(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
26 September 2002 (26.09.2002)

PCT

(10) International Publication Number
WO 02/074903 A2

(51) International Patent Classification[7]: C12N

(21) International Application Number: PCT/IB02/01973

(22) International Filing Date: 22 February 2002 (22.02.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/270,123 22 February 2001 (22.02.2001) US

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(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:
— *of inventorship (Rule 4.17(iv)) for US only*

Published:
— *without international search report and to be republished upon receipt of that report*
— *with sequence listing part of description published separately in electronic form and available upon request from the International Bureau*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 02/074903 A2

(54) Title: COMPARATIVE MYCOBACTERIAL GENEOMICS AS A TOOL FOR IDENTIFYING TARGETS FOR THE DIAGNOSIS, PROPHYLAXIS OR TREATMENT OF MYCOBACTERIOSES

(57) Abstract: The present invention is directed to a method of selection of purified nucleotidic sequences or polynucleotides encoding proteins or part of proteins carrying at least an essential function for the survival or the virulence of mycobacterium species by a comparative genomic analysis of the sequence of the genome of M. tuberculosis aligned on the genome sequence of M. leprae and M. tuberculosis and M. leprae marker polypeptides of nucleotides encoding the polypeptides, and methods for using the nucleotides and the encoded polypeptides are disclosed.

COMPARATIVE MYCOBACTERIAL GENEOMICS AS A TOOL FOR IDENTIFYING TARGETS FOR THE DIAGNOSIS, PROPHYLAXIS OR TREATMENT OF MYCOBACTERIOSES.

BACKGROUND OF THE INVENTION

The present invention is directed to a method of selection of purified nucleotidic sequences or polynucleotides encoding proteins or part of proteins carrying at least an essential function for the survival or the virulence of mycobacterium species by a comparative genomic analysis of the sequence of the genome of M. tuberculosis aligned on the genome sequence of M. leprae. The selection by the method of the invention of these nucleotidic or peptidic sequences of interest which are encoding said essential functions of mycobacterium leads to identify and characterize specific antigens or regulator sequences, said antigens being chosen as potential candidates for an immunogenic or vaccine composition, but also useful to determine novel potential drug targets for the pharmaceutical industry. The molecules having essential functions encoded by these genes or corresponding to regulatory elements represent also new highly specific targets for chemotherapy. The sequence of the polynucleotides according to the invention have the particularity to be maintained during the evolution of the mycobacterium and therefore have been highly conserved in pathogenic mycobacterium species. The invention is directed to purified nucleic acid selected by the method of the invention as well as the purified polypeptides with essential functions for the survival or the virulence of mycobacterium species encoded by these sequences. In a preferred embodiment, the invention is directed to genes that code for essential proteins for which the functions have been attributed. The invention is also directed to a process for the production of recombinant polypeptides and chimeric polypeptides comprising them, antibodies generated against these polypeptides, immunogenic or vaccine compositions comprising at least one polypeptide useful as protective antigens or capable to induce a protective response in vivo or in vitro against mycobacterium infections, immunotherapeutic compositions comprising at least such a polypeptide according to the invention, and the use of such nucleic acids and polypeptides in diagnostic methods, vaccines, kits, or antimicrobial therapy.

To illustrate the new approach of comparative mycobacterial genomics for identifying essential molecules as regulator nucleotidic sequences and proteins for the survival or the virulence of mycobacterium species, the inventors made several

examples which will not limit the scope of the present invention. A comparative genomic analysis, which permitted the inventors to select the sequences encoding essential molecules as regulatory nucleotidic sequences and proteins for the survival or the virulence of mycobacterium species, has been made by analysis of the complete genome sequence of both Mycobacterium tuberculosis and Mycobacterium leprae. The whole genome comparisons led also to the identification of genes that are present in both M. tuberculosis and M. leprae but have no counterparts elsewhere. The polypeptides having essential functions for the survival or the virulence mycobacterium species are characterized by at least 40 % identity at the protein level and at least 70 % identity at the gene level between both genomic sequences. The amino acid sequences have been compared using the program GAP, "GCG" (Genetic Computer Group) from Program Manual (UNIX), Wisconsin Sequence Analysis Package™, Algorithm of Needleman and Wunsch.

(J. Mol. Biol. 48:443, 1970) The parameters are chosen as follows.

For amino acid comparisons:

Gap penalty: 5

Gap extension penalty: 0.30

Length: the sequence to be compared are the following XXX SEQ ID NO:XXX and having XXX amino acids.

For nucleotide comparisons:

Gap penalty: 50

Gap extension penalty: 3

Also the parameters could be adapted case by case.

Other techniques are known by the man of the art for the comparison of sequences. We can refer to the algorithm of Smith and Wateman (Ad. App. Math. 2: 482, 1982), the method of search of similarities of Pearson and Lipman (Proc. Natl. Acad. Sci. USA 85:2444, 1988), Zhang et al. "A greedy algorithm for aligning DNA sequences" (J. Comp. Biol., 2000, Feb-Apr. 7(1-2), p.203-214), these algorithms are used by the way of informatic tools (GAP, BLASTP, BLASTN, BLASTX, BESTFIT, FASTA and TFASTA in the Wisconsin Genetics Software Package, Genetics Computer Group, 575 Sciences Dr., Madison WI).

The recombinant clones carrying DNA from Mycobacterium tuberculosis and Mycobacterium leprae strains containing genomic sequences of said bacteria, have been deposited at the Collection Nationale de Cultures de Microoganismes (C.N.C.M.),

of Institut Pasteur, 28, rue du Docteur Roux, F-75724 Paris cedex 15, France, and are designated as following.

- HRV37 genomic library, deposited on November 19, 1997 under the accession number I-1945.

- A recombinant BAC containing a fragment of M. tuberculosis genome deposited on February 20, 2001, at the C.N.C.M. under the accession number I-2625.

- A recombinant BAC containing a fragment of M. tuberculosis genome deposited on February 20, 2001, at the C.N.C.M. under the accession number I-2626.

- A recombinant BAC containing a fragment of M. tuberculosis genome deposited on February 20, 2001, at the C.N.C.M. under the accession number I-2627.

- A recombinant BAC containing a fragment of M. tuberculosis genome deposited on February 20, 2001, at the C.N.C.M. under the accession number I-2628.

- A recombinant BAC containing a fragment of M. tuberculosis genome deposited on February 20, 2001, at the C.N.C.M. under the accession number I-2629.

- A recombinant cosmid containing a fragment of M. leprae genome deposited on February 21, 2001, at the C.N.C.M. under the accession number I-2632.

- A recombinant cosmid containing a fragment of M. leprae genome deposited on February 21, 2001, at the C.N.C.M. under the accession number I-2633.

Leprosy, one of the oldest recorded diseases, remains a major public health problem. Although prevalence has been reduced extensively by WHO multidrug therapy and vaccination with BCG (Anon, Karonga Prevention Trial Group, Lancet, 348, 17-24, 1996 ; Nordeen, S.K., et al., eds. Walgate, R. & Simpson, K., 47-55, World Health Organisation, Geneva, 1993, the incidence of the disease remains worrying with more than 690,000 new cases annually (Anon, WHO Weekly Epidemiological Record, 73, 40, 1998) in the world. Leprosy was common in Europe in the middle ages but gradually disappeared.

In 1873, in the first convincing association of a microorganism with a human disease, (Hansen, G.H.A., Norsk Magazin for Laegervidenskaben (supplement), 4, 1-88, 1874) discovered the leprosy bacillus in skin biopsies but failed to culture Mycobacterium leprae. A century later, the nine-banded armadillo (Kirchheimer, W.K. et al., Int. J. Lep., 39, 693-702, 1971) was used as a surrogate host, enabling large quantities of the bacillus to be isolated for biochemical and physiological studies. Subsequent efforts to demonstrate multiplication in synthetic media have been equally fruitless altough metabolic activity can be detected (Franzblau, S., Antimicrobial Agents and Chemotherapy, 33, 2115-2117, 1989). The exceptionally slow growth of the

bacillus, which has a doubling time of ~ 14 days (Shephard, C.C., eds. Hastings, R.C., 269-286, Churchill Livingstone, Edinburgh, 1985), may contribute to these failures.

The means of transmission of leprosy is uncertain but, like tuberculosis, it is believed to be spread by the respiratory route since lepromatous patients harbour bacilli in their nasal passages. The bacterium accumulates principally in the extremities of the body where it resides with macrophages and infects the Schwann cells of the peripheral nervous system. Lack of myelin production by infected Schwann cells, and their desctruction by host-mediated immune reactions, leads to nerve damage, sensory loss and the disfiguration that, sadly, are hallmarks of leprosy.

There is no data or technical information in the prior art which permit to select specifically potential new targets and protective antigens for new drugs and vaccine compositions to treat and prevent mycobacterial diseases, particularly tuberculosis and leprosy. Furthermore, there is a need for the development of new tools for the selection of genes which are encoding for essential proteins or regulatory nucleotidic sequences in the survival or infection of mycobacterium species and useful for the design of antituberculosis drugs and vaccines based on the knowledge of comparative mycobactertial genomics.

SUMMARY OF THE INVENTION

The invention aids in fulfilling these needs in the art. The method according to the invention has the advantage to reduce drastically the number of potential new targets and protective antigens by giving for the first time an exhaustive description of conserved proteins in the tuberculosis and leprae bacilli. The isolated polynucleotides and proteins described in the present invention, which are highly conserved in both genomic sequences of M. tuberculosis and M. leprae, are by this characteristic essential for the survival or the virulence of these mycobacteria in the host. The identification of antigens and potentially therapeutic targets has been made on an evolutionary basis by a method of comparative genomic analysis.

This invention provides a method for the identification and the selection of essential genes for the survival or the virulence of mycobacterium species which comprises:

a) aligning the genomic sequence of a first mycobacterium species on a genomic sequence of the genomic sequence of a second mycobacterium species,

b) selecting a polynucleotide sequence highly conserved in both genomes with no counterparts in other bacterial genomic sequences and which corresponds to an essential gene for the survival or the virulence of mycobacterium species, and

c) optionaly, testing the polypolynucleotide selected in step b) for its capacity of virulence or involved in the survival of a mycobacterium species, said testing being based on the activation or inactivation of said polyucleotide in a bacterial host or said testing being based on the activity of the product of expression of said polynucleotide *in vivo* or *in vitro*.

This invention provides also a method for the identification and the selection in silico of essential genes for the survival or the virulence of mycobacterium species which comprises the following steps:

a) aligning the genomic sequence of a first mycobacterium specie on a genomic sequence of the genomic sequence of a second mycobacterium specie, and

b) selecting a polynucleotide sequence highly conserved in both genomes with no counterparts in other bacterial genomic sequences and which corresponds to an essential gene for the survival or the virulence of mycobacterium species.

Optionally, testing the polypolynucleotide selected in step b) for its capacity of virulence or involved in the survival of a mycobacterium species can be carried out, said testing being based on the activation or inactivation of said polynucleotide in a bacterial host or said testing being based on the activity of the product of expression of said polynucleotide *in vivo* or *in vitro*.

The method according to the invention permits also to determine the polynucleotidic sequences, which encode for polypeptides and regulatory sequences essential for the virulence and/or the survival of mycobacterium which are, in one hand, specific to Mycobacterium tuberculosis and, in the other hand, specific to Mycobacterium leprae, that is to say, said polynucleotidic sequences are not found in publicly accessible banks of non-Mycobacterium tuberculosis and non-Mycobacterium leprae genome.

A gene according to the invention is a defined nucleotidic sequence, which contains an open reading frame with base composition, codon usage, GC skew and other features typical of a microorganism, preferably a mycobacterium. The definition of gene according to the invention comprises nucleotidic sequences, which encode an antigen or a fragment thereof, or nucleotidic sequences, which encode for essential polypeptide with essential function in the host, or nucleotidic sequence, which encodes polypeptide with regulation function in the bacteria, by example, in the DNA expression or in the transcription. An essential function for a polypeptide in bacteria according to the invention comprises functions implicated in the survival or in the virulence of the bacteria.

In a preferred embodiment the first genomic sequence of mycobacterium belongs to Mycobacterium tuberculosis. The Mycobacterium microti is a Mycobacterium which infect the vole. It has a genome sequence close to the sequence of Mycobacterium tuberculosis and therefore in a second preferred embodiment, the first genomic sequence of Mycobacterium microti belongs to Mycobacterium genus.

In another preferred embodiment, the second genomic sequence of mycobacterium belongs to Mycobacterium leprae.

In a preferred embodiment, the method according to the invention comprises the complete genomic sequence of said mycobacterium species which is analysed. This invention provides purified polypolynucleotide molecule obtained by the method according to the invention.

Further, this invention provides a purified polynucleotide molecule according to the invention which encodes essential proteins or fragments of proteins of Mycobacterium species.

The invention also encompasses a purified polynucleotide molecule of a formula selected from the group consisting of polynucleotidic sequences, which encode for polypeptides and regulatory sequences essential for the virulence and/or the survival of mycobacterium which are, in one hand, specific to Mycobacterium tuberculosis and, in the other hand, specific to Mycobacterium leprae, that is to say, said polynucleotidic sequences are not found in publicly accessible banks of non-Mycobacterium tuberculosis and non-Mycobacterium leprae genome. In a preferred embodiment, this purified polynucleotide is obtained by the method according to the invention. The invention also encompasses a purified polypeptide encoded by the above polynucleotide molecule.

The invention emcompasses a purified polynucleotide molecule that hybridizes to either strand of a denatured, double-stranded DNA comprising the purified polynucleotide sequence according to the invention under conditions of moderate stringency in 50 % formamide and 6X SSC at 42°C with washing conditions of 60°C, 0.5XSSC, 0.1 % SDS.

This invention provides a purified polypeptide of a formula selected from the group consisting of SEQ ID NO: 1 to SEQ ID NO: 644.

The invention further provides a process of screening of active molecules comprising:

a) preparation of at least one purified polynucleotidic molecule or fragment thereof as defined above in an acceptable medium.

b) contacting the purified polynucleotide sequence or a fragment thereof corresponding to said essential gene of interest with an active molecule to be tested, and

c) selecting the active molecule by inhibition or activation of the activity of the purified polynucleotide compared to the standard activity of the essential gene in absence of said active molecule.

The invention also provides a process of screening of an active molecule comprising:

a) preparation of at least one purified polypeptide as defined above or fragment thereof to be used as a target in an acceptable medium,

b) contacting said purified polypeptide or fragment thereof obtained in step a) with an active molecule to be tested, and

c) selecting the active molecule by inhibition or activation of the activity of the purified polypeptide obtainable after expression of the essential gene selected above and compared to the standard activity of said polypeptide.

The invention also provides a recombinant BAC containing a fragment of M. tuberculosis genome deposited on February 20, 2001 at the C.N.C.M under the accession number I-2625, I-2626, I-2627, I-2628 or I-2629.

The invention also provides a recombinant cosmid containing a fragment of M. leprae genome deposited on February 21, 2001 at the C.N.C.M under the accession number I-2632 or I-2633.

This invention also provides a purified nucleic acid molecule encoding a polypeptide of a formula selected from the group consisting of SEQ ID NO: 1 to SEQ ID NO: 644.

The nucleic acid molecules of the invention, which include DNA and RNA, are referred to herein as "*M. tuberculosis* and *M. leprae* marker nucleic acids" or "*M.*

tuberculosis and *M. leprae* marker DNA". The polypeptides encoded by these molecules, which are referred to herein as "*M. tuberculosis* and *M. leprae* marker polypeptides," have formulas selected from the group consisting of SEQ ID NO: 1 to SEQ ID NO: 644.

Further, this invention provides a purified nucleic acid molecule that hybridizes to either strand of a denatured, double-stranded DNA comprising the nucleic acid molecule encoding the polypeptide of a formula selected from the group consisting of SEQ ID NO: 1 to SEQ ID NO: 644 under conditions of moderate stringency in 50 % formamide and 6XSSC, at 42°C with washing conditions of 60°C, 0.5XSSC, 0.1 % SDS. This nucleic acid molecule that hybridizes under the stated conditions can be derived by *in vitro* mutagenesis of a *M. tuberculosis* and *M. leprae* marker nucleic acid of the invention.

The invention also encompasses purified nucleic acid molecules degenerate from *M. tuberculosis* and *M. leprae* marker nucleic acids as a result of the genetic code, purified nucleic acid molecules that are allelic variants of *M. tuberculosis* and *M. leprae* marker nucleic acids, and a species homolog of *M. tuberculosis* and *M. leprae* marker nucleic acids. The invention also encompasses recombinant vectors that direct the expression of these nucleic acid molecules and host cells transformed or transfected with these vectors.

The invention further encompasses methods for the production of *M. tuberculosis* and *M. leprae* marker polypeptides, including culturing a host cell under conditions promoting expression, and recovering the polypeptide from the culture medium. Especially, the expression of *M. tuberculosis* and *M. leprae* marker polypeptides in bacteria, yeast, plant, and animal cells is encompassed by the invention.

This invention also provides labeled *M. tuberculosis* and *M. leprae* marker polypeptides. Preferably, the labeled polypeptides are in purified form. It is also preferred that the unlabeled or labeled polypeptide is capable of being immunologically recognized by human body fluid containing antibodies to a mycobacterium. The polypeptides can be labeled, for example, with an immunoassay label selected from the group consisting of radioactive, enzymatic, fluorescent, chemiluminescent labels, and chromophores.

Immunological complexes between the *M. tuberculosis* and *M. leprae* marker polypeptides of the invention and antibodies recognizing the polypeptides are also provided. The immunological complexes can be labeled with an immunoassay label

selected from the group consisting of radioactive, enzymatic, fluorescent, chemiluminescent labels, and chromophores.

Furthermore, this invention provides a method for detecting infection by mycobacteria. The method comprises providing a composition comprising a biological material suspected of being infected with a mycobacteria, and assaying for the presence of *M. tuberculosis* and *M. leprae* marker polypeptide of the mycobacteria. The polypeptides are typically assayed by electrophoresis or by immunoassay with antibodies that are immunologically reactive with *M. tuberculosis* and *M. leprae* marker polypeptides of the invention.

This invention also provides an *in vitro* diagnostic method for the detection of the presence or absence of antibodies, which bind to an antigen comprising a *M. tuberculosis* and *M. leprae* marker polypeptide of the invention or mixtures of the polypeptides. The method comprises contacting the antigen with a biological fluid for a time and under conditions sufficient for the antigen and antibodies in the biological fluid to form an antigen-antibody complex, and then detecting the formation of the complex. The detection step can further comprise measuring the formation of the antigen-antibody complex. The formation of the antigen-antibody complex is preferably measured by immunoassay based on Western blot technique, ELISA (enzyme linked immunosorbent assay), indirect immunofluorescent assay, or immunoprecipitation assay.

The polypeptides of this invention are thus useful as a portion of a diagnostic composition for detecting the presence of antibodies to antigenic proteins associated with mycobacteria. Thus, a diagnostic kit for the detection of the presence or absence of antibodies, which bind to the *M. tuberculosis* and *M. leprae* marker polypeptide of the invention or mixtures of the polypeptides, contains antigen comprising the *M. tuberculosis* and *M. leprae* marker polypeptide, or mixtures thereof, and means for detecting the formation of immune complex between the antigen and antibodies. The antigens and the means are present in an amount sufficient to perform the detection.

This invention also provides an immunogenic composition comprising a *M. tuberculosis* and *M. leprae* marker polypeptide of the invention or a mixture thereof in an amount sufficient to induce an immunogenic or protective response *in vivo*, in association with a pharmaceutically acceptable carrier therefor. A vaccine composition of the invention comprises a neutralizing amount of the *M. tuberculosis* and *M. leprae* marker polypeptide and a pharmaceutically acceptable carrier therefor.

In addition, the *M. tuberculosis* and *M. leprae* marker polypeptides can be used to raise antibodies for detecting the presence of antigenic proteins associated with a mycobacterium. Purified polyclonal or monoclonal antibodies that bind to *M. tuberculosis* and *M. leprae* marker polypeptides are encompassed by the invention.

The polypeptides of the invention can be also employed to raise neutralizing antibodies that either inactivate the mycobacteria, reduce the viability of a mycobacterium *in vivo*, or inhibit or prevent bacterial replication. The ability to elicit mycobacteria-neutralizing antibodies is especially important when the proteins and polypeptides of the invention are used in immunizing or vaccinating compositions to activate the B-cell arm of the immune response or induce a cytotoxic T lymphocyte response (CTL) in the recipient host, or other T cell mediated response.

Further, this invention provides a method for detecting the presence or absence of a mycobacterium comprising:

(1) contacting a sample suspected of containing bacterial genetic material of a mycobacterium with at least one nucleotide probe, and

(2) detecting hybridization between the nucleotide probe and the bacterial genetic material in the sample,

wherein said nucleotide probe is complementary to the full-length sequence of a purified *M. tuberculosis* and *M. leprae* marker nucleic acid of the invention.

Also, this invention provides a method of comparing genetic complements of different types of organisms, wherein the method comprises:

(a) providing a database including sequence libraries for a plurality of types of organisms, said libraries having multiple genomic sequences;

(b) providing one or more probe sequences encoding a polypeptide of a formula selected from the group consisting of SEQ ID NO: 1 to SEQ ID NO: 644;

(c) determining homologous matches between one or more of said probe sequences and one or more sequences of said sequences in said genomic libraries; and

(d) displaying the results of said determination.

The method can be carried out using a computer system comprising a database including sequence libraries for a plurality of types of organisms, wherein the libraries have multiple genomic sequences, and providing a database including the one or more probe sequences encoding a polypeptide of a formula selected from the group consisting of SEQ ID NO: 1 to SEQ ID NO: 644. The computer system includes a user interface capable of receiving sequence information from the sequence libraries and

the probe sequence information for comparison and displaying the results of the comparison.

This invention also provides an *in vitro* diagnostic method for the detection of the presence or the absence of essential nucleotidic sequences for the survival or the virulence in mycobacterium by hybridization or amplification of said specific sequence comprising:

a) providing a composition comprising a probe as defined above with a sequence library of interest to be tested in an acceptable medium and in sufficient time to obtain an hybridization and/or an amplification of said sequence;

b) purifying the sequence which hybridizes with said probes; and

c) optionally, quantifying said sequence.

BRIEF DESCRIPTION OF THE DRAWINGS

This invention will be described with reference to the drawings in which:

Figure 1 is a circular genome map. From the outside, circles 1, 2, clockwise and anticlockwise, genes on the - and + strands, respectively; circles 3 and 4, pseudogenes; 5 and 6, *M. leprae* specific genes; 7, repeat sequences; 8, G+C content; 9, G/C bias (G+C)/(G-C).

Figures 2A and 2B are a comparison of the *proS* loci of *M. leprae* and *M. tuberculosis*.

Figure 2A: the *M. leprae proS* region is shown above that of *M. tuberculosis*. Genes or operons are depicted by arrows while crosses denote pseudogenes. Note the absence of *ugpAEBC* and *dinF* from *M. leprae* and the presence of *proS* at this site.

Figure 2B: domain structures of prolyl-tRNA synthetases of bacterial (*M. tuberculosis*) or eukaryotic (*M. leprae*) types after (Wolf, Y.I., et al., Genome Research, 9, 689-710, 1999).

Figure 3 shows distribution of genes by functional category. The number of complete (grey) and pseudogenes (black) within each category for *M. leprae* is shown. Data for *M. tuberculosis* (white) were taken from the published genome sequence (Cole, S.T., et al., Nature, 393, 537-544, 1998). Functional categories: 1. Small-molecule catabolism, 2. Energy Metabolism, 3. Central intermediary metabolism, 4. Amino acid biosynthesis, 5. Nucleosides and nucleotide biosynthesis and metabolism, 6. Biosynthesis of cofactors, prosthetic groups and carriers, 7. Lipid biosynthesis, 8. Polyketide and nonribosomal peptide synthesis, 9. Proteins performing regulatory

functions, 10. Synthesis and modification of macromolecules, 11. Degradation of macromolecules, 12. Cell envelope constituents, 13. Transport/binding proteins, 14. Chaperones/Heat shock proteins, 15. Cell division proteins, 16. Protein and peptide secretion, 17. Adaptations and atypical conditions, 18. Detoxification, 19. Virulence determinants, 20. IS elements and phage derived proteins, 21. PE and PPE families, 22. Antibiotic production and resistance, 23. Cytochrome P450 enzymes, 24. Coenzyme F420-dependent enzymes, 25. Miscellaneous transferases, 26. Miscellaneous phosphatases, lyases and hydrolases, 27. Cyclases, and 28. Chelatases. **Inset graph:** The Y axis shows the number of genes within each functional category. The X axis shows the functional categories: 29. Conserved

hypothetical proteins, 30. Hypothetical proteins which share no significant similarity with any protein currently in the databases.

Figure 4. Polynucleotidic sequence (SEQ ID NO: 645) of the Mycobacterium tuberculosis H37Rv BAC clone, BAC-Rv221, deposited at the C.N.C.M. under the accession number I-2625, which corresponds to pBelo BACII with HindIII partial digest fragment from the genome of M. tuberculosis H37 Rv that starts at position 2,115,612 and extends to position 2,198,604 according to Cole et al. (1998). All of the M. tuberculosis genes contained herein are of interest.

Figure 5. Polynucleotidic sequence (SEQ ID NO: 646) of the Mycobacterium tuberculosis H37Rv BAC clone, BAC-Rv230, deposited at the C.N.C.M. under the accession number I-2626, which corresponds to pBelo BACII with HindIII partial digest fragment from the genome of M. tuberculosis H37 Rv that starts at position 1,336,764 and extends to position 1,411,979 according to Cole et al. (1998). All of the M. tuberculosis genes contained herein are of interest.

Figure 6. Polynucleotidic sequence (SEQ ID NO: 647) of the Mycobacterium tuberculosis H37Rv BAC clone, BAC-Rv234, deposited at the C.N.C.M. under the accession number I-2627, which corresponds to pBelo BACII with HindIII partial digest fragment from the genome of M. tuberculosis H37 Rv that starts at position 2,847,864 and extends to position 2,928,420 according to Cole et al. (1998). All of the M. tuberculosis genes contained herein are of interest.

Figure 7. Polynucleotidic sequence (SEQ ID NO: 648) of the Mycobacterium tuberculosis H37Rv BAC clone, BAC-Rv265, deposited at the C.N.C.M. under the accession number I-2628, which corresponds to pBelo BACII with HindIII partial digest fragment from the genome of M. tuberculosis H37 Rv that starts at position 513,402 and extends to position 599,515 according to Cole et al. (1998). All of the M. tuberculosis genes contained herein are of interest.

Figure 8. Polynucleotidic sequence (SEQ ID NO: 649) of the Mycobacterium tuberculosis H37Rv BAC clone, BAC-Rv267, deposited at the C.N.C.M. under the accession number I-2629, which corresponds to pBelo BACII with HindIII partial digest fragment from the genome of M. tuberculosis H37 Rv that starts at position 1,124,621 and extends to position 1,169,811 according to Cole et al. (1998). All of the M. tuberculosis genes contained herein are of interest.

Figure 9. Polynucleotidic sequence (SEQ ID NO: 650) of the Mycobacterium leprae cosmid which corresponds to pYUB18 with Sau3A partial digest fragment from the genome of M. leprae that starts at position 1,373,705 and extends to position

1,403,746. This sequence comprises the sequence of the Mycobacterium leprae cosmid MLCY 811 which corresponds to pYUB18 with Sau3A partial digest fragment of the genome of M. leprae deposited at the C.N.C.M. under the accession number I-2633 that starts at position 1,363,759 and extends to position 1,403,737 according to Cole et al. (2001, Nature, 409, 1007-1011).

Figure 10. Polynucleotidic sequence (SEQ ID NO: 651) of the Mycobacterium leprae cosmid which corresponds to pYUB18 with Sau3A partial digest fragment of the genome of M. leprae that starts at position 3,160,443 and extends to position 3,194,161. This sequence comprises the sequence of the Mycobacterium leprae cosmid MLCY 047 which corresponds to pYUB18 with Sau3A partial digest fragment of the genome of M. leprae deposited at the C.N.C.M. under the accession number I-2632 that starts at position 3,160,458 and extends to position 3,194,087 according to Cole et al. (2001).

DETAILED DESCRIPTION OF THE INVENTION

Sequence analysis of *M. leprae*

The complete genome sequence of *M. leprae* contains 3,268,203 bp, and has an average G+C content of 57.8%. These values are much lower than those reported for the *M. tuberculosis* genome, comprising ~4,000 genes, 4,411,529 bp and 65.6 % G+C (Cole et al, 1998). On detailed pairwise comparisons of both genome and proteome sequences (Cole et al., 1998 ; Tekaia, F., et al., Tubercle Lung Disease 79, 329-342, 1999), it was immediately apparent that only 49.5 % of the genome was occupied by protein-coding genes, while 27% contained recognisable pseudogenes, inactive reading frames with functional counterparts in the tubercle bacillus. The remaining 23.5 % of the genome did not appear to be coding, and probably contains gene remnants mutated beyond recognition. The distribution of the 1,114 pseudogenes was essentially random (Figure 1) and, after their exclusion, 1604 potentially active genes remained, of which 1,439 were common to both pathogens. Among the remaining 165 genes, with no ortholog in *M. tuberculosis*, were 29 for which functions could be attributed. Many of the 136 residual CDS in *M. leprae*, showing no similarity to known genes, may also represent pseudogenes as they are shorter than average and occur in regions of low gene density (Figure 1).

Reductive evolution

Assuming that the genome of *M. leprae* was once topologically equivalent and similar in size to those of all other mycobacteria (~4.4 Mb) (Brosch, R., et al., Res. Microbiol., 151, 135-142, 2000 ; Philipp, W., et al., Electrophoresis, 19, 573-576, 1998 ; Stinear, T.P., et al., J. Bacteriol., 182, 6322-6330, 2000), then extensive downsizing and rearrangement must have occurred during evolution. Loss of 1.1 Mb would eliminate ~1100 CDS, and *M. leprae* would, therefore, be expected to produce 3000 proteins compared to the 4000 predicted in *M. tuberculosis*. On analysis of the proteome only 391 soluble protein species were detected (Marques, M.A.M., et al., Infection Immunity, 66, 2625-2631, 1998), compared to nearly 1800 in *M. tuberculosis* (Jungblut, P.R., et al., Mol Microbiol, 33, 1103-1117, 1999), consistent with there being many pseudogenes. In conclusion, since diverging from the last common mycobacterial ancestor, the leprosy bacillus may have lost >2000 genes.

Reductive evolution is documented in obligate intracellular parasites, such as *Rickettsia* and *Chlamydia* spp., and in some endosymbionts (Andersson, J.O., et al., Curr. Opin. Genetics & Development, 9, 664-671, 1999), as genes become inactivated once their functions are no longer required in highly specialised niches. This process may have naturally defined the minimal gene set for a pathogenic mycobacterium. The most extensive genome degradation reported previously was in *Rickettsia prowazekii*, the typhus agent, where only 76 % of the potential coding capacity was used and 12 pseudogenes identified (Anderssen, S.G.E., et al., Nature, 396, 133-140, 1998). In comparison with *M. leprae*, the level of gene loss detected was modest, and it is striking that elimination of pseudogenes by deletion lags far behind gene inactivation in both pathogens. Intriguingly, the G+C content of *M. leprae* genes (60.1 %) is higher than that of the pseudogenes (56.5 %), and the remainder of the genome (54.5 %). The high G+C content of *M. leprae*, and other mycobacteria, is apparently driven by the codon preference of active genes, while random mutation within non-coding regions results in drift towards a more neutral G+C content, closer to that of the host.

Mosaic organisation and horizontal transfer

While the precise mechanism behind pseudogene formation in *M. leprae* is unclear, loss of *dnaQ*-mediated proof-reading activities of DNA polymerase III (Mizrahi, V., et al., eds. Hatfull, G.F. & Jacobs, W.R., Jr., 159-172 (ASM Press, Washington, D.C., 2000) may have contributed. By contrast, there is extensive evidence for large scale rearrangements and deletions arising from homologous recombination events. Comparison with *M. tuberculosis* delineated ~65 segments that show synteny but differ

in their relative order and distribution in the *M. leprae* genome. Breaks in synteny generally correspond to dispersed repeats, tRNA genes or gene-poor regions. Copies of all three repeats, RLEP, REPLEP, and LEPREP, occur at the junctions of discontinuity suggesting that the mosaic arrangement of the *M. leprae* genome reflects multiple recombination events between related repetitive sequences. In some cases, aberrant recombination may have occurred as truncated repeats exist.

While there is little sequence similarity indicating that they are insertion sequences, RLEP is clearly capable of transposition since it exists within sequences corresponding to known genes. Unlike *M. tuberculosis* H37Rv, which contains at least two prophages and 56 intact or truncated IS elements (Cole et al., 1998 ; Gordon, S.V., et al., Microbiology, 145, 881-892, 1999), *M. leprae* has only three phage-like genes, all with *M. tuberculosis* orthologs, and 26 transposase gene fragments. However, some signs of horizontal transfer of genetic material were detected when the aminoacyl-tRNA synthetase genes were examined. With one exception, all of these are more closely related to *M. tuberculosis* enzymes than to those of any other organism. Surprisingly, prolyl-tRNA synthetase, encoded by *proS*, is more similar to the enzymes of *Borrelia burgdorfieri* and eukaryotes such as Drosophila, humans and yeast. It has been proposed that horizontal transfer of tRNA synthetase genes occurs frequently, and that the pathogen *B. burgdorferi* may have acquired *proS* from its host (Wolf et al., 1999). Comparison of the genetic context provides further support for this hypothesis as the *M. leprae proS* is both displaced and inverted with respect to the *M. tuberculosis* genome (Figure 4), consistent with recent acquisition.

Multigene families

Half of the genes (52 %) present in *M. tuberculosis* arose from gene duplication events leading to extensive functional redundancy (Tekaia et al., 1999). Many of these are involved in lipid metabolism or belong to the novel PE and PPE families, encoding unusual glycine-rich proteins of repetitive structure and unknown function. The latter are confined to certain mycobacterial species (Poulet, S., et al., Arch. Microbiol., 163, 79-86, 1995), and represent sources of genetic and, possibly antigenic, variation (Cole et al., 1998). The corresponding 167 genes are exceptionally GC-rich and occupy >8 % of the *M. tuberculosis* genome (Cole, S.T., FEBS Letters, 452, 7-10, 1999). By contrast, only 9 intact PE and PPE genes were found in *M. leprae* although 30 pseudogenes were present. No intact members of the PE-PGRS subfamily were found. This reduction partly contributes to the smaller genome size and the lower GC content of *M. leprae*. Recently, some PE-PGRS proteins were shown to be upregulated in

Mycobacterium marinum during granuloma formation in frogs (Ramakrishnan, L., et al., Science, 288, 1436-1439, 2000). However, this effect is probably not mediated directly by the PE-PGRS, as granulomas are a prominent cytological feature of all forms of leprosy. Essentially all of the gene families (Tekaia et al., 1999) have undergone extensive retraction in *M. leprae* and now encode "just-enough" activity to permit intracellular growth. Selected examples of this are given in Table 1, whereas the comprehensive comparison presented in Figure 3 shows that all functional categories have shrunk.

Table 1. Selected examples of metabolic streamlining

M. tuberculosis	*M. leprae*	*M. leprae*	Function	Pathway
Gene	*Gene*	*Pseudogene*		
gltAl, gltA2, cit,4	*gltA2*	*citA*	Citrate synthase	Krebs cycle
icdl, icd2	*icd2*	*icdl*	Isocitrate dehydrogenase	Krebs cycle
icl, aceA	*aceA*	*icl*	Isocitrate lyase	Glyoxy-latecycle
gndl, gnd2	*gnd1*	*gnd2*	6-phosphogluconate-dehydrogenase	Pentose phosphate pathway
pfkA, pjkB	*pfkA*	*pfkB*	Phospho-fructokinase	Glycolysis
aceE, lpdA, pdhA, pdhB, pdhC, lpd (Rv0462) .	*aceE, lpd (Rv0462)*	*lpdA, pdhA, dhB, pdhC*	Pyruvate, dehydrogenase complex	Energy metabolism
lldD1, lldD2	*lldD2*	*lldD1*	L-lactate dehydrogenase	Respiration
mmaAl, mmaA2, mmaA3, mmaA4, cmaAl, cmaA2, umaAl, umaA2	*mmaA1, mmaA4, cmaA2, umaA2*	*mmaA2, nmaA3, cmaA1, umaA1*	Methyltransferase	Mycolic acid modification
glnAl, glnA2, glnA3, glnA4	*glnA1, glnA2*	*glnA3, glnA4*	Glutamine synthase	Glutamine biosynthesis
metA, metB, metC, metE, metH, metK, metZ	*met4, metB, metE, metH,metK, metZ*	*metC*	Various	Methionine biosynthesis
bfrA, bfrB	*bfrA*	*bfrB*	Bacterioferritin	Iron storage
ligA, ligB, ligC	*ligA*	*ligB*	DNA ligase	DNA metabolism

Metabolic clues

Successive generations of microbiologists have failed to grow *M. leprae* in axenic culture leading to the notion that the bacterium lacks certain biosynthetic pathways. Complete genome comparisons shed new light on this. Lipid metabolism is prominent in the biochemical repertoire of *M. leprae* but to a lesser extent than in the tubercle bacillus whose cell envelope has a greater diversity of lipids, glycolipids and carbohydrates (Daffe, M., et al., Advances in Microbial Physiology, 39, 131-203, 1998).

Envelope biogenesis

Mycolic acids, structural components of all mycobacteria, include the alpha mycolates, lacking oxygen functions, and the oxygenated keto- and methoxy-forms. Reappraisal of mycolic acid modification is now possible in the light of the reduced *cmaA*, *mmaA* and *umaA* gene-sets encoding the effector methyltransferases. *M. leprae* contains no methoxy-mycolates (Daff et al., 1998), probably due to the loss of the MmaA2 and MmaA3 enzymes that attach the methoxy group in *M. tuberculosis* (Brosch et al., 1999 ; Yuan, Y. et al., Proceedings of the National Academy of Sciences of the United States of America, 93, 12828-33, 1996). However, the mycolic acids do contain cyclopropane functions (Draper, P., et al., Ann Microbiol (Paris), 133, 39-47, 1982) that in *M. tuberculosis* are introduced by MmaA2 and CmaAl. Since both the *mmaA2* and *cmaA1* genes have decayed in *M. leprae*, cyclopropanation must be encoded by one of the related *umaA* genes. Recently, both *umaA2* and *cmaA2* were shown to be essential for the cyclopropanation function in *M. tuberculosis* (Glickman, M.S., et al., Mol Cell, 5, 717-27, 2000). The same enzymes also catalyse cyclopropanation in *M. leprae* as their duplicate copies are both inactive (Table 1).

Foremost among the outer lipids of the leprosy bacillus is phenolic glycolipid 1 (PGL1), an envelope component not found in *M. tuberculosis* (Melancon-Kaplan, J., et al., Proc. Nad. Acad. Sci. USA, 85, 1917-1921, 1988). PGL1 is derived from phthiocerol-dimycocerosate (PDIM), an esterified compound lipid generated by mycocerosic acid synthase and a type I polyketide synthase (PKS), by addition of three o-methylated deoxy sugars (Daffe et al., 1998). However, the genes for the glycosyltransferases, that modify PDIM to produce PGLI, could not be detected despite extensive comparisons. PDIM, a virulence factor in *M. tuberculosis*, requires the RND protein, MmpL7, for its transport across the cytoplasmic membrane (Tekaia et al., 1999 ; Cox, J.S., et al., Nature, 402, 79-83; 1999 ; Camacho, L.R., et al., Mol. Microbiol., 34, 257-267, 1999). Of the 18 PKS systems identifiable in *M. tuberculosis* (Cole et al., 1998), only six were predicted in *M. leprae* and the number of *mmpL* genes (often linked to

PKS genes) has decreased from 16 to five, presumably because they are no longer required for polyketide or lipid export. Deletion of such systems may be reflected in the lack of mycolipenic and hydroxylipenic acids, polyketides esterified to trehalose in *M. tuberculosis*. Further PKS missing from *M. leprae* include the *mbt* operon required for production of the salicylate-based mycobactin siderophores. Lipids, polyketides and aromatic compounds are often substrates, for cytochrome-P450 monooxygenases (Peterson, J.A., et al., Structure, 6,1079-1085, 1998), enzymes that are exceptionally abundant in *M. tuberculosis* (Cole et al., 1998). Astonishingly, none of these is functional in *M. leprae* although a novel enzyme is predicted.

Lipolysis

Intracellular mycobacteria probably derive much of their energy from degradation of host-derived lipids (Wheeler, P.R., et al., eds. Bloom, B.R., 353-385, American Society for Microbiology, Washington DC 20005, 1994), a process initiated by lipases. In remarkable contrast to the 22 *lip genes* of *M. tuberculosis*, *M. leprae* has only two lipase genes, of which, *lipG*, clusters with *mmaA* genes and could, therefore, effect fatty acid remodelling. This appears to leave just one lipase for scavenging fatty acids. The enzyme LipE (ML1190) or its counterpart in *M. tuberculosis* (Rv3775) could represent an attractive drug target. In addition to the multifunctional FadA and FadB enzymes, which catalyse β-oxidation, *M. tuberculosis* has numerous alternative systems for fatty acid degradation (Cole et al., 1998). Once again, *M. leprae* has roughly one third as many potential enzymes; however, there are three-times more FadD acyl-CoA synthases than FadE acyl-CoA dehydrogenases, whereas these are expected in equal amounts in *M. tuberculosis*. This may be explained by the dual role of FadD in β-oxidative and anabolic processes while FadE only participates catabolically.

The acetyl-CoA produced by β-oxidation, or glycolysis, flows into the central pathways of carbon metabolism in *M. leprae*. However, the pattern of "just enough" genes for each step is firmly established, so that the redundancy seen in *M. tuberculosis* almost never occurs. For instance, there is only one isocitrate lyase (with low predicted activity) capable of participating in the glyoxylate shunt (Table 1) (Honer Zu Bentrup, K., et al., Journal of Bacteriology, 181, 7161-7167, 1999 ; McKinney, J.D., et al., Nature, 406, 735-738, 2000), and one enzyme complex that oxidatively decarboxylates pyruvate to acetyl-CoA, compared to two such systems in *M. tuberculosis*. In the Krebs cycle, as in glycolysis, replicate genes for the same activity are deleted although differences in expression levels might compensate for some missing copies. Thus,

while lack of *pdh* genes is reflected in a low rate of oxidative decarboxylation of pyruvate, isocitrate dehydrogenase activity is comparable in host-grown leprosy and tubercle bacilli (Wheeler, P.R., J Gen Microbiol, 130, 381-9, 1984) even though a duplicate *icd* gene is inactivated in *M. leprae*.

Central and energy metabolism

Despite an active glyoxylate cycle, there appear to be fundamental differences elsewhere in anaplerotic pathways between *M. leprae* and *M. tuberculosis*. Here, phospho-*enol*-pyruvate (PEP) carboxylase replaces the pyruvate carboxylase of *M. tuberculosis*, and the malic enzyme, associated with fast growth in mycobacteria (Ratledge, C.R., eds. Ratledge, C. & Stanford, J., 53-94, Academic Press Limited, San Diego, CA, 1982), is missing. The metabolic implications are that flux between C3 and C4 compounds and the balance between glycolysis and gluconeogenesis will be very different. Another missing link between by-products of lipid metabolism and the Krebs cycle is the production of succinyl-CoA by catabolic Acc carboxylases predicted for *M. tuberculosis* (Cole et al., 1998). Other carbon sources lost to *M. leprae* are acetate, as *ackA*, *pta* and *acs* are all inactive, and galactose, so the cell wall galactan can only be produced from glucose since the *galK,T* genes are missing. This might imply that *M. leprae* is limited to growth on very few carbon sources, or even a limited and rather specialised combination, on which it can maintain a balanced carbon metabolism. Though a similar range of potential substrates is available to both *M. leprae* and *M. tuberculosis* in the host, marked differences in their ability to exploit them are apparent on examination of the systems involved in carbon and nitrogen compound degradation: there are fewer oxidoreductases, oxygenases and short-chain alcohol dehydrogenases, and their probable regulatory genes, (Figure 3). The inescapable conclusion is that catabolism in *M. leprae* is severely limited.

In the same vein, the leprosy bacillus has lost anaerobic and microacrophilic electron transfer systems, such as formate dehydrogenase, nitrate, and fumarate reductase together with the biosynthetic and transport systems required to produce the cognate prosthetic groups. Likewise, the aerobic respiratory chain of *M. leprae* is truncated as only the 3'-end of the NADH oxidase operon, *nuoA-N*, remains. The consequences of this event are far-reaching, for not only has the potential to produce ATP from the oxidation of NADH been lost, but also regeneration of NAD^+ may be limited, relying heavily on *ndh,* which is involved only in recycling NAD^+. Alternatively, *M. leprae* may regenerate NAD^+ from NADH by (1) diverting pyruvate to acetate and CO_2 using lactate dehydrogenase and lactate oxidase; (2) diverting PEP to malate or

fumarate via oxaloacetate, using its PEP carboxylase (an enzyme not found in the tubercle bacillus) that only catalyses the reaction in this direction. Given the loss of genes reviewed above, the acids produced by (1) and (2) cannot be recycled and must be excreted.

Anabolism

In surprising contrast, all the anabolic pathways seem to be relatively intact. With few exceptions, complete enzyme systems are predicted for synthesis of amino acids, purines, pyrimidines, nucleosides, nucleotides, most vitamins and cofactors. This suggests that the availability of these metabolites in phagosomes is either highly limited or that *M. leprae* cannot transport them efficiently. It also sets the biology of the leprosy bacillus apart from that of the other obligate parasites for which genomes have been sequenced (Andersson et al., 1999 ; Anderssen et al., 1998). *M., leprae* may, however, be auxotrophic for methionine as *metC,* encoding cystathionine β-lyase, is a pseudogene, whereas the other counterparts of *M. tuberculosis met* genes are all intact. This requirement for methionine may be dictated by the inactivation of the sulphate transport operon, *cysYWA*, and in turn this implies that *M. leprae* depends upon an organic source of sulphur. A second auxotrophy that is predicted is for cobinamide, as examination of the *cob* genes shows selective deletion of those to make cobinamide, while the genes needed to produce vitamin B12 from cobinamide are retained.

Pathogenesis and disease control

Central to a successful pathogenic lifestyle is the ability to obtain iron. *M. leprae* has many genes for haem and iron-based proteins and employs the iron regulatory systems, *ideR* and *furB,* yet may be severely handicapped compared to *M. tuberculosis* as it appears to have lost the *mbt* operon, encoding the non-ribosomal peptide synthase required for production of the iron-scavenging siderophores, mycobactin/exochelin (Cole et al., 1998 ; De Voss, J.J., et al., Proc. Natl.Acad. Sci. USA, 97, 1252-1257, 2000 ; Quadri, L.E., et al., Chemistry & Biology, 5, 631-645, 1998). However, part of the iron uptake system is functional in *M. leprae,* as it transports exochelinMN, from *M. neoaurum* but not those of M. *smegmatis* or *M. tuberculosis* (Hall, R.M., et al., Int J Lepr Other Mycobact Dis, 51, 490-494, 1983). The genes for exochelinMN are unknown and seem unlikely to occur in *M. leprae.*

As might be expected given the differences in their respective pathologies, *M. leprae* contains several enzymes that have no counterparts in the tubercle bacillus, including a eukaryotic-like uridine phosphorylase and adenylate cyclase. In addition,

there are two transport systems that may play significant physiological roles: an ABC-transporter for sugars, and a second member of the Nramp1 family, involved in divalent metal ion uptake. *M. leprae* may have acquired another Nramp1 gene (Makui, H., et al., Molecular Microbiology, 35, 1065-1078, 2000) to ensure adequate intracellular iron concentrations resulting from its lack of mycobactin siderophores.

M. leprae, shows a marked tropism for myelin-producing Schwann cells, and a surface-exposed 21 kDa laminin-binding protein (LBP) may be an important virulence factor (Shimoji, Y., et al., Proceedings of the National Academy of Sciences of the United States of America, 96, 9857-9862, 1999 ; Rambukkana, A., et al., Role of alpha-dystroglycan as a Schwann cell receptor for *Mycobacterium leprae*, 282, 2076-2079, 1998 ; Rambukkana, A., et al., Cell, 88, 811-821, 1997). Inspection of the genome sequence revealed a single LBP gene and this also occurs in *M. tuberculosis*. No further candidates for virulence genes were detected, and many of those present in *M. tuberculosis* have been inactivated or lost, including three of the Mce operons encoding putative invasins (Tekaia et al., 1999 ; Arruda, S., et al., Science, 261, 1454-1457, 1993). Although the leprosy and tubercle bacilli both survive within macrophages, *M. leprae* has no catalase-peroxidase (Eiglmeier, K., et al., FEMS Microbiol. Lett., 149, 273-278, 1997), and fewer peroxidoxins and epoxide hydrolases to combat reactive oxygen species. It has retained both superoxide dismutases suggesting that these may contribute to its survival.

Comparative Mycobacterial Genomics

Comparative genomics is a powerful new tool for exploring micobial evolution and identifying those genes that might encode new drug targets or protective antigens. Coupled with knowledge derived from bioinformatic analysis of the proteome, and understanding of the underlying microbiology, it is possible to reduce the number of potential new targets within a pathogen to a more tangible level.

This invention includes discoveries resulting from the findings of a comparative analysis in which gene and protein sets of the leprosy and tubercle bacilli have been compared pairwise, and against the completed genome sequences of various prokaryotes and eukaryotes.

The genome of *M. leprae*, an exceptionally slow growing bacterium, is substantially smaller than that of M. tuberculosis and contains numerous pseudogenes. While the genome of *M. tuberculosis* comprises 4.41 Mb and contains around 4,000 genes, the genome of *M. leprae* is only 3.27 Mb and a mere 49.5 % is occupied by protein-coding genes. About 27 % of the *M. leprae* genome contains recognizable

pseudogenes, inactive reading frames with functional counterparts in the tubercle bacillus. The remaining 23.5 % of the genome does not appear to be coding, and probably contains gene remnants mutated beyond recognition. The distribution of the 1,114 pseudogenes was essentially random throughout the chromosome. 1,604 potentially active genes were identified, of which 1,439 were common to both pathogens. Among the remaining 165 genes, with no ortholog in *M. tuberculosis*, were 29 for which functions could be attributed. Many of the 136 residual CDS in M. leprae, showing no similarity to known genes, may also represent pseudogenes as they are shorter than average and occur in regions of low gene density. In summary, assuming that all mycobacteria are descendants of a common ancestor, *M. leprae* has probably lost around 2,000 genes during evolution and the minimal gene set required by a pathogenic mycobacterium has been naturally defined.

Whole genome comparisons led to the identification of genes that are present in both *M. tuberculosis* and *M. leprae* but have no counterparts elsewhere. Since these pathogenic mycobacteria occupy similar niches in the human body where they encounter the same physiological stresses and immune responses, it is conceivable that the products of some of these genes may conduct highly specialized functions that could be essential for intracellular growth of mycobacteria. If this were the case, the corresponding proteins or enzymes might represent novel drug targets. In addition to those proteins that are confined to the species or the genus, there is a second group of polypeptides that also occur in Streptomyces spp., related members of the Actinomycetales kingdom, but not in other prokaryotes. It is reasonable to assume that such proteins confer specific properties on actinomycetes.

Knowledge of the subcellular location of proteins is particularly valuable for the design of new tuberculosis vaccines since it is widely believed that surface-exposed or secreted proteins correspond to those antigenic components that are first encountered by the immune system during infection (Andersen, P., Scandinavian Journal of Immunology, 45, 115-131, 1997). Bioinformatics has also been used to identify proteins that localize to the cell envelope and these include transmembrane proteins with hydrophobic domains, and lipoproteins with N-terminal cysteine residues that are modified by addition of lipid groups. Proteins that are secreted via the general secretory pathway (Pugsley, A.P., Microbiological Reviews, 57, 50-108, 1993).are readily identifiable by their characteristic signal peptides, whereas those metallo-enzymes that are secreted by the twin arginine transporter system, Tat, can be recognized by the presence at the N-terminus of the cognate motif, S/TRRXFLK

preceeding the signal peptide (Stanley, N.R., et al., J. Biol. Chem., 275, 11591-61, 2000 ; Berks, B.C., et al., Mol. Microbiol., 35, 260-274, 2000). This will be discussed further below.

Other proteins that lack signal peptides and are secreted from mycobacteria in a Sec-independent manner, include those belonging to the ESAT-6 family (Tekaia, F., et al., Tubercle Lung Disease, 79, 329-342, 1999). ESAT-6 is a potent T-cell antigen that induces strong Th1-type responses (Lalvani, A., et al., Proceedings of the National Academy of Sciences of the United States of America, 95, 270-275, 1998) and has been extensively studied as a potential diagnostic reagent for infection (Pollock, J.M. et al., J. Inf. Dis., 175, 1251-1254, 1997), since its gene is missing from BCG (Gordon, S.V., et al., Molec. Microbiol., 32, 643-656, 1999 ; Harboe, M., et al., Infection Immun., 64, 16-22, 1996 ; Mahairas, G.G., et al., J. Bacteriol., 178, 1274-1282, 1996) and as a component of a subunit vaccine (Brandt, L., et al., Infect Immun., 68, 791-795, 2000). The comparative genomic analysis identified several ESAT-6 proteins, and their potential secretion machinery, that were common to both *M. tuberculosis* and *M. leprae* (Table 2).

Several examples are given in Table 2 of proteins of limited distribution with potential drug targets, diagnostic antigens or subunit vaccine components.

Legend of Table 2:

The reading of the first example, by instance,

M. leprae

ML0048: Name of an identified ORF in the genome of M. leprae.

M. tub.:

Rv3876: Name of Equivalent ORF in the genome of M. tuberculosis published in 1998.

BLASTP:

Method of comparing protein sequences for establishing their degree of similarity or identity.

$1,00^{E}$-79:

BLASTP score, which indicates how similar the protein sequences are. The analyses of the results are described in Cole et al. for the comparisons between the genome of M. tuberculosis and the genome of BCG (Analysis of the proteome of Mycobacterium tuberculosis in silico, tuber Lung. Dis. 1999, 79(6):329-42).

Description:

Description of the protein, identified from all publically accessible databases, with highest similarity for the M. leprae protein ML0048.

Sc3C3.03C: Nomenclature of the streptomyces protein.

EMB: **AL031231:** Accession number in EMBL databank for the sequence of the Streptomyces protein found to be most similar to ML0048.

1083: length of the sequence in the EMBL databank.

FASTA score: Different method, like BLAST, for comparing sequences for their similarity.

Score denotes the degree of similarity.

31.6 % : Percentage of identity between C terminal part of the Streptomyces protein and the amino acid sequence of ML0048. This 31.6 % identity is found in an overlapping region of 580 amino acids between the two sequences. The other examples should be read similarly.

Table 2. Proteins of limited distribution with potential as drug targets, diagnostic antigens or subunit vaccine components

Group	M.leprae	M. tub.	BLASTP	Description
A	ML0048	Rv3876	1,00E-79	C-terminal half of Streptomyces coelicolor SC3C3.03C, hypothetical protein, TR:O86637 (EMBL:AL031231) (1083 aa); Fasta score E(): 5.9e-27, 31.6% identity in 580 aa overlap, which contains Pro-Gln repeats
A	ML0115	Rv3780	2,00E-44	S. coelicolor SCGD3.23C, hypothetical protein, TR:Q9XA56 (EMBL:AL096822)
A	ML0124	Rv0164	2,00E-40	S. coelicolor SC6G10.02C, hypothetical protein, TR:Q9X7Y8 (EMBL:AL049497) (144 aa); Fasta score E(): 7e-05, 21.9% identity in 137 aa overlap.
A	ML0151	Rv0948c	2,00E-25	S. coelicolor SCD63.16C, hypothetical protein, TR:CAB82023 (EMBL:AL161755)
A	ML0169	Rv0966c	7,00E-66	S. coelicolor SCE6.30C, hypothetical protein, TR:CAB88834 (EMBL:AL353832) (277 aa); Fasta score E(): 3.3e-20, 41.0% identity in 205 aa overlap.
A	ML0229	Rv3603c	2,00E-60	N-terminal half of S. coelicolor SCE126.02C, hypothetical protein, TR:Q9X845 (EMBL:AL049630) (420 aa); Fasta score E(): 4.1e-24, 36.7% identity in 294 aa overlap
A	lsr2	Rv3597c	1,00E-27	S. coelicolor SCE94.26C, putative lsr2-like protein, TR:Q9X8N1 (EMBL:AL049628) (111 aa); Fasta score E(): 7.3e-18, 56.3% identity in 112 aa overlap
A	ML0284	Rv0360c	3,00E-23	S. coelicolor SCH10.25C, hypothetical protein, TR:Q9X8R4 (EMBL:AL049754)
A	whiB3	Rv3416	6,00E-38	Transcriptional regulator
A	lppS	Rv2518c	e-135	many predicted lipoproteins from S. coelicolor.
A	ML0451	Rv2609c	2,00E-85	S. coelicolor e.g. SC2E1.17, hypothetical protein, TR:O69888 (EMBL:AL023797) (172 aa); Fasta score E(): 2e-13, 43.3% identity in 150 aa overlap.
A	ML0486	Rv2588c	2,00E-19	S. coelicolor SCL2.07C, putative secreted protein, TR:CAB70919 (EMBL:AL137778) (169 aa); Fasta score E(): 7.3e-08, 35.8% identity in 120 aa overlap
A	ML0542	Rv1390	6,00E-51	S. coelicolor SC9C5.02C, hypothetical protein, TR:CAB93358 (EMBL:AL357523) (90 aa); Fasta score E(): 2e-18, 71.3% identity in 80 aa overlap.
A	ML0561	Rv1417	3,00E-38	Corynebacterium ammoniagenes ribX, hypothetical protein, TR:O24754 (EMBL:AB003693) (184 aa); Fasta score E(): 2.1e-15, 34.5% identity in 148 aa overlap. Contains hydrophobic, possible membrane-spanning regions
A	ML0580	Rv1446c	2,00E-64	hypothetical proteins from S. coelicolor e.g. SCC22.20, hypothetical protein, TR:Q9XAB8 (EMBL:AL096839) (351 aa); Fasta score E(): 7.1e-21, 36.0% identity in 203 aa overlap, although these have a short N-terminal extension relative to this homologue.
A	ML0603	Rv2413c	3,00E-77	S. coelicolor SCC123.02C, putative DNA-binding protein, TR:Q9RDM2 (EMBL:AL136518) (336 aa); Fasta score E(): 0, 39.3% identity in 326 aa overlap.
A	ML0630	Rv2365c	2,00E-15	S. coelicolor SCC77.05, hypothetical protein, TR:Q9RDF3 (EMBL:AL136503) (132 aa); Fasta score E(): 3.3e-06, 39.4% identity in 99 aa overlap.
A	ML0642	Rv3195	e-143	S. coelicolor SCE9.14C, hypothetical protein, TR:Q9X8I7 (EMBL:AL049841) (375 aa); Fasta score E(): 4.9e-12, 24.9% identity in 305 aa overlap.
A	whiB2	Rv3260c	9,00E-31	Transcription factor
A	ML0762	Rv3258c	4,00E-41	S. coelicolor hypothetical 15.0 kDa protein SCE34.11C TR:CAB88914 (EMBL:AL353862) fasta scores: E(): 4.8e-16, 47.0% id in 151 aa.
A	lpqB	Rv3244c	0.0	S. coelicolor putative lipoprotein SCE33.13C

				TR:CAB90922 (EMBL:AL355774) fasta scores: E(): 0.00039, 24.4% id in 624 aa
A	whiB1	Rv3219	6,00E-31	Transcription factor
A	ML0814	Rv3208c	3,00E-32	S. coelicolor hypothetical protein gp|AL390975|AL390975_32 (94 aa) E(): 2.5e-09; 47.945% identity
A	ML0816	Rv3207c	e-101	S. coelicolor putative membrane protein SC2H12.28c (314 aa) TR:CAB94652 (EMBL:AL359215) fasta scores: E(): 1e-13, 30.2% id in 331 aa
A	ML0857	Rv2219	2,00E-59	S. coelicolor putative integral membrane protein SC3H12.04 TR:CAB90843 (EMBL:AL355740) (234 aa) fasta scores: E(): 1.2e-26, 39.6% id in 230 aa
A	ML0869	Rv2206	4,00E-40	S. coelicolor putative integral membrane protein SC5F7.32 TR:Q9S2R7 (EMBL:AL096872)
A	ML0876	Rv2199c	2,00E-43	S. coelicolor hypothetical proteins e.g. putative integral membrane protein SC6G10.27C TR:Q9X812 (EMBL:AL049497) (132 aa) fasta scores: E(): 6.2e-15, 38.8% id in 139 aa
A	ML0920	Rv2147c	3,00E-89	pir||T34949 hypothetical protein SC4A10.12c - Streptomyces coelicolor
A	ML0921	Rv2146c	5,00E-32	S. coelicolor TR:Q9S2X3 (EMBL:AL109663) (94 aa); Fasta score E(): 2.9e-12, 40.7% identity in 86 aa overlap. Contains possible membrane spanning hydrophobic domains.
A	ML0986	Rv2738c	3,00E-21	S. coelicolor TR:O50484 (EMBL:AL020958) (64 aa); Fasta score E(): 2.5e-08, 44.4% identity in 63 aa overlap
A	ML0994	Rv2728c	1,00E-56	S. coelicolor TR:O69964 (EMBL:AL022268) (237 aa); Fasta score E(): 1.3e-13, 32.9% identity in 243 aa overlap
A	ML1009	Rv2714	e-106	pir||T35742 hypothetical protein SC7H2.11c S. coelicolor
A	ML1016	Rv2708c	1,00E-25	emb|CAB72193.1| (AL138851) hypothetical protein SCE59.06c [S. coelicolor A3(2)] Length = 97
A	ML1026	Rv2699c	2,00E-32	T34816 hypothetical protein SC2E9.05 SC2E9.05 - S. coelicolor 144 2e-34
A	ML1027	Rv2698	1,00E-33	membrane protein, S. coelicolor TR:O54132 (EMBL:AL021530) (154 aa); Fasta score E(): 1.1e-08, 33.6% identity in 149 aa overlap.
A	ML1029	Rv2696c	7,00E-69	pir||T34821 hypothetical protein SC2E9.10 SC2E9.10 - S. coelicolor 86 4e-16
A	ML1041	Rv2680	2,00E-62	pir||T34710 hypothetical protein SC1C3.18c SC1C3.18c - S. coelicolor 158 5e-38
A	ML1067	Rv1211	9,00E-23	emb|CAC01346.1| (AL390975) conserved hypothetical protein S. coelicolor 101 1e-21
A	ML1093	Rv1244	5,00E-78	lipoprotein, pir||T35857 probable secreted substrate-binding protein - S. coelicolor 67 3e-10
A	ML1105	Rv1259	e-115	S. coelicolor TR:Q9S2L3 (EMBL:AL109732) (237 aa); Fasta score E(): 0, 54.5% identity in 231 aa overlap.
A	ML1117	Rv1276c	3,00E-53	pir||T36773 hypothetical protein SCI28.03c - S. coelicolor 115 4e-25
A	ML1147	Rv1312	3,00E-42	possible secreted protein, emb|CAB94546.1| (AL359152) putative secreted/membrane protein S. coelicolor 66 2e-10
A	ML1166	Rv1332	7,00E-54	S. coelicolor TR:Q9S2G6 (EMBL:AL096852) (202 aa); Fasta score E(): 1.5e-05, 34.6% identity in 188 aa overlap.
A	ML1230	Rv1182	e-149	papA3, emb|CAC08383.1| (AL392176) hypothetical protein S. coelicolor 132 8e-30
A	ML1306	Rv2125	5,00E-87	S. coelicolor TR:Q9S2K6 (EMBL:AL109732) (312 aa); Fasta score E(): 1.6e-07, 23.4% identity in 278 aa overlap
A	ML1321	Rv2111c	3,00E-07	upstream of bacterial proteasome beta subunits including: Mycobacterium smegmatis TR:O30517 (EMBL:AF009645) (64 aa); Fasta score E(): 6.2e-18, 82.8% identity in 64 aa overlap, Rhodococcus

A	ML1338	Rv2673	e-150	conserved integral membrane protein, S. coelicolor TR:Q53873 (EMBL:AL031317) (411 aa); Fasta score E(): 1.1e-12, 28.3% identity in 410 aa overlap
A	ML1439	Rv2050	4,00E-31	emb|CAB61670.1| (AL133213) hypothetical protein SC6D7.18c. S. coelicolor 101 4e-21
A	ML1485	Rv2466c	2,00E-66	S. coelicolor TR:CAB71809 (EMBL:AL138662) (216 aa); Fasta score E(): 0, 52.3% identity in 214 aa overlap
A	ML1508	Rv1155	2,00E-48	S. coelicolor TR:Q9XAG1 (EMBL:AL079356) (144 aa); Fasta score E(): 5.6e-25, 54.3% identity in 140 aa overlap.
A	ML1525	Rv2771c	8,00E-27	S. coelicolor TR:Q9RD46 (EMBL:AL133424) (151 aa); Fasta score E(): 1.3e-28, 56.1% identity in 148 aa overlap
A	ML1548	Rv2795c	e-132	S. coelicolor TR:O88028 (EMBL:AL031107) (295 aa); Fasta score E(): 0, 54.4% identity in 285 aa overlap
A	ML1557	Rv2840c	2,00E-27	emb|CAB91141.1| (AL355913) hypothetical protein S. coelicolor 46 7e-05
A	ML1561	Rv2844	1,00E-39	S. coelicolor TR:CAB91137 (EMBL:AL355913) (167 aa); Fasta score E(): 1.4e-07, 35.8% identity in 137 aa
A	ML1624	Rv2917	0.0	S. coelicolor TR:Q9S3Y6 (EMBL:AF170560) (597 aa); Fasta score E(): 0, 55.5% identity in 566 aa overlap
A	ML1644	Rv2235	e-113	N-terminal signal sequence plus membrane spanning hydrophobic domain; emb|CAB59445.1| (AL132644) putative membrane protein [Streptomyc... 109 4e-23
A	ML1649	Rv2239c	3,00E-36	emb|CAB92846.1| (AL356892) hypothetical protein [Streptomyces co... 137 6e-32
A	ML1652	Rv2242	0.0	S. coelicolor TR:Q9RDP8 (EMBL:AL133423) (401 aa); Fasta score E(): 4.3e-26, 42.0% identity
A	ML1666	Rv2968c	9,00E-59	S. coelicolor putative integral membrane protein TR:CAB93387 (EMBL:AL357523) (240 aa); Fasta score E(): 3.6e-25, 36.1% identity in 191 aa overlap
A	ML1698	Rv3005c	4,00E-54	conserved membrane protein, emb|CAB61735.1| (AL133220) putative membrane protein. S. coelicolor 99 5e-20
A	ML1706	Rv3015c	1,00E-91	S. coelicolor TR:Q9Z586 (EMBL:AL035569) (331 aa); Fasta score E(): 0, 38.6% identity in 337 aa overlap,
A	ML1781	Rv2256c	4,00E-62	4pir||T11215 hypothetical protein 5 - Streptomyces glaucescens >g... 153 1e-36
A	ML1782	Rv2257c	e-121	S. coelicolor SC4A7.08 TR:Q9RDQ4 (EMBL:AL133423) (273 aa); Fasta score E(): 0, 53.2% identity in 269 aa overlap
A	ML1791	Rv1976c	8,00E-25	S. coelicolor hypothetical protein SC1C3.03C TR:O69845 (EMBL:AL023702) (125 aa); Fasta score E(): 4.3e-06, 36.6% identity in 112 aa overlap.
A	ML1908	Rv0637	3,00E-62	S. coelicolor SCD82.07 TR:CAB77410 (EMBL:AL160431) (150 aa); Fasta score E(): 4.7e-11, 29.3% identity in 150 aa overlap.
A	ML1910	Rv0635	9,00E-49	emb|CAB77410.1| (AL160431) hypothetical protein SCD82.07 S. coelicolor 83 1e-15
A	ML1926	Rv0431	6,00E-24	S. coelicolor hypothetical protein SCD95A.20 TR:CAB93047 (EMBL:AL357432) (84 aa); Fasta score E(): 4.1e-11
A	ML1927	Rv0430	2,00E-25	S. coelicolor hypothetical protein SCD95A.20 TR:CAB93047 (EMBL:AL357432) (84 aa); Fasta score E(): 4.1e-11, 52.8% identity in 72 aa overlap.
A	ML1997	Rv0970	7,00E-39	S. coelicolor putative integral membrane protein SCM2.15C
A	ML2030	Rv1884c	1,00E-34	Rpf, emb|CAC09538.1| (AL442120) putative secreted protein S. coelicolor 108 5e-23
A	ML2031	Rv1883c	1,00E-44	Streptomyces actuosus NSH-OrfB TR:P72384 (EMBL:U75434) fasta scores: E(): 2.5e-08, 34.4% in 125 aa
A	ML2048	Rv1871c	2,00E-14	S. coelicolor hypothetical protein TR:CAB88434 (EMBL:AL353815) fasta scores: E(): 0.0092, 39.3% in 61 aa; truncated at C-terminus; may represent a pseudogene
A	ML2063	Rv1846c	3,00E-35	possible regulator, pir||T36388 hypothetical protein SCE94.28c - S. coelicolor 64 6e-10

A	ML2064	Rv1845c	3,00E-82	S. coelicolor putative integral membrane protein SC10A7.04 TR:Q9XAS1 (EMBL:AL078618) fasta scores: E(): 1.8e-19, 32.6% in 328 aa
A	ML2073	Rv1830	2,00E-74	S. coelicolor hypothetical 19.1 kda protein TR:CAB88877 (EMBL:AL353861) fasta scores: E(): 3.7e-30, 64.8% in 145 aa
A	ML2075	Rv1828	7,00E-71	S. coelicolor hypothetical 26.5 kda protein TR:CAB88879 (EMBL:AL353861) fasta scores: E(): 1.1e-14, 41.4% in 237 aa.
A	ML2114	Rv0909	7,00E-07	S. coelicolor hypothetical 9.9 kda protein TR:O69965 (EMBL:AL022268) fasta scores: E(): 0.038, 41.3% in 46 aa
A	ML2135	Rv0885	e-123	S. coelicolor putative membrane protein TR:Q9XAE8 (EMBL:AL079356) fasta scores: E(): 1.5e-13, 27.1% in 255 aa
A	ML2137	Rv0883c	1,00E-76	S. coelicolor hypothetical 39.0 kda protein TR:O50529 (EMBL:AL009204) fasta scores: E(): 2.2e-19, 36.0% in 247 aa
A	ML2142	Rv0877	8,00E-91	S. coelicolor hypothetical 32.2 kda protein TR:CAB93404 (EMBL:AL357524) fasta scores: E(): 2.5e-19, 43.3% in 270 aa.
A	ML2143	Rv0876c	e-172	S. coelicolor putative integral membrane protein TR:CAB93403 (EMBL:AL357524) fasta scores: E(): 5.3e-16, 38.8% in 448 aa.
A	ML2151	Rv0867c	1,00E-35	Probable resusicitation-promoting factors, exported protein
A	ML2156	Rv0862c	0.0	S. coelicolor hypothetical 90.4 kda protein TR:CAB93395 (EMBL:AL357524) fasta scores: E(): 3.9e-27, 34.6% in 856 aa
A	ML2193	Rv0819	2,00E-87	Acetyltransferase (GNAT) family, emb|CAB88484.1| (AL353816) putative acetyltransferase S. coelicolor 216 3e-55
A	ML2199	Rv3118	1,00E-28	Saccharopolyspora erythraea hypothetical 10.2 kda protein TR:Q54084 (EMBL:M29612) fasta scores: E(): 2.7e-16, 53.0% in 100 aa
A	ML2200	Rv0813c	3,00E-59	S. coelicolor hypothetical 21.7 kda protein TR:CAB94083 (EMBL:AL358692) fasta scores: E(): 4.4e-11, 30.5% in 167 aa
A	ML2204	Rv0810c	2,00E-13	S. coelicolor hypothetical 9.3 kda protein SCD25.24C TR:Q9RKJ8 (EMBL:AL118514) fasta scores: E(): 1.3e-06, 46.8% id in 62 aa.
A	ML2207	Rv0807	8,00E-36	S. coelicolor hypothetical protein SCD25.20 TR:Q9RKK0 (EMBL:AL118514) (202 aa) fasta scores: E(): 6.6e-16, 52.5% id in 101 aa.
A	ML2219A	Rv0787A	1,00E-33	S. coelicolor hypothetical protein SCD25.13 (AL118514)
A	ML2253	Rv2145c	1,00E-06	antigen 84 homolog, also in S. coelicolor, etc.
A	ML2261	Rv0546c	1,00E-43	emb|CAB95979.1| (AL360034) conserved hypothetical protein S. coelicolor 119 1e-26
A	ML2289	Rv3662c	7,00E-64	S. coelicolor putative oxidoreductase SCH5.22C TR:Q9X924 (EMBL:AL035636) (274 aa) fasta scores: E(): 1e-11, 40.9% id in 269 aa
A	ML2295	Rv3668c	7,00E-67	emb|CAB61552.1| (AL133171) protease precursor S. coelicolor 53 2e-06
A	ML2296	Rv3669	2,00E-43	Similar_to S. coelicolor putative integral membrane transport protein SCH5.28 TR:Q9X930 (EMBL:AL035636) (162 aa) fasta scores: E(): 3.3e-10, 37.3% id
A	ML2306	Rv3680	e-110	S. coelicolor putative ion-transporting ATPase TR:Q9XA35 (EMBL:AL079353) (481 aa) fasta scores: E(): 0, 48.6% id in 432 aa
A	ML2307	Rv3681c	4,00E-28	whiB4
A	ML2330	Rv3716c	6,00E-10	pir||T35387 hypothetical protein SC66T3.30c - S. coelicolor 47 6e-05
A	ML2332	Rv3718c	1,00E-39	S. coelicolor conserved hypothetical protein TR:Q9ZBJ2 (EMBL:AL035161) (147 aa) fasta scores: E(): 1.4e-22, 47.6% id in 147 aa.

A	ML2410	Rv0528	e-160	conserved membrane protein, emb|CAC08381.1| (AL392176) putative integral membrane protein S. coelicolor 221 2e-56
A	ML2425	Rv0504c	7,00E-52	emb|CAB77410.1| (AL160431) hypothetical protein SCD82.07 [Strept... 73 2e-12
A	ML2428A	Rv0500B	6,00E-17	Small, strongly basic, S. coelicolor SCE68.25c, gp|AL079345|AL079345_25 S. coelicolor (32 aa) E(): 1.7e-07; 93.103%
A	ML2432	Rv0498	e-101	S. coelicolor hypothetical protein TR:Q9X8H0 (EMBL:AL049819) (285 aa) fasta scores: E(): 3.2e-30, 51.6% id in 273 aa
A	ML2435	Rv0495c	7,00E-94	S. coelicolor hypothetical protein TR:Q9X8H2 (EMBL:AL049819) (271 aa) fasta scores: E(): 0, 48.4% id in 250 aa
A	ML2442	Rv0487	1,00E-47	emb|CAC04041.1| (AL391406) conserved hypothetical protein S. coelicolor 142 2e-33
A	ML2446	Rv0483	e-137	possible lipoprotein, S. coelicolor putative lipoprotein TR:CAB76012 (EMBL:AL157916) fasta scores: E(): 2.5e-24, 28.6% id in 405 aa.
A	ML2453	Rv0476	9,00E-22	conserved membrane protein, emb|CAC04036.1| (AL391406) putative membrane protein S. coelicolor 57 3e-08
A	ML2522	Rv0309	5,00E-65	S. coelicolor putative secreted protein SCL24.08 TR:CAB76092 (EMBL:AL157956)
A	ML2529	Rv0290	e-116	S. coelicolor putative integral membrane protein SC3C3.21 TR:O86654 (EMBL:AL031231) fasta scores: E(): 1.9e-05, 23.8% id in 483 aa
A	ML2566	Rv0241c	e-125	S. coelicolor putative dehydratase TR:CAB77291 (EMBL:AL160312)
A	ML2630	Rv0007	4,00E-06	emb|CAB92992.1| (AL357152) putative integral membrane protein S. coelicolor 69 5e-11
A	ML2640	Rv0146	3,00E-93	pir||T35930 hypothetical protein SC9B5.10 - S. coelicolor 141 1e-32
A	ML2664	Rv0116c	1,00E-72	possible secreted protein, pir||T35535 probable secreted protein - S. coelicolor 154 7e-37
A	ML2687	Rv0051	e-150	conserved membrane protein, pir||T36589 probable transmembrane protein - S. coelicolor 185 1e-45
A	ML2699	Rv3909	0.0	putative secreted protein, pir||T36582 hypothetical protein SCH24.17c - S. coelicolor 90 8e-17
M	ML0007	Rv0007	6,00E-51	Putative membrane protein
M	ML0012	Rv0010c	4,00E-30	Contains hydrophobic, possible membrane-spanning regions.
M	ML0013	Rv0011c	3,00E-36	Contains hydrophobic, possible membrane-spanning regions.
M	ML0022	Rv0020c	e-114	-
M	ML0030	Rv0039c	9,00E-06	putative membrane protein
M	ML0031	Rv0040c	3,00E-48	Contains a probable N-terminal signal sequence
M	ML0042	Rv3882c	e-138	putative membrane protein
M	ML0044	Rv3880c	2,00E-19	-
M	ML0047	Rv3877	e-146	putative membrane protein
M	ML0049	Rv3875	5,00E-14	possible secreted protein, ESAT-6
M	ML0050	Rv3874	4,00E-12	possible secreted protein, ESAT-6
M	ML0051	Rv3873	1,00E-30	PPE-family protein
M	ML0054	Rv3869	e-151	putative membrane protein
M	ML0056	Rv3867	2,00E-13	-
M	ML0068	Rv3850	8,00E-71	-
M	ML0069	Rv3849	4,00E-41	-
M	ML0071	Rv3847	2,00E-65	-
M	ML0073	Rv3843c	3,00E-51	putative membrane protein
M	ML0081	Rv3835	e-107	putative membrane protein, possible membrane-spanning region near the N-terminus.
M	ML0091	Rv3810	1,00E-39	erp, pirG, exported repetitive protein precursor

M	ML0093	Rv3808c	0.0	-
M	ML0094	Rv3807c	6,00E-30	putative membrane protein
M	ML0096	Rv3805c	0.0	putative membrane protein
M	ML0099	Rv3802c	8,00E-96	-
M	embB	Rv3795	0.0	arabinosyl transferase
M	embA	Rv3794	0.0	arabinosyl transferase
M	embC	Rv3793	0.0	arabinosyl transferase
M	ML0107	Rv3792	0.0	Mycobacterium smegmatis ORF3, hypothetical membrane protein
M	ML0116	Rv3779	e-179	putative membrane protein
M	ML0133	Rv2949c	3,00E-64	Pfam match to entry PF01947 DUF98, Protein of unknown function
M	lppX	Rv2945c	6,00E-60	putative lipoprotein
M	ML0158	Rv0954	4,00E-20	34 kDa antigen, membrane protein
M	ML0159	Rv0955	2,00E-74	putative membrane protein
M	ML0185	Rv0996	2,00E-74	possible membrane-spanning regions
M	ML0187	Rv0998	e-124	Cyclic nucleotide-binding domain.
M	ML0199	Rv3647c	2,00E-52	-
M	ML0208	Rv3632	2,00E-38	putative membrane protein
M	ML0227	Rv3605c	3,00E-36	putative membrane protein
M	MML0228	Rv3604c	2,00E-51	putative membrane protein
M	lpqT	Rv1016c	1,00E-52	putative lipoprotein
M	ML0256	Rv1024	2,00E-42	Contains hydrophobic, possible membrane-spanning region
M	ML0271	Rv0401	1,00E-23	putative membrane protein
M	ML0279	Rv0356c	9,00E-63	-
M	ML0281	Rv0358	2,00E-36	-
M	ML0285	Rv0361	1,00E-50	putative membrane protein
M	ML0298	Rv0416	5,00E-10	possibly thiamine_biosynthesis
M	lpqE	Rv3584	3,00E-40	putative lipoprotein
M	ML0370	Rv3438	2,00E-78	Contains PS00107 Protein kinases ATP-binding region signature
M	ML0383	Rv3415c	5,00E-59	-
M	ML0386	Rv3412	4,00E-45	-
M	ML0405	Rv3616c	1,00E-71	-
M	ML0406	Rv3615c	2,00E-14	-
M	ML0407	Rv3614c	2,00E-45	-
M	ML0410	Rv2107	8,00E-08	PE-family protein
M	ML0411	Rv2108	1,00E-22	PPE-family protein, serine-rich antigen
M	ML0425	Rv2520c	2,00E-10	putative membrane protein
M	ML0431	Rv2507	1,00E-41	putative membrane protein
M	ML0520	Rv2536	1,00E-40	putative membrane protein
M	PE	Rv1386	1,00E-21	PE protein family
M	PPE.0	Rv1387	3,00E-99	PPE protein family
M	mihF	Rv1388	4,00E-24	integration host factor
M	lprG	Rv1411c	1,00E-50	putative lipoprotein
M	mtb12	Rv2376c	2,00E-28	putative secreted protein
M	ML0676	Rv3354	2,00E-15	-
M	ML0703	Rv3311	e-125	-
M	ML0730	Rv3281	1,00E-20	Contains Pfam match to entry PF01039 Carboxyl_trans, Carboxyl transferase domain
M	ML0733	Rv3278c	4,00E-53	putative membrane protein
M	ML0734	Rv3277	2,00E-64	putative membrane protein
M	ML0748	Rv3269	1,00E-15	irpA

M	ML0761	Rv3259	2,00E-48	Mycobacterium smegmatis hypothetical 6.0 kDa protein (partial CDS) TR:Q9S425 (EMBL:AF164439) fasta scores: E(): 1e-10, 75.5% id in 53 aa
M	ML0764	Rv3256c	1,00E-79	-
M	ML0806	Rv3217c	5,00E-25	putative membrane protein
M	ML0810	Rv3212	e-104	putative membrane protein
M	ML0813	Rv3209	2,00E-24	putative membrane protein
M	ML0818	Rv3205c	e-102	-
M	ML0834	Rv2342	1,00E-21	-
M	ML0872	Rv2203	9,00E-43	putative membrane protein
M	mmpS3	Rv2198c	3,00E-49	putative membrane protein
M	ML0878	Rv2197c	1,00E-55	putative membrane protein
M	ML0888	Rv2186c	8,00E-41	-
M	ML0889	Rv2185c	8,00E-41	-
M	ML0891	Rv2183c	2,00E-27	-
M	ML0895	Rv2179c	1,00E-60	-
M	ML0898	Rv2175c	1,00E-41	putative DNA-binding protein
M	MML0901	Rv2172c	e-102	-
M	ML0902	Rv2171	3,00E-57	probable lipoprotein
M	ML0903	Rv2170	9,00E-55	-
M	ML0904	Rv2169c	7,00E-32	putative membrane protein
M	ML0907	Rv2164c	2,00E-50	putative conserved membrane protein
M	ML0923	Rv2144c	3,00E-07	possible membrane protein
M	ML0984	Rv2740	3,00E-31	-
M	ML0990	Rv2732c	9,00E-46	possible conserved membrane protein
M	ML1001	Rv2722	7,00E-06	-
M	ML1004	Rv2719c	1,00E-17	possible conserved membrane protein
M	ML1015	Rv2709	7,00E-26	possible conserved membrane protein
M	ML1025	Rv2700	1,00E-62	possible secreted protein
M	ML1030	Rv2695	1,00E-47	-
M	ML1053	Rv2107	8,00E-11	PE protein
M	ML1055	Rv2347c	1,00E-19	-, family
M	ML1056	Rv3619c	6,00E-18	-, family
M	ML1065	Rv1209	6,00E-21	membrane protein
M	ML1077	Rv1222	3,00E-34	Mycobacterium avium TR:O05736 (EMBL:U87308) (133 aa); Fasta score E(): 0, 71.7% identity in 138 aa overlap
M	ML1079	Rv1224	2,00E-29	possible secreted protein
M	ML1096	Rv1249c	2,00E-48	putative membrane protein
M	ML1098	Rv1251c	0.0	some_similarity_to_GTP-binding_proteins
M	ML1099	Rv1252c	5,00E-41	putative lipoprotein
M	ML1115	Rv1274	3,00E-58	lipoprotein, lprB
M	ML1116	Rv1275	8,00E-54	lipoprotein, lprC
M	ML1120	Rv1278	0.0	Contains multiple possible coiled-coils. Contains PS00017 ATP/GTP-binding site motif A (P-loop)
M	ML1138	Rv1303	3,00E-20	integral membrane protein
M	ML1176	Rv1342c	3,00E-34	possible conserved membrane protein
M	ML1177	Rv1343c	5,00E-43	possible lipoprotein, membrane protein
M	ML1180	Rv3619c	6,00E-18	ESAT-6 family
M	ML1181	Rv2347c	1,00E-19	QILSS family
M	ML1182	Rv1361c	2,00E-47	PPE family
M	ML1183	Rv2107	8,00E-11	PE family
M	ML1190	Rv2525c	3,00E-70	-, twin-Arginine secreted protein
M	ML1221	Rv1590	2,00E-18	-

M	ML1222	Rv1591	1,00E-29	membrane protein
M	ML1232	Rv1184c	2,00E-77	Possibly secreted PE protein, Contains PS00017 ATP/GTP-binding site motif A (P-loop)
M	ML1233	Rv3821	9,00E-33	conserved membrane protein
M	ML1244	Rv2484c	e-130	conserved membrane protein
M	ML1255	Rv2468c	1,00E-41	-
M	ML1270	Rv1610	8,00E-36	conserved membrane protein, Contains Pfam match to entry PF00218 IGPS,
M	ML1296	Rv2137c	1,00E-25	-
M	ML1299	Rv2134c	9,00E-60	-
M	ML1300	Rv2133c	4,00E-90	-
M	ML1315	Rv2116	1,00E-35	lipoprotein, LppK
M	ML1334	Rv2091c	6,00E-28	conserved membrane protein, calcium-binding
M	ML1357	Rv1693	7,00E-09	-
M	ML1361	Rv1697	e-114	conserved membrane protein
M	ML1362	Rv1698	6,00E-58	conserved secreted protein
M	ML1389	Rv1635c	e-144	conserved membrane protein
M	ML1446	Rv2061c	5,00E-35	-
M	ML1470	Rv2446c	2,00E-16	conserved membrane protein
M	ML1505	Rv1158c	7,00E-17	conserved hypothetical Proline rich protein, possibly secreted
M	ML1506	Rv1157c	4,00E-62	-
M	ML1526	Rv2772c	2,00E-43	conserved membrane protein
M	ML1537	Rv1797	1,00E-98	possible secreted protein
M	ML1540	Rv1794	e-101	-
M	ML1544	Rv1782	e-155	conserved membrane protein
M	ML1560	Rv2843	8,00E-24	-
M	ML1584	Rv2876	3,00E-25	conserved membrane protein
M	ML1607	Rv2898c	2,00E-17	Contains Pfam match to entry PF02021 UPF0102, Uncharacterised protein family UPF0102, sp|O83883|Y913_TREPA HYPOTHETICAL PROTEIN TP0913 >gi|7514634|pir.
M	ML1610	Rv2901c	2,00E-39	-
M	ML1638	Rv2229c	2,00E-63	-
M	ML1677	Rv2980	3,00E-33	possible secreted protein
M	ML1704	Rv3013	6,00E-71	-
M	ML1720	Rv3035	e-107	-
M	ML1813	Rv1476	3,00E-39	-
M	PPE.1	Rv0256c	3,00E-93	PPE-family protein
M	ML1828A	Rv0257	1,00E-15	Probably pseudogene as Rv0257 is longer
M	ML1911A	Rv0634A		-, May be pseudogene as Rv0634A is predicted to be 13 aa longer
M	ML1918	Rv3587c	5,00E-69	conserved hypothetical membrane protein
M	ML1937	Rv1111c	9,00E-39	probable integral membrane protein
M	MML1939	Rv1109c	9,00E-49	-
M	ML1945	Rv1100	6,00E-57	possible membrane protein
M	ML1991	Rv0096	4,00E-90	PPE
M	ML1988	Rv0093c	1,00E-52	Contains possible membrane spanning hydrophobic domains. Note lacks the N-terminal 46 aa of the M. tuberculosis protein
M	ML1993	Rv0098	3,00E-50	-
M	ML1995	Rv0100	1,00E-18	-
M	ML2010	Rv1906c	4,00E-31	putative lipoprotein (secreted in Mt)
M	ML2022	Rv1893	2,00E-13	-
M	ML2023	Rv1891	2,00E-46	Contains probable N-terminal signal sequence.

M	ML2054	Rv1861	1,00E-07	integral membrane protein
M	ML2070	Rv1836c	e-171	-
M	ML2111	Rv0912	1,00E-35	membrane protein
M	ML2113	Rv0910	6,00E-49	-
M	ML2141	Rv0879c	9,00E-22	-
M	ML2144	Rv0875c	2,00E-45	possible exported protein
M	ML2155	Rv0863	2,00E-18	-
M	ML2195	Rv0817c	4,00E-68	probable exported protein
M	ML2228	Rv0779c	3,00E-50	probable membrane protein
M	ML2258	Rv0543c	2,00E-28	-
M	ML2259	Rv0544c	2,00E-16	possible membrane protein
M	ML2271	Rv0556	6,00E-46	putative membrane protein
M	ML2274	Rv0559c	9,00E-23	putative secreted protein
M	ML2320	Rv3705c	8,00E-64	-
M	ML2337	Rv3723	4,00E-57	possible membrane spanning hydrophobic domains
M	ML2377	Rv0451c	1,00E-35	mmpS4, Mycobacterium avium TmtpA TR:Q9XCF4 (EMBL:AF143772) (221 aa) fasta scores: E(): 0, 58.9% id in 146 aa
M	ML2380	Rv0455c	2,00E-37	possible secreted protein
M	ML2388	Rv0463	9,00E-18	possible membrane protein
M	ML2390	Rv1083	1,00E-10	possible secreted/membrane protein
M	ML2392	Rv1081c	6,00E-34	conserved membrane protein, hydrophobic_stretch_from_aa_26-48
M	ML2407	Rv0531	5,00E-06	putative membrane protein
M	ML2433	Rv0497	5,00E-39	conserved membrane protein
M	ML2450	Rv0479c	7,00E-57	possible secreted protein, >gb|AAF74996.1|AF143402_1 (AF143402) putative multicopper oxidase [Mycobacterium avium]
M	ML2452	Rv0477	2,00E-23	-
M	ML2454	Rv0475	6,00E-40	possible hemagglutinin
M	ML2465	Rv0464c	7,00E-53	-
M	ML2473	Rv3753c	2,00E-53	-
M	ML2489	Rv0383c	5,00E-91	possible secreted protein, hydrophobic N-terminus and Pro-rich C-terminus
M	ML2491	Rv1754c	e-109	-
M	ML2518	Rv0313	1,00E-39	-
M	ML2527	Rv0292	2,00E-69	conserved membrane protein,
M	ML2530	Rv0289	2,00E-92	-
M	ML2531	Rv0288	5,00E-27	ESAT-6 family, possible cell surface protein
M	ML2532	Rv3020c	9,00E-10	PE-family protein
M	ML2534	Rv0285	9,00E-13	PE-family protein
M	ML2536	Rv0283	e-156	conserved membrane protein
M	ML2557	Rv0250c	2,00E-26	-
M	mce	Rv0169	e-107	Mce protein
M	ML2569A	Rv0236A	2,00E-24	Small secreted protein with typical N-terminal signal peptide
M	ML2570	Rv0236c	0.0	possible integral membrane protein
M	ML2581	Rv0227c	e-116	putative integral membrane protein
M	ML2582	Rv0226c	e-132	conserved membrane protein
M	ML2595	Rv0175	2,00E-41	possible membrane protein
M	ML2596	Rv0176	1,00E-73	conserved membrane protein
M	ML2597	Rv0177	1,00E-42	conserved membrane protein
M	ML2598	Rv0178	2,00E-43	conserved membrane protein
M	ML2604	Rv0184	8,00E-64	-

M	ML2605	Rv0185	3,00E-47	-
M	ML2614	Rv0199	3,00E-47	conserved membrane protein
M	ML2615	Rv0200	5,00E-55	probable membrane protein
M	ML2616	Rv0201c	5,00E-36	-
M	ML2621	Rv0207c	2,00E-43	-
M	ML2627	Rv0216	e-103	-
M	ML2629	Rv0164	6,00E-44	-
M	ML2689	Rv0049	1,00E-45	-
X	ML0190	Rv1000	7,00E-53	gp|AL357613|AL357613_12 S. coelicolor cosmid (210 aa) E(): 2.4e-44; 55.122% identity in 205 aa overlap; AE003963|AE003963_5 Xylella fastidiosa, E(): 9.7e-14; 3 9.894% identity in 188 aa overlap. Weak similarity to proteins involved in DNA repair
X	ML0257	Rv1025	4,00E-72	Also hypothetical proteins from Thermotoga maritima e.g. TM1078, hypothetical protein, TR:Q9X0G7 (EMBL:AE001768) (170 aa)
X	ML0418	Rv3368c	2,00E-76	weak similarity Thermus aquaticus nox, NADH dehydrogenase, SW:NOX_THETH (X60110) (205 aa); Fasta score E(): 0.00023, 28.8% identity in 212 aa overlap.
X	ML0577	Rv1440	9,00E-12	putative protein-export membrane protein, secG
X	ML0776	Rv3242c	3,00E-11	probable competence protein ComF - Deinococcus radio... 77 2e-13
X	ML1037	Rv2683	2,00E-42	Contains 2 Pfam matches to entry PF00571 CBS, CBS domain.
X	ML1119	Rv1277	e-105	possibly phosphoesterase
X	ML1159	Rv1324	e-116	probable thioredoxin
X	ML1249	Rv2476c	0.0	Rickettsia prowazekii TR:Q9ZCI2 (EMBL:AJ235273) (1581 aa); Fasta score E(): 0, 32.9% identity in 1494 aa overlap
X	ML1399	Rv1647	1,00E-76	weakly adenylate cyclases
X	ML1444	Rv2054	3,00E-94	Weakly several carboxymethylenebutenolidases (EC 3.1.1.45) involved in 3-chlorocatechol degradation e.g. Pseudomonas putida SW:CLCD_PSEPU (P11453) (236 aa)
X	ML1494	Rv1171	8,00E-19	conserved membrane protein, pir||PH0210 hypothetical protein 133 (fdxA 5' region) - Saccharo... 74 5e-13
X	ML1503A	Rv1159A	9,00E-33	S. coelicolor (SC5C7.25) gp|AL03151 5AL031515|AL031515_25 (101 aa) E(): 1.9e-06; 34.831% identity in 89 aa overlap; and archaebacteria.
X	ML1660	Rv2926c	2,00E-69	-, pir||E72412 conserved hypothetical protein - Thermotoga maritima... 66 4e-10
X	ML1723	Rv3038c	e-152	-, gb|AAC01738.1| (AF040571) methyltransferase [Amycolatopsis medit... 59 1e-07
X	ML1909	Rv0636	9,00E-72	Contains Pfam match to entry PF01575 MaoC_dehydratas, MaoC like domain. ML2566
X	desA2	Rv1094	7,00E-85	Gossypium hirsutum (Upland cotton) acyl-[acyl-carrier protein] desaturase precursor SW:STAD_GOSHI (X95988) (397 aa); Fasta score E(): 5.6e-05, 23.9% identity in 293 aa overlap.
X	ML1983	Rv1919c	8,00E-45	weakly similar pollen allergen
X	ML2366	Rv3760	1,00E-12	Deinococcus radiodurans conserved hypothetical protein TR:Q9RU17
X	ML2463	Rv0466	e-102	weakly similar acyl-ACP thioesterase

A, Actinomycete-specific; M, mycobacterial-specific; X, limited distribution; -, no information available.

Table 3. Possible twin arginine secreted proteins

M. tuberculosis	*M. leprae*	Gene	Predicted function
Rv0203	del	-	unknown
Rv0265c	NF	*fecB2*	iron_transport_protein_FeIII_dicitrate_transporter
Rv0846c	ML2171 ps	-	similar_to_several_L-ascorbate_oxidases
Rv1755c	del	*plcD*	phospholipase_C_precursor
Rv2349c	NF	*plcC*	phospholipase_C_precursor
Rv2350c	del	*plcB*	phospholipase_C_precursor
Rv2351c	NF	*plcA*	phospholipase_C_precursor
Rv2525c	ML1190	-	unknown
Rv2577	ML0497 ps	-	similarity_to_G755244_acid_phosphatase
Rv2833c	del	*ugpB*	sn-glycerol-3-phosphate transport
Rv3353c	del	-	unknown
NF	ML2649	-	unknown

del, deleted; NF, not found; ps, pseudogene.

The implications for this invention are widespread. *M. tuberculosis* and *M. leprae* marker polypeptides are disclosed in SEQ ID NO: 1 to SEQ ID NO: 644. The discovery of the *M. tuberculosis* and *M. leprae* marker polypeptides and DNA encoding the polypeptides enables construction of expression vectors comprising nucleic acid sequences encoding *M. tuberculosis* and *M. leprae* marker polypeptides; host cells transfected or transformed with the expression vectors; biologically active *M. tuberculosis* and *M. leprae* marker polypeptides and *M. tuberculosis* and *M. leprae* marker polypeptides as isolated or purified peptides; and antibodies immunoreactive with *M. tuberculosis* and *M. leprae* marker polypeptides. In addition, understanding of the mechanism by which *M. tuberculosis* and *M. leprae* marker polypeptides function enables the design of assays to detect inhibitors of *M. tuberculosis* and *M. leprae* marker polypeptide activity.

As used herein, the term "*M. tuberculosis* and *M. leprae* marker polypeptides" refers to a genus of polypeptides that encompasses polypeptides of a formula selected from the group consisting of SEQ ID NO: 1 to SEQ ID NO: 644, as well as those polypeptides having a high degree of similarity (at least 90 % homology) with such amino acid sequences and which polypeptides are immunoreactive or biologically active.

The term "purified" as used herein, means that the *M. tuberculosis* and *M. leprae* marker polypeptides are essentially free of association with other proteins or polypeptides, for example, as a purification product of recombinant host cell culture or as a purified product from a non-recombinant source. The term "substantially purified" as used herein, refers to a mixture that contains *M. tuberculosis* and *M. leprae* marker polypeptides and is essentially free of association with other proteins or polypeptides, but for the presence of known proteins that can be removed using a specific antibody, and which substantially purified *M. tuberculosis* and *M. leprae* marker polypeptides can be used as antigens.

A *M. tuberculosis* and *M. leprae* marker polypeptide "variant" as referred to herein means a polypeptide substantially homologous to native *M. tuberculosis* and *M. leprae* marker polypeptides, but which has an amino acid sequence different from that of native *M. tuberculosis* and *M. leprae* marker polypeptides because of one or more deletions, insertions, or substitutions. The variant amino acid sequence preferably is at least 80% identical to a native *M. tuberculosis* and *M. leprae* marker polypeptide amino acid sequence, most preferably at least 90 % identical. The percent identity can be determined, for example by comparing sequence information using the GAP computer program, version 6.0 described by Devereux et al. (Nucl. Acids Res., 12:387, 1984) and available from the University of Wisconsin Genetics Computer Group (UWGCG). The GAP program utilizes the alignment method of Needleman and Wunsch (J. Mol. Biol. 48:443, 1970), as revised by Smith and Waterman (Adv. Appl. Math, 2:482, 1981). The preferred default parameters for the GAP program include: (1) a unary comparison matrix (containing a value of 1 for identities and 0 for non-identities) for nucleotides, and the weighted comparison matrix of Gribskov and Burgess, Nucl. Acids Res., 14:6745, 1986, as described by Schwartz and Dayhoff, eds., Atlas of Protein Sequence and Structure, National Biomedical Research Foundation, pp. 353-358, 1979; (2) a penalty of 3.0 for each gap and an additional 0.10 penalty for each symbol in each gap; and (3) no penalty for end gaps.

Variants can comprise conservatively substituted sequences, meaning that a given amino acid residue is replaced by a residue having similar physicochemical characteristics. Examples of conservative substitutions include substitution of one aliphatic residue for another, such as Ile, Val, Leu, or Ala for one another, or substitutions of one polar residue for another, such as between Lys and Arg; Glu and Asp; or Gln and Asn. Other such conservative substitutions, for example, substitutions of entire regions having similar hydrophobicity characteristics, are well known.

Naturally occurring *M. tuberculosis* and *M. leprae* marker polypeptide variants are also encompassed by the invention. Examples of such variants are proteins that result from alternate mRNA splicing events or from proteolytic cleavage of the *M. tuberculosis* and *M. leprae* marker polypeptides. Variations attributable to proteolysis include, for example, differences in the termini upon expression in different types of host cells, due to proteolytic removal of one or more terminal amino acids from the *M. tuberculosis* and *M. leprae* marker polypeptides. Variations attributable to frameshifting include, for example, differences in the termini upon expression in different types of host cells due to different amino acids.

As stated above, the invention provides isolated and purified, or homogeneous, *M. tuberculosis* and *M. leprae* marker polypeptides, both recombinant and non-recombinant. Variants and derivatives of native *M. tuberculosis* and *M. leprae* marker polypeptides that can be used as antigens can be obtained by mutations of nucleotide sequences coding for native *M. tuberculosis* and *M. leprae* marker polypeptides. Alterations of the native amino acid sequence can be accomplished by any of a number of conventional methods. Mutations can be introduced at particular loci by synthesizing oligonucleotides containing a mutant sequence, flanked by restriction sites enabling ligation to fragments of the native sequence. Following ligation, the resulting reconstructed sequence encodes an analog having the desired amino acid insertion, substitution, or deletion.

Alternatively, oligonucleotide directed, site specific mutagenesis procedures can be employed to provide an altered gene wherein predetermined codons can be altered by substitution, deletion, or insertion. Exemplary methods of making the alterations set forth above are disclosed by Walder et al. (Gene, 42:133, 1986); Bauer et al. (Gene, 37:73, 1985); Craik (BioTechniques, January 1985, 12-19); Smith et al. (Genetic Engineering: Principles and Methods, Plenum Press, 1981); Kunkel (Proc. Natl. Acad. Sci., USA, 82:488, 1985); Kunkel et al. (Methods in Enzymol., 154:367, 1987); and U.S. Patents Nos. 4,518,584 and 4,737,462, all of which are incorporated by reference.

Within an aspect of the invention, *M. tuberculosis* and *M. leprae* marker polypeptides can be utilized to prepare antibodies that specifically bind to *M. tuberculosis* and *M. leprae* marker polypeptides. The term "antibodies" is meant to include polyclonal antibodies, monoclonal antibodies, fragments thereof such as F(ab')2 and Fab fragments, as well as any recombinantly produced binding partners. Antibodies are defined to be specifically binding if they bind *M. tuberculosis* and *M. leprae* marker polypeptides with a K_a of greater than or equal to about 10^7 M^{-1}. Affinities

of binding partners or antibodies can be readily determined using conventional techniques, for example, those described by Scatchard et al., Ann. N.Y Acad. Sci., 51:660, 1949). Polyclonal antibodies can be readily generated from a variety of sources, for example, horses, cows, goats, sheep, dogs, chickens, rabbits, mice, or rats, using procedures that are well known in the art.

The invention further encompasses isolated fragments and oligonucleotides derived from the nucleotide sequences of the invention. The invention also encompasses polypeptides encoded by these fragments and oligonucleotides.

Nucleic acid sequences within the scope of the invention include isolated DNA and RNA sequences that hybridize to the native *M. tuberculosis* and *M. leprae* marker nucleic acids disclosed herein under conditions of moderate or severe stringency, and which encode *M. tuberculosis* and *M. leprae* marker polypeptides. As used herein, conditions of moderate stringency, as known to those having ordinary skill in the art, and as defined by Sambrook et al. *Molecular Cloning: A Laboratory Manual,* 2 ed. Vol. 1, pp. 1.101-104, Cold Spring Harbor Laboratory Press, (1989), include use of a prewashing solution for the nitrocellulose filters 5X SSC, 0.5 % SDS, 1.0 mM EDTA (pH 8.0), hybridization conditions of 50 % formamide, 6X SSC at 42°C (or other similar hybridization solution, such as Stark's solution, in 50 % formamide at 42°C), and washing conditions of about 60°C, 0.5X SSC, 0.1 % SDS. Conditions of high stringency are defined as hybridization conditions as above, and with washing at 68°C, 0.2X SSC, 0.1 % SDS. The skilled artisan will recognize that the temperature and wash solution salt concentration can be adjusted as necessary according to factors such as the length of the probe.

Due to the known degeneracy of the genetic code, wherein more than one codon can encode the same amino acid, a DNA sequence can vary and still encode a *M. tuberculosis* and *M. leprae* marker polypeptide of a formula selected from the group consisting of SEQ ID NO: 1 to SEQ ID NO: 644. Such variant DNA sequences can result from silent mutations (e.g., occurring during PCR amplification), or can be the product of deliberate mutagenesis of a native sequence.

The invention thus provides equivalent isolated DNA sequences, encoding *M. tuberculosis* and *M. leprae* marker polypeptides, selected from: (a) DNA derived from the coding region of a native *M. tuberculosis* and *M. leprae* marker nucleic acid; (b) cDNA comprising the nucleotide sequence of the invention; (c) DNA capable of hybridization to a DNA of (a) under conditions of moderate stringency and which encode *M. tuberculosis* and *M. leprae* marker polypeptides; and (d) DNA which is

degenerate as a result of the genetic code to a DNA defined in (a), (b) or (c) and which encodes *M. tuberculosis* and *M. leprae* marker polypeptides. *M. tuberculosis* and *M. leprae* marker polypeptides encoded by such DNA equivalent sequences are encompassed by the invention.

DNA that is equivalent to the DNA sequence of the invention will hybridize under moderately stringent conditions to the double-stranded native DNA sequence that encodes polypeptides of a formula selected from the group consisting of SEQ ID NO: 1 to SEQ ID NO: 644. Examples of *M. tuberculosis* and *M. leprae* marker polypeptides encoded by such DNA, include, but are not limited to, *M. tuberculosis* and *M. leprae* marker polypeptide fragments and *M. tuberculosis* and *M. leprae* marker polypeptides comprising inactivated N-glycosylation site(s), inactivated protease processing site(s), or conservative amino acid substitution(s), as described above. *M. tuberculosis* and *M. leprae* marker polypeptides encoded by DNA derived from other species, wherein the DNA will hybridize to the complement of the DNA of the invention are also encompassed.

Recombinant expression vectors containing a nucleic acid sequence encoding *M. tuberculosis* and *M. leprae* marker polypeptides can be prepared using well known methods. The expression vectors include a *M. tuberculosis* and *M. leprae* marker DNA sequence operably linked to suitable transcriptional or translational regulatory nucleotide sequences, such as those derived from a mammalian, microbial, viral, or insect gene. Examples of regulatory sequences include transcriptional promoters, operators, or enhancers, an mRNA ribosomal binding site, and appropriate sequences which control transcription and translation initiation and termination. Nucleotide sequences are "operably linked" when the regulatory sequence functionally relates to the *M. tuberculosis* and *M. leprae* marker DNA sequence. Thus, a promoter nucleotide sequence is operably linked to a *M. tuberculosis* and *M. leprae* marker DNA sequence if the promoter nucleotide sequence controls the transcription of the *M. tuberculosis* and *M. leprae* marker DNA sequence. The ability to replicate in the desired host cells, usually conferred by an origin of replication, and a selection gene by which transformants are identified can additionally be incorporated into the expression vector.

In addition, sequences encoding appropriate signal peptides that are not naturally associated with *M. tuberculosis* and *M. leprae* marker polypeptides can be incorporated into expression vectors. For example, a DNA sequence for a signal peptide (secretory leader) can be fused in-frame to the *M. tuberculosis* and *M. leprae* marker nucleotide sequence so that the *M. tuberculosis* and *M. leprae* marker

polypeptide is initially translated as a fusion protein comprising the signal peptide. A signal peptide that is functional in the intended host cells enhances extracellular secretion of the *M. tuberculosis* and *M. leprae* marker polypeptide. The signal peptide can be cleaved from the *M. tuberculosis* and *M. leprae* marker polypeptide upon secretion of the marker polypeptide from the cell.

Expression vectors for use in prokaryotic host cells generally comprise one or more phenotypic selectable marker genes. A phenotypic selectable marker gene is, for example, a gene encoding a protein that confers antibiotic resistance or that supplies an autotrophic requirement. Examples of useful expression vectors for prokaryotic host cells include those derived from commercially available plasmids. Commercially available vectors include those that are specifically designed for the expression of proteins. These include pMAL-p2 and pMAL-c2 vectors, which are used for the expression of proteins fused to maltose binding protein (New England Biolabs, Beverly, MA, USA).

Promoter sequences commonly used for recombinant prokaryotic host cell expression vectors include β-lactamase (penicillinase), lactose promoter system (Chang et al., Nature, 275:615, 1978; and Goeddel et al., Nature, 281:544, 1979), tryptophan (trp) promoter system (Goeddel et al., Nucl. Acids Res., 8:4057, 1980; and EP-A-36776), and tac promoter (Maniatis, Molecular Cloning: A Laboratory Manual, Cold Spring Harbor Laboratory, p. 412, 1982).

Suitable host cells for expression of *M. tuberculosis* and *M. leprae* marker polypeptides include prokaryotes, yeast or higher eukaryotic cells. Appropriate cloning and expression vectors for use with bacterial, fungal, yeast, and mammalian cellular hosts are described, for example, in Pouwels et al., Cloning Vectors: A Laboratory Manual, Elsevier, New York, (1985). Cell-free translation systems could also be employed to produce *M. tuberculosis* and *M. leprae* marker polypeptides using RNAs derived from DNA constructs disclosed herein.

It will be understood that the present invention is intended to encompass the previously described proteins in isolated or purified form, whether obtained using the techniques described herein or other methods. In a preferred embodiment of this invention, the *M. tuberculosis* and *M. leprae* marker polypeptides are substantially free of human tissue and human tissue components, nucleic acids, extraneous proteins and lipids, and adventitious microorganisms, such as bacteria and a mycoplasma. It will also be understood that the invention encompasses equivalent proteins having

substantially the same biological and immunogenic properties. Thus, this invention is intended to cover serotypic variants of the proteins of the invention.

Depending on the use to be made of the *M. tuberculosis* and *M. leprae* marker polypeptides of the invention, it may be desirable to label them. Examples of suitable labels are radioactive labels, enzymatic labels, fluorescent labels, chemiluminescent labels, and chromophores. The methods for labeling proteins and glycoproteins of the invention do not differ in essence from those widely used for labeling immunoglobulin. The need to label may be avoided by using labeled antibody to the antigen of the invention or anti- immunoglobulin to the antibodies to the antigen as an indirect marker.

Once the *M. tuberculosis* and *M. leprae* marker polypeptides of the invention have been obtained, they can be used to produce polyclonal and monoclonal antibodies reactive therewith. Thus, a polypeptide of the invention can be used to immunize an animal host by techniques known in the art. Such techniques usually involve inoculation, but they may involve other modes of administration. A sufficient amount of the polypeptide is administered to create an immunogenic response in the animal host. Any host that produces antibodies to the antigen of the invention can be used. Once the animal has been immunized and sufficient time has passed for it to begin producing antibodies to the antigen, polyclonal antibodies can be recovered. The general method comprises removing blood from the animal and separating the serum from the blood. The serum, which contains antibodies to the antigen, can be used as an antiserum to the antigen. Alternatively, the antibodies can be recovered from the serum. Affinity purification is a preferred technique for recovering purified polyclonal antibodies to the antigen from the serum.

Monoclonal antibodies to the antigens of the invention can also be prepared. One method for producing monoclonal antibodies reactive with the antigens comprises the steps of immunizing a host with the antigen; recovering antibody producing cells from the spleen of the host; fusing the antibody producing cells with myeloma cells deficient in the enzyme hypoxanthine-guanine phosphoribosyl transferase to form hybridomas; select at least one of the hybridomas by growth in a medium comprising hypoxanthine, aminopterin, and thymidine; identifying at least one of the hybridomas that produces an antibody to the antigen, culturing the identified hybridoma to produce antibody in a recoverable quantity; and recovering the antibodies produced by the cultured hybridoma.

These polyclonal or monoclonal antibodies can be used in a variety of applications. Among these is the neutralization of corresponding proteins. They can

also be used to detect viral antigens in biological preparations or in purifying corresponding proteins, glycoproteins, or mixtures thereof, for example, when used in a affinity chromatographic columns.

The *M. tuberculosis* and *M. leprae* marker polypeptides can be used as antigens to identify antibodies to a mycobacteria in materials and to determine the concentration of the antibodies in those materials. Thus, the antigens can be used for qualitative or quantitative determination of a mycobacteria in a material. Such materials of course include human tissue and human cells, as well as biological fluids, such as human body fluids, including human sera. When used as a reagent in an immunoassay for determining the presence or concentration of the antibodies to a mycobacteria, the antigens of the present invention provide an assay that is convenient, rapid, sensitive, and specific.

More particularly, the antigens of the invention can be employed for the detection of a mycobacterium by means of immunoassays that are well known for use in detecting or quantifying humoral components in fluids. Thus, antigen-antibody interactions can be directly observed or determined by secondary reactions, such as precipitation or agglutination. In addition, immunoelectrophoresis techniques can also be employed. For example, the classic combination of electrophoresis in agar followed by reaction with anti-serum can be utilized, as well as two-dimensional electrophoresis, rocket electrophoresis, and immunolabeling of polyacrylamide gel patterns (Western Blot or immunoblot). Other immunoassays in which the antigens of the present invention can be employed include, but are not limited to, radioimmunoassay, competitive immunoprecipitation assay, enzyme immunoassay, and immunofluorescence assay. It will be understood that turbidimetric, colorimetric, and nephelometric techniques can be employed. An immunoassay based on Western Blot technique is preferred.

Immunoassays can be carried out by immobilizing one of the immunoreagents, either an antigen of the invention or an antibody of the invention to the antigen, on a carrier surface while retaining immunoreactivity of the reagent. The reciprocal immunoreagent can be unlabeled or labeled in such a manner that immunoreactivity is also retained. These techniques are especially suitable for use in enzyme immunoassays, such as enzyme linked immunosorbent assay (ELISA) and competitive inhibition enzyme immunoassay (CIEIA).

When either the antigen of the invention or antibody to the antigen is attached to a solid support, the support is usually a glass or plastic material. Plastic materials

molded in the form of plates, tubes, beads, or disks are preferred. Examples of suitable plastic materials are polystyrene and polyvinyl chloride. If the immunoreagent does not readily bind to the solid support, a carrier material can be interposed between the reagent and the support. Examples of suitable carrier materials are proteins, such as bovine serum albumin, or chemical reagents, such as gluteraldehyde or urea. Coating of the solid phase can be carried out using conventional techniques.

The invention provides immunogenic *M. tuberculosis* and *M. leprae* marker polypeptides, and more particularly, protective polypeptides for use in the preparation of vaccine compositions against a mycobacterium. These polypeptides can thus be employed as viral vaccines by administering the polypeptides to a mammal susceptible to a mycobacteria infection. Conventional modes of administration can be employed. For example, administration can be carried out by oral, respiratory, or parenteral routes. Intradermal, subcutaneous, and intramuscular routes of administration are preferred when the vaccine is administered parenterally.

The major purpose of the immune response in a mycobacteria-infected mammal is to inactivate the free mycobacteria and to eliminate mycobacteria infected cells that have the potential to release infectious mycobacteria. The B-cell arm of the immune response has some responsibility for inactivating free mycobacteria. The principal manner in which this is achieved is by neutralization of infectivity. Another major mechanism for destruction of the a mycobacteria-infected cells is provided by cytotoxic T lymphocytes (CTL) that recognize *M. tuberculosis* and *M. leprae* marker antigens expressed in combination with class I histocompatibility antigens at the cell surface. The CTLs recognize *M. tuberculosis* and *M. leprae* marker polypeptides processed within cells from a *M. tuberculosis* and *M. leprae* marker polypeptide that is produced, for example, by the infected cell or that is internalized by a phagocytic cell. Thus, this invention can be employed to stimulate a B-cell response to *M. tuberculosis* and *M. leprae* marker polypeptides, as well as immunity mediated by a CTL response following infection. The CTL response can play an important role in mediating recovery from primary mycobacterial infection and in accelerating recovery during subsequent infections.

The ability of the *M. tuberculosis* and *M. leprae* marker polypeptides and vaccines of the invention to induce protective levels of neutralizing antibody in a host can be enhanced by emulsification with an adjuvant, incorporating in a liposome, coupling to a suitable carrier, or by combinations of these techniques. For example, the *M. tuberculosis* and *M. leprae* marker polypeptides of the invention can be

administered with a conventional adjuvant, such as aluminum phosphate and aluminum hydroxide gel, in an amount sufficient to potentiate humoral or cell-mediated immune responses in the host. Similarly, the *M. tuberculosis* and *M. leprae* marker polypeptides can be bound to lipid membranes or incorporated in lipid membranes to form liposomes. The use of nonpyrogenic lipids free of nucleic acids and other extraneous matter can be employed for this purpose.

The immunization schedule will depend upon several factors, such as the susceptibility of the host to infection and the age of the host. A single dose of the vaccine of the invention can be administered to the host or a primary course of immunization can be followed in which several doses at intervals of time are administered. Subsequent doses used as boosters can be administered as needed following the primary course.

The *M. tuberculosis* and *M. leprae* marker polypeptides and vaccines of the invention can be administered to the host in an amount sufficient to prevent or inhibit a mycobacteria infection or replication *in vivo*. In any event, the amount administered should be at least sufficient to protect the host against substantial immunosuppression, even though a mycobacterial infection may not be entirely prevented. An immunogenic response can be obtained by administering the polypeptides of the invention to the host in an amount of about 10 to about 500 micrograms antigen per kilogram of body weight, preferably about 50 to about 100 micrograms antigen per kilogram of body weight. The polypeptides and vaccines of the invention can be administered together with a physiologically acceptable carrier. For example, a diluent, such as water or a saline solution, can be employed.

Another aspect of the invention provides a method of DNA vaccination. The method also includes administering any combination of the nucleic acids encoding *M. tuberculosis* and *M. leprae* marker polypeptides, with or without carrier molecules, to an individual. In embodiments, the individual is an animal, and is preferably a mammal. More preferably, the mammal is selected from the group consisting of a human, a dog, a cat, a bovine, a pig, and a horse. In an especially preferred embodiment, the mammal is a human.

The methods of treating include administering immunogenic compositions comprising *M. tuberculosis* and *M. leprae* marker polypeptides, but compositions comprising nucleic acids encoding *M. tuberculosis* and *M. leprae* marker polypeptides as well. Those of skill in the art are cognizant of the concept, application, and effectiveness of nucleic acid vaccines (*e.g.*, DNA vaccines) and nucleic acid vaccine

technology as well as protein and polypeptide based technologies. The nucleic acid based technology allows the administration of nucleic acids encoding *M. tuberculosis* and *M. leprae* marker polypeptides, naked or encapsulated, directly to tissues and cells without the need for production of encoded proteins prior to administration. The technology is based on the ability of these nucleic acids to be taken up by cells of the recipient organism and expressed to produce an immunogenic determinant to which the recipient's immune system responds. Typically, the expressed antigens are displayed on the surface of cells that have taken up and expressed the nucleic acids, but expression and export of the encoded antigens into the circulatory system of the recipient individual is also within the scope of the present invention. Such nucleic acid vaccine technology includes, but is not limited to, delivery of naked DNA and RNA and delivery of expression vectors encoding *M. tuberculosis* and *M. leprae* marker polypeptides. Although the technology is termed "vaccine", it is equally applicable to immunogenic compositions that do not result in a protective response. Such non-protection inducing compositions and methods are encompassed within the present invention.

Although it is within the present invention to deliver nucleic acids encoding *M. tuberculosis* and *M. leprae* marker polypeptides and carrier molecules as naked nucleic acid, the present invention also encompasses delivery of nucleic acids as part of larger or more complex compositions. Included among these delivery systems are mycobacterium, mycobacteria-like particles, or bacteria containing the nucleic acid encoding *M. tuberculosis* and *M. leprae* marker polypeptides. Also, complexes of the invention's nucleic acids and carrier molecules with cell permeabilizing compounds, such as liposomes, are included within the scope of the invention. Other compounds, such as molecular vectors (EP 696 191, Samain et al.) and delivery systems for nucleic acid vaccines are known to the skilled artisan and exemplified in, for example, WO 93/06223 and WO 90/11092, U.S. 5,580,859, and U.S. 5,589,466 (Vical's patents), which are incorporated by reference herein, and can be made and used without undue or excessive experimentation.

To further achieve the objective and in accordance with the purposes of the present invention, a kit capable of diagnosing mycobacteria infection is described. This kit, in one embodiment, contains the DNA sequences of this invention, which are capable of hybridizing to RNA or analogous DNA sequences to indicate the presence of a mycobacteria infection. Different diagnostic techniques can be used which include, but are not limited to: (I) Southern blot procedures to identify cellular DNA which may or

may not be digested with restriction enzymes; (2) Northern blot techniques to identify RNA extracted from cells; and (3) dot blot techniques, i.e., direct filtration of the sample through an ad hoc membrane, such as nitrocellulose or nylon, without previous separation on agarose gel. Suitable material for dot blot technique could be obtained from body fluids including, but not limited to, serum and plasma, supernatants from culture cells, or cytoplasmic extracts obtained after cell lysis and removal of membranes and nuclei of the cells by centrifugation.

The invention also provides screening assays for identifying agents that modulate (e.g. augment or inhibit) the activity of *M. tuberculosis* and *M. leprae* marker polypeptides. Assays for detecting the ability of agents to inhibit or augment the activity of *M. tuberculosis* and *M. leprae* marker polypeptides provide for facile high-throughput screening of agent banks (e.g., compound libraries, peptide libraries, and the like) to identify antagonists or agonists of these marker polypeptides. Such *M. tuberculosis* and *M. leprae* marker polypeptide antagonists and agonists may modulate marker polypeptide activity and thereby modulate, inhibit, or even prevent infection of a host by *M. tuberculosis* and *M. leprae*.

For example, yeast comprising (1) an expression cassette encoding a GAL4 DNA binding domain (or GAL4 activator domain) fused to a binding fragment of *M. tuberculosis* or *M. leprae* marker polypeptide, (2) an expression cassette encoding a GAL4 DNA activator domain (or GAL4 binding domain, respectively) fused to a binding fragment of a test polypeptide, and (3) a reporter gene (e.g., β-galactosidase) comprising a cis-linked GAL4 transcriptional response element can be used for agent screening. Such yeast are incubated, and expression of the reporter gene (e.g., β-galactosidase) is determined by the capacity of the agent to affect expression of the reporter gene and thereby identify the test polypeptide as a candidate modulatory agent for *M. tuberculosis* or *M. leprae* marker polypeptides.

Yeast two-hybrid systems can be used to screen a mammalian (typically human) cDNA expression library, wherein cDNA is fused to a GAL4 DNA binding domain or activator domain, and either a *M. tuberculosis* or *M. leprae* marker polypeptide sequence is fused to a GAL4 activator domain or DNA binding domain, respectively. Such a yeast two-hybrid system can screen for cDNAs that encode proteins that interact with *M. tuberculosis* or *M. leprae* marker polypeptides.

Polypeptides that interact with *M. tuberculosis* or *M. leprae* marker polypeptides can also be identified by immunoprecipitation of *M. tuberculosis* or *M. leprae* marker polypeptides with antibody, and identification of co-precipitating species. Further,

polypeptides that interact with *M. tuberculosis* or *M. leprae* marker polypeptides can be identified by screening a peptide library (e.g., a bacteriophage peptide display library) with a *M. tuberculosis* or *M. leprae* marker polypeptide.

Additional embodiments of the invention are directed to methods that employ specific antisense polynucleotides complementary to all or part of *M. tuberculosis* or *M. leprae* marker nucleic acids. Such complementary antisense polynucleotides may include nucleotide substitutions, additions, deletions, or transpositions, so long as specific hybridization to the relevant target sequence corresponding to *M. tuberculosis* or *M. leprae* marker nucleic acids is retained as a functional property of the polynucleotide. Complementary antisense polynucleotides include soluble antisense RNA or DNA oligonucleotides that can hybridize specifically to *M. tuberculosis* and *M. leprae* marker nucleic acid species and prevent transcription of the mRNA species and/or translation of the encoded polypeptide. See (Ching et al., 1989, Proc. Natl. Acad. Sci. U.S.A., 86:10006 ; Broder et al., 1990, Ann. Int. Med., 113:604 ; Loreau et al., 1990, FEBS Letters, 274:53 ; Holcenberg et al., WO91/11535 ; U.S. Ser. No. 07/530,165 ; WO 91/09865 ; WO 91/04753 ; WO 90/13641 ; and EP 386563). The antisense polynucleotides, therefore, inhibit production of *M. tuberculosis* or *M. leprae* marker polypeptides. Antisense polynucleotides that prevent transcription and/or translation of mRNA corresponding to *M. tuberculosis* or *M. leprae* marker polypeptides may inhibit or prevent infection by *M. tuberculosis* or *M. leprae*. Antisense polynucleotides of various lengths may be produced, although such antisense polynucleotides typically comprise a sequence of about at least 25 consecutive nucleotides, which are substantially identical to a naturally-occurring *M. tuberculosis* or *M. leprae* marker nucleic acids, and typically are identical to a *M. tuberculosis* or *M. leprae* marker nucleic acid. For general methods relating to antisense polynucleotides, see *Antisense RNA and DNA*, (1988) D.A. Melton, Ed., Cold Spring Harbor Laboratory, Cold Spring Harbor, N.Y.).

Polypeptides with similar sequence should have similar function. Thus, the functions of *M. tuberculosis* and *M. leprae* marker polypeptides can be assessed by a database search. One method by which structural and functional domains can be identified is by comparison of the nucleotide and/or amino acid sequence data for *M. tuberculosis* and *M. leprae* marker polypeptides, or *M. tuberculosis* or *M. leprae* marker nucleic acids, to public or proprietary sequence databases. Preferably, computerized comparison methods are used to identify sequence motifs or predict polypeptide conformation domains that occur in other polypeptides of known structure and/or

function. For example, methods to identify protein sequences that fold into a known three-dimensional structure are known (Bowie et al., 1991, Science, 253:164).

As other examples, but not for limitation, the programs GAP, BESTFIT, FASTA, and TFASTA in the Wisconsin Genetics Software Package (Genetics Computer Group, 575 Science Dr., Madison, Wis.) can be used to identify sequences in databases, such as GenBank/EMBL, that have regions of homology with *M. tuberculosis* or *M. leprae* marker polypeptides or *M. tuberculosis* or *M. leprae* marker nucleic acids. Such homologous regions are candidate structural or functional domains. Alternatively, other algorithms are provided for identifying such domains from sequence data. Further, network methods, whether implemented in hardware or software, can be used to: (1) identify related protein sequences and nucleotide sequences, and (2) define structural or functional domains in *M. tuberculosis* and *M. leprae* marker polypeptides.

Thus, those of skill in the art can recognize sequence motifs and structural conformations that may be used to define structural and functional domains in the *M. tuberculosis* and *M. leprae* marker nucleic acids of the invention. Hydrophobicity profiles can be generated and displayed graphically using the ProtScale utility at ExPASy (http://expasy.hcuge.ch/cgi-bin/protscale.pl). There are a number of different ways of predicting transmembrane helices in sequences, the simplest being merely to look for regions of the protein containing a run of 20 hydrophobic residues. However, there are also a number of more sophisticated, and accurate, algorithms which can be used not only to predict the location of transmembrane helices but also their orientation in the membrane.

Proteins can contain signals within their sequence which assist in their processing within the cell, for example leader sequences or signals which target proteins to specific compartments within cells. Web resources are available to help predict both these types of sites. Different regions of a polypeptide evolve at different rates; some parts of a polypeptide must retain a certain pattern of residues for the polypeptide to function. By identifying such conserved regions, it is possible to make predictions about the polypeptide function. Examples of conserved sequences can be found around the active sites of enzymes, sites of post-translational modification, binding sites for co-factors, protein sorting signals, etc.. A number of bioinformatics resources have been developed both to build databases of conserved patterns and to search for instances of such patterns in sequences. One of the best known motif databases is PROSITE, which can be employed in this invention.

This invention will be described in greater detail in the following Examples.

EXAMPLE 1

The whole genome sequence was obtained from a combination of sequenced cosmids (Eiglmeier, K., et al., Mol. Microbiol., 7,197-206, 1993) and 54,000 end sequences (giving 7.1x coverage) from a pUC18 genomic shotgun library using dye terminator chemistry on ABI373 or 377 automated sequencers. The sequences of 42 cosmids previously generated by multiplex sequencing (Smith, D.R., et al., Genome Research, 7, 802-819, 1997) were used for scaffolding purposes only. The sequence was assembled using Phrap (P. Green, unpublished), finished using GAP4 (Bonfield, J.K., et al., Nucleic Acids Res., 24, 4992-4999, 1995) then compared with sequences present in public databases using FASTA, BLASTN and BLASTX (Altschul, S.F., et al., Nature Genet., 6, 119-129, 1994). Potential CDS were predicted, and gene and protein sequences analysed as described previously (Cole et al., 1998 ; Parkhill, J., et al., Nature, 404, 502-505, 2000), using Artemis (Rutherford, K., et al., Bioinformatics, 16, 944-945, 2000) to collate data and facilitate annotation. The genome and proteome sequences of *M. leprae* and *M. tuberculosis* H37Rv were compared pairwise to identify conserved genes using the Artemis Comparison Tool (ACT) (K. Rutherford; unpublished; http://www.sanger.ac.uk/Software/ACT/). Pseudogenes had one or more mutations that would ablate expression and were pinpointed by direct comparison with *M. tuberculosis*.

EXAMPLE 2

Target Discovery

To illustrate the usefulness of comparative mycobacterial genomics for identifying potentially important proteins, a precise example will now be given. Preproteins transported by the TAT pathway generally bind redox cofactors and fold or oligomerize before crossing the membrane (Berks et al., 2000 ; Berks, B.C., et al., Biochim. Biophys. Acta., 1459, 325-330, 2000). After removal of the signal peptide, these proteins usually function in extracytoplasmic electron transfer chains. The specialized machinery that recognizes the twin-arginine motif, and translocates the preprotein across the membrane, is composed of several different Tat proteins. In *Escherichia* coli, TatA and TatE are 50 % identical and share weak similarity with TatB. All three proteins are predicted to be anchored to the cytoplasmic membrane via an N-terminal hydrophobic alpha-helix, and to have cytoplasmic amphipathic helices followed by variable regions. The TatC protein is predicted to be an integral membrane protein with six transmembrane segments. *M. tuberculosis* and *M. leprae* both contain clearly

identifiable *tatA, tatB, tatC*, and *tatD* genes and must, therefore, produce a functional Tat system.

On examination of the proteome of M. *tuberculosis*, eleven potential substrates for the Tat export system were recognized on the basis of their signal peptides containing potential twin arginine motifs (Table 3). During the extensive reductive evolution of the genome of M. *leprae* only one of the corresponding genes, ML1190, has escaped inactivation. It is orthologous to Rv2525c of *M. tuberculosis* but shows no similarity to proteins present in sequence databases. The 240 amino acid long precursor protein encoded by Rv2525c (or its counterpart ML1190 contains five histidines and one cysteine residue that may be important for coordinating divalent metal ions. The conservation of this coding sequence by M. *leprae,* in the face of massive gene loss, is a strong indication that it must play an important biological role. Given the many parallels with Tat systems elsewhere, it is likely to be in electron transport. These indirect arguments suggest on the one hand that, if this function were essential, the ML1190/Rv2525c gene product might represent a novel drug target or, on the other, since it is likely to be located extracellularly it may, therefore, be an important sentinel protein antigen.

The *Mycobacterium tuberculosis* strain HRV37 genomic library has been deposited at the Collection Nationale de Cultures de Microorganismes (C.N.C.M.), of Institut Pasteur, 28, rue du Docteur Roux, F-75724 Paris, Cedex 15, France, on November 19, 1997, under the Accession Number I-1945. This genomic DNA library is disclosed in International patent application No. WO 9954487 (Institut Pasteur).

In summary, Leprosy, a chronic human neurological disease, results from infection with the obligate intracellular pathogen *Mycobacterium leprae,* a close relative of the tubercle bacillus. *M. leprae* has the longest doubling time of all known bacteria and has thwarted every effort at axenic culture. Comparison of the 3.27 Mb genome sequence of an armadillo-derived Indian isolate of the leprosy bacillus with that of *Mycobacterium tuberculosis* (4.41 Mb) provides clear explanations for these properties and reveals an extreme case of reductive evolution. Less than half of the genome contains functional genes while pseudogenes, with intact counterparts in *M. tuberculosis*, abound. Genome downsizing and the current mosaic arrangement appear to have resulted from extensive recombination events between dispersed repetitive sequences. Gene deletion and decay have eliminated many important metabolic activities including siderophore production, part of the oxidative, and all of

the microaerophilic and anaerobic respiratory chains, together with numerous catabolic systems and their regulatory circuits.

The entire disclosure of each of the publication which has been referenced in the present description is incorporated by reference herein.

CLAIMS

1. A method for identification and the selection of essential genes for the survival or the virulence of mycobacterium species which comprises:

a) aligning the genomic sequence of a first mycobacterium species on a genomic sequence of the genomic sequence of a second mycobacterium species,

b) selecting a polypolynucleotide sequence highly conserved in both genomes with no counterparts in other bacterial genomic sequences and which corresponds to an essential gene for the survival or the virulence of mycobacterium species, and

c) optionally, testing the polypolynucleotide selected in step b) for its capacity of virulence or involved in the survival of a mycobacterium species said testing being based on the activation or inactivation of said polypolynucleotide in a bacterial host or said testing being based on the activity of the product of expression of said polynucleotide *in vivo* or *in vitro*.

2. A method according to claim 1, wherein the first genomic sequence of mycobacterium belongs to Mycobacterium tuberculosis.

3. A method according to claim 1, wherein the second genomic sequence of mycobacterium belongs to Mycobacterium leprae.

4. A method according to any one of claims 1 to 3, wherein the complete genomic sequence of said mycobacterium species is analysed.

5. A method for the identification and the selection in silico of essential genes for the survival or the virulence of mycobacterium species according to any one of claims 1 to 4.

6. Purified polynucleotide molecule obtained by the method according to any one of claims 1 to 5.

7. A purified polynucleotide molecule of claim 6 which encodes essential proteins or fragments of proteins of Mycobacteium species.

8. A purified polynucleotide molecule of a formula selected from the group consisting of polynucleotidic sequences, which encode for polypeptides and regulatory sequences essential for the virulence and/or the survival of mycobacterium which are, in one hand, specific to Mycobacterium tuberculosis and, in the other hand, specific to Mycobacterium leprae, that is to say, said polynucleotidic sequences are not found in publicly accessible banks of non-Mycobacterium tuberculosis and non-Mycobacterium leprae genome.

9. A purified polynucleotide molecule according to claim 8 obtained by the method according to any one of claims 1 to 5.

10. A purified polynucleotide molecule that hybridizes to either strand of a denratured, double-stranded DNA comprising the purified polynucleotide sequence according to claims 6 to 9 under conditions of moderate stringency in 50 % formamide and 6X SSC at 42°C with washing conditions of 60°C, 0.5XSSC, 0. 1% of SDS.

11. The purified polynucleotide molecule as claimed in claim 10, wherein said purified polynucleotide molecule is derived by mutagenesis.

12. A purified polynucleotide molecule degenerate from the purified polynucleotide molecule according to any one of claims 6 to 9 as a result of the genetic code.

13. A purified polynucleotide according to any one of claims 6 to 9 which encodes M. tuberculosis or M. leprae marker polypeptide.

14. A purified polynucleotide molecule according to any one of claims 6 to 9 which encodes an allelic variant of M. tuberculosis or M. leprae marker polypeptide according to claim 13.

15. A purified polynucleotide molecule according to any one of claims 6 to 9 which encodes a similar sequence of M. tuberculosis or M. leprae marker polypeptide DNA according to claim 13.

16. A purified polypeptide encoded by a polynucleotide molecule according to claim 8.

17. A purified polypeptide of a formula selected from the group consisting of SEQ ID NO: 1 to SEQ ID NO: 644.

18. A purified polypeptide according to claim 17 encoded by a polynucleotide molecule according to claims 6 or 9.

19. A purified polypeptide according to any one of claims 16 to 18 in non-glycosylated form or in glycosylated form.

20. Process of screening of active molecules comprising:

a) preparation of at least one purified polynucleotidic molecule or fragment thereof according to claims 6 to 9 in an acceptable medium,

b) contacting the purified polynucleotide sequence or a fragment thereof corresponding to said essential gene of interest with an active molecule to be tested, and

c) selecting the active molecule by inhibition or activation of the activity of the purified polynucleotide compared to the standard activity of the essential gene in absence of said active molecule.

21. Process of screening of an active molecule comprising:

a) preparation of at least one purified polypeptide according to claims 16 to 19 or fragment thereof to be used as a target in an acceptable medium,

b) contacting said purified polypeptide or fragment thereof obtained in step a) with an active molecule to be tested, and

c) selecting the active molecule by inhibition or activation of the activity of the purified polypeptide obtainable after expression of the essential gene selected according to claim 1 and compared to the standard activity of said polypeptide.

22. A recombinant BAC containing a fragment of M. tuberculosis genome deposited on February 20, 2001 at the C.N.C.M. under the accession number I-2625, I-2626, I-2627, I-2628 or I-2629.

23. A recombinant cosmid containing a fragment of M. leprae genome deposited on February 21, 2001 at the C.N.C.M. under the accession number I-2632 or I-2633.

24. A recombinant purified vector that directs the expression of a polynucleotide molecule selected from the group consisting of purified polynucleotide molecule selected according to claims 1 or 6, 7, 8, 9, 13, 14 and 15.

25. A recombinant purified vector that directs the expression of a purified polynucleotide molecule according to claims 10 to 12.

26. A recombinant purified vector containing a part of the polynucleotide insert of claims 22 or 23 which is a plasmid.

27. A host cell transfected or transduced with the vector of claims 24 to 26.

28. A method for the production of mycobacterium purified marker polypeptide comprising culturing a host cell of claim 27 under conditions promoting expression, and recovering the polypeptide from the culture medium.

29. The method according to claim 28, wherein the host cell is selected from the group consisting of bacterial cells, yeast cells, plant cells, and mammalian cells.

30. An immunological complex comprising a Mycobacterium purified marker polypeptide produced by a method according to claim 28 or 29 and an antibody that specifically recognizes said polypeptide.

31. A composition comprising at least a mycobacterium purified polypeptide marker produced by a method according to claim 28 or 29.

32. A method for detecting infection by mycobacteria, said method comprises:

a) providing a composition according to claim 31 with a biological sample suspected to be infected with a mycobacterium,

b) assaying for the presence of said mycobacterium, and

c) optionally, detecting the presence of mycobacteria in said biological sample if infected.

33. The method of claim 32, which in step b) the assay is performed by electrophoresis or by immunoassay with antibodies that are immunologically reactive with M. tuberculosis and/or M. leprae.

34. An *in vitro* diagnostic method for the detection of the presence or the absence of antibodies which bind to an antigen or fragment of antigen comprising a mycobacterium purified polypeptide molecule according to any one of claims 16 to 19, wherein the method comprises contacting the antigen or fragment of antigen with a biological fluid for a time and under conditions sufficient for the antigen and antibodies in the biological fluid to form an immunological complex, detecting the formation of the complex, and optionally measuring the formation of the immunologicalcomplex.

35. The method as claimed in claim 34, wherein the formation of the immunological complex is detected by immunoassay method based on western blot technique, ELISA, indirect immuno-fluorescense assay, or immunoprecipitation assay.

36. An in vitro diagnostic method for the detection of the presence or the absence of antibodies which bind to an antigen or fragment of antigen comprising a mycobacterium purified polypeptide molecule obtained by a method according to claim 28 or 29, wherein the method comprises contacting the antigen or fragment of antigen with a biological fluid for a time and under conditions sufficient for the antigen and antibodies in the biological fluid to form an immunological complex, detecting the formation of the complex, and optionally measuring the formation of the immunological complex.

37. The method as claimed in claim 36, wherein the formation of the immunological complex is detected by immunoassay method based on western blot technique, ELISA, indirect immuno-fluorescence assay, or immunoprecipitation assay.

38. A kit for the *in vitro* diagnostics of mycobacterium infections comprising:

a) a mycobacterium purified polypeptide molecule according to any one of claims 16 to 19 or mixture thereof,

b) antibodies capable of forming an immunological complex with said polypeptides, and

c) acceptable medium to permit the detection of the formation of the complex thereof.

39. A kit as claimed in claim 38 useful for the detection of M. tuberculosis or leprae infections.

40. An immunogenic composition comprising at least a purified polypeptide according to any one of claims 16 to 19 in an amount sufficient to induce an immunogenic or protective response in vivo, and a pharmaceutically acceptable carrier therefor.

41. A polynucleotidic probe comprising a purified polynucleotide molecule or fragment thereof according to any one of claims 6 to 15.

42. A polynucleotidic probe which is complementary to the full length sequence of a purified nucleic acid that hybridizes under conditions of moderate stringency in 50 % formamide and 6X SSC at 42°C with washing conditions of 60°C, 0.5XSSC, 0.1 % SDS with a nucleic acid encoding a purified polypeptide according to any one of claims 16 to 19.

43. A method for the detection of the presence or the absence of mycobacteria in a sample comprising:

a) contacting a sample suspected to contain genetic material of mycobacteria with at least one probe according to claims 41 or 42,

b) detecting the hybridization under conditions of moderate stringency in 50 % formamide and 6X SSC at 42°C with washing conditions of 60°C, 0.5XSSC, 0.1 % SDS.

44. A method for the detection of the presence or the absence of mycobacteria according to claim 43, wherein said method is specific for the detection of M. tuberculosis infections.

45. A method for the detection of the presence or the absence of mycobacteria according to claim 43, wherein said method is specific for the detection of M. leprae infections.

46. A method for the detection of the presence or the absence of mycobacteria according to any one of claims 43 to 45, wherein the sample contains nucleic acids of at least one microorganism other than the mycobacteria.

47. A method of selection according to claims 1 to 5, wherein the comparison of the genetic informations of different types of organisms, wherein the method comprises:

a) providing a database including sequence libraries for a plurality of types of organism, said libraries having multiple genomic sequences,

b) providing one or more probe sequences according to claims 41 or 42,

c) determining homologous matches between one or more of said probe sequences and one or more sequences of said sequences in said genomic libraries; and

d) displaying the results of said determination.

48. A method according to claims 1 to 4, wherein the genomic sequence of a first mycobacterium species is a recombinant BAC deposited at the C.N.C.M. according to claim 22 or 23.

49. An *in vitro* diagnostic method for the detection of the presence or the absence of essential nucleotidic sequences for the survival or the virulence in mycobacterium by hybridization or amplification of said specific sequence comprising:

a) providing a composition comprising a probe according to claims 41 or 42 with a sequence library of interest to be tested in an acceptable medium and in sufficient time to obtain an hybridization and/or an amplification of said sequence;

b) purifying the sequence which hybridizes with said probe; and

c) optionally, quantifying said sequence.

50. A method according to claim 1, wherein the first genomic sequence of mycobacterium belongs to Mycobacterium microti.

SEQUENCE LISTING

<110> COLE STEWART

<120> COMPARATIVE MYCOBACTERIAL GENOMICS AS A TOOL FOR IDENTIFYING TARGETS FOR THE DIAGNOSIS, PROPHYLAXIS OR TREATMENT OF MYCOBACTERIOSES

<130> D20069

<150> US 60/270 123
<151> 2001-02-22

<160> 644

<170> PatentIn version 3.0

<210> 1

<211> 303

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0007, ML.tab 11195:12106 forward MW:32204

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1 5 10 15

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20 25 30

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35 40 45

Pro Asn Asp Ser Pro Pro Trp Gln Arg Gly Ser Ala Arg Ala Ser Gln
50 55 60

Ser Gly Tyr Arg Pro Ser Asp Pro Leu Thr Thr Thr Arg Gln Ser Asn
65 70 75 80

Pro Ala Pro Gly Ala Asn Val Arg Ser Asn Arg Phe Ile Ser Gly Met
85 90 95

Thr Ala Pro Ala Leu Ser Gly Gln Leu Pro Lys Lys Asn Asn Ser Thr
100 105 110

Gln Ala Leu Glu Pro Val Leu Met Ser Asn Glu Val Pro Phe Thr Glu

115 120 125

Ser Tyr Ala Ser Glu Leu Pro Asp Leu Ser Gly Pro Val Gln Arg Thr
130 135 140

Val Pro Cys Lys Pro Ser Pro Asp Arg Gly Ser Ser Thr Pro Arg Met
145 150 155 160

Gly Arg Leu Glu Ile Thr Lys Val Arg Gly Thr Gly Glu Ile Arg Ser
165 170 175

Gln Ile Ser Arg Arg Ser His Gly Pro Val Arg Ala Ser Met Gln Ile
180 185 190

Arg Arg Ile Asp Pro Trp Ser Met Leu Lys Val Ser Leu Leu Leu Ser
195 200 205

Val Ala Leu Phe Phe Val Trp Met Ile Ala Val Ala Phe Leu Tyr Leu
210 215 220

Leu Leu Gly Gly Met Gly Val Trp Ala Lys Leu Asn Ser Asn Val Gly
225 230 235 240

Asp Leu Leu Asn Asn Thr Gly Gly Asn Ser Gly Glu Leu Val Ser Asn
245 250 255

Ser Thr Ile Phe Gly Cys Ala Val Leu Val Gly Leu Val Asn Ile Val
260 265 270

Leu Met Thr Thr Met Ala Ala Ile Ala Ala Phe Val Tyr Asn Leu Ser
275 280 285

Ser Asp Leu Val Gly Gly Val Glu Val Thr Leu Ala Asp Leu Asp
290 295 300

<210> 2

<211> 137

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

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1 5 10 15

Gly Gly Ala Gly Ile Val Ile Ala Ile Ala Cys Ser Thr Leu Asp Ile
20 25 30

Asp Thr Pro Gly Phe Met Leu Thr Gly Ile Ala Ala Leu Gly Leu Ile
35 40 45

Leu Phe Ala Gly Leu Ser Trp Arg Ala Arg Pro Lys Leu Ala Ile Asn
50 55 60

Pro Asp Gly Leu Ala Val Gln Gly Trp Phe Arg Thr Arg Leu Phe Gly
65 70 75 80

Pro Ala Asp Ile Lys Ile Ile Arg Ile Thr Glu Phe Arg Arg Phe Gly
85 90 95

Arg Lys Val Arg Leu Leu Glu Ile Glu Ala Ile Asn Gly Asp Leu Val
100 105 110

Ile Leu Ser Arg Trp Asp Leu Gly Thr Gly Pro Leu Glu Val Leu Asp
115 120 125

Ala Leu Ile Thr Ala Gly Tyr Ala Gly
130 135

<210> 3

<211> 93

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

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Met Pro Lys Ser Lys Val Arg Lys Lys Asn Asp Phe Thr Ile Thr Ser
1 5 10 15

Val Ser Arg Thr Pro Val Lys Val Lys Val Gly Pro Ser Ser Val Trp
20 25 30

Phe Val Thr Leu Phe Val Gly Leu Met Leu Ile Gly Leu Val Trp Leu
35 40 45

Met Val Phe Gln Leu Ala Ala Leu Gly Thr Gln Ala Pro Thr Ala Leu
50 55 60

His Trp Met Ala Gln Leu Gly Pro Trp Asn Tyr Ala Ile Ala Phe Ala
65 70 75 80

Phe Met Ile Thr Gly Leu Leu Leu Thr Met Arg Trp His
85 90

<210> 4

<211> 488

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<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

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<400> 4

Met Asp Asn Gln Lys Glu Leu Ile Gln Arg Ile Glu Arg Lys Leu Glu
1 5 10 15

Ser Ser Ile Asp Asp Ala Phe Ala Arg Met Phe Gly Gly Ser Ile Val
20 25 30

Pro Gln Glu Val Glu Ala Leu Leu Arg Arg Glu Ala Ser Asp Gly Val
35 40 45

Arg Ser Leu Gln Gly Asn Arg Leu Leu Ala Pro Asn Glu Tyr Ile Ile
50 55 60

Thr Leu Gly Val His Asp Leu Glu Lys Met Lys Ala Asp Pro Asp Leu
65 70 75 80

Thr Ser Ser Ala Phe Ala Ser Asp Leu Ala Asp Tyr Ile His Glu Gln
85 90 95

Gly Trp Gln Thr Tyr Gly Asp Val Val Val Arg Phe Asp Gln Ser Ser
100 105 110

Ser Leu His Thr Gly Gln Ile Arg Ala Arg Ser Val Val Asn Pro Asp
115 120 125

Val Glu Pro Arg Pro Thr Val Asn Asp Pro Val Arg Thr Gln Ser Asn
130 135 140

Gln Ala Phe Ser Ala Glu Pro Gly Val Pro Pro Met Thr Asp Asn Ser
145 150 155 160

Ser Tyr Arg Gly Gly Gln Gly Gln Gly Arg Pro Ser Asp Asp Tyr Tyr
165 170 175

Gly Arg Pro Gln Asp Asp Pro Arg Gly Ala Asp Pro Gln Gly Gly Gln
180 185 190

Asp Pro Arg Gly Cys Tyr Pro Pro Lys Pro Gly Ser Tyr Pro Gln Gln
195 200 205

Ala Gly His Pro Pro Leu His Arg Pro Asp Gln Gly Gly Tyr Pro Gly
210 215 220

Gln Gly Gly Tyr Glu Asp Gln Arg Ala Tyr His Asp Gln Gly Gln Gly

225 230 235 240

Gly Tyr Pro Ser Pro Tyr Glu Gln Arg Pro Ala Thr Pro Gly Gly Tyr
245 250 255

Gly Ser Gln Gly His Asp Gln Gly Tyr Arg Pro Gly Ser Tyr Gly Pro
260 265 270

Pro Ser Gly Gly Gln Pro Gly Tyr Gly Gly Tyr Gly Asp Tyr Gly Arg
275 280 285

Gly Pro Ala Arg Pro Asp Glu Gly Ser Tyr Thr Pro Ser Gly Phe Pro
290 295 300

Ala Pro Pro Glu Gln Arg Val Ala Tyr Pro Asp Gln Gly Gly Gly Tyr
305 310 315 320

Asp Gln Gly Tyr Gln His Ser Gly Leu Gly Tyr Gly Arg Glu Asp Tyr
325 330 335

Gly Arg Gln Glu Tyr Thr Gln Tyr Ala Glu Asn Leu Pro Gly Gly Val
340 345 350

Tyr Ala Pro Ser Ser Gly Gly Tyr Ala Glu Pro Ala Gly Arg Asp Tyr
355 360 365

Asp Tyr Gly Gln Pro Gly Ala Ala Asn Asp Tyr Ser Gln Pro Val Ile
370 375 380

Gly Gly Tyr Gly Gly Tyr Gly Ala Leu Gly Ser Ala Val Ile Leu Gln
385 390 395 400

Leu Asp Asp Gly Ser Gly Arg Thr Tyr Gln Leu Arg Glu Gly Ser Asn
405 410 415

Ile Val Gly Arg Gly Gln Asp Ala Gln Phe Arg Leu Pro Asp Thr Gly
420 425 430

Val Ser Arg Arg His Leu Glu Ile Arg Trp Asp Gly Gln Val Ala Leu
435 440 445

Leu Ser Asp Leu Asn Ser Thr Asn Gly Thr Thr Val Asn Asn Ala Pro
450 455 460

Val Gln Glu Trp Gln Leu Ala Asp Gly Asp Val Ile Arg Leu Gly His
465 470 475 480

Ser Glu Ile Ile Val Arg Ile His
485

<210> 5

<211> 113

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0030, ML.tab 34750:35091 reverse MW:11383

<400> 5

Met Leu Ile Ala Gly Thr Leu Cys Val Cys Ala Ala Val Ile Ser Ala
1 5 10 15

Val Phe Gly Thr Trp Ala Leu Ile His Asn Gln Thr Val Asp Pro Thr
20 25 30

Gln Leu Ala Met Arg Ala Met Ala Pro Pro Gln Leu Ala Ala Ala Ile
35 40 45

Met Leu Ala Ala Gly Gly Val Val Ala Leu Val Ala Val Ala His Thr
50 55 60

Ala Leu Ile Val Val Ala Val Cys Val Thr Gly Ala Val Gly Thr Leu
65 70 75 80

Ala Ala Gly Ser Trp Gln Ser Ala Arg Tyr Thr Leu Arg Arg Arg Ala
85 90 95

Thr Ala Thr Ser Cys Gly Lys Asn Cys Ala Gly Cys Ile Leu Ser Cys
100 105 110

Arg

<210> 6

<211> 278

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0031, ML.tab 35287:36123 reverse MW:28788

<400> 6

Met Ile Gln Ser Thr Gln Thr Trp Arg Val Leu Ala Gly Gly Leu Ala
1 5 10 15

Ala Thr Ala Met Gly Val Thr Val Phe Ala Gly Gly Thr Ala Ala Ala
20 25 30

Asp Pro Ser Pro Pro Ala Pro Pro Pro Ala Ile Pro Gly Val Leu Pro

35 40 45

Pro Ala Ser Leu Pro Pro Ile Gln Ser Val Thr Ala Val Pro Gly Gly
50 55 60

Ile Thr Thr Asn Asn Arg Phe Val Ala Thr Pro Gln Ala Pro Gly Pro
65 70 75 80

Ala Ala Leu Gly Gln Pro Pro Leu Ala Val Ala Ala Pro Val Ser Glu
85 90 95

Ser Leu His Asp Tyr Phe Lys Ala Lys Asn Ile Lys Leu Val Ala Gln
100 105 110

Lys Pro His Gly Phe Lys Ala Leu Asp Ile Thr Leu Pro Val Pro Thr
115 120 125

Arg Trp Thr Gln Val Pro Asp Pro Asn Val Pro Asp Ala Phe Ala Val
130 135 140

Ile Ala Asp Arg Leu Gly Asn Ser Leu Tyr Thr Ser Asn Ala Gln Leu
145 150 155 160

Val Val Tyr Asn Leu Val Gly Asn Phe Asp Pro Lys Glu Ala Ile Thr
165 170 175

His Gly Phe Val Asp Thr Gln Gln Leu Ser Ala Trp Gln Thr Thr Asn
180 185 190

Ala Ser Lys Ala Asp Phe Asp Gly Phe Pro Ser Ser Ile Ile Glu Gly
195 200 205

Thr Tyr Arg Glu Asn Gly Met Thr Leu Asn Thr Ser Arg Arg His Val
210 215 220

Ile Ala Ser Ser Gly Pro Asp Lys Tyr Leu Val Ser Leu Ser Val Thr
225 230 235 240

Thr Ala Leu Ser Gln Ala Val Ala Asp Ala Pro Ala Thr Asn Ala Ile
245 250 255

Val Asn Gly Phe Arg Val Ser Ser Pro Thr Val Ser Ala Pro Val Pro
260 265 270

Pro Gln Leu Gly Thr Arg
275

<210> 7

<211> 467

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

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<400> 7

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Met Arg Asn Pro Val Trp Leu Arg Phe Ser Met Gly Arg Ala Leu Leu
1               5                  10                  15

Val Thr Ala Leu Val Pro Pro Cys Ile Ile Leu Phe Phe His Thr Gln
            20                  25                  30

Tyr Trp Trp Ala Gly Ile Ala Leu Val Val Leu Val Val Ile Leu Thr
        35                  40                  45

Leu Val Glu Phe Ser Gly Arg Trp Leu Ser Gly Trp Leu Met Ala Leu
    50                  55                  60

Tyr Ser Phe Phe Arg Arg Ser Ser Lys Pro Leu Asp Thr Pro Ser Glu
65                  70                  75                  80

Pro Val Ile Gly Ala Thr Val Lys Pro Ala Asp Gln Val Ile Met Arg
                85                  90                  95

Trp Gln Asp Gly Phe Leu Val Ser Val Val Glu Leu Ile Pro Arg Pro
            100                 105                 110

Phe Thr Pro Thr Val Ile Val Asp Gly Glu Ala Gln Thr Asp Asp Leu
        115                 120                 125

Leu Glu Thr Gln Leu Leu Glu His Leu Leu Ser Val His Cys Pro Asp

    130                 135                 140

Leu Glu Ala Val Val Val Ser Ala Gly Tyr Arg Val Gly His Val Ala
145                 150                 155                 160

Ser Leu Asp Val Val Asn Leu Tyr Gln Gln Val Ile Gly Ala Asp Pro
                165                 170                 175

Ala Pro Ala His Arg Arg Thr Trp Ile Met Leu Arg Ala Asp Pro Val
            180                 185                 190

Arg Thr Arg Lys Ser Ala Gln Arg Arg Asp Ala Gly Val Ala Gly Leu
        195                 200                 205

Ala Arg Tyr Leu Ile Ala Ser Thr Thr Arg Ile Ala Asp Gln Leu Ala
    210                 215                 220

Ser His Gly Val Asp Ala Val Cys Gly His Ser Phe Glu Ser Val Asp
225                 230                 235                 240

His Ala Thr Asp Val Gly Phe Met Gln Glu Lys Trp Ser Met Met Arg
                245                 250                 255

Gly Gln Asn Ala Tyr Ser Val Ala Tyr Thr Ala Pro Ala Gly Pro Asp
            260                 265                 270

Ala Trp Trp Ser Ala Arg Ala Asp His Thr Ile Thr Arg Val Trp Val
        275                 280                 285
```

```
Ala Pro Gly Lys Thr Pro Gln Ala Thr Val Val Leu Thr Thr Leu Gly
    290                 295                 300

Lys Pro Lys Thr Pro Cys Gly Phe Tyr Arg Leu His Gly Ala Gln Gln
305                 310                 315                 320

Pro Ala Leu Leu Gly Arg Ser Phe Val Ala Tyr Gln His Cys Gln Met
                325                 330                 335

Pro Ile Gly Ser Ala Gly Val Leu Val Gly Glu Thr Val Asn Arg Cys
            340                 345                 350

Ser Val Tyr Met Pro Phe Asp Asp Val Asp Val Ser Val Ser Leu Gly
        355                 360                 365

Asp Val Gln Thr Phe Thr Gln Phe Val Val Arg Ala Ala Ala Ala Gly
    370                 375                 380

Gly Ile Val Thr Leu Gly Gln Gln Phe Glu Lys Phe Ala Arg Met Ile
385                 390                 395                 400

Gly Gly Gln Ile Gly Ser Val Ala Lys Val Ala Trp Pro Asn Ala Thr
                405                 410                 415

Thr Tyr Leu Asp Pro Tyr Pro Gly Ser Glu Arg Val Ile Leu Lys His
            420                 425                 430

Asp Ile Ile Gly Thr Pro Arg His Arg Lys Leu Pro Ile Arg Arg Ile
        435                 440                 445

Ser Pro Pro Glu Glu Gly His Tyr Gln Met Val Leu Pro Lys Ser Ser
    450                 455                 460

Tyr Glu Leu
465
```

<210> 8

<211> 113

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0044, ML.tab 54698:55039 forward MW:12157

<400> 8

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Met Asp Leu Asp Pro Thr Gln Ala Gln Thr Met Ala Leu Leu Gly Gln
1               5                   10                  15

Phe Gln Ser Ala Leu Asp Glu Gln Cys Asn Arg Met Thr Asp Gly Val
            20                  25                  30
```

Phe Lys Ala Ser Asp Gln Glu Lys Thr Val Glu Val Thr Ile Asn Gly
35 40 45

Tyr Gln Trp Leu Thr Gly Ile Arg Ile Glu Ser Gly Ala Leu Arg Glu
50 55 60

Phe Gly His Ala Val Val Ala Asp Arg Ile Asn Glu Ala Leu Gln Asn
65 70 75 80

Ala Gln Gly Val Ala Thr Ala Tyr Asn Glu Val Ser Gly Glu Gln Leu
85 90 95

Ala Ala Arg Leu Ser Ala Leu Ser Cys Ser Ile Gly Glu Pro Pro Pro
100 105 110

Thr

<210> 9

<211> 512

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0047, ML.tab 58020:59558 reverse MW:54486

<400> 9

Leu Ser Ala Pro Ala Val Thr Ala Gly Pro Ala Thr Ala Gly Ile Thr
1 5 10 15

Pro Ala Arg Pro Ser Ala Thr Arg Val Thr Ile Leu Thr Gly Lys Arg
20 25 30

Met Thr Asp Leu Val Leu Pro Ser Thr Val Ser Ile Glu Ala Tyr Ile
35 40 45

Asp Glu Thr Val Ala Val Leu Ser Asp Leu Leu Glu Asp Ala Pro Ala
50 55 60

Asp Val Leu Ala Gly Phe Asp Phe Ser Ala Gln Gly Val Trp Thr Phe
65 70 75 80

Ala Arg Pro Gly Ser Pro Pro Met Lys Leu Asp Gln Ser Leu Asp Asp
85 90 95

Ala Gly Val Val Asp Gly Ser Leu Leu Thr Leu Val Ser Thr Ser Arg
100 105 110

Thr Glu Arg Tyr Arg Pro Leu Val Glu Asp Val Ile Asp Ala Ile Ala

```
        115                 120                 125

Val Leu Asn Glu Ser Pro Glu Phe Asn Arg Lys Ala Val Asp Arg Phe
    130                 135                 140

Ile Gly Val Ala Ile Pro Val Leu Ser Leu Pro Ile Thr Ala Val Ala
145                 150                 155                 160

Val Trp Ala Trp Trp Val Thr Gly Arg Ser Pro Phe Trp Ser Leu Ala
                165                 170                 175

Ile Gly Ile Leu Ser Ile Val Ala Leu Thr Gly Ser Ile Val Ala Glu
            180                 185                 190

Lys Phe Tyr Lys Asn Leu Asp Leu Ser Glu Ser Leu Leu Leu Thr Ser
        195                 200                 205

Tyr Pro Leu Ile Ala Ser Ala Ala Ala Leu Val Thr Pro Leu Pro Asn
    210                 215                 220

Gly Val Asp Ser Leu Gly Pro Pro Gln Val Ala Ala Ala Ala Ala Ala
225                 230                 235                 240

Val Leu Phe Leu Thr Leu Leu Thr Arg Gly Gly Ala Arg Arg His Ser
                245                 250                 255

Gly Tyr Ala Ser Phe Thr Ala Ile Thr Thr Ile Ala Ile Val Val Ile
            260                 265                 270

Ala Ile Ala Tyr Gly Phe Gly Tyr Gln His Trp Val Pro Thr Gly Ala
        275                 280                 285

Val Ala Phe Gly Leu Phe Ile Val Thr Asn Ala Ala Lys Leu Thr Val
    290                 295                 300

Ala Val Ala Arg Ile Ala Leu Pro Pro Ile Pro Val Pro Gly Glu Thr
305                 310                 315                 320

Val Asp Asn Glu Glu Leu Leu Asp Pro Val Val Thr Pro His Glu Ala
                325                 330                 335

Thr His Glu Glu Thr Pro Thr Trp Gln Ala Ile Ile Ala Ser Val Pro
            340                 345                 350

Asp Ser Ala Val Arg Leu Thr Glu Arg Ser Ser Leu Ala Lys Arg Leu
        355                 360                 365

Leu Ile Gly Tyr Val Ile Ser Gly Thr Leu Ile Leu Cys Ser Gly Ala
    370                 375                 380

Ile Ala Val Ile Val Arg Gly His Phe Phe Ala His Ser Leu Val Val
385                 390                 395                 400

Ala Phe Leu Leu Thr Val Val Cys Thr Phe Arg Ser Arg Leu Tyr Ala
                405                 410                 415

Glu Arg Trp Cys Ala Trp Ala Leu Leu Ala Ala Ala Val Val Ile Pro
            420                 425                 430

Thr Gly Leu Thr Val Lys Leu Cys Ile Trp Tyr Thr Gln Ile Ala Trp
        435                 440                 445
```

Leu Leu Leu Thr Ser Tyr Leu Val Ala Ala Ile Ile Ala Leu Met Val
450 455 460

Phe Gly Ala Thr Val Arg Val Arg Arg Val Ser Pro Val Thr Lys Arg
465 470 475 480

Ile Met Glu Leu Ile Asp Gly Ala Val Val Ala Ser Ile Ile Pro Leu
485 490 495

Leu Leu Trp Ile Ala Gly Val Tyr Asp Met Val Arg Asn Leu Ser Phe
500 505 510

<210> 10

<211> 586

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0048, ML.tab 59555:61315 reverse MW:63226

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1 5 10 15

Ala Ser Pro Asp Gln Ala Ala Glu Gln Leu Phe Asp Asp Ala Pro Leu
20 25 30

Tyr Pro Pro Pro Ile Ile Pro Thr Cys Thr Thr Thr Pro Asn Gly Glu
35 40 45

Val Ala Ser Pro Met Pro Asp Trp Ser Glu Gln Leu Pro Pro Asn Pro
50 55 60

Pro Ala Ala Ser Lys Ser Pro Leu Pro Pro Met Pro Ile Gly Ser Ser
65 70 75 80

Val Gln Pro Pro Pro Ala Ser Ser Glu Ser Pro Arg Ala Pro Met Pro
85 90 95

Val Ser Ala Pro Pro Arg Ser Pro Ala Ala Ser Leu Met Pro Ile Ser
100 105 110

Glu Pro Pro Gln Trp Pro Pro Ala Glu Ala Pro Glu His Gln Phe Ala
115 120 125

Lys Ala Glu Pro Pro Ser Val Pro Ile Pro Ile Asn Glu Pro Ser Pro
130 135 140

Ala Lys Pro Ala Thr Pro Met Pro Met Thr Pro Ile Asp Gly Ser Gln

```
145                 150                 155                 160

Arg Thr Pro Val Thr Ser Pro Glu Pro Ser Leu Ala Glu Phe Glu Ala
                165                 170                 175

Gln Pro Pro Ala Thr Pro Lys Pro Ser Leu Leu Pro Arg Pro Met Ser
            180                 185                 190

Ser Pro Pro Glu Ala Pro Arg Pro Ser Ala Asn Gln His Ser Arg His
        195                 200                 205

Ala Arg Arg Gly His His His Arg Asp Glu Thr Gln Gln Ala Asn Pro
    210                 215                 220

Ala Ser Ala Thr Glu Pro Met Ile Ala Pro Arg Ala Arg Thr Ala Glu
225                 230                 235                 240

Leu Arg Gln Ala Pro His Ala Ala Ala Glu Pro Ala Pro Thr Gln His
                245                 250                 255

Leu Thr Arg Pro Asp Gly Leu Val Ser His Arg Thr Ala Leu His Asp
            260                 265                 270

Ser Thr Ala Thr Ser Ala Ile Gly Val Gln Thr Gly Arg Ser Thr Gly
        275                 280                 285

Ala Lys Lys Pro Ser Lys Val Val Ala Lys Arg Gly Trp Arg His Trp
    290                 295                 300

Val His Thr Val Thr Arg Ile Asn Leu Gly Leu Ser Pro Asp Glu Arg
305                 310                 315                 320

Tyr Glu Leu Asp Leu Arg Thr Arg Val Arg Arg Pro Pro Arg Gly Ser
                325                 330                 335

Tyr Gln Ile Gly Ile Leu Gly Leu Lys Gly Gly Ala Gly Lys Thr Thr
            340                 345                 350

Val Thr Val Thr Leu Gly Ser Met Phe Ala Arg Val Arg Asn Asp Arg
        355                 360                 365

Ile Leu Val Val Asp Ala Asp Thr Ser Cys Gly Asn Leu Ala Asp Arg
    370                 375                 380

Ala Gly Arg Phe Ser Glu Ala Asn Ile Ala Asp Leu Leu Ala Asp Lys
385                 390                 395                 400

Asp Val Lys Ser Tyr Asn Asp Ile Arg Thr His Thr Ser Val Asn Ala
                405                 410                 415

Val Asn Leu Glu Val Leu Pro Ala Ala Glu Tyr Ser Thr Ala Gln His
            420                 425                 430

Ala Leu Ser Gly Glu Asp Trp Asn Phe Ala Ala Ala Thr Val Ser Lys
        435                 440                 445

Tyr Tyr Asn Val Met Leu Ala Asp Cys Gly Val Gly Leu Phe Asp Pro
    450                 455                 460

Val Thr Arg Gly Val Leu Ser Thr Ala Ser Gly Val Val Ile Val Thr
465                 470                 475                 480
```

```
Ser Thr Ser Val Asp Ala Ala Arg Gln Ala Ala Ile Ala Leu Asp Trp
                485                 490                 495

Leu Arg His Asn Gly Tyr Gln Asp Leu Leu Ser Arg Ala Cys Val Val
            500                 505                 510

Ile Asn His Val Met Pro Lys Glu Pro Asn Ile Ala Ser Lys Asp Leu
        515                 520                 525

Val Gln Gln Phe Glu Gln Gln Ile Gln Pro Gly Arg Val Val Val Leu
    530                 535                 540

Pro Trp Asp Lys His Ile Ala Ala Gly Thr Glu Ile Arg Leu Asp Arg
545                 550                 555                 560

Leu Asp Pro Leu Tyr Arg Arg Arg Ile Leu Glu Leu Ala Ala Ala Leu
                565                 570                 575

Ser Asp Asp Phe Glu Arg Ala Gly Arg His
            580                 585
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<210> 11

<211> 95

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0049, ML.tab 61406:61693 reverse MW:10464

<400> 11

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Met Ile Gln Ala Trp His Phe Pro Ala Leu Gln Gly Ala Val Asn Glu
1               5                   10                  15

Leu Gln Gly Ser Gln Ser Arg Ile Asp Ala Leu Leu Glu Gln Cys Gln
            20                  25                  30

Glu Ser Leu Thr Lys Leu Gln Ser Ser Trp His Gly Ser Gly Asn Glu
        35                  40                  45

Ser Tyr Ser Ser Val Gln Arg Arg Phe Asn Gln Asn Thr Glu Gly Ile
    50                  55                  60

Asn His Ala Leu Gly Asp Leu Val Gln Ala Ile Asn His Ser Ala Glu
65                  70                  75                  80

Thr Met Gln Gln Thr Glu Ala Gly Val Met Ser Met Phe Thr Gly
                85                  90                  95
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<210> 12

<211> 100

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0050, ML.tab 61720:62022 reverse MW:10964

<400> 12

Met Ala Glu Met Ile Thr Glu Ala Ala Ile Leu Thr Gln Gln Ala Ala
1 5 10 15

Gln Phe Asp Gln Ile Ala Ser Gly Leu Ser Gln Glu Arg Asn Phe Val
20 25 30

Asp Ser Ile Gly Gln Ser Phe Gln Asn Thr Trp Glu Gly Gln Ala Ala
35 40 45

Ser Ala Ala Leu Gly Ala Leu Gly Arg Phe Asp Glu Ala Met Gln Asp
50 55 60

Gln Ile Arg Gln Leu Glu Ser Ile Val Asp Lys Leu Asn Arg Ser Gly
65 70 75 80

Gly Asn Tyr Thr Lys Thr Asp Asp Glu Ala Asn Gln Leu Leu Ser Ser
85 90 95

Lys Met Asn Phe
100

<210> 13

<211> 302

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0051, ML.tab 62201:63109 reverse MW:32135

<400> 13

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Met Thr Trp Pro Met Leu Trp Pro Ala Ser Val Pro Ser Glu Cys Pro
1               5                  10                  15

Pro Asn Tyr Trp His Thr Pro Ala Pro Ser Ala Lys Cys Glu Pro Glu
            20                  25                  30

Gln Ala Ala Val Ala Pro Ile Ala Ala Ala Lys Pro Met Ile Thr Trp
        35                  40                  45

Leu Gln Ser Ala Ala Glu Gln Thr Thr Thr Gln Ala Glu Ala His Arg
    50                  55                  60

Gln Ala Met Ala Ser Thr Pro Gly Met Ala Val Ile Thr Glu Asn His
65                  70                  75                  80

Ile Thr Gln Ala Ile Leu Ala Thr Ile Asn Phe Phe Gly Ile Asn Met
                85                  90                  95

Ala Pro Ile Ala Phe Thr Glu Ala Gly Asp Phe Ile Cys Met Arg Thr
            100                 105                 110

Gln Thr Ala Leu Ala Met Asn Ser Tyr Gln Ala Glu Thr Leu Leu Asn
        115                 120                 125

Thr Ala Phe Gln Lys Leu Glu Pro Met Ala Ala Ile Leu Asn Pro Ser
    130                 135                 140

Ser Tyr Ser Pro Pro Ser Ala Leu Thr Ser Gln Val Asn Gln Phe Thr
145                 150                 155                 160

Gln Met Ile Ser Gly Phe Ser Ala Ala Leu Pro Ser Thr Gln Val Leu
                165                 170                 175

Gln Gln Thr Val Gly Gln Val Ala Glu Leu Ala Arg Pro Met Gln Gln
            180                 185                 190

Val Lys Ser Leu Phe Thr Ser Ile Asp Ser Thr Gly Val Tyr Thr Ser
        195                 200                 205

Ala Gln Arg Gly Asp Thr Glu Ser Ala His Arg Ile Gly Leu Phe Gly
    210                 215                 220

Ala Ser Thr Leu Ser Ser His Pro Leu Val Gly Ile Thr Gly Thr Thr
225                 230                 235                 240

Thr Asp Thr Arg Leu Leu Cys Ala Glu Ser Leu Pro Ser Ala Ser Gly
                245                 250                 255

Ser Leu Ala Trp Thr Pro Leu Met Thr Gln Phe Gln Leu Ile Asp Lys
            260                 265                 270

Ser Ile Ala Pro Glu Pro Arg Gln Arg Val Met Leu Pro Pro Trp Ala
        275                 280                 285

Ala Gly Ser Pro Gly His Asn Ala Gln Asp Gly Gly Thr Thr
    290                 295                 300
```

<210> 14

<211> 481

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0054, ML.tab 67417:68862 reverse MW:51875

<400> 14

```
Met Gly Leu Arg Leu Thr Thr Lys Val Gln Val Ser Gly Trp Arg Phe
1               5                  10                  15

Leu Leu Arg Arg Val Glu His Ala Ile Val Arg Arg Asp Thr Arg Met
            20                  25                  30

Phe Asp Asp Pro Leu Gln Phe Tyr Ser Arg Ser Ile Ala Leu Gly Ile
        35                  40                  45

Val Val Ala Val Ala Leu Leu Ile Gly Ala Val Leu Leu Ala Tyr Phe
    50                  55                  60

Lys Pro Gln Gly Lys Leu Gly Ala Ser Thr Leu Leu Thr Asp Arg Ala
65                  70                  75                  80

Thr Asn Gln Leu Tyr Val Leu Leu Ser Gly His Leu Tyr Pro Val Tyr
                85                  90                  95

Asn Leu Thr Ser Ala Arg Leu Ala Leu Gly Lys Pro Ala Asn Pro Ala
            100                 105                 110

Ala Val Lys Ser Ser Glu Leu Thr Lys Leu Pro Ile Gly Gln Thr Ile
        115                 120                 125

Gly Ile Pro Gly Ala Pro Tyr Ala Thr Pro Val Ser Gly Asp Ser Ser
    130                 135                 140

Ser Thr Trp Thr Leu Cys Asp Thr Val Ala Lys Ile Glu Ser Glu Ser
145                 150                 155                 160

Pro Ala Val Gln Thr Ser Val Ile Ala Arg Ser Leu Gln Ile Asp Pro
                165                 170                 175

Ala Ile Asn Pro Leu Gln Pro Asn Glu Ala Leu Leu Ala Ser Tyr Arg
            180                 185                 190

Asp Lys Thr Trp Leu Val Asn Ser Lys Gly Arg His Ser Ile Asp Leu
        195                 200                 205

Ala Asp Arg Ala Leu Thr Ser Ala Ile Gly Ile Ser Val Asn Val Lys
    210                 215                 220

Pro Thr Pro Leu Ser Glu Gly Leu Phe Asn Ala Leu Pro Asp Val Gly
225                 230                 235                 240
```

Arg Trp Glu Leu Pro Thr Ile Pro Asp Thr Gly Ala Pro Asn Ser Leu
245 250 255

Gly Leu Ser Pro Asp Leu Val Ile Gly Ser Val Phe Gln Ile Gln Met
260 265 270

Glu Lys Ser Pro Gln Tyr Tyr Val Val Leu Ser Asp Gly Ile Ala Gln
275 280 285

Val Asn Ala Thr Thr Ala Asp Ala Leu Arg Ala Thr Gln Ser His Gly
290 295 300

Leu Val Ala Pro Pro Ser Leu Val Pro Asn Val Val Val Gln Ile Pro
305 310 315 320

Glu Arg Val Tyr Asp Ser Pro Leu Pro Asp Glu Pro Leu Lys Met Val
325 330 335

Ala Arg Asp Asp Tyr Pro Thr Leu Cys Trp Ala Trp Glu Arg Lys Ala
340 345 350

Ser Asp Gln Ala Pro Lys Arg Thr Met Leu Ile Gly Gln His Leu Pro
355 360 365

Leu Gln Pro Ser Ala Met Ser Thr Gly Ile Lys Gln Ile Arg Gly Thr
370 375 380

Ala Thr Val Tyr Ile Asp Gly Gly Arg Tyr Val Ala Leu Gln Ser Pro
385 390 395 400

Asp Pro Arg Tyr Ser Glu Ser Leu Tyr Tyr Val Asp Pro Glu Gly Val
405 410 415

Arg Tyr Gly Leu Ala Asn Ser Glu Ala Val Lys Ala Leu Gly Leu Ala
420 425 430

Ser Pro Gln Thr Ala Pro Trp Val Ile Val Arg Leu Leu Val Glu Gly
435 440 445

Pro Val Leu Ser Arg Asp Ala Ala Leu Leu Glu His Asp Thr Leu Ile
450 455 460

Ala Asp Pro Ser Pro Arg Lys Val Pro Ala Gly Tyr Ser Gly Val Arg
465 470 475 480

Pro

<210> 15

<211> 169

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0056, ML.tab 70584:71093 reverse MW:18452

<400> 15

Val Asn Leu Leu Gly Asn Asp Asp Asp Asn His Leu Ala Ser Leu Asp
1 5 10 15

Phe Tyr Ser Ala Asn Arg Tyr Tyr Glu Glu Ser Leu Phe Phe Asp Glu
20 25 30

Leu Asp Gly Tyr Ala Pro Thr Thr Pro Val Gly Ile Glu Ala Asn Asp
35 40 45

Leu Asp Val Phe Gln Ser Leu Thr Glu Pro Glu Glu Glu Leu Glu Val
50 55 60

Glu Leu Leu Ala Val Thr Asn Pro Ala Lys Ser Val Ser Ala Leu Met
65 70 75 80

Asn Gly Arg Val His Gln Val Glu Leu Thr Asp Gln Val Thr Arg Ile
85 90 95

Gly Glu Lys Lys Pro Ala Thr Glu Ala Phe Val Leu Ala Ser Leu Ala
100 105 110

Arg Gln Lys Ala Arg Thr Ser Gln Gly Thr Cys Ile Leu Asp Ser Leu
115 120 125

Gln Gly Gly Gly Glu Asn Thr Thr Ala Arg Cys Glu Leu Val Gly Leu
130 135 140

Thr Leu Asn Leu Pro Thr Ser Glu Gln Ala Ala Ala Glu Ala Glu Met
145 150 155 160

Phe Ser Asn Asn Ile Leu Arg Gln Lys
165

<210> 16

<211> 238

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0068, ML.tab 89620:90336 reverse MW:26088

<400> 16

Met Gly Leu Phe His Lys Arg Arg Ser Arg Ala Met Arg Arg Ala Glu
1 5 10 15

Ala Arg Ala Ile Lys Ala Arg Ala Lys Leu Glu Ala Arg Leu Ala Ala
20 25 30

Lys Asn Glu Ala Arg Arg Leu Asn Ser Ala Gln Arg Ala Thr Asn Lys
35 40 45

Ala Leu Lys Ala Gln Leu Lys Ala Lys Arg Asn Ser Asp Arg Val Ala
50 55 60

Leu Lys Val Ala Glu Thr Glu Leu Lys Ala Ala Lys Glu Gly Lys Leu
65 70 75 80

Leu Ser Pro Thr Arg Ile Arg Arg Val Leu Thr Val Ser Arg Leu Leu
85 90 95

Ala Pro Ile Val Val Pro Leu Ile Tyr Arg Ala Ala Ile Ala Thr Arg
100 105 110

Ala Leu Ile Asp Gln Arg Arg Ala Asp Gln Leu Gly Ile Pro Leu Ala
115 120 125

Gln Ile Gly Gln Phe Ser Gly Pro Ser Ala Arg Leu Ser Ala Arg Ile
130 135 140

Ala Arg Ser Glu Gln Ser Val Leu Leu Val Gln Glu Lys Lys Pro Lys
145 150 155 160

Asp Ala Glu Thr Lys Gln Phe Val Ser Thr Ile Thr Glu Arg Leu Ile
165 170 175

Asp Leu Ser Ala Ala Val Ala Ala Val Glu Asn Met Pro Ala Thr Arg
180 185 190

Arg Arg Ala Val His Ser Thr Ile Ser Ser Gln Leu Asp Gly Ile Glu
195 200 205

Ala Asp Leu Met Ala Arg Leu Gly Val Asp Leu Thr Thr Ser Met Ala
210 215 220

Asp Asn Arg Ser Val Ala Asp Ser Thr Arg Lys Ala Ala Thr
225 230 235

<210> 17

<211> 132

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0069, ML.tab 90521:90919 reverse MW:14807

<400> 17

Met Ser Thr Thr Phe Ala Ala Arg Leu Asn Arg Leu Phe Asp Thr Val
1 5 10 15

Tyr Pro Pro Gly Arg Gly Pro His Thr Ser Ala Glu Val Ile Ala Ala
20 25 30

Leu Lys Ala Glu Gly Ile Thr Met Ser Ala Pro Tyr Leu Ser Gln Leu
35 40 45

Arg Ser Gly Asn Arg Thr Asn Pro Ser Ser Ala Thr Ile Ser Ala Leu
50 55 60

Ala Asn Phe Phe Arg Ile Lys Pro Ala Tyr Phe Thr Asn Asp Glu Tyr
65 70 75 80

Tyr Glu Lys Leu Asp Gln Glu Leu Ala Trp Leu Ala Thr Met Arg Asp
85 90 95

Glu Gly Val Arg Arg Ile Ala Met Arg Thr Ile Gly Leu Ser Ala Gln
100 105 110

Ala Gln Gln Asp Ile Val Asp Arg Val Asp Glu Leu Arg Arg Ala Glu
115 120 125

His Leu Asp Val
130

<210> 18

<211> 177

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0071, ML.tab 91913:92446 reverse MW:18446

<400> 18

Met Glu Thr Gly Ser Gly Leu Pro Ile Gly Val Val Pro Phe His Ala
1 5 10 15

Arg Gly Ala Leu Lys Gly Phe Val Ile Ser Gly Arg Trp Pro Asp Ser
20 25 30

Thr Lys Glu Trp Ala Gln Leu Leu Met Val Ala Val Arg Ile Ala Ser
35 40 45

Leu Pro Gly Leu Leu Ser Thr Thr Thr Val Phe Gly Ala Arg Glu Glu

50 55 60

Leu Pro Asp Glu Pro Glu Pro Gly Thr Val Gly Leu Val Leu Ala Glu
65 70 75 80

Gly Thr Val Phe Gly Glu Ser Ala Ile Gln Pro Gly Tyr Phe Ala Asp
85 90 95

His Gln Pro Pro Ala Leu Leu Met Leu His Pro Pro Ser Glu Thr Met
100 105 110

Pro Ser Leu Pro Glu Cys Thr Gly Ala Ala Ser Gly Cys Val Leu Leu
115 120 125

Pro Gly Leu Pro Tyr Leu Gly Leu Glu His Arg Ala Ala Trp Val Glu
130 135 140

Ala Glu Ala Asp Gly Thr Ile Thr Ser Met Val Ser Arg Val Gly Val
145 150 155 160

Asp Pro Ile Ser His Pro Asp Thr Ala Ile Leu Ala Met Leu Leu Ala
165 170 175

Ala

<210> 19

<211> 344

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0073, ML.tab 94092:95126 forward MW:38124

<400> 19

Val Ile Gln Val Cys Ser Gln Cys Gly Thr Arg Trp Asn Val Arg Glu
1 5 10 15

Arg Arg Arg Glu Trp Cys Leu Arg Cys Arg Gly Ala Leu Ile Ala Pro
20 25 30

Gln Ala Glu Met Pro Thr Ala Val Lys Gln Trp Ser Ser His Val Gly
35 40 45

Leu Pro Ala Gly Ile Val Pro Glu Ala Leu Gly Trp Gln Arg Thr Pro
50 55 60

Pro Gly Phe Arg Trp Ile Ala Val Arg Pro Gly Ala Ala Pro Pro Asn
65 70 75 80

```
Arg Arg Arg Gln Arg His His Val Pro Thr Pro Arg Tyr Ala Val Met
                85                  90                  95

Pro Arg Trp Gly Leu Ala Asp Arg Val Asp Gln Asp Ser Thr Trp Ile
            100                 105                 110

Gln Ala Pro Leu Lys Pro Gly Pro Ser Ser Ala Lys Val Arg Thr Thr
        115                 120                 125

Leu Phe Val Ala Val Leu Val Phe Thr Leu Ala Ala Leu Val Tyr Val
    130                 135                 140

Val Arg Tyr Val Leu Leu Val Ile Asn Arg Asn Thr Leu Leu Asn Phe
145                 150                 155                 160

Gly Val Ala Ala Ile Ala Asp Trp Leu Gly Val Ile Ala Ser Leu Ala
                165                 170                 175

Ala Ile Ala Ala Thr Leu Ala Cys Val Met Ala Leu Ser Arg Trp Leu
            180                 185                 190

Ile Ala Arg Arg Ala Ala Ala Tyr Ala His His Ala Val Pro Glu Gln
        195                 200                 205

Arg Ser Ser Trp Glu Leu Arg Ala Gly Cys Leu Leu Pro Leu Val Asn
    210                 215                 220

Leu Leu Trp Ala Pro Val Tyr Val Ile Glu Leu Ala Leu Met Glu Asn
225                 230                 235                 240

His Tyr Thr Gln Leu Gln Lys Pro Ile Phe Met Trp Trp Ile Val Trp
                245                 250                 255

Val Phe Ser Tyr Val Ile Ser Val Val Ala Val Val Thr Ser Trp Ala
            260                 265                 270

Lys Asp Ala Gln Gly Ile Ala Asn Asn Thr Val Ala Met Val Phe Ala
        275                 280                 285

Tyr Leu Phe Ala Ala Ala Ala Val Ala Ala Val Ala Arg Val Phe Glu
    290                 295                 300

Gly Phe Glu Cys Lys Ser Ile Lys Arg Pro Val His Arg Trp Val Val
305                 310                 315                 320

Val His Leu Gly Gly Ser Val Val His Pro Ser Pro Gly Ser Val Glu
                325                 330                 335

Leu Glu Gly Gln Glu Pro Ala Ala
            340
```

<210> 20

<211> 450

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0081, ML.tab 100648:102000 reverse MW:48150

<400> 20

```
Met Leu Asp Ala Pro Glu Glu Glu Pro Ala Leu Ala Asp Asp Leu Thr
1               5                  10                  15

Gly Glu Asp Glu Gln Pro Pro Val Glu Phe Gln Trp Pro Ser Thr Leu
            20                  25                  30

Gln Ala Arg Ala Thr Arg Arg Gly Leu Leu Leu Thr Ala Leu Gly Gly
        35                  40                  45

Leu Leu Ile Gly Gly Leu Val Thr Ala Ile Pro Thr Val Gly Thr Gly
    50                  55                  60

Ser Gly Leu Leu Ala Thr Tyr Ile Asp Ser Asn Pro Val Pro Ser Thr
65                  70                  75                  80

Gly Ala Lys Ser Asn Val Ala Phe Asn Arg Ala Thr Asn Gly Asp Cys
                85                  90                  95

Leu Met Trp Pro Asp Ser Thr Pro His Thr Ala Val Ile Val Asn Cys
            100                 105                 110

Ala Asp Asp His Arg Phe Glu Val Ala Glu Ser Ile Asp Met Arg Thr
        115                 120                 125

Phe Pro Gly Ser Glu Tyr Gly Pro Asn Ala Ala Pro Pro Ser Pro Ala
    130                 135                 140

Arg Ile Gln Gln Ile Ser Glu Glu Gln Cys Glu Thr Ala Val Arg Arg
145                 150                 155                 160

Tyr Leu Gly Thr Lys Phe Asp Pro Asn Ser Lys Tyr Thr Ile Ser Met
                165                 170                 175

Leu Trp Ser Gly Asp Arg Ala Trp Arg Gln Ser Gly Glu Arg Arg Met
            180                 185                 190

Leu Cys Gly Leu Gln Leu Pro Gly Val Asn Asn Gln Gln Val Ala Phe
        195                 200                 205

Lys Gly Lys Val Ala Asn Ile Asp Gln Ser Lys Val Trp Pro Ala Gly
    210                 215                 220

Thr Cys Leu Ser Ile Asp Leu Thr Thr Asn Gln Pro Ile Asp Ile Pro
225                 230                 235                 240

Val Asp Cys Val Ala Pro His Ala Met Glu Val Thr Gly Thr Val Asn
                245                 250                 255

Leu Ala Asp Lys Phe Pro Asn Ala Leu Pro Ala Ala Ser Glu Gln Asp
            260                 265                 270
```

Thr Phe Ile Lys Asp Ala Cys Thr Arg Leu Thr Asp Ile Tyr Leu Ala
275 280 285

Ala Ile Glu Leu Arg Thr Thr Thr Leu Thr Leu Ile Tyr Pro Thr Leu
290 295 300

Ser Leu Ser Ser Trp Ala Ala Gly Ser Arg Lys Val Ala Cys Ser Ile
305 310 315 320

Gly Ala Thr Met Gly Asn Gly Gly Trp Ala Thr Leu Val Asn Ser Ala
325 330 335

Lys Gly Pro Leu Leu Ile Asn Asn Gln Pro Pro Thr Pro Pro Pro Asp
340 345 350

Ile Pro Glu Glu Arg Leu Gly Met Pro Pro Ile Pro Leu His His Leu
355 360 365

Gln Val Pro Asn Ser Gln Ser Asn Val Pro Val Asn Pro Ile Pro Pro
370 375 380

Gly Asn Gln Gln His Arg Lys Gln Gln Pro Ile Val Thr Val Pro Gln
385 390 395 400

Ser Pro Ala Ser Thr Ala Pro Ala Ala Ser Val Ser Pro Ala Lys His
405 410 415

Leu Pro Lys Ala Arg His Thr Arg Gln Met Ser Lys Arg Arg Gly Arg
420 425 430

Pro Ile Ser Pro His Pro Trp Ala Gly Arg Ala Ser Pro Gly Gly Leu
435 440 445

Ala Glu
450

<210> 21

<211> 236

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0091, ML.tab 113153:113863 reverse MW:23752

<400> 21

Val Pro Asn Arg Arg Arg Cys Lys Leu Ser Thr Ala Ile Ser Thr Val
1 5 10 15

Ala Thr Leu Ala Ile Ala Ser Pro Cys Ala Tyr Phe Leu Val Tyr Glu
20 25 30

Pro Thr Ala Ser Ala Lys Pro Ala Ala Lys His Tyr Glu Phe Lys Gln
35 40 45

Ala Ala Ser Ile Ala Asp Leu Pro Gly Glu Val Leu Asp Ala Ile Ser
50 55 60

Gln Gly Leu Ser Gln Phe Gly Ile Asn Leu Pro Pro Val Pro Ser Leu
65 70 75 80

Thr Gly Thr Asp Asp Pro Gly Asn Gly Leu Arg Thr Pro Gly Leu Thr
85 90 95

Ser Pro Asp Leu Thr Asn Gln Glu Leu Gly Thr Pro Val Leu Thr Ala
100 105 110

Pro Gly Thr Gly Leu Thr Pro Pro Val Thr Gly Ser Pro Ile Cys Thr
115 120 125

Ala Pro Asp Leu Asn Leu Gly Gly Thr Cys Pro Ser Glu Val Pro Ile
130 135 140

Thr Thr Pro Ile Ser Leu Asp Pro Gly Thr Asp Gly Thr Tyr Pro Ile
145 150 155 160

Leu Gly Asp Pro Ser Thr Leu Gly Gly Thr Ser Pro Ile Ser Thr Ser
165 170 175

Ser Gly Glu Leu Val Asn Asp Leu Leu Lys Val Ala Asn Gln Leu Gly
180 185 190

Ala Ser Gln Val Met Asp Leu Ile Lys Gly Val Val Met Pro Ala Val
195 200 205

Met Gln Gly Val Gln Asn Gly Asn Val Ala Gly Asp Leu Ser Gly Ser
210 215 220

Val Thr Pro Ala Ala Ile Ser Leu Ile Pro Val Thr
225 230 235

<210> 22

<211> 643

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0093, ML.tab 115371:117302 forward MW:72371

<400> 22

Met Thr Ala Val Ser Leu Leu Ala Arg Val Ile Leu Pro Arg Pro Gly

```
1               5                  10                  15

Asp Pro Leu Asp Val Arg Lys Leu Tyr Leu Val Glu Ser Ile Thr Asn
            20                  25                  30

Ala Arg Arg Ala His Ala Leu Ser Pro Thr Thr Leu Gln Ile Gly Ala
        35                  40                  45

Glu Ser Glu Val Ser Phe Ala Thr Tyr Phe Asn Ala Phe Pro Ala Ser
    50                  55                  60

Tyr Trp Arg Arg Trp Thr Ile Cys Lys Ser Val Val Leu Arg Val Glu
65                  70                  75                  80

Val Thr Gly Ala Gly Arg Val Asp Val Tyr Arg Thr Lys Ala Asn Gly
                85                  90                  95

Ala Arg Ile Phe Val Glu Gly Arg Glu Phe Ala Gly Val Glu Asp Asp
            100                 105                 110

Ala Ser Lys Ala Gln Val Val Glu Leu Glu Val Gly Leu Gln Pro Phe
        115                 120                 125

Glu Asp Gly Gly Trp Ile Trp Phe Asp Ile Thr Ala Glu Thr Arg Val
    130                 135                 140

Thr Leu Cys Ser Gly Gly Trp Tyr Ala Thr Ser Pro Ala Pro Gly Arg
145                 150                 155                 160

Ala Asn Ile Ala Val Gly Ile Pro Thr Phe Asn Arg Pro Ala Asp Cys
                165                 170                 175

Thr Asn Ala Leu Ala Glu Leu Thr Ala Asp Pro Leu Val Asp Glu Val
            180                 185                 190

Ile Gly Ala Val Ile Val Pro Asp Gln Gly Val Arg Lys Val Arg Asp
        195                 200                 205

His Pro Asp Phe Pro Glu Ala Ala Ala Arg Leu Gly Asp Arg Leu Ser
    210                 215                 220

Ile His Asp Gln Pro Asn Leu Gly Gly Ser Gly Gly Tyr Ser Arg Val
225                 230                 235                 240

Met Tyr Glu Ala Leu Lys Asn Thr Asp Cys Gln Gln Ile Leu Phe Met
                245                 250                 255

Asp Asp Asp Ile Arg Ile Glu Pro Asp Ser Ile Leu Arg Val Leu Ala
            260                 265                 270

Met His Arg Phe Ala Lys Ser Pro Met Leu Val Gly Gly Gln Met Leu
        275                 280                 285

Ser Leu Gln Glu Pro Ser His Leu His Ile Met Gly Glu Val Val Asn
    290                 295                 300

Arg Ser Asn Phe Ile Trp Thr Ala Ala Pro His Ala Glu Tyr Asp His
305                 310                 315                 320

Asp Phe Val Glu Tyr Pro Leu Asn Asp Lys Glu Asp Lys Ser Lys Leu
                325                 330                 335
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```
Leu His Arg Arg Ile Asp Val Asp Tyr Asn Gly Trp Trp Thr Cys Met
            340                 345                 350

Ile Pro Arg Gln Val Ala Glu Glu Leu Gly Gln Pro Leu Pro Leu Phe
        355                 360                 365

Ile Lys Trp Asp Asp Ala Asp Tyr Gly Leu Arg Ala Ala Glu His Gly
    370                 375                 380

Tyr Pro Thr Val Thr Leu Pro Gly Ala Ala Ile Trp His Met Ala Trp
385                 390                 395                 400

Ser Asp Lys Asp Asp Ala Ile Asp Trp Gln Ala Tyr Phe His Leu Arg
                405                 410                 415

Asn Arg Leu Val Val Ala Ala Met His Trp Asp Gly Asp Val Thr Gly
            420                 425                 430

Leu Val Arg Ser His Leu Lys Ala Thr Leu Lys His Leu Ala Cys Leu
        435                 440                 445

Glu Tyr Ser Thr Val Ala Ile Gln Asn Lys Ala Ile Asp Asp Phe Leu
    450                 455                 460

Ala Gly Pro Asp His Ile Phe Ser Ile Leu Glu Ser Ala Leu Pro Glu
465                 470                 475                 480

Val His Arg Met Arg Lys Glu Tyr Pro Asp Ala Val Val Leu Pro Ala
                485                 490                 495

Ala Thr Glu Leu Pro Pro Pro Val His Lys Asn Lys Val Met Lys Pro
            500                 505                 510

Pro Glu Asn Pro Leu Ser Ile Val Tyr Arg Leu Leu Arg Gly Ile Phe
        515                 520                 525

His Asn Leu Thr Ala Ala Asp Pro Glu Cys His Lys Arg Pro Glu Phe
    530                 535                 540

Asn Ile Pro Thr Gln Asp Ala Arg Trp Phe Arg Leu Cys Thr Val Asp
545                 550                 555                 560

Gly Val Thr Val Thr Thr Ala Asp Gly Cys Gly Val Val Tyr Arg Gln
                565                 570                 575

Arg Asp Arg Ala Lys Met Phe Leu Leu Leu Phe Ser Ser Leu His Arg
            580                 585                 590

Gln Leu Gln Leu Ala Arg Arg Phe Asp Glu Leu Arg Lys Ile Tyr Arg
        595                 600                 605

Asp Ala Leu Pro Val Leu Ser Ser Lys Gln Lys Trp Glu Met Ala Leu
    610                 615                 620

Leu Pro Leu Pro Asp Ser Pro Thr Arg Phe Pro Ala Glu Gln Glu Pro
625                 630                 635                 640

Glu His Ala
```

<210> 23

<211> 192

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0094, ML.tab 117295:117873 forward MW:19928

<400> 23

Met Pro Glu Asp Lys Ala Pro Thr Gly Glu Leu Ala Ala Ile Ala Ala
1 5 10 15

Val Gln Ser Val Leu Val Asp Arg Pro Gly Val Leu Pro Thr Ala Arg
20 25 30

Gly Met Ser His Phe Gly Glu His Ser Ile Gly Trp Leu Ala Ile Ser
35 40 45

Leu Leu Gly Ala Ile Leu Val Pro Cys Arg Arg Arg Tyr Trp Leu Val
50 55 60

Ala Gly Ala Gly Val Phe Ala Ala His Val Ala Ala Val Leu Ile Lys
65 70 75 80

Arg Met Val Arg Arg Ile Arg Pro Asn His Pro Ala Val Thr Val Asn
85 90 95

Val Gly Thr Pro Ser Pro Leu Ser Phe Pro Ser Ala His Ala Thr Ser
100 105 110

Thr Ala Ala Ala Ala Ile Leu Ile Gly Arg Ala Ser Arg Leu Pro Lys
115 120 125

Gly Ile Val Ala Ala Val Leu Val Ala Pro Met Ala Leu Ser Arg Ile
130 135 140

Val Leu Gly Val His Tyr Pro Ser Asp Val Ala Phe Gly Val Val Leu
145 150 155 160

Gly Ala Ala Val Ala Gly Thr Thr Ala Arg Phe Asp Ser Arg Leu Ser
165 170 175

Arg Arg Trp Thr Val Gln His Gly Leu Ser Ser Gly Ser Ala Val Lys
180 185 190

<210> 24

<211> 649

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0096, ML.tab 118819:120768 forward MW:71091

<400> 24

Met Arg Arg Arg Met Val Ser Arg Gln Val Gly Trp Pro Leu Phe Pro
1 5 10 15

Tyr His Ile Val Val Arg Val Ser Leu Trp Ala Ser Val Leu Leu Val
20 25 30

Ala Ala Leu Phe Gly Trp Gly Ala Trp Gln Arg Arg Trp Ile Ala Asp
35 40 45

Asp Gly Leu Ile Val Leu Arg Thr Val Arg Asn Leu Leu Ala Gly Asn
50 55 60

Gly Pro Val Phe Asn Gln Gly Glu Arg Val Glu Ala Asn Thr Ser Thr
65 70 75 80

Val Trp Thr Tyr Leu Leu Tyr Ala Gly Ser Trp Val Gly Gly Pro Met
85 90 95

Arg Phe Glu Tyr Val Ala Leu Ala Ala Ala Leu Val Leu Ser Val Leu
100 105 110

Gly Met Val Leu Leu Met Leu Gly Thr Gly Arg Leu Tyr Ala Pro Ser
115 120 125

Leu Gln Gly Arg Gln Ala Ile Met Leu Pro Ala Gly Ala Leu Val Tyr
130 135 140

Val Ala Leu Pro Pro Ala Arg Asp Phe Ala Thr Ser Gly Leu Glu Ser
145 150 155 160

Gly Leu Val Leu Thr Tyr Leu Gly Leu Leu Trp Trp Met Met Val Cys
165 170 175

Trp Ala Gln Pro Leu Arg Asn Arg Ser Gln Ser Arg Arg Phe Ile Gly
180 185 190

Ala Leu Ala Phe Val Ala Gly Cys Ser Val Leu Val Arg Pro Glu Leu
195 200 205

Ala Leu Met Gly Gly Ser Ala Leu Ile Met Leu Met Ile Ala Ala Arg
210 215 220

Thr Cys Trp Leu Arg Ala Leu Ile Val Val Ala Gly Gly Ser Leu Pro
225 230 235 240

```
Val Ala Tyr Gln Leu Phe Arg Met Gly Tyr Tyr Gly Leu Leu Val Pro
                245                 250                 255

Gly Thr Ala Leu Ala Lys Asp Ala Ala Gly Asp Lys Trp Ser Gln Gly
            260                 265                 270

Ile Ile Tyr Leu Ser Asn Phe Asn Gln Pro Tyr Val Leu Trp Val Pro
        275                 280                 285

Leu Val Leu Leu Val Leu Leu Gly Leu Leu Leu Met Leu Ile His Arg
    290                 295                 300

Trp Pro Ser Phe Met His Pro Leu Glu Thr Pro Asp Ser Gly Arg Val
305                 310                 315                 320

Ala Arg Ala Val Gln Ser Pro Pro Ala Val Val Val Phe Val Val Phe
                325                 330                 335

Ser Gly Leu Leu Gln Ala Phe Tyr Trp Ile Arg Gln Gly Gly Asp Phe
            340                 345                 350

Met His Gly Arg Val Leu Leu Ala Pro Leu Phe Cys Leu Leu Ala Pro
        355                 360                 365

Val Val Val Ile Pro Val Val Ile Ser Glu Gly Ala Asp Phe Ser Arg
    370                 375                 380

Gln Thr Gly Asn Trp Leu Ala Gly Val Thr Ser Leu Leu Trp Leu Gly
385                 390                 395                 400

Val Ala Gly Trp Ser Leu Trp Ala Ala Asn Ser Pro Gly Met Gly Asp
                405                 410                 415

Asp Ala Thr Asn Val Ser Tyr Ser Gly Ile Val Asp Glu Arg Arg Phe
            420                 425                 430

Tyr Ala Gln Ala Thr Gly His Ala His Pro Leu Thr Ala Ala Asp Tyr
        435                 440                 445

Leu Gly Tyr Pro Arg Met Ala Ala Val Leu Val Ala Leu Asn Asn Thr
    450                 455                 460

Pro Asp Gly Ala Leu Leu Leu Pro Ser Gly Asn Tyr Ile Lys Trp Asp
465                 470                 475                 480

Leu Val Pro Met Ile Gln Leu Ser Pro Ser Ser Pro Gly Ser Pro Pro
                485                 490                 495

Asp Ser Leu Val Ser Gln Lys Pro Gln His Thr Val Phe Phe Thr Asn
            500                 505                 510

Leu Gly Met Leu Gly Met Asn Val Gly Leu Asp Val Arg Val Ile Asp
        515                 520                 525

Gln Ile Gly Leu Ala Asn Pro Leu Ala Gln His Thr Glu Arg Leu Gln
    530                 535                 540

His Gly Arg Ile Gly His Asp Lys Asn Leu Phe Pro Asp Trp Val Ile
545                 550                 555                 560

Ala Asp Gly Pro Trp Val Lys Trp Tyr Pro Gly Ile Pro Gly Tyr Leu
```

565 570 575

Asp Gln Ala Trp Ile Ala Gln Ala Val Ala Ala Leu Gln Cys Ser Gly
580 585 590

Thr Gln Ala Val Leu Ser Ser Val Arg Ala Pro Met Ala Leu His Arg
595 600 605

Phe Ile Ser Asn Leu Leu Asn Ser Phe Glu Phe Thr Arg Tyr Arg Phe
610 615 620

Asp Arg Val Pro Leu Tyr Glu Leu Val Arg Cys Gly Leu Pro Val Pro
625 630 635 640

Asp Val Leu Pro Ala Thr Pro Pro Glu
645

<210> 25

<211> 336

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0099, ML.tab 123370:124380 forward MW:35611

<400> 25

Met Val Glu Lys Val Pro Arg Lys Arg His Arg Val Leu Ala Trp Thr
1 5 10 15

Ala Ala Leu Ser Met Ala Ala Val Val Ala Leu Ala Ile Val Ala Val
20 25 30

Val Ile Leu Leu Arg Ser Ala Glu Ser Pro Arg Ser Ser Leu Pro Pro
35 40 45

Gly Val Leu Pro Ile Pro Ser Thr Ala Pro His Pro Arg Lys Pro Arg
50 55 60

Pro Ala Phe Gln Asp Val Ser Cys Pro Asp Val Gln Leu Leu Val Val
65 70 75 80

Pro Gly Thr Trp Glu Ser Ser Leu Gln Asp Asn Pro Leu Asp Pro Val
85 90 95

Gln Phe Pro Asp Ala Leu Leu Arg Asn Ser Thr Met Thr Ile Gly Gln
100 105 110

Gln Phe Pro Thr Ser Arg Val Gln Thr Tyr Thr Ile Pro Tyr Thr Ala
115 120 125

```
Gln Phe His Asn Pro Leu Ser Gly Asp Lys Gln Met Thr Tyr Asn Asp
    130                 135                 140

Ser Arg Ala Glu Gly Thr Arg Ala Met Val Gln Glu Met Ile Asn Val
145                 150                 155                 160

Asn Asn Lys Cys Pro Leu Thr Ser Tyr Val Leu Val Gly Phe Ser Gln
                165                 170                 175

Gly Ala Val Ile Ala Gly Asp Ile Thr Ser Asp Ile Gly Asn Gly His
            180                 185                 190

Gly Pro Val Asp Asp Asp Leu Val Leu Gly Val Thr Leu Ile Ala Asp
        195                 200                 205

Gly Arg Arg Gln Gln Gly Val Gly Asn Asp Ile Gly Pro Asn Pro Pro
    210                 215                 220

Gly Glu Gly Ala Glu Val Thr Leu His Glu Val Pro Val Leu Ser Gly
225                 230                 235                 240

Leu Gly Met Thr Met Thr Gly Ala Arg Pro Gly Gly Phe Gly Val Leu
                245                 250                 255

His Ser Arg Thr Asn Glu Ile Cys Ala Pro Gly Asp Leu Ile Cys Ala
            260                 265                 270

Ala Pro Ala Glu Ala Phe Ser Val Ala Asn Leu Pro Ala Thr Leu Asn
        275                 280                 285

Thr Leu Ala Ser Gly Ala Gly Gln Pro Ile His Ala Met Tyr Ala Thr
    290                 295                 300

Ala Gln Phe Trp Asp Leu Asp Gly Ala Pro Ala Thr Val Trp Thr Leu
305                 310                 315                 320

Asn Trp Val His Arg Leu Ile Glu Gly Ala Pro His Pro Lys His Gly
                325                 330                 335
```

<210> 26

<211> 632

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0107, ML.tab 147460:149358 reverse MW:68650

<400> 26

```
Met Arg Asn Ala Leu Ala Ser Phe Gly Gln Ile Val Leu Ala Ala Val
1               5                   10                  15
```

```
Val Ala Ser Gly Val Ala Ala Val Ser Leu Ile Ala Ile Ala Arg Val
            20                  25                  30

His Trp Pro Ala Phe Pro Ser Ser Asn Gln Leu His Ala Leu Thr Thr
        35                  40                  45

Val Gly Gln Val Gly Cys Leu Thr Gly Leu Leu Ala Val Gly Gly Val
    50                  55                  60

Trp Gln Ala Gly Arg Phe Arg Arg Leu Ala Gln Leu Gly Gly Leu Val
65                  70                  75                  80

Phe Val Ser Ala Phe Thr Val Val Thr Leu Gly Met Pro Leu Gly Ala
                85                  90                  95

Thr Lys Leu Tyr Leu Phe Gly Ile Ser Val Asp Gln Gln Phe Arg Thr
            100                 105                 110

Glu Tyr Leu Thr Arg Leu Thr Asp Ser Ala Ala Leu Gln Asp Met Thr
        115                 120                 125

Tyr Leu Gly Leu Pro Pro Phe Tyr Pro Pro Gly Trp Phe Trp Ile Gly
    130                 135                 140

Gly Arg Val Ala Ala Leu Thr Gly Thr Pro Ala Trp Glu Ile Phe Lys
145                 150                 155                 160

Pro Trp Ala Ile Thr Ser Ile Thr Ile Ala Val Ala Ile Thr Leu Val
                165                 170                 175

Leu Trp Trp Gln Met Ile Arg Phe Glu Tyr Ala Leu Leu Val Thr Ile
            180                 185                 190

Ala Thr Ala Ala Val Thr Leu Val Tyr Ser Ser Pro Glu Pro Tyr Ala
        195                 200                 205

Ala Met Ile Thr Val Leu Leu Pro Pro Ala Leu Val Leu Thr Trp Ser
    210                 215                 220

Gly Leu Arg Ala Ala Glu Arg Glu Ala Asp Arg Thr Leu Gly Asn Lys
225                 230                 235                 240

Arg Gly Trp Ala Thr Val Val Gly Ala Gly Ile Phe Leu Gly Phe Ala
                245                 250                 255

Ala Thr Trp Tyr Thr Leu Leu Leu Ala Tyr Thr Ala Phe Thr Val Val
            260                 265                 270

Leu Met Thr Leu Leu Leu Ala Thr Ala Leu Cys Arg Arg Ala Gly Phe
        275                 280                 285

Arg Ala Thr Phe Asp Pro Leu Arg Arg Leu Ala Gly Ile Val Val Ile
    290                 295                 300

Ala Ala Ala Ile Gly Ala Ile Thr Trp Leu Pro Phe Leu Ala Arg Ala
305                 310                 315                 320

Ala His Asp Pro Val Ser Asp Thr Gly Ser Ala Gln His Tyr Leu Pro
                325                 330                 335
```

Ala Asp Gly Ala Glu Leu Ala Phe Pro Met Leu Gln Phe Ser Leu Leu
340 345 350

Gly Met Ile Cys Met Leu Gly Thr Leu Trp Leu Ile Val Arg Thr Ser
355 360 365

Ser Ser Val Arg Ala Ser Ala Leu Met Ile Ser Val Leu Ala Val Tyr
370 375 380

Leu Trp Ser Leu Leu Ser Ile Leu Thr Thr Leu Ala Arg Thr Thr Leu
385 390 395 400

Leu Ser Phe Arg Leu Gln Pro Thr Leu Thr Val Leu Leu Val Thr Ala
405 410 415

Gly Val Phe Gly Phe Ile Glu Thr Ala Gln Ser Leu Ala Lys His Asn
420 425 430

Arg Ala Val Leu Ser Val Ala Ser Ala Ile Gly Leu Ala Gly Ala Ile
435 440 445

Ala Phe Ser Gln Asp Ile Pro Asn Val Leu Arg Pro Asp Leu Thr Ile
450 455 460

Ala Tyr Thr Asp Thr Asp Gly His Gly Gln Arg Gly Asp Arg Arg Pro
465 470 475 480

Pro Gly Ser Glu Lys Tyr Tyr Trp Ala Ile Asp Glu Ala Val Leu His
485 490 495

Ile Thr Gly Lys Pro Arg Asp Gln Thr Val Val Leu Thr Ala Asp Tyr
500 505 510

Ser Phe Leu Ala Tyr Tyr Pro Tyr Trp Gly Phe Gln Gly Leu Thr Ser
515 520 525

His Tyr Ala Asn Pro Leu Ala Gln Phe Asp Leu Arg Ala Ala Gln Ile
530 535 540

Gln Gln Trp Ser Arg Leu Thr Thr Ala Ser Glu Leu Ile His Ala Leu
545 550 555 560

Asp Thr Leu Pro Trp Pro Pro Pro Thr Val Phe Val Met Arg His Gly
565 570 575

Ala Gly Asn Thr Tyr Thr Leu Arg Leu Ala Lys Asn Val Tyr Pro Asn
580 585 590

Gln Pro Asn Val Arg Arg Tyr Thr Val Asp Leu Pro Ala Ala Leu Phe
595 600 605

Ala Asp Gln Arg Phe Ala Val Gln Asp Ile Gly Pro Phe Val Leu Ala
610 615 620

Ile Arg Lys Pro Met Gly Asn Ala
625 630

<210> 27

<211> 174

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0115, ML.tab 155413:155937 reverse MW:19053

<400> 27

Leu Asn Asn Asp Asn Asp Asp Ser Ile Glu Ile Ile Gly Gly Val Asp
1 5 10 15

Pro Arg Thr Met Ala Thr Arg Gly Glu Asp Glu Ser Arg Asp Ser Asp
20 25 30

Glu Pro Ser Leu Thr Asp Leu Val Glu Gln Pro Ala Lys Val Met Arg
35 40 45

Ile Gly Thr Met Ile Lys Gln Leu Leu Glu Glu Val Arg Ala Ala Pro
50 55 60

Leu Asp Glu Ala Ser Arg Asn Gln Leu Arg Glu Ile His Ala Thr Ser
65 70 75 80

Ile Arg Glu Leu Glu Asp Gly Leu Ala Pro Glu Leu Arg Glu Glu Leu
85 90 95

Asp Arg Leu Thr Leu Pro Phe Asn Glu Ser Thr Ala Pro Ser Asn Ala
100 105 110

Glu Leu Arg Ile Ala Gln Ala Gln Leu Val Gly Trp Leu Glu Gly Leu
115 120 125

Phe His Gly Ile Gln Thr Ala Leu Phe Ala Gln Gln Met Ala Ala Arg
130 135 140

Ala Gln Leu Glu Gln Met Arg His Ser Ala Leu Pro Pro Gly Met Gly
145 150 155 160

Lys Pro Gly Gln Ala Gly Gly Gln Gly Thr Gly Gln Tyr Leu
165 170

<210> 28

<211> 654

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0116, ML.tab 155965:157929 reverse MW:70767

<400> 28

```
Val Gly Leu Cys Cys Gly Thr Leu Ile Ala Leu Phe Leu Leu Ile Val
1               5                  10                  15

Pro Glu Thr Ile Val Ala Arg Phe Ala Ala Leu Thr Trp Pro Ile Ala
            20                  25                  30

Ile Ala Val Ser Pro Ala Leu Thr Tyr Gly Val Ile Ala Leu Val Ile
        35                  40                  45

Ile Pro Phe Gly Ala Val Gly Ile Pro Trp Asn Ser Trp Thr Ala Leu
    50                  55                  60

Ala Ala Leu Val Ala Val Ser Met Leu Met Ile Ala Phe Arg Leu Leu
65                  70                  75                  80

Leu Val Arg Tyr Arg Asp Thr Ala Ala Glu Thr Arg Gly Ile Ser Gly
                85                  90                  95

Trp Pro Ala Val Thr Val Ala Val Gly Val Leu Leu Gly Ala Leu Leu
            100                 105                 110

Ile Gly Trp Ala Ala Tyr Arg Gly Leu Leu His Trp Gln Ser Ile Pro
        115                 120                 125

Ser Thr Trp Asp Ala Val Trp His Ala Asn Thr Val Arg Phe Ile Leu
    130                 135                 140

Asp Thr Gly Gln Ala Ser Pro Thr His Met Gly Glu Leu Arg Asn Val
145                 150                 155                 160

Glu Thr His Ser Val Leu Tyr Tyr Pro Ser Val Leu His Ala Leu Ala
                165                 170                 175

Gly Val Tyr Cys Gln Leu Thr Gly Ala Ala Pro Thr Thr Gly Tyr Thr
            180                 185                 190

Val Ser Ser Leu Ala Val Ala Val Trp Leu Phe Pro Val Ser Ala Ala
        195                 200                 205

Thr Leu Thr Trp His Leu Leu Arg Pro Val Thr Thr Gln Lys Arg Ala
    210                 215                 220

Ala Gly Ala Ser Ala Thr Ala Ala Ala Leu Ser Ala Ala Phe Thr Ser
225                 230                 235                 240

Val Pro Tyr Val Glu Phe Gly Val Ala Ala Met Pro Asn Leu Ala Ala
                245                 250                 255

Tyr Gly Val Ala Val Pro Thr Met Val Leu Ile Thr Ser Thr Leu Arg
            260                 265                 270

His Arg Asp Arg Ile Pro Val Ala Ile Leu Ala Leu Val Gly Thr Phe
        275                 280                 285
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```
Ser Val His Leu Thr Gly Gly Ile Val Val Ser Leu Phe Leu Leu Gly
    290                 295                 300

Trp Trp Leu Met Asn Ala Leu Leu His Pro Val Arg Ser Arg Ala Ala
305                 310                 315                 320

Asp Ala Arg Thr Leu Ala Ala Val Val Met Pro Thr Ala Leu Ile Leu
                325                 330                 335

Ala Pro Gln Phe Ile Ala Val Leu Asn Gln Ala Asp Ile Ile Ala Gly
            340                 345                 350

His Ser Phe Pro Ser Phe Lys Ser Val Lys Gln Gly Val Ile Asp Ala
        355                 360                 365

Leu Leu Leu His Thr Arg His Leu Asn Asp Phe Pro Ile Gln Tyr Gly
    370                 375                 380

Leu Val Val Leu Ala Ala Ile Gly Met Ala Ile Leu Leu Tyr Gln Lys
385                 390                 395                 400

Ile Trp Trp Pro Ser Ile Ala Trp Leu Val Leu Thr Val Ala Thr Val
                405                 410                 415

Tyr Ser Ala Ala Pro Phe Arg Gly Pro Ile Gly Ser Ala Ile Glu Ser
            420                 425                 430

Phe Ser Gln Phe Phe Tyr Asn Asp Pro Arg Arg Leu Ser Ala Val Val
        435                 440                 445

Thr Met Leu Leu Thr Pro Met Ala Gly Ile Ala Leu Phe Ala Gly Val
    450                 455                 460

Leu Leu Leu Val Val Gly Ala Arg Arg Val Thr Ala Arg Phe Thr Ala
465                 470                 475                 480

Leu Pro Arg Pro Val Trp Thr Thr Ala Thr Val Val Leu Leu Val Ala
                485                 490                 495

Ala Thr Val Leu Thr Ala Trp His Tyr Leu Phe Arg His Leu Val Leu
            500                 505                 510

Phe Gly Asp Lys Tyr Asp Ser Val Met Val Asn Gln Lys Asp Leu Asp
        515                 520                 525

Ala Met Ser Tyr Leu Ala Thr Leu Pro Gly Ala His Asn Thr Ile Ile
    530                 535                 540

Gly Asn Ser Asn Thr Asp Gly Ser Ser Trp Met Tyr Ala Val Ala Asp
545                 550                 555                 560

Leu His Pro Leu Trp Thr His Tyr Asp Phe Pro Gln Gln Thr Gly Pro
                565                 570                 575

Gly Tyr Phe Arg Tyr Ala Phe Trp Ala Tyr Ala Arg Thr Gly Asn Pro
            580                 585                 590

Trp Val Val Glu Ala Val Arg Val Phe Asn Ile Arg Tyr Ile Leu Thr
        595                 600                 605
```

Thr Ser Pro Thr Val Gln Gly Phe Ala Ile Pro Asp Gly Leu Val Ser
610 615 620

Leu Glu Glu Ser Lys Ser Trp Thr Lys Ile Tyr Asp Asn Gly Ala Ala
625 630 635 640

Arg Ile Phe Glu Trp Ser Gly Asn Ala Thr Ala Thr Arg Ala
645 650

<210> 29

<211> 146

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0124, ML.tab 166949:167389 reverse MW:16448

<400> 29

Met Pro Val Leu Ser Lys Thr Val Glu Ile Asp Thr Asp Thr Ala Thr
1 5 10 15

Ile Met Ala Ile Val Thr Asp Phe Glu Ser Tyr Pro Gln Trp His Glu
20 25 30

Trp Ile Lys Gly Val Trp Val Leu Ala His Tyr Asp Asp Gly Arg Pro
35 40 45

Ser Gln Leu Arg Ile Asp Ile Asn Phe Gln Gly Met Gln Gly Thr Tyr
50 55 60

Ile Gln Ala Val Tyr Tyr Pro Gly Val Asn Gln Ile Gln Thr Val Met
65 70 75 80

Gln Gln Gly Asp Leu Tyr Ser Lys Gln Glu Gln Leu Phe Ser Val Thr
85 90 95

Gln Ala Glu Gly Gly Ser Val Leu Thr Val Asp Leu Asp Val Glu Leu
100 105 110

Thr Met Pro Val Pro Ala Pro Met Val Lys Met Leu Leu Asn Thr Ala
115 120 125

Leu Asp Arg Leu Ala Glu Lys Leu Lys Leu Tyr Ala Glu His Leu Ala
130 135 140

Pro Ser
145

<210> 30

<211> 210

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0133, ML.tab 179256:179888 forward MW:24045

<400> 30

```
Met Thr Asn Arg Thr Leu Ser Arg Glu Glu Ile Arg Lys Leu Asp Arg
1               5                  10                  15

Asp Leu Arg Ile Leu Val Ala Thr Asn Gly Thr Leu Thr Arg Val Leu
            20                  25                  30

Asn Val Val Ala Asn Glu Glu Ile Val Val Asp Ile Ile Asn Gln Gln
        35                  40                  45

Leu Leu Asp Val Ala Pro Lys Ile Pro Glu Leu Glu Asn Leu Lys Ile
    50                  55                  60

Gly Arg Ile Leu Gln Arg Asp Ile Leu Leu Lys Gly Gln Lys Ser Gly
65                  70                  75                  80

Ile Leu Phe Val Ala Ala Glu Ser Leu Ile Val Ile Asp Leu Leu Pro
                85                  90                  95

Thr Ala Ile Thr Thr Tyr Leu Thr Lys Thr His His Pro Ile Gly Glu
            100                 105                 110

Ile Met Ala Ala Ser Arg Ile Glu Thr Tyr Lys Glu Asp Ala Gln Val
        115                 120                 125

Trp Ile Gly Asp Leu Pro Cys Trp Leu Ala Asp Tyr Gly Tyr Trp Asp
    130                 135                 140

Leu Pro Lys Arg Ala Val Gly Arg Arg Tyr Arg Ile Ile Ala Gly Gly
145                 150                 155                 160

Gln Pro Val Ile Ile Thr Thr Glu Tyr Phe Leu Arg Ser Val Phe Gln
                165                 170                 175

Asp Thr Pro Arg Glu Glu Leu Asp Arg Cys Gln Tyr Ser Asn Asp Ile
            180                 185                 190

Asp Thr Arg Ser Gly Asp Arg Phe Val Leu His Gly Arg Val Phe Lys
        195                 200                 205

Asn Leu
    210
```

<210> 31

<211> 105

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0151, ML.tab 213175:213492 reverse MW:11830

<400> 31

Met Arg Pro Glu Pro Pro His His Glu Asn Ala Glu Leu Thr Glu Met
1 5 10 15

Asn Thr Glu Val Val Glu Ala Pro Leu Leu Thr Asp Ile Glu Glu Leu
20 25 30

Arg Glu Glu Ile Asp Arg Leu Asp Ala Gln Ile Leu Ala Thr Val Lys
35 40 45

Arg Arg Ala Glu Val Ser Gln Ala Ile Gly Lys Val Arg Met Ala Ser
50 55 60

Gly Gly Thr Arg Leu Val His Ser Arg Glu Met Lys Val Ile Glu Arg
65 70 75 80

Tyr Ser Glu Leu Gly Pro Asp Gly Lys Asp Leu Ala Ile Leu Leu Leu
85 90 95

Arg Leu Gly Arg Gly Arg Leu Gly His
100 105

<210> 32

<211> 314

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0158, ML.tab 221657:222601 forward MW:31355

<400> 32

```
Leu His Cys Ser Ser Gly Ala Val Thr Ala Leu Glu Ile Thr Gly Gly
1               5                  10                  15

Val Met Thr Tyr Leu Pro Gly Ser Pro Gly Tyr Pro Leu Val Gln Pro
            20                  25                  30

Ala Gly Ser Tyr Pro Gly Ala Thr Pro Ser Phe Val Lys Ser Asp Val
        35                  40                  45

Gly Glu Ser Gln Leu Tyr His Tyr Leu Thr Ile Ala Val Val Val Leu
    50                  55                  60

Gly Leu Ala Val Tyr Leu Gly Asn Phe Gly Pro Thr Phe Thr Ser Ser
65                  70                  75                  80

Ser Asp Ile Gly Pro Gly Ser Gly Gly Phe Ala Gly Asp Ala Gly Thr
                85                  90                  95

Ala Val Val Val Ala Leu Leu Ala Ala Leu Leu Ala Gly Leu Asp Leu
            100                 105                 110

Leu Pro Lys Ala Lys Ser Ser Ala Gly Val Val Gly Ala Ile Ala Val
        115                 120                 125

Leu Gly Ala Leu Leu Ala Ile Ser Glu Met Ile Asn Met Pro Ala Gly
    130                 135                 140

Phe Ser Ile Gly Trp Ala Met Trp Phe Ile Leu Val Cys Ser Val Leu
145                 150                 155                 160

Gln Ala Ile Ala Ala Val Ala Ala Leu Leu Leu Glu Ala Gly Ile Ile
                165                 170                 175

Thr Ala Pro Ala Pro Arg Leu Ser Tyr Asp Pro Tyr Leu Gln Tyr Gly
            180                 185                 190

Gln Tyr Gly Ala Gln Ser Tyr Tyr Gly Gln Pro Asn Arg Gln Leu Gln
        195                 200                 205

Val Gly Leu Asn Ala His Ser Pro Gln Gln Ser Pro Ala Gly Tyr Gly
    210                 215                 220

Ala Gln Tyr Gly Ala Tyr Thr Ser Ser Pro Thr Gln Ile Gln Ala Gly
225                 230                 235                 240

Met Pro Ala Thr Gly Gly Phe Ser Ala Gln His Ser Ala Gln Gln Gly
                245                 250                 255

Pro Ser Thr Pro Pro Thr Gly Phe Pro Ser Phe Ser Pro Pro Pro Ser
            260                 265                 270

Val Gly Ala Ala Ala Gly Ser Gln Ala Gly Ser Ala Pro Val Ser Tyr
        275                 280                 285

Ser Asn Pro Thr Asp Ser Lys Gln Gly Phe Gly Gln Gly Arg Glu Ser
    290                 295                 300

Thr Ser Ser Ser Ser Gly Ser Ala Pro Val
305                 310
```

<210> 33

<211> 430

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0159, ML.tab 222650:223942 forward MW:44093

<400> 33

Val Gly Asp Asn Arg Ala Ala Gly Val Arg Gln Ala Arg Asp Leu Val
1 5 10 15

Lys Val Ala Phe Gly Pro Ala Val Val Ala Leu Ala Ile Ile Ala Ala
20 25 30

Ile Thr Leu Leu Gln Leu Leu Ile Ala Asn Ser Asp Met Thr Gly Ala
35 40 45

Leu Gly Ala Ile Ala Ser Met Trp Leu Gly Val His Gln Val Pro Ile
50 55 60

Ala Ile Gly Gly Arg Glu Leu Ser Ile Met Pro Leu Leu Pro Val Leu
65 70 75 80

Leu Met Val Trp Ala Thr Ala His Ser Thr Ser Gln Ala Thr Ser Ala
85 90 95

Tyr Ser Ser Trp Leu Val Ile Arg Trp Val Val Ala Ser Ala Leu Gly
100 105 110

Gly Pro Leu Leu Ile Ala Ala Ile Ser Leu Ala Val Ile His Asp Ala
115 120 125

Ser Ser Val Leu Thr Glu Leu Gln Thr Pro Lys Ala Leu Arg Ala Phe
130 135 140

Thr Gly Val Leu Val Val His Ala Ile Gly Ala Ala Ile Gly Val Asn
145 150 155 160

Ser Arg Val Gly Arg Arg Val Leu Thr Ala Ser Arg Leu Pro Asp Trp
165 170 175

Val Gly Asp Ser Val His Ala Ala Thr Ala Gly Val Leu Ala Leu Leu
180 185 190

Gly Leu Ser Gly Leu Val Thr Ala Gly Ser Leu Val Val His Trp Ala
195 200 205

Thr Met Gln Glu Phe Tyr Gly Ile Thr Asp Ser Ile Phe Gly Gln Phe
210 215 220

Ser Leu Thr Val Leu Ser Val Leu Tyr Ala Pro Asn Val Ile Val Gly
225 230 235 240

Thr Ser Ala Val Ala Val Gly Ser Ser Ala His Leu Gly Phe Ala Thr
245 250 255

Phe Ser Ser Phe Thr Val Phe Gly Gly Asp Ile Pro Ala Leu Pro Val
260 265 270

Leu Ala Ala Ala Pro Thr Pro Pro Leu Ala Pro Val Trp Val Ala Leu
275 280 285

Leu Ile Val Gly Ala Ala Ser Gly Val Ala Val Gly Gln Gln Cys Thr
290 295 300

Arg His Pro Leu Pro Leu Leu Ala Ala Leu Ala Lys Leu Leu Val Ala
305 310 315 320

Ala Ala Thr Gly Ala Leu Met Met Ala Leu Leu Gly Tyr Ala Gly Ser
325 330 335

Gly Arg Leu Gly Asn Phe Gly Asp Ile Asp Val Asp Gln Gly Ala Leu
340 345 350

Val Val Gly Val Phe Phe Trp Phe Ala Val Val Gly Trp Val Thr Val
355 360 365

Val Val Ala Cys Gly Ile Lys Arg Phe Pro Arg His Leu Lys Pro Pro
370 375 380

Pro Ala Leu Ser Ser Glu Glu His Ala Asp Ala Ser Ser Lys Asp His
385 390 395 400

Glu Ala Tyr Phe Gly Val Asp Leu Asn Val Pro Phe Asp Leu Ser Gly
405 410 415

Glu Asp Glu Ile Pro Lys Ala Glu Pro Gly Glu Ala Ala Asp
420 425 430

<210> 34

<211> 200

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0169, ML.tab 234932:235534 forward MW:22082

<400> 34

Met Ser Asn Ser Ala Gln Arg Asp Ala Lys Gly Ala Arg Asp Glu Pro

1 5 10 15

Leu Arg Ala Ala Asp Thr Asp Arg Ile Gln Ile Ala Gln Leu Leu Ala
20 25 30

Tyr Ala Ala Glu Gln Gly Arg Leu Glu Leu Lys Asp Tyr Glu Asp Arg
35 40 45

Leu Ala Lys Ala Tyr Ala Ala Thr Thr Tyr Gln Glu Leu Glu Gln Leu
50 55 60

Arg Asp Asp Leu Pro Gly Ser Gln Val Ser Ala Arg Arg Gly Gly Asn
65 70 75 80

Pro Asn Pro Ala Pro Ser Thr Leu Leu Leu Ala Leu Met Ser Gly Phe
85 90 95

Glu Arg Arg Gly Arg Trp Asn Val Pro Arg Lys Leu Thr Thr Phe Ser
100 105 110

Leu Trp Gly Ser Gly Val Leu Asp Leu Arg Tyr Ala Asp Phe Thr Ser
115 120 125

Thr Glu Val Glu Leu His Ala Tyr Ser Val Met Gly Val Gln Thr Ile
130 135 140

Leu Leu Pro Pro Glu Val Asn Val Glu Ile Ser Gly His Gly Val Met
145 150 155 160

Gly Ser Phe Asp Arg Gln Val Arg Gly Gln Gly Thr Pro Gly Ala Pro
165 170 175

Thr Val Lys Ile Arg Gly Phe Ser Leu Trp Gly Gly Val Gly Ile Lys
180 185 190

Arg Lys Ala Arg Arg Pro Arg Arg
195 200

<210> 35

<211> 342

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0185, ML.tab 250221:251249 forward MW:38250

<400> 35

Met Pro Ser Ile Pro Gln Ser Leu Leu Trp Ile Ser Leu Val Val Leu
1 5 10 15

```
Trp Leu Phe Val Leu Val Pro Met Leu Ile Ser Lys Arg Asp Val Val
            20                  25                  30

Arg Arg Ile Ser Asp Val Ala Leu Ala Thr Arg Val Leu Asn Gly Val
        35                  40                  45

Ala Gly Ala Arg Leu Leu Lys Arg Gly Gly Pro Ala Thr Gly His Arg
    50                  55                  60

Ser Asp His Asn Trp Glu Leu Asp Glu Asp Trp Arg Gln Asn Pro Val
65                  70                  75                  80

Asp Gly Glu Phe Ala Asp Ala Asp Gln Asp Ile Gly Glu Glu Gln Asp
                85                  90                  95

Gln Asn Val Asp Asp Thr Gln Arg Thr Arg Pro Val Val Met Glu Val
            100                 105                 110

Ala Val Ala Glu Leu Thr Gly Thr Asp Tyr Leu Asp Val Asp Val Val
        115                 120                 125

Glu Asp Ser Val Ala Leu Pro Ile Glu Asp Ser Ala Asp Val Thr Glu
    130                 135                 140

Ser Val Leu Leu Ala Val Gly Glu Gly Gly Ser Pro Gly Glu Glu Ala
145                 150                 155                 160

Glu Ala Glu Gln Arg Gln Ser Asp Arg Tyr Gly Tyr Val Asp Ala Ser
                165                 170                 175

Ser Gly Leu Gly Leu Glu Gln Lys Asp Asp Lys Ser Pro Val Pro Val
            180                 185                 190

Ala Pro Thr Val Ser Arg Gln Arg Arg Tyr Asp Thr Lys Thr Ala Thr
        195                 200                 205

Ala Val Ser Ala Arg Lys Tyr Ala Phe Arg Lys Arg Val Leu Met Val
    210                 215                 220

Met Ala Ile Ile Leu Val Gly Ser Ala Ala Ala Ala Phe Glu Val Asp
225                 230                 235                 240

Ser Asn Ala Trp Trp Ile Cys Gly Ser Ser Thr Thr Val Thr Val Leu
                245                 250                 255

Tyr Leu Ala Tyr Leu Arg Arg Gln Thr Arg Ile Glu Glu Lys Val Arg
            260                 265                 270

Ser Arg Arg Met His Arg Ile Ala Arg Ala Arg Val Asp Val Glu Asn
        275                 280                 285

Ala His Asp Arg Glu Phe Asp Val Val Pro Ser Arg Leu Arg Arg Pro
    290                 295                 300

Gly Ala Val Val Leu Glu Ile Asp Asp Glu Asp Pro Ile Phe Glu His
305                 310                 315                 320

Leu Asp Tyr Glu Met Pro Ile Arg Thr Phe Gly Trp Pro Arg Asp Leu
                325                 330                 335

Pro Arg Ala Val Gly Gln
```

340

<210> 36

<211> 353

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0187, ML.tab 252658:253719 forward MW:38375

<400> 36

Val Ala Gly Ser Trp Gln Cys Gly His Cys Glu Ser Cys Ala Ser Pro
1 5 10 15

Leu Gly Pro Arg Asp Ile Ala Val Val Glu Leu Ile Ala Asp Arg Ala
20 25 30

Glu Glu Phe Ala Ala Met Asp Ile Phe Arg Gly Leu Pro Ala Glu Asp
35 40 45

Leu Met Ser Val Ala Val Ser Val Glu Pro Val Leu Ala Ala Ala Gly
50 55 60

Glu Val Leu Met Gln Gln Gly Glu Gln Ala Val Ser Phe Leu Leu Ile
65 70 75 80

Ser Ser Gly Asn Val Glu Val Arg Arg Val Asp Asp Asp Gly Ala Val
85 90 95

Ile Val Gly Gln Ala Ser His Gly Met Ile Ile Gly Glu Ile Ala Leu
100 105 110

Leu Arg Asp Gly Arg Arg Thr Ala Thr Val Ile Thr Thr Glu Pro Leu
115 120 125

Thr Gly Trp Val Gly Asp Ile Asp Ala Phe Ala Gln Met Val Gln Ile
130 135 140

Pro Ser Ile Thr Arg Arg Leu Leu Leu Thr Val Arg Gln Arg Leu Ala
145 150 155 160

Ala Phe Ile Thr Pro Ile Pro Val Gln Leu Arg Asp Gly Thr His Leu
165 170 175

Met Leu Arg Pro Val Leu Pro Gly Asp Thr Glu Arg Ser Leu Arg Gly
180 185 190

His Val Arg Phe Ser Arg Glu Thr Leu Tyr Leu Arg Phe Met Ser Ala
195 200 205

Arg Ala Pro Ser Asp Glu Leu Met His Tyr Leu Ser Glu Val Asp Tyr
210 215 220

Val Asp His Phe Val Trp Val Val Thr Asp Gly Gly Asp Pro Val Ala
225 230 235 240

Asp Ala Arg Phe Val Arg Asp Glu Ser Asp Pro Thr Leu Ala Glu Ile
245 250 255

Ala Phe Thr Val Ala Asp Ala Tyr Gln Gly Arg Gly Val Gly Asn Phe
260 265 270

Leu Ile Ser Ala Leu Ser Ile Ala Ala His Val Asn Gly Val Asn Arg
275 280 285

Phe Ser Ala Arg Met Leu Thr Asp Asn Gly Pro Met Arg Ala Ile Met
290 295 300

Asp His His Gly Ala Val Trp Arg Arg Tyr Asp Val Gly Val Ile Thr
305 310 315 320

Thr Val Ile Asp Val Pro Arg Gln Arg Asp Leu Ile Ile Gly Arg Ala
325 330 335

Met Ala Asp Gln Ile Ala Gly Val Val Arg Gln Val Ile Gly Ala Val
340 345 350

Gly

<210> 37

<211> 205

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0190, ML.tab 255125:255742 reverse MW:22988

<400> 37

Met Cys Asp Met Leu Val Asp Val Gly Ile Ala Phe Gln Gly Ser Leu
1 5 10 15

Phe Glu Tyr His Glu Arg Arg Gln Leu Gly Asp Gly Ala Phe Ile Glu
20 25 30

Leu Arg Ser Gly Trp Leu Thr Asp Gly Val Glu Leu Leu Asp Thr Leu
35 40 45

Leu Ser Glu Val Pro Trp Arg Ile Glu Arg Arg Arg Met Tyr Asp Lys
50 55 60

Val Val Asn Val Pro Arg Leu Val Ser Phe His Asp Leu Thr Thr Asp
65 70 75 80

Asp Pro Pro His Pro Leu Leu Thr Arg Leu Arg Arg Arg Leu Asn Asp
85 90 95

Ile Tyr Ala Gly Glu Leu Gly Glu Pro Phe Thr Ser Val Gly Leu Cys
100 105 110

Cys Tyr Arg Asp Gly Ser Asp Ser Ile Ala Trp His Gly Asp Thr Ile
115 120 125

Gly Arg Asn Ser Ser Glu Asp Thr Met Val Ala Ile Ile Ser Leu Gly
130 135 140

Ala Thr Arg Val Phe Ala Leu Arg Lys Arg Gly Gly Gly Pro Ser Leu
145 150 155 160

Arg Leu Pro Leu Thr His Gly Asp Leu Leu Val Met Gly Gly Ser Cys
165 170 175

Gln Arg Thr Trp Glu His Ser Val Pro Lys Thr Ser Ala Ser Thr Gly
180 185 190

Pro Arg Val Ser Ile Gln Phe Arg Pro Arg Asn Val His
195 200 205

<210> 38

<211> 200

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0199, ML.tab 265213:265815 forward MW:21217

<400> 38

Val Ser Gln Leu Ser Phe Phe Thr Ala Glu Ser Leu Leu Pro Ala Ile
1 5 10 15

Ala Asp Leu Ala Gly Val Leu Ala Ala Ser Gly Gln Ile Val Val Val
20 25 30

Ser Ala Ser Gly Gln Ser Pro Ala Pro Ala Ala Arg Leu Ser Val Val
35 40 45

Val Asp Gln Leu Trp Arg Ala Ser Ala Leu Ala Glu Met Ile Ser Glu
50 55 60

Ala Gly Leu Val Pro Glu Ile Ser Arg Thr Glu Glu Asp Thr Pro Leu

65 70 75 80

Val Arg Thr Ala Val Asp Pro Leu Leu Cys Pro Ile Ala Ala Glu Trp
85 90 95

Thr Arg Gly Ala Val Lys Thr Val Pro Pro Arg Trp Leu Pro Gly Pro
100 105 110

Arg Glu Leu Arg Ala Trp Ile Leu Ala Ala Gly Val Pro Glu Ala Ala
115 120 125

Asn Arg Tyr Leu Leu Gly Leu Asp Pro His Ala Pro Asp Thr His Ser
130 135 140

Pro Leu Ala Ser Ala Leu Met Arg Val Gly Ile Ala Pro Thr Leu Ile
145 150 155 160

Gly Thr Arg Ser Gly Arg Pro Ala Leu Arg Ile Ser Gly Arg Arg Arg
165 170 175

Leu Ser Arg Leu Leu Glu Asn Val Gly Glu Pro Pro Asp Trp Ala Glu
180 185 190

Ala Leu Ala Leu Trp Pro Arg Val
195 200

<210> 39

<211> 113

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0208, ML.tab 279784:280125 forward MW:12884

<400> 39

Met Asn Trp Ile Gln Val Leu Leu Ile Gly Ser Ile Ile Val Leu Leu
1 5 10 15

Ile Tyr Leu Leu Arg Ser Arg Arg Asn Val Arg Ser Arg Ala Trp Val
20 25 30

Lys Val Gly Tyr Ile Ala Phe Val Leu Gly Gly Val Tyr Ala Val Leu
35 40 45

Arg Pro Asn Asp Thr Thr Val Val Ala His Trp Phe Gly Val Cys Arg
50 55 60

Gly Thr Asp Leu Met Leu Tyr Ala Leu Ile Met Ala Phe Ser Phe Thr
65 70 75 80

Thr Leu Ser Ile Tyr Ile Arg Phe Lys Asp Leu Glu Leu Arg Tyr Ala
85 90 95

Cys Leu Ala Arg Val Val Ala Leu Glu Gly Ala Arg Ala Pro Glu Pro
100 105 110

Phe

<210> 40

<211> 158

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0227, ML.tab 298516:298992 forward MW:17121

<400> 40

Met Gly Pro Thr Arg Lys Arg Asp Leu Thr Ala Ala Met Ile Gly Ala
1 5 10 15

Ala Val Val Gly Tyr Leu Leu Val Leu Val Leu Tyr Arg Trp Phe Pro
20 25 30

Pro Ile Thr Val Trp Thr Gly Leu Ser Leu Leu Ala Val Ala Ile Pro
35 40 45

Glu Ala Leu Trp Ala Arg Tyr Val Arg Thr Lys Ile Ser Asp Gly Glu
50 55 60

Ile Gly Asp Gly Pro Gly Trp Leu His Pro Leu Ala Val Ala His Ser
65 70 75 80

Leu Met Val Ala Lys Ala Ser Ala Trp Val Gly Ala Leu Val Leu Gly
85 90 95

Trp Trp Val Gly Val Leu Val Tyr Phe Leu Pro Arg Trp Pro Trp Leu
100 105 110

Arg Val Ala Asp Lys Asp Thr Ser Gly Thr Val Val Ala Ala Leu Ser
115 120 125

Ala Leu Ala Leu Leu Val Ala Ala Leu Trp Leu Gln His Cys Cys Lys
130 135 140

Ser Pro Gln Asp Pro Thr Glu His Gly Glu Gly Ala Glu Asn
145 150 155

<210> 41

<211> 309

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0229, ML.tab 300537:301466 forward MW:32734

<400> 41

```
Met Val Gln Phe Asp Gly Leu Arg Ser Ala Arg Leu Asn Ile Ala Ile
1               5                  10                  15

Leu Ser Thr Gly Arg Val Gly Val Ala Leu Glu Arg Ala Asp Gln Val
            20                  25                  30

Val Val Ala Cys Ser Ala Val Ser His Ala Ser Arg Gln Trp Val Gln
        35                  40                  45

Phe Arg Leu Pro Glu Thr Ser Val Ala Ser Pro Pro Glu Val Ala Ser
    50                  55                  60

Ser Ala Glu Leu Leu Leu Leu Ala Val Pro Asp Cys Glu Phe Ala Gly
65                  70                  75                  80

Leu Met Ser Gly Val Ala Val Thr Ser Val Pro Arg Pro Gly Thr Ile
                85                  90                  95

Val Ala His Thr Ser Trp Ala Asn Gly Val Gly Ile Leu Ala Gln Leu
            100                 105                 110

Gly Lys Asp Gly Cys Ile Pro Leu Ala Ile His Pro Ala Met Met Phe
        115                 120                 125

Ser Gly Ser Asp Glu Asp Leu Ser Gln Cys Gln Leu Arg Asp Thr Tyr
    130                 135                 140

Phe Gly Ile Thr Lys Thr Asp Asp Val Gly Tyr Ala Ile Ala Gln Ser
145                 150                 155                 160

Leu Val Leu Glu Met Gly Gly Glu Pro Phe Cys Val Val Glu Tyr Ala
                165                 170                 175

Arg Ile Leu Tyr His Ser Val Ser Pro His Val Gly Asn His Ile Val
            180                 185                 190

Thr Val Leu Ala Asp Ala Leu Glu Val Arg Arg Ser Ala Leu Arg Gly
        195                 200                 205

Ser Glu Leu Leu Gly Leu Gly Val Pro Pro Ala Cys Arg Gly Glu Val
    210                 215                 220

Val Asp Asp Gln Leu Asp Val Ile Val Glu Arg Ile Val Gly Ser Leu
```

225 230 235 240

Ala Arg Ala Ala Cys Glu Asn Thr Leu Gln Arg Gly Gln Ala Gly Leu
245 250 255

Thr Lys Leu Val Ala Arg Gly Asp Leu Asp Ala Leu Ala Gly His Leu
260 265 270

Val Ala Leu Met Arg Ile Gly Pro Glu Leu Ala Gln Ala Tyr Arg Val
275 280 285

Asn Ala Leu Arg Lys Thr Gln Arg Ala His Ala Pro Tyr Asp Val Val
290 295 300

Glu Ala Leu Ala Pro
305

<210> 42

<211> 227

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0256, ML.tab 335129:335812 forward MW:24402

<400> 42

Met Ser Glu Ala Lys Arg Leu Asp Pro Lys Arg Arg Ser Pro Ala Ser
1 5 10 15

Arg Pro Gly Lys Ala Gly Asp Ser Val Arg Gly Arg Arg Ser Thr Lys
20 25 30

Pro Val Ala Lys Leu Ser Val Lys Pro Ser Arg Thr Thr Pro Ala Ser
35 40 45

Ser His Ser Gly Arg Asn Ser Thr Arg Met Leu Thr Gln His Val Val
50 55 60

Glu Pro Ile Arg Gln Ser Ile Ile Glu Ser Arg Glu Arg Arg Ser Asp
65 70 75 80

Gln Gln Leu Gly Phe Thr Ala Arg Arg Ala Ala Val Leu Ala Ala Val
85 90 95

Val Cys Val Leu Thr Leu Thr Ile Ala Gly Pro Val Arg Thr Tyr Phe
100 105 110

Ala Gln His Ala Glu Ile Glu Gln Leu Ala Ala Thr Glu Ala Thr Leu
115 120 125

```
Arg Arg Gln Ile Ala Asp Leu Glu Gln Gln Lys Gly Lys Leu Ala Asp
    130                 135                 140

Ser Ala Tyr Ile Ala Ala Arg Ala Arg Glu Arg Leu Gly Phe Val Met
145                 150                 155                 160

Pro Gly Asp Val Pro Phe Gln Val Gln Leu Pro Ser Thr Ala Ala Val
                165                 170                 175

Ser Ser Gln Pro Gly Gly Arg Ala Ala Lys Pro Ala Asn Asn Asp Pro
            180                 185                 190

Trp Tyr Thr Ser Leu Trp His Asn Ile Ala Asp Ala Pro His Leu Pro
        195                 200                 205

Pro Gly Ala Gly Thr Pro Pro Phe Ser Leu Thr Pro Leu Ser Thr Thr
    210                 215                 220

Ser Gly Gly
225
```

<210> 43

<211> 167

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0257, ML.tab 335805:336308 forward MW:17960

<400> 43

```
Val Val Asp Arg Ala Asp Leu Glu Ala Val Ala Arg His Leu Gly Arg
1               5                   10                  15

Glu Pro Arg Gly Val Leu Glu Ile Ala Tyr Arg Cys Pro Ser Gly Glu
            20                  25                  30

Pro Gly Val Val Lys Thr Ala Pro Lys Leu Asp Asp Gly Thr Pro Phe
        35                  40                  45

Pro Thr Leu Tyr Tyr Leu Thr His Pro Val Leu Ile Ala Ala Ala Ser
    50                  55                  60

Arg Leu Glu Ser Thr Gly Leu Met Arg Glu Met Thr Glu Arg Leu Gly
65                  70                  75                  80

Gln Asp Pro Glu Leu Ala Ala Gly Tyr Arg Arg Ala His Glu Ser Tyr
                85                  90                  95

Leu Thr Glu Arg Asp Ala Ile Glu Ser Leu Gly Thr Thr Phe Ser Ala
            100                 105                 110
```

Gly Gly Met Pro Asp Arg Val Lys Cys Leu His Val Leu Ile Ala His
115 120 125

Ser Leu Ala Lys Gly Pro Gly Leu Asn Ser Leu Gly Asp Glu Val Leu
130 135 140

Ala Leu Leu Ala Ala Asp Pro Lys Thr Ala Ala Thr Leu Val Ala Gly
145 150 155 160

Gln Trp Lys Glu Cys Asp Arg
165

<210> 44

<211> 123

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0271, ML.tab 354849:355220 reverse MW:12992

<400> 44

Met Arg Leu Gly Gln Ala Leu Ala Trp Leu Ala Thr Asp Ile Val Ala
1 5 10 15

Val Ser Val Phe Cys Ala Val Gly Arg Cys Ser His Ala Glu Gly Leu
20 25 30

Thr Val Ala Asp Leu Ala Val Thr Leu Trp Pro Phe Leu Thr Gly Thr
35 40 45

Ala Ile Gly Trp Leu Ala Ser Arg Gly Trp Gln Arg Pro Thr Ala Val
50 55 60

Val Pro Thr Gly Val Val Val Trp Leu Cys Thr Val Val Val Gly Val
65 70 75 80

Ala Leu Arg Lys Ala Ser Ser Ala Gly Val Val Ala Asn Phe Met Val
85 90 95

Val Ala Ala Ser Thr Thr Ala Ala Leu Phe Leu Gly Trp Arg Ala Val
100 105 110

Val Glu Leu Ile Leu Arg Arg Arg Ser Thr Arg
115 120

<210> 45

<211> 218

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0279, ML.tab 361297:361953 reverse MW:24062

<400> 45

Val Thr Tyr Tyr Ser Ser Leu Arg Pro Glu Asp Leu Pro Pro Glu Arg
1 5 10 15

Pro Lys His Glu His Tyr Ser Gly Phe Pro Glu Tyr Glu Leu Ala Asn
20 25 30

Pro Gly Val Gly Phe Arg Arg Phe Val Ala Thr Met Arg Arg Leu Gln
35 40 45

Asp Leu Ala Val Ser Ala Asp Pro Ser Asp Glu Val Trp Tyr Ala Ala
50 55 60

Ala Asp Arg Ala Val Ala Leu Val Glu Leu Leu Gly Pro Phe Ala Thr
65 70 75 80

Asp Glu Gly Lys Ala Pro Ala Gly Arg Val Pro Asp Met Pro Gly Met
85 90 95

Gly Ser Leu Leu Leu Pro Pro Trp Thr Leu Thr Arg Ser Gly Pro Asp
100 105 110

Ser Val Glu Met Thr Gly Tyr Phe Thr Arg Phe His Val Gly Phe Asn
115 120 125

His Ala Val His Gly Gly Val Leu Pro Leu Val Phe Asp His Leu Phe
130 135 140

Gly Met Ile Ser Tyr Thr Ala Gly Arg Ser Ile Ser Arg Thr Ala Phe
145 150 155 160

Leu His Val Asp Tyr Arg Lys Ile Thr Pro Ile Asp Glu Pro Leu Val
165 170 175

Met Arg Gly Arg Val Thr Arg Thr Glu Gly Arg Lys Ala Phe Val Ser
180 185 190

Ala Glu Leu Val Asp Gly Asp Glu Met Leu Leu Ala Glu Gly Asn Gly
195 200 205

Met Met Val Arg Leu Leu Ala Gly Gln Pro
210 215

<210> 46

<211> 229

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0281, ML.tab 363432:364121 forward MW:25240

<400> 46

Leu Asn Thr Ser Asp Ser Ala Pro Gly Val Ala Val Leu Leu Phe Gly
1 5 10 15

Asp Asp Arg Thr Arg Gln Arg Trp Asn Thr Leu Thr Ala Leu Ser Thr
20 25 30

Tyr Arg Ala Gly Gly Pro Asp Asp Ile Asp Ser Ile Asp Ala Thr Ile
35 40 45

Gly Pro Tyr Arg Arg Leu Val Val Val Gly Gly Asp Gly Asp Leu Ala
50 55 60

Ala Val Leu Gly Arg Leu Leu Arg Ala Asp Arg Leu Asp Ile Glu Val
65 70 75 80

Ala Tyr Val Pro His Gln Arg Thr Ala Ala Thr Arg Val Tyr Arg Leu
85 90 95

Pro Thr Gly Arg Arg Ala Ala Arg Arg Ala Arg Arg Gly Tyr Ala Thr
100 105 110

Arg Val Pro Leu Ile Arg Asp Glu Thr Gly Ser Val Ile Val Gly Arg
115 120 125

Ala Asp Trp Leu Pro Val Val Asp Arg Gln Pro Leu His Gly Glu Ala
130 135 140

Ile Val Asp Asp Ile Pro Leu Phe Asp Gly Asp Val Ala Gly Val Arg
145 150 155 160

Ile Ala Pro Thr Leu Ala Met Pro Gly Leu Arg Ala Arg Leu His Thr
165 170 175

Ser Arg Thr Gly Ile Gly Ile Trp Ser Arg Trp Leu Thr Gly Arg Ala
180 185 190

Val Gln Leu Gly Ser Thr Gly Val Ala Val Val Arg Asp Gly Val Pro
195 200 205

Thr Arg Arg Arg Glu Arg Arg Ser Thr Phe Tyr Arg Asn Val Glu Gly
210 215 220

Trp Met Leu Val Arg

225

<210> 47

<211> 137

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0284, ML.tab 365860:366273 reverse MW:14541

<400> 47

Met Thr Ser Met Gly Asp Leu Leu Gly Pro Asp Pro Ile Leu Leu Pro
1 5 10 15

Asp Asp Ser Ala Ala Glu Val Glu Leu Arg Ala Asn Lys Asp Pro Gly
20 25 30

Thr Val Ala Ala Ala His Pro Ser Ala Ser Val Ala Trp Ala Ala Leu
35 40 45

Ala Glu Gly Ala Leu Ala Asp Asp Lys Ala Thr Thr Ala Tyr Ala Tyr
50 55 60

Ala Arg Thr Gly Tyr His Arg Gly Leu Asp Gln Leu Arg Cys Asn Gly
65 70 75 80

Trp Lys Gly Phe Gly Pro Val Pro Tyr Ser His Glu Pro Asn Arg Gly
85 90 95

Phe Leu Arg Cys Val Ala Ala Leu Ala Arg Ala Ala Asn Ala Ile Gly
100 105 110

Glu Thr Asp Glu Tyr Arg Arg Cys Leu Asn Leu Leu Asp Asp Cys Asp
115 120 125

Pro Ala Ala Arg Asn Glu Leu Gly Leu
130 135

<210> 48

<211> 292

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0285, ML.tab 366385:367263 forward MW:31593

<400> 48

```
Met Pro Asn Ala Ser Glu Pro Glu Arg Gly Ile Thr Leu Asn Arg Pro
1               5                  10                  15

Gly Leu Ala Pro Arg Thr Leu Asp Lys Asn Val Val Ser Asn Leu Pro
            20                  25                  30

Glu Ala Lys Asp Asn Pro Ala Met Thr His Gly Glu Glu Ile Ala Ala
        35                  40                  45

Gly Tyr Pro Leu Ala His Ser Asp Ser Glu Thr Glu Ala Met Val Leu
    50                  55                  60

Thr Lys Thr Glu Pro Asp Gln Asp Pro Gly Ala Asp Arg Gln His His
65                  70                  75                  80

Glu Arg Arg Phe Thr Ala Pro Gly Phe Asp Ala Arg Ala Thr Ala Ile
                85                  90                  95

Met Ala Thr Ala Pro Asp Pro Ala Thr Glu Ala Ile His Pro Pro Leu
            100                 105                 110

Ser Ser Ser Asp Pro Pro Gly His Leu Gly Ile Ser Pro Lys Ala Ala
        115                 120                 125

Val Pro Gln Ser Ile Pro Pro Val Leu Gly Thr Lys Leu Arg Ser Ala
    130                 135                 140

Arg His Phe His Trp Gly Trp Val Val Ala Leu Leu Met Met Val Leu
145                 150                 155                 160

Ala Leu Ala Ala Ile Ala Ile Leu Gly Thr Val Leu Leu Thr Arg Gly
                165                 170                 175

Lys His Val Lys Ala Ser Pro Ala Glu Gln Val Arg His Ala Ile Gln
            180                 185                 190

Ser Phe Asp Val Ala Val Gln Thr Gly Asn Leu Thr Ala Leu Arg Ser
        195                 200                 205

Ile Thr Cys Gly Thr Thr Arg Asp Gly Tyr Val Glu Tyr Asp Glu Ser
    210                 215                 220

Ser Trp Asp Glu Thr Tyr His Arg Val Ser Ala Ala Lys Gln Tyr Pro
225                 230                 235                 240

Val Ile Ala Ser Ile Asp Gln Val Val Val Asn Gly Gln His Ala Glu
                245                 250                 255

Ala Asn Ile Thr Thr Phe Met Ala Tyr Asp Pro Gln Val Arg Ser Thr
            260                 265                 270

Arg Ser Leu Asp Leu Gln Phe Cys Asp Asp Gln Trp Lys Ile Cys Gln
        275                 280                 285
```

Ser Pro Ser Gly
290

<210> 49

<211> 74

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0298, ML.tab 381423:381647 reverse MW:7851

<400> 49

Met Ile Val Val Val Asn Glu Arg Pro Val Glu Val Asn Glu Gln Thr
1 5 10 15

Thr Val Ala Ala Leu Leu Glu Ser Leu Gly Phe Pro Ala Ser Gly Ile
20 25 30

Ala Val Ala Val Glu Phe Ser Val Leu Pro Arg Ser Tyr Trp Ala Thr
35 40 45

Lys Ile Ser Glu Leu Pro Ala Val Thr Gly Arg Ser Glu Pro Ile Arg
50 55 60

Leu Glu Val Val Thr Ala Val Gln Gly Gly
65 70

<210> 50

<211> 289

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0370, ML.tab 461945:462814 reverse MW:30055

<400> 50

Val Arg Tyr Arg Arg Gln Val Ala His Thr Arg Lys Leu Leu Ala Ala
1 5 10 15

Leu Ser Arg Arg Gly Pro His Arg Val Leu Arg Gly Asp Leu Ser Phe
20 25 30

Ala Gly Leu Pro Gly Val Val Tyr Thr Pro Ala Gly Gly Leu Asn Leu
35 40 45

Pro Gly Val Ala Phe Gly His Asp Trp Leu Thr Gly Thr Ala Arg Tyr
50 55 60

Ala Gly Leu Leu Glu His Leu Ala Ser Trp Gly Ile Val Thr Gly Ala
65 70 75 80

Pro Asp Thr Gln Arg Gly Leu Thr Pro Ser Val Leu Asn Leu Ala Phe
85 90 95

Asp Leu Gly Ser Ala Leu Asp Ile Val Ala Gly Val Arg Leu Gly Pro
100 105 110

Gly Asn Ile Ser Val His Pro Ala Lys Leu Gly Leu Val Gly His Gly
115 120 125

Phe Gly Gly Ser Ala Ala Val Leu Ala Ala Ala Gly Leu Pro Gly Leu
130 135 140

Ala Gly Leu Pro Ala Lys Ser Ala Val Ala Ile Phe Pro Thr Val Thr
145 150 155 160

Ser Pro Ala Pro Glu Gln Pro Ala Ala Thr Cys Lys Val Pro Gly Leu
165 170 175

Ile Leu Thr Ala Pro Gly Asp Pro Lys Thr Leu Asn Ser Asn Ala Leu
180 185 190

Ser Leu Tyr Arg Ala Trp Asp Asp Ala Thr Leu Arg Ile Val Ser Lys
195 200 205

Ala Lys Ala Gly Gly Leu Val Glu Gly Trp Arg Met Thr Lys Val Val
210 215 220

Gly Leu Ala Gly Pro His Arg Ala Thr Gln Lys Ala Val Arg Ser Leu
225 230 235 240

Leu Thr Gly Tyr Leu Leu Tyr Ala Leu Gly Gly Asp Lys Glu Tyr Arg
245 250 255

Asp Phe Ala Asp Pro Asp Met His Leu Pro His Thr Val Pro Val Asp
260 265 270

Pro Glu Ala Pro Leu Val Thr Pro Glu Gln Lys Ile Val Thr Leu Leu
275 280 285

Lys

<210> 51

<211> 281

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0383, ML.tab 476440:477285 forward MW:29301

<400> 51

Val Thr Ser Val Ser Ile Val Val Glu Ile Gly His Thr Ser Ala Ala
1 5 10 15

Glu Pro Met Leu Ala Ala Ala Ala Phe Gly Asn Gln Pro Gly Arg Trp
20 25 30

Pro Leu Pro Thr Ala Thr Thr Pro His Gln Leu Trp Leu Arg Ala Val
35 40 45

Ala Ala Gly Gly Gln Gly His Tyr Ser Ser Ala Tyr Arg Asp Leu Ala
50 55 60

Val Leu Arg Arg Ser Val Pro Ala Gly Arg Leu Ala Ser Leu Ala His
65 70 75 80

Ser Thr His Gly Ser Phe Leu Arg Gln Leu Gly Trp His Ser Leu Ala
85 90 95

Arg Gly Trp Asp Gly Arg Ala Leu Val Leu Ala Gly Thr Asp Ser Glu
100 105 110

Ala Arg Ala Asp Ala Leu Ile Gly Leu Ala Ala Asp Ala Leu Gly Val
115 120 125

Gly Arg Leu Ala Ala Ala Ala Thr Leu Leu Arg Arg Val Gly Ser Ala
130 135 140

Leu Ala Pro Ala Gln Leu Pro Ala Gln Val Ala Asp Arg Leu Ala Val
145 150 155 160

Arg Arg Arg Trp Val Ala Ala Glu Leu Ala Met Ala Val Gly Asp Gly
165 170 175

Ala Thr Ala Val Arg His Ala Arg Glu Ala Val Glu Leu Ala Gln Val
180 185 190

Gly Arg Val Val Ser Val Arg His Gln Val Lys Ser Asp Val Val Leu
195 200 205

Ala Ala Ala Leu Cys Ser Ala Ala Thr Glu Arg Ala Arg Val Val Ala
210 215 220

Glu Ala Ala Leu Ala Ala Thr Gly Arg Leu Gly Leu Ile Pro Leu Arg
225 230 235 240

Trp Ala Leu Ala Cys Leu Leu Ile Asp Ile Gly Ser Val Thr Phe Ser
245 250 255

Glu Pro Glu Leu Ser Glu Leu Arg Asp Val Cys Ala Asp Gln Val Arg
260 265 270

Arg Ala Gly Gly Thr Trp Arg Thr Ala
275 280

<210> 52

<211> 137

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0386, ML.tab 480093:480506 reverse MW:15294

<400> 52

Val Arg Asp His Leu Pro Pro Gly Leu Pro Pro Asp Pro Phe Ala Asp
1 5 10 15

Asp Pro Cys Asp Pro Ser Ala Ala Leu Asp Ala Val Glu Pro Gly Gln
20 25 30

Pro Leu Asp Gln Gln Glu Arg Ile Ala Val Glu Ala Asp Leu Ala Asp
35 40 45

Leu Ala Val Tyr Glu Ala Leu Leu Ala His Lys Gly Ile Arg Gly Leu
50 55 60

Val Val Cys Cys Asp Glu Cys Gln Gln Asp His Tyr His Asp Trp Asp
65 70 75 80

Met Leu Arg Ala Asn Leu Leu Gln Leu Leu Ile Asp Gly Thr Val Arg
85 90 95

Pro His Glu Pro Ala Tyr Asp Pro Glu Pro Asp Ser Tyr Val Thr Trp
100 105 110

Asp Tyr Cys Arg Gly Tyr Ala Asp Ala Ser Leu Asn Gln Ala Thr Ser
115 120 125

Asp Ala Asp Gly Tyr Arg Arg Arg His
130 135

<210> 53

<211> 394

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0405, ML.tab 503217:504401 forward MW:40754

<400> 53

```
Met Ser Gly Ala Phe Ile Ile Asp Pro Thr Leu Lys Ala Ile Glu Ala
1               5                  10                  15

Trp His Ala Leu Leu Gly Ile Gly Val Pro Asn Asp Gly Gly Val Leu
            20                  25                  30

Tyr Ser Ser Leu Ser Phe Phe Glu Lys Ala Leu Glu His Leu Ala Ala
        35                  40                  45

Ala Phe Pro Gly Asp Gly Trp Leu Gly Ser Ala Ala Asp Lys Tyr Ala
    50                  55                  60

Gly Gln Asn Arg Lys Arg Val Asp Ile Phe Gln Glu Leu Ala Glu Leu
65                  70                  75                  80

Asp Lys Glu Leu Ile Glu Leu Ile His Asn Gln Ala Asn Ser Val Gln
                85                  90                  95

Thr Thr Arg Gly Ile Leu Asp Gly Ala Lys Lys Ala Leu Leu Phe Val
            100                 105                 110

Arg Pro Val Ala Ile Asp Leu Asn Tyr Ile Pro Leu Val Gly Ser Val
        115                 120                 125

Met Ser Ala Ser Ile Gln Ala Gln Ala Cys Ala Ala Ala Met Ala Ala
    130                 135                 140

Val Ser Gly Gly Leu Ala Tyr Leu Leu Val Gln Thr Ala Ile His Thr
145                 150                 155                 160

Ala Lys Phe Val Ala Leu Leu Ala Arg Leu Ala His Leu Leu Ala Ser
                165                 170                 175

Ala Val Ala Asp Val Val Ser Asp Gly Val Ala Ile Ile Lys Gly Ile
            180                 185                 190

Val Asp His Leu Trp His Phe Ile Ala Gly Ala Leu Thr Gly Leu Lys
        195                 200                 205

Asp Ile Val Glu Lys Ile Ile His Trp Phe Phe Gly Leu Phe Ser His
    210                 215                 220

Trp Trp Ser Arg Leu His Ser Phe Phe Gly Gly Ile Pro Gly Leu Ser
225                 230                 235                 240

Gly Ala Thr Ser Gly Leu Ser Gln Val Thr Gly Leu Phe Gly Val Pro
                245                 250                 255
```

Gly Leu Ala Gly Ser Ser Gly Leu Leu Ser Gly Glu Ser Leu Leu Ser
260 265 270

Thr Glu Asn Leu Pro Ser Leu Ala Gly Val Gly Ala Gly Leu Gly Leu
275 280 285

Gly Ser Leu Pro Gln Leu Ala Gln Leu His Ala Ala Ser Thr Arg Gln
290 295 300

Gly Thr Arg Ser Gln Ala Gly Val Ser Ala Glu Leu Ser Thr Glu Gln
305 310 315 320

Phe Gly Gly Gln Gln Glu Pro Val Ser Ala Gln Gly Ser Gln Gly Met
325 330 335

Gly Gly Ser Gln Gly Met Gly Gly Met Thr Pro Ala Ser Thr Lys Ser
340 345 350

Lys Lys Asp Glu Arg Lys Lys Lys Lys Tyr Ser Glu Gly Ala Ala Ala
355 360 365

Gly Thr Asp Asp Ala Glu Arg Ala Pro Ile Glu Val Gln Ser Gly Gly
370 375 380

Gly Lys Arg Ala Leu Ala Gln His Val Val
385 390

<210> 54

<211> 106

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0406, ML.tab 504459:504779 forward MW:11110

<400> 54

Met Arg Ser Met Ile Asp Asn Leu Thr Val Gln Ser Glu His Leu Asn
1 5 10 15

Ser Leu Ala Ser Gln His Glu Asn Glu Ala Ala Cys Ala Ser Ser Gly
20 25 30

Val Ser Ala Ala Ala Gly Leu Ala Asn Ala Val Ser Thr Ser His Gly
35 40 45

Ser Tyr Cys Ala Gln Phe Asn Asp Thr Leu Lys Met Tyr Glu Asp Ala
50 55 60

His Arg Thr Leu Gly Glu Ser Leu His Thr Gly Gly Ile Asp Leu Ala

65 70 75 80

Arg Val Leu Arg Val Ala Ala Ala Met Tyr Cys Asp Ala Asp Glu Ile
85 90 95

Cys Gly Ser Asp Ile Lys Ser Ala Phe Gly
100 105

<210> 55

<211> 216

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0407, ML.tab 504793:505443 forward MW:24227

<400> 55

Met Gly Ser Arg Arg Arg Ile Asn Arg Arg Leu Leu Pro Met Ser Thr
1 5 10 15

Phe Pro Ala Trp Gln Glu Phe Arg Arg Asp Val Val Val Val Phe Pro
20 25 30

Gly Asn Asp Phe Asp Arg Asp Asp Cys Asp Thr Val Asp Pro Trp Gly
35 40 45

Val Gly Gly Ala Ala His Trp Thr Ile Asp Pro Ile Val Gly Phe Ala
50 55 60

Ser Ser Ser Ala Pro Gln Asp Arg Gly Thr Asp Val Asp Asn Thr Arg
65 70 75 80

Gly Gln Ala Glu Glu Asp Glu Lys Gln Lys Glu Pro Glu Val Ala Ile
85 90 95

Phe Thr Val Thr Asn Pro Pro Arg Thr Val Ser Val Ser Val Leu Met
100 105 110

Asp Gly Arg Ile Asp His Val Glu Leu Ser Lys Arg Val Thr Trp Met
115 120 125

Ser Glu Ser Gln Val Ala Ser Glu Ile Leu Val Leu Ala Asp Leu Ala
130 135 140

Arg Gln Lys Ala Gln Ser Ala Gln Tyr Thr Phe Ile Leu Asp Lys Leu
145 150 155 160

Ser Gln Leu Ala Asp Gly Asp Glu His Arg Val Ala Leu Leu Arg Glu
165 170 175

Ser Val Gly Asn Thr Trp Asn Leu Pro Ser Pro Glu Gln Ala Ala Glu
180 185 190

Ala Glu Ala Glu Val Phe Ala Thr Arg Tyr Ser Asp Tyr Cys Pro Ala
195 200 205

Gln Asp Thr Glu Asn Asp Gln Trp
210 215

<210> 56

<211> 100

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0410, ML.tab 508327:508629 forward MW:10951

<400> 56

Met Ser Phe Phe Leu Arg Val Glu Val Gly Gly Leu Met Met Ala Ala
1 5 10 15

Gly Arg Leu Glu Arg Ile Thr Ser Glu Ser Met Ala Cys Asn Ala Lys
20 25 30

Leu Thr Pro Val Thr Thr Lys Val Val Pro Pro Ala Ala Asp Gln Val
35 40 45

Ser Lys Leu Val Ser Gln Val Phe Ser Ser Tyr Gly Lys Gln Tyr Glu
50 55 60

Gly Tyr Ala Ala Gln Gly Val Asp Gln Ser Arg Leu Phe Val Gln Ser
65 70 75 80

Leu Lys Asp Ala Ala Gly Asp Tyr Met Asp Ser Asp His Met Tyr Leu
85 90 95

Asn Thr Glu Asp
100

<210> 57

<211> 408

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0411, ML.tab 508755:509981 forward MW:42466

<400> 57

```
Met Phe Asp Phe Met Val Tyr Ser Pro Glu Val Asn Ala Phe Leu Met
1               5                  10                  15

Ser Arg Gly Pro Gly Ser Thr Pro Leu Trp Gly Ala Ala Glu Ala Trp
            20                  25                  30

Ile Ser Leu Ala Glu Gln Leu Met Glu Ala Ala Gln Glu Val Ser Asp
        35                  40                  45

Thr Ile Val Val Ala Val Pro Ala Ser Phe Ala Gly Glu Thr Ser Asp
    50                  55                  60

Met Leu Ala Ser Arg Val Ser Thr Phe Val Ala Trp Leu Asp Gly Asn
65                  70                  75                  80

Ala Glu Asn Ala Gly Leu Ile Ala Arg Val Leu His Ala Val Ala Tyr
                85                  90                  95

Ala Phe Glu Glu Ala Arg Ala Gly Met Val Pro Leu Leu Thr Val Leu
            100                 105                 110

Gly Asn Ile Ile His Thr Met Ala Leu Lys Ala Ile Asn Trp Phe Gly
        115                 120                 125

Gln Val Ser Thr Thr Val Ala Ala Leu Glu Ala Asp Tyr Asp Leu Met
    130                 135                 140

Trp Val Gln Asn Ser Thr Ala Met Thr Thr Tyr Arg Asp Thr Val Leu
145                 150                 155                 160

Arg Glu Thr Gly Lys Met Glu Asn Phe Glu Pro Ala Pro Gln Leu Val
                165                 170                 175

Ser Arg Tyr Cys Met Asp Arg Arg Asp Ser Val Asn Ser Phe His Ser
            180                 185                 190

Ser Ser Ser Ser Asp Ser Leu Tyr Glu Ser Ile Asp Asn Leu Tyr Asp
        195                 200                 205

Ser Val Ala Gln Ser Glu Glu His Gly Ser Asp Ser Met Ser Gln Ser
    210                 215                 220

Tyr Asn Thr Cys Gly Ser Val Ala Gln Ser Glu Leu Cys Asp Ser Pro
225                 230                 235                 240

Phe Gly Thr Pro Ser Gln Ser Ser Gln Ser Asn Asp Leu Ser Ala Thr
                245                 250                 255

Ser Leu Thr Gln Gln Leu Gly Gly Leu Asp Ser Ile Ile Ser Ser Ala
            260                 265                 270
```

Ser Ala Ser Leu Leu Thr Thr Asn Ser Ile Ser Ser Ser Thr Ala Ser
275 280 285

Ser Ile Met Pro Ile Val Ala Ser Gln Val Thr Glu Thr Leu Gly Arg
290 295 300

Ser Gln Val Ala Val Glu Lys Met Ile Gln Ser Ile Ser Ser Thr Ala
305 310 315 320

Val Ser Val Asp Val Ala Ala Ser Lys Val Val Ala Gly Val Gly Gln
325 330 335

Ala Val Ser Val Gly Ala Leu Arg Val Pro Glu Asn Trp Ala Thr Ala
340 345 350

Ser Gln Pro Val Met Ala Thr Ala His Ser Val Pro Ala Gly Cys Ser
355 360 365

Ala Ile Thr Thr Ala Val Ser Gly Pro Leu Glu Gly Val Thr Gln Pro
370 375 380

Ala Glu Glu Val Leu Thr Ala Ser Val Ala Gly Gly Ser Gly Thr Gly
385 390 395 400

Gly Pro Ala Phe Asn Glu Ala Val
405

<210> 58

<211> 210

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0418, ML.tab 517644:518276 forward MW:23558

<400> 58

Leu Ser Val Asp Glu Val Leu Thr Thr Thr Arg Ser Val Arg Lys Arg
1 5 10 15

Leu Asp Phe Asp Lys Pro Val Pro Arg Asp Val Leu Met Glu Cys Leu
20 25 30

Gln Leu Ala Leu Gln Ala Pro Thr Gly Ser Asn Ser Gln Gly Trp His
35 40 45

Trp Val Phe Val Glu Asp Ala Glu Lys Arg Lys Ala Ile Gly Asp Ile
50 55 60

Tyr Leu Val Asn Ala Arg Cys Tyr Leu Ser Gln Pro Ala Pro Glu Tyr
65 70 75 80

Pro Glu Gly Asp Thr Arg Gly Glu Arg Met Arg Leu Val Arg Asp Ser
85 90 95

Ala Thr Tyr Leu Ala Glu His Met His Glu Val Pro Val Leu Leu Ile
100 105 110

Pro Cys Leu Leu Gly Arg Ala Glu Glu Ser Pro Leu Gly Ala Val Ser
115 120 125

Tyr Trp Ala Ser Leu Phe Pro Ala Val Trp Ser Phe Cys Leu Ala Leu
130 135 140

Arg Ser Arg Gly Leu Gly Thr Cys Trp Thr Ser Leu His Leu Leu Gly
145 150 155 160

Asp Gly Glu Gln Arg Ala Ala Glu Val Leu Gly Ile Pro Ser Asp Lys
165 170 175

Tyr Ser Gln Gly Gly Leu Phe Pro Ile Ala Tyr Thr Lys Gly Thr Asp
180 185 190

Phe Arg Pro Ala Asn Arg Leu Pro Ala Glu Asn Val Thr His Trp Asp
195 200 205

Ile Trp
210

<210> 59

<211> 75

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0425, ML.tab 524416:524643 forward MW:8231

<400> 59

Val Ala Asp Arg His Pro Asp Thr Ile Lys Leu Glu Ile Asp Val Ala
1 5 10 15

Arg Glu Gln Phe Ala Ala Thr Val Asp Ser Leu Ala Glu Arg Ala Asn
20 25 30

Pro Arg Arg Leu Ala Gly Asp Leu Lys Ala Arg Val Val Glu Phe Gly
35 40 45

Arg Arg Pro Ala Val Ile Ala Ala Leu Val Ser Cys Ala Val Leu Thr
50 55 60

Val Ile Val Val Val Arg Lys Val Lys Asn Arg

65 70 75

<210> 60

<211> 259

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0431, ML.tab 530916:531695 reverse MW:27233

<400> 60

Met Asn Asn Pro Arg Arg Ser Glu Trp Leu Gly Pro Ser Leu Ala Gly
1 5 10 15

Ser Gly Pro Ile Glu Pro Gln Val His Gln Tyr Pro Pro Leu Thr Asp
20 25 30

Pro Ala Tyr Ala Glu Gln Ala Pro Tyr Ala Pro Ala Tyr Gly Ala Ser
35 40 45

Leu Pro Pro Trp Thr Pro Lys Lys Pro Pro Gln Gln Leu Pro Arg Tyr
50 55 60

Trp Gln Gln Asp Gln Pro Pro Pro Thr Asp Ile Pro Pro Glu Gly Leu
65 70 75 80

Thr Leu Pro Pro Pro His Glu Pro Lys Ser Pro His Trp Phe Leu Trp
85 90 95

Val Val Ala Gly Ala Ser Val Val Leu Val Val Gly Leu Val Met Ala
100 105 110

Leu Ile Ile Ala Asn Gly Ala Ile Lys Thr Gln Thr Ala Val Pro Pro
115 120 125

Leu Pro Ala Ile Thr Glu Ser Ser Ser Ala Thr Pro Thr Pro Thr Thr
130 135 140

Lys Thr Ser Pro Thr Pro Thr Ala Gly Pro Ala Pro Ser Thr Thr Gly
145 150 155 160

Ser Gly Thr Leu Thr Gln Thr Ile Gly Pro Ser Ala Met Leu Asp Val
165 170 175

Val Tyr Ser Ile Thr Gly Gln Gly Arg Ala Ile Ser Val Thr Tyr Met
180 185 190

Asp Thr Gly Asp Val Ile Gln Thr Glu Phe Asn Val Val Leu Pro Trp
195 200 205

Ser Lys Gln Val Ser Leu Ser Lys Ser Ala Val His Pro Ala Ser Val
210 215 220

Thr Ile Val Asn Ile Gly His Asp Val Thr Cys Ser Val Thr Val Ala
225 230 235 240

Gly Val Gln Ile Arg Gln His Thr Gly Val Gly Leu Thr Ile Cys Asp
245 250 255

Ala Pro Arg

<210> 61

<211> 349

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0451, ML.tab 551191:552240 reverse MW:37930

<400> 61

Met Leu Thr Leu Leu Val Leu Leu Val Ala Leu Ala Thr Leu Ala Gly
1 5 10 15

Gly Trp Gly Tyr Gln Thr Ala Asn Arg Leu Asn Arg Leu His Val Arg
20 25 30

Tyr Asp Leu Ser Trp Gln Ala Leu Asp Gly Ala Leu Ala Arg Arg Ala
35 40 45

Val Val Ala Arg Ala Val Ala Ile Asp Ala Tyr Ser Gly Thr Ser Pro
50 55 60

Gly Arg Arg Leu Ala Ala Leu Ala Asp Ala Ala Glu Cys Ala Pro Arg
65 70 75 80

His Thr Arg Glu Asn Ala Glu Asn Glu Leu Ser Ala Ala Leu Ala Met
85 90 95

Val Asp Pro Ala Ser Leu Pro Thr Ala Leu Ile Ala Glu Leu Ala Asp
100 105 110

Ala Glu Ala Arg Val Leu Leu Ala Arg Arg Phe His Asn Asp Ala Val
115 120 125

Arg Asp Thr Leu Ala Leu Gly Glu Gln Arg Leu Val Arg Thr Leu Arg
130 135 140

Leu Arg Gly Thr Ala Ser Val Pro Thr Tyr Phe Glu Ile Val Glu Arg
145 150 155 160

```
Pro His Ala Leu Thr His Gly Asp His Gly Val Pro Asn Gln Arg Thr
                165                 170                 175

Ser Ala Arg Val Val Leu Leu Asp Glu Thr Gly Ala Val Leu Leu Leu
            180                 185                 190

Cys Gly Ser Asp Pro Ala Ile Thr Asn Gly His Ala Pro Arg Trp Trp
        195                 200                 205

Ile Thr Val Gly Gly Glu Val Arg Pro Gly Glu Arg Leu Ala Ala Ala
    210                 215                 220

Ala Ala Arg Glu Leu Ala Glu Glu Thr Gly Leu Arg Val Ile Pro Thr
225                 230                 235                 240

His Met Val Gly Pro Ile Trp Arg Arg Asp Ala Ile Phe Glu Phe Asn
                245                 250                 255

Gly Ser Val Ile Asp Ser Glu Glu Phe Tyr Leu Val Tyr Arg Thr Arg
            260                 265                 270

Arg Phe Glu Pro Ser Thr Val Gly Trp Thr Glu Leu Glu His Leu Cys
        275                 280                 285

Leu His Gly Ser Arg Trp Cys Asp Ala Asn Asp Ile Ala Glu Leu Val
    290                 295                 300

Ala Ser Gly Glu Gln Val Tyr Pro Arg Gln Leu Gly Glu Leu Leu Pro
305                 310                 315                 320

Val Ala Asn Gln Leu Ala Asp Ala Ser Thr Gly Thr Ala Arg Gly Thr
                325                 330                 335

Ala Ala Ala Arg Asn Thr Tyr Val Leu Leu Ser Ile Cys
            340                 345
```

<210> 62

<211> 114

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0486, ML.tab 589652:589996 forward MW:12749

<400> 62

```
Met Glu Ser Leu Val Leu Leu Leu Phe Leu Leu Ile Met Gly Gly
1               5                   10                  15

Phe Met Phe Phe Ala Ser Arg Arg Gln Arg Arg Ser Met Gln Ala Thr
```

20 25 30

Ile Asp Leu Tyr Asn Ser Leu Gln Pro Gly Asp Arg Val Asn Thr Thr
35 40 45

Ser Gly Leu Gln Ala Thr Ile Ile Val Val Gly Asp Asp Thr Val Asp
50 55 60

Leu Glu Ile Ala Pro Gly Val Val Thr Thr Trp Met Lys Leu Ala Ile
65 70 75 80

Arg Asp Arg Ile Leu Pro Asp Asp Ala Tyr Met Asp Glu His Glu Ala
85 90 95

Glu Pro Gly Asp Phe Val Tyr Cys Asp Glu Leu Glu Glu Ser Asp Gly
100 105 110

Ser Ser

<210> 63

<211> 202

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0520, ML.tab 631179:631787 reverse MW:21872

<400> 63

Met Asn Asn Trp Met Leu Arg Gly Leu Val Phe Ala Ala Leu Met Ile
1 5 10 15

Val Val Arg Leu Met Gln Gly Thr Met Ile Asn Val Trp Gln Ala Gln
20 25 30

Ser Val Leu Ile Ser Val Val Leu Leu Ala Val Phe Ile Ile Ala Val
35 40 45

Val Val Trp Ala Ala Arg Asp Gly Arg Ala Asp Ala Ile Ala Asn Pro
50 55 60

Asp Pro Asp Arg Arg Arg Asp Leu Ala Met Thr Trp Leu Leu Thr Gly
65 70 75 80

Ile Leu Val Gly Val Leu Ser Asp Ala Val Ala Trp Val Ile Ser Leu
85 90 95

Leu Tyr Asn Gly Ile Tyr Thr Gly Gly Leu Val Ser Glu Leu Thr Thr
100 105 110

Phe Ser Ala Phe Thr Ala Leu Ile Val Phe Leu Thr Gly Ile Ile Gly
115 120 125

Val Ala Cys Gly Arg Trp Arg Val Asp Arg Arg Ser Pro Pro Val Pro
130 135 140

Glu His Ser Arg Ser Gly Gln Asn Arg Ala Asp Ser Asn Val Phe Ala
145 150 155 160

Ala Val Cys Thr Asp Asp Asp Thr Pro Thr Gly Glu Leu Ser Ala Ala
165 170 175

Gln Thr Lys Glu Gln Thr Ala Ala Val Ala Thr Ala Glu Ser Glu Ala
180 185 190

Pro Thr Glu Ile Ile Tyr His Gln Arg Ala
195 200

<210> 64

<211> 110

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0542, ML.tab 657980:658312 forward MW:11942

<400> 64

Val Ser Ile Pro Gln Ser Asn Thr Ser Leu Ser Ala Val Ile Ala Val
1 5 10 15

Asp Gln Phe Asp Pro Ser Ser Gly Gly Gln Gly Val Tyr Asp Thr Pro
20 25 30

Leu Gly Ile Thr Asn Pro Pro Ile Asp Glu Leu Leu Asp Arg Val Ser
35 40 45

Ser Lys Tyr Ala Leu Val Ile Tyr Ala Ala Lys Arg Ala Arg Gln Ile
50 55 60

Asn Asp His Tyr Asn Gln Leu Gly Glu Gly Ile Leu Glu Tyr Val Gly
65 70 75 80

Pro Leu Val Glu Pro Gly Leu Gln Glu Lys Pro Leu Ser Ile Ala Met
85 90 95

Arg Glu Ile His Ala Asp Leu Leu Glu His Thr Glu Gly Glu
100 105 110

<210> 65

<211> 156

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0561, ML.tab 678085:678555 forward MW:17254

<400> 65

Met Thr Ala Gln Leu Asp Arg Asp Asp Trp Asp Val Glu Leu Arg Pro
1 5 10 15

Tyr Trp Thr Pro Leu Phe Ala Tyr Ala Ala Ala Phe Leu Ile Ala Ala
20 25 30

Ala His Ile Thr Val Gly Leu Leu Leu Arg Ile Lys Ser Ser Gly Val
35 40 45

Val Phe Arg Thr Ala Asp Gln Val Ala Ile Gly Ala Leu Gly Leu Val
50 55 60

Ile Ala Ser Ala Val Leu Leu Leu Thr Arg Pro Arg Leu Arg Val Gly
65 70 75 80

Ala Ala Gly Leu Leu Val Arg Asn Ile Met Phe Tyr Arg Ile Ile Pro
85 90 95

Trp Ser His Val Val Asp Val Ser Phe Pro Leu Gly Ser His Trp Ala
100 105 110

Arg Ile Asp Leu Pro Asp Asp Glu Tyr Ile Pro Leu Met Ala Ile Gln
115 120 125

Ala Val Asp Lys Glu Arg Ala Val Glu Ala Met Asp Ala Val Arg Ala
130 135 140

Leu Leu Ala Arg Tyr Arg Ala Gly Pro Tyr Gly Pro
145 150 155

<210> 66

<211> 77

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0577, ML.tab 699950:700183 forward MW:8150

<400> 66

Met Glu Leu Ala Leu Gln Ile Thr Leu Val Val Thr Ser Ile Leu Val
1 5 10 15

Val Leu Leu Val Leu Leu His Arg Ala Lys Gly Gly Gly Leu Ser Thr
20 25 30

Leu Phe Gly Gly Gly Val Gln Ser Ser Leu Ser Gly Ser Thr Val Val
35 40 45

Glu Lys Asn Leu Asp Arg Leu Thr Leu Phe Val Thr Gly Ile Trp Leu
50 55 60

Val Ser Ile Ile Gly Val Ala Leu Leu Thr Lys Tyr Arg
65 70 75

<210> 67

<211> 265

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0580, ML.tab 704001:704798 reverse MW:29039

<400> 67

Met Ser Arg Val Leu Thr Leu Val Ile Thr Pro Tyr Ser Lys Ala Met
1 5 10 15

Leu Lys Glu Ser Ile Glu Ala Ala Asn Gly Ala Ser His Lys Tyr Pro
20 25 30

Asn Arg Ile Ile Ile Ala Met Arg Val Asn Ser Tyr Ala Asn Lys Ala
35 40 45

Arg Leu Asp Ala Gln Leu Trp Val Gly Ala Asp Thr Gly Ala Gly Val
50 55 60

Val Val Ser Arg Thr Leu Ala Val Tyr Ala His Ser Val Val Ile Ser
65 70 75 80

Ile Leu Leu Pro Asp Ile Pro Met Val Ala Trp Trp Pro Asn Ile Ala
85 90 95

```
Pro Thr Met Ser Gly Gln Asp Ser Leu Gly Lys Leu Ala Ile Gln Arg
            100                 105                 110

Ile Thr Asn Ala Thr Asn Ser Ile Asp Pro Leu Ala Thr Ile Lys Ser
        115                 120                 125

Arg Leu Ser Asp Tyr Thr Ala Asp Asp Thr His Leu Ala Trp Asp Leu
    130                 135                 140

Ile Thr Tyr Trp Arg Ala Leu Leu Thr Ser Ala Val Asn Leu Pro Pro
145                 150                 155                 160

His Glu Pro Ile Asp Leu Ala Leu Val Ser Gly Met Lys Thr Glu Pro
                165                 170                 175

Ala Leu Asp Val Leu Ala Gly Trp Leu Ala Asn Arg Ile Asn Arg Pro
            180                 185                 190

Leu Arg Arg Ala Val Ala Asp Leu Lys Val Glu Leu Ile Arg Asn Ser
        195                 200                 205

Glu Thr Ile Val Leu Ser Arg Pro Gln Thr Trp Val Thr Ser Thr Leu
    210                 215                 220

Ile Arg Thr Val Lys Pro Asp Ala Leu Val Pro Trp Gly Ala Gln Gly
225                 230                 235                 240

Ser Arg Gly Val Pro Ser Arg Lys Ser Ala Thr Thr Gly Ser Arg Gln
                245                 250                 255

Val Leu Leu Gln Cys Leu Arg Arg His
            260                 265
```

<210> 68

<211> 371

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0603, ML.tab 735002:736117 forward MW:39051

<400> 68

```
Val Leu Val Leu Trp Arg Cys Phe Arg Val Ala Met Ile Ser Ala Leu
1               5                   10                  15

Met Val Ala Val Ala Cys Leu Pro Asp Trp Leu Ser Gly Phe Leu Thr
            20                  25                  30

Gly Gly Leu Ile Ala Gly Ser Ser Ala Arg Arg Ala Thr Ile Tyr Gly
        35                  40                  45
```

```
Val Ser Asn Lys Phe Ser Ser Leu His Leu Val Leu Gly Asn Glu Glu
    50                  55                  60

Leu Leu Val Glu Arg Ala Val Gly Glu Val Leu Arg Ser Ala Arg Gln
65                  70                  75                  80

Arg Ala Gly Thr Gln Asp Val Pro Val Ser Arg Met Arg Ala Gly Asp
                85                  90                  95

Val Gly Thr Tyr Glu Leu Thr Glu Leu Leu Ser Pro Ser Leu Phe Ala
            100                 105                 110

Asp Glu Arg Ile Val Val Leu Glu Ala Ala Ala Glu Ala Gly Lys Glu
        115                 120                 125

Ala Ala Ala Leu Ile Val Ser Ala Ala Ala Asp Ile Pro Gln Gly Thr
    130                 135                 140

Val Leu Val Val Val His Ser Gly Gly Gly Arg Ala Lys Ala Leu Ala
145                 150                 155                 160

Asn Glu Leu Gln Ser Leu Gly Ala Thr Val His Pro Cys Ala Arg Ile
                165                 170                 175

Thr Lys Leu Ser Glu Arg Thr Asp Phe Val Arg Lys Glu Leu Arg Ser
            180                 185                 190

Leu Arg Val Lys Val Asp Glu Gly Ala Val Thr Ala Leu Leu Asn Ala
        195                 200                 205

Val Gly Ser Asp Val Arg Glu Leu Ala Ser Ala Cys Ser Gln Leu Val
    210                 215                 220

Ala Asp Thr Ala Gly Asp Val Asp Ala Asp Ala Val Gln Arg Tyr His
225                 230                 235                 240

Ser Gly Lys Ala Glu Val Lys Gly Phe Asp Ile Ala Asp Lys Ala Val
                245                 250                 255

Gly Gly Asp Val Ser Gly Ala Val Glu Ala Leu Arg Trp Ala Met Met
            260                 265                 270

Arg Gly Glu Pro Leu Val Val Leu Ala Asp Ala Leu Ala Glu Ala Val
        275                 280                 285

His Thr Ile Gly Arg Val Gly Pro Leu Ser Gly Asp Ser Tyr Arg Leu
    290                 295                 300

Ala Ser Arg Leu Gly Met Pro Pro Trp Arg Val Gln Lys Ala Gln Gln
305                 310                 315                 320

Gln Ala Arg Arg Trp Ser Arg Asp Thr Val Ala Ala Ala Met Arg Val
                325                 330                 335

Val Ala Ala Leu Asn Ala Asp Val Lys Gly Ala Ala Ala Asp Ala Tyr
            340                 345                 350

Tyr Ala Leu Glu Ser Ala Val Arg Lys Val Ala Glu Leu Ala Ala Asp
        355                 360                 365
```

Gly Ser Arg
370

<210> 69

<211> 108

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0630, ML.tab 763032:763358 forward MW:11114

<400> 69

Met Ala Glu Leu Leu Asn Thr Glu Asp Ala Lys Leu Val Val Leu Val
1 5 10 15

Arg Ala Ala Met Ala Arg Thr Glu Ala Gly Ser Gly Ala Val Val Arg
20 25 30

Asp Phe Asp Gly Arg Thr Tyr Ala Ala Ala Pro Val Thr Leu Ser Thr
35 40 45

Leu Glu Leu Ile Gly Leu Gln Glu Glu Ala Ala Ala Ala Phe Ser Ala
50 55 60

Ser Ser Val Val Ser Gly Leu Glu Val Gly Val Leu Val Ala Gly Ser
65 70 75 80

Val Asp Glu Pro Asp Ile Ala Met Val Arg Glu Leu Ala Ser Thr Ala
85 90 95

Val Val Ile Leu Ile Asp Arg Asn Gly Asn Arg Val
100 105

<210> 70

<211> 479

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0642, ML.tab 774506:775945 reverse MW:50246

<400> 70

```
Val Ala His Ser Gly Ser Pro Val Ser Thr Val Asp Gly Val Ala Asn
1               5                  10                  15

Pro Pro Phe Gly Phe Ser Ser Gly Asn Asp Ser Pro Asn Asp Glu Ser
            20                  25                  30

Gly Arg Asp Lys His Gly Lys Asn Gly Pro Asp Ser Gly Ser Ser Gly
        35                  40                  45

Ser Asp Pro Leu Ala Ser Phe Gly Met Ser Gly Asp Phe Gly Met Ser
    50                  55                  60

Asp Leu Gly Gln Ile Phe Thr His Leu Gly Gln Met Phe Thr Asn Ala
65                  70                  75                  80

Gly Thr Ala Met Thr Ala Asp Lys Gln Leu Gly Pro Val Asn Tyr Glu
                85                  90                  95

Leu Ala Arg Arg Val Ala Ser Ser Ser Ile Gly Phe Val Ala Pro Ile
            100                 105                 110

Pro Ala Thr Thr Ser Ser Ala Ile Gly Asp Ala Val His Leu Ala Glu
        115                 120                 125

Thr Trp Leu Asp Gly Val Thr Ala Leu Pro Ala Gly Thr Thr Lys Ala
    130                 135                 140

Glu Gly Trp Thr Pro Asp Asp Trp Val Asn Asn Thr Leu Glu Thr Trp
145                 150                 155                 160

Lys Arg Leu Cys Asp Pro Met Ala Gln Gln Ile Ser Thr Val Trp Ala
                165                 170                 175

Ala Ser Leu Pro Glu Glu Ala Lys Ser Met Ala Ser Pro Leu Leu Ser
            180                 185                 190

Met Met Ser Gln Met Gly Gly Met Ala Phe Gly Ser Gln Leu Gly Gln
        195                 200                 205

Ala Phe Gly Gln Leu Ser Arg Glu Val Leu Thr Ser Thr Asp Ile Gly
    210                 215                 220

Leu Pro Leu Gly Pro Arg Gly Val Ala Ala Ile Met Pro Gln Ala Val
225                 230                 235                 240

Glu Ser Phe Ala Asp Gly Leu Glu Gln Pro Arg Cys Glu Ile Leu Thr
                245                 250                 255

Phe Leu Ala Thr Arg Glu Ala Ala His His Arg Leu Phe Ser His Val
            260                 265                 270

Pro Trp Leu Ala Ser Gln Leu Leu Gly Ala Val Glu Ala Tyr Ala Ala
        275                 280                 285

Gly Met Lys Ile Asp Met Asn Gly Ile Glu Glu Leu Ala Arg Asp Phe
    290                 295                 300
```

Asn Pro Ala Ser Leu Ser Asp Pro Thr Ala Ile Glu Glu Leu Leu Gly
305 310 315 320

Gln Gly Val Phe Glu Pro Gln Ala Thr Pro Ala Gln Thr Gln Ala Leu
325 330 335

Glu Arg Leu Glu Ala Leu Leu Ala Leu Ile Glu Gly Trp Val Gln Val
340 345 350

Val Val Thr Ala Ala Leu Gly Asp Arg Ile Pro Gly Ala Ala Ala Leu
355 360 365

Gly Glu Thr Leu Arg Arg Arg Arg Ala Ser Gly Gly Pro Ala Glu Gln
370 375 380

Thr Phe Ala Thr Leu Val Gly Leu Glu Leu Arg Pro Arg Lys Leu Arg
385 390 395 400

Glu Ala Ala Val Leu Trp Glu Arg Leu Thr Gln Ala Ala Gly Val Asp
405 410 415

Ala Arg Asp Ala Val Trp Gln His Pro Asp Leu Leu Pro Ser Gly Lys
420 425 430

Asp Leu Asp Asp Pro Ala Ser Phe Ile Asp Arg Ile Ile Gly Gly Asp
435 440 445

Thr Ser Gly Ile Asp Glu Ala Ile Ala Lys Leu Asp Leu Asp Arg Gly
450 455 460

Asn Ser Asp Gly Arg Thr Pro Gly Ser Gly Gly Pro Val Asp Asn
465 470 475

<210> 71

<211> 158

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0676, ML.tab 811815:812291 reverse MW:16889

<400> 71

Met Phe Leu Arg Leu Met Leu Ser Ala Leu Lys Ala Leu Gln Arg Leu
1 5 10 15

Gly Ala Val Met Asn Ser Leu Ala Arg Ile Asp His Trp Ile Trp Leu
20 25 30

Phe Arg Cys Gln Pro Leu Thr Ile Arg Leu Leu Val Ala Thr Ala Ala
35 40 45

Leu Phe Thr Ala Ala Thr Ala Phe Glu Val Pro Ala Glu Ala Asp Ala
50 55 60

Ile Asp Asp Thr Phe Ile Lys Ala Leu Asn His Ala Gly Val Asn Phe
65 70 75 80

Gly Glu Pro Arg Ser Ala Met Thr Met Gly His Tyr Val Cys Pro Ile
85 90 95

Leu Ala Lys Ser Gly Gly Asn Phe Ala Ala Ala Val Gln Arg Ile Arg
100 105 110

Gly Asn Ser Asp Met Ser Pro Gln Met Ala Glu Thr Phe Ala Lys Ile
115 120 125

Ala Ile Ser Ile Tyr Cys Pro Thr Met Met Ala Asn Val Ala Ser Gly
130 135 140

Asn Leu Pro Ser Leu Pro Pro Gly Pro Gly Ile Pro Gly Ile
145 150 155

<210> 72

<211> 423

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0703, ML.tab 840882:842153 reverse MW:46028

<400> 72

Met Val Ala Asp Leu Val Pro Ile Cys Leu Ser Leu Pro Ala Gly Asp
1 5 10 15

Arg Tyr Thr Val Trp Ala Pro Arg Trp Arg Asp Gly Gly Asp Glu Trp
20 25 30

Glu Ala Phe Leu Gly Lys Asp Asp Asn Leu Tyr Ala Cys Glu Thr Val
35 40 45

Ala Asp Leu Val Ala Phe Val Arg Thr Asp Ser Asp Asn Asp Leu Val
50 55 60

Asp His Pro Ala Trp Lys Asp Leu Thr Ser Val His Ala His Lys Leu
65 70 75 80

Asp Pro Ser Glu Asp Asn Gln Phe Asp Leu Val Val Val Glu Glu Leu
85 90 95

Val Ala Glu Lys Pro Thr Ala Glu Ser Val Thr Thr Leu Ala Ala Thr

```
            100                 105                 110

Leu Ala Ile Val Ala Ser Ile Gly Ser Val Cys Glu Leu Pro Ala Val
        115                 120                 125

Ser Lys Phe Phe Asn Gly Asn Pro Ser Leu Gly Ala Val Ser Gly Gly
    130                 135                 140

Ile Glu His Phe Thr Gly Arg Ala Gly Gln Arg Arg Trp Asn Ser Ile
145                 150                 155                 160

Ala Glu Ile Ile Gly Arg Ser Trp Asp Asp Val Leu Ser Ala Ile Asp
                165                 170                 175

Lys Val Ile Ser Thr Pro Arg Val Asn Ala Ala Met Ser Ala Lys Ala
            180                 185                 190

Ala Asp Glu Leu Ala Glu Glu Pro Val Glu Pro Glu Val Glu Pro Asp
        195                 200                 205

Asp Glu Asp Gly Ala Asp Ser Ala Thr Ala Gln Ala Asn Asn Ser Asp
    210                 215                 220

Asp Thr Glu Asp Glu Ser Arg Thr Ala Gly Asp Thr Val Val Leu Gly
225                 230                 235                 240

Ser Asp Lys Asp Phe Trp Leu Gln Val Gly Ile Asp Pro Val Arg Ile
                245                 250                 255

Met Thr Gly Ala Gly Thr Phe Tyr Thr Leu Arg Cys Tyr Leu Asp Asp
            260                 265                 270

His Pro Ile Phe Leu Gly Arg Asn Gly Arg Ile Ser Val Phe Ser Ser
        275                 280                 285

Glu Arg Ala Leu Ala Arg Tyr Leu Ala Asp Glu His Asp His Asp Leu
    290                 295                 300

Ser Tyr Leu Ser Thr Tyr Asp Asp Ile Arg Thr Ala Ala Thr Asp Gly
305                 310                 315                 320

Ser Leu Ala Ile Asp Ile Thr Asp Asp Asn Ile Tyr Val Leu Ser Gly
                325                 330                 335

Leu Ser Asp Asp Leu Ala Asp Gly Pro Asp Ala Val Asp Arg Asp Gln
            340                 345                 350

Leu Asp Leu Ala Val Glu Leu Leu Arg Asp Ile Gly Gln Tyr Ser Glu
        355                 360                 365

Glu Ser Ala Val Asp Thr Ala Leu Glu Thr Asn Arg Pro Leu Gly Lys
    370                 375                 380

Leu Val Ala His Val Leu Ser Pro Ser Ala Val Asp Lys Pro Val Ala
385                 390                 395                 400

Pro Tyr Ser Ala Ala Val Arg Glu Trp Glu Lys Leu Glu Gln Phe Val
                405                 410                 415

Glu Ser Arg Leu Arg Leu Glu
            420
```

<210> 73

<211> 84

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0730, ML.tab 871757:872011 reverse MW:9373

<400> 73

Val Ser Ala Ala Asn Asp Gly Ser Glu Thr Asn Lys Leu Pro Thr Thr
1 5 10 15

Gln Asn Pro His Ile Gln Ile Thr Lys Gly Gln Pro Thr Asp Gln Glu
20 25 30

Leu Ala Ala Leu Ile Val Val Leu Ser Ser Ile Gly Gly Ala Ser Gln
35 40 45

Val Lys Gln Pro Glu Pro Thr Arg Trp Gly Leu Pro Val Asp Lys Leu
50 55 60

Arg Tyr Pro Val Phe Ser Trp Gln Arg Ile Thr Leu His Glu Met Thr
65 70 75 80

His Met Arg Arg

<210> 74

<211> 172

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0733, ML.tab 874677:875195 forward MW:19913

<400> 74

Met Arg Tyr Pro Gly Asn Thr Leu Val Ala Gly Glu Gln Val Val Leu
1 5 10 15

His Arg His Pro His Trp Lys Arg Leu Ile Trp Pro Ala Val Val Leu
20 25 30

Ile Leu Ala Thr Gly Leu Val Ser Phe Gly Ser Gly Tyr Val Asn Ser
35 40 45

Thr His Trp Ala Gln Val Ala Lys Asn Val Ile Tyr Gly Val Leu Trp
50 55 60

Gly Val Trp Leu Val Ile Val Gly Trp Leu Thr Leu Trp Pro Phe Leu
65 70 75 80

Asn Trp Leu Thr Thr His Phe Val Val Thr Asn Arg Arg Val Met Phe
85 90 95

Arg Gln Gly Thr Leu Thr Arg Ser Gly Val Asp Ile Pro Leu Ala Arg
100 105 110

Ile Asn Ser Val Glu Phe Arg Asp Arg Leu Phe Glu Arg Met Phe Arg
115 120 125

Thr Gly Thr Leu Ile Ile Glu Ser Ala Ser Gln Asp Pro Val Glu Phe
130 135 140

Tyr Asn Ile Pro Arg Leu Arg Gln Met Tyr Ala Leu Leu Tyr His Glu
145 150 155 160

Val Phe Asp Thr Leu Gly Ser Glu Glu Ser Pro Ser
165 170

<210> 75

<211> 228

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0734, ML.tab 875150:875836 reverse MW:25515

<400> 75

Val Ser Phe Pro Asp Ala Thr Ile Thr Arg Leu Pro Thr Val Leu Gln
1 5 10 15

Pro Tyr Ala Gln Arg Tyr His Glu Leu Ile Lys Phe Ala Ile Val Gly
20 25 30

Gly Thr Thr Phe Ile Ile Asp Ser Ala Ile Phe Tyr Thr Leu Lys Leu
35 40 45

Thr Ile Leu Glu Pro Lys Pro Val Thr Ala Lys Val Val Ala Gly Ile

50 55 60

Val Ala Val Ile Ala Ser Tyr Val Leu Asn Arg Glu Trp Ser Phe Arg
65 70 75 80

Asp Arg Gly Gly Arg Glu Arg His Asn Glu Ala Leu Leu Phe Phe Ala
85 90 95

Phe Ser Gly Ile Gly Val Leu Leu Ser Met Ala Pro Leu Trp Phe Ser
100 105 110

Ser Tyr Val Leu Gln Leu Arg Ala Pro Thr Val Ser Leu Thr Val Glu
115 120 125

Asn Leu Ala Asp Phe Leu Ser Ala Tyr Ile Ile Gly Asn Leu Leu Gln
130 135 140

Met Ala Phe Arg Phe Trp Ala Phe Arg Arg Trp Val Phe Pro Asp Ala
145 150 155 160

Phe Ala Arg Asn Pro Glu Lys Thr Leu Glu Ser Ala Leu Thr Ala Gly
165 170 175

Gly Ile Ala Glu Val Phe Glu Asp Ala Ile Asp Gly Val Phe Glu Asp
180 185 190

Phe Gly Asp Ala Leu Leu Arg Ala Trp Arg Asn Arg Ser Arg Arg Leu
195 200 205

Asp Leu Ser Pro Ala Ser Gln Leu Gly Asp Ser Ser Glu Pro Arg Val
210 215 220

Ser Lys Thr Ser
225

<210> 76

<211> 92

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0748, ML.tab 890981:891259 reverse MW:9830

<400> 76

Met Val Gln Gly Leu Leu Ala Lys Ala Ala Thr Met Val Ile Thr Gly
1 5 10 15

Leu Thr Gly Val Thr Ala Tyr Glu Met Leu Arg Lys Ala Val Thr Lys
20 25 30

Val Pro Leu His Gln Ile Ala Val Ser Ala Leu Glu Leu Gly Leu Arg
35 40 45

Gly Ser Arg Lys Ala Glu Glu Ala Ala Glu Ser Ala Arg Leu Lys Leu
50 55 60

Ala Asp Val Met Ala Glu Ala Arg Glu Arg Ile Gly Lys Glu Thr Thr
65 70 75 80

Ala Pro Ala Val Ser Asp Ile His Gln His Asp His
85 90

<210> 77

<211> 167

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0761, ML.tab 903525:904028 reverse MW:18775

<400> 77

Val Ser Asn Ser Cys Ser Ser Ser Arg His Gly Gln Trp Ser Arg Arg
1 5 10 15

Phe Ser Ser Arg Arg Ala Ala Lys Arg Gly Arg Asp Ile Arg Gly Pro
20 25 30

Leu Leu Pro Pro Thr Val Pro Gly Trp Arg Ser Arg Ala Glu Arg Phe
35 40 45

Asp Met Ala Val Leu Glu Ala Tyr Glu Pro Ile Glu Gln Arg Trp Gln
50 55 60

Gly Arg Val Ser Glu Leu Asp Val Ala Val Asp Glu Ile Pro Arg Ile
65 70 75 80

Ala Ala Arg Asn Pro Glu Asn Val Gln Trp Pro Pro Glu Val Ile Ala
85 90 95

Asp Gly Pro Ile Ala Leu Ala Arg Leu Ile Pro Ala Gly Val Asp Val
100 105 110

Arg Ser Asn Ala Thr Arg Ala Arg Ile Val Leu Phe Arg Lys Pro Ile
115 120 125

Glu Arg Arg Ala His Asp Thr Val Glu Leu Gly Glu Leu Leu His Asp
130 135 140

Ile Leu Val Ala Gln Val Ala Ile Tyr Leu Asp Val Glu Pro Ser Ala
145 150 155 160

Ile Asp Pro Thr Met Asp Asp
165

<210> 78

<211> 165

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0762, ML.tab 904068:904565 forward MW:17248

<400> 78

Met Arg Val Ser Gly Ala Ser Ala Thr Phe Ser His Asp Ser Leu Ser
1 5 10 15

Val Val Asn Val Pro Arg Arg Cys Cys Arg Pro Gly Cys Pro His Tyr
20 25 30

Ala Val Ala Thr Leu Thr Phe Val Tyr Ser Asp Ser Thr Ala Val Val
35 40 45

Gly Pro Leu Ala Thr Val Arg Glu Pro His Ser Trp Asp Leu Cys Val
50 55 60

Asp His Ala Ala Arg Ile Thr Ala Pro Arg Gly Trp Glu Leu Val Arg
65 70 75 80

His Ala Gly Pro Leu Pro Ser Asn Pro Asp Glu Asp Asp Leu Val Ala
85 90 95

Leu Ala Asp Ala Val Arg Glu Gly Pro Gly Gly Glu His Gly Ser Tyr
100 105 110

Gly Asn Gly Ala Arg Ala Ser Leu Gly Gly Phe Ala Asp Pro Gln Leu
115 120 125

Gln Ser Ala Gly Ala His Ala Thr Val Pro Ser Gly Gly Leu Leu Ala
130 135 140

Pro Ser Glu Leu Arg Ser Gly Arg Arg Arg Gly His Leu Arg Val Leu
145 150 155 160

Pro Asp Pro Ser Asp
165

<210> 79

<211> 365

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0764, ML.tab 906078:907175 forward MW:37464

<400> 79

```
Val Asn Ala Thr Arg Leu Ile Asp Leu Glu Asp Thr Lys Gly Leu Ile
1               5                  10                  15

Ala Ala Asp Arg Asp Gly Leu Leu Arg Ala Ala Ser Ser Ala Gly Ala
            20                  25                  30

Gln Val Arg Ala Ile Ala Ala Ala Ala Glu Glu Gly Ala Leu Glu Thr
        35                  40                  45

Leu Arg Ala His Asp Arg Pro Arg Thr Val Ile Trp Val Ala Gly Arg
    50                  55                  60

Gly Thr Ala Glu Thr Ala Gly Ala Met Leu Ala Ala Thr Ser Gly Gly
65                  70                  75                  80

Ala Thr Thr Glu Pro Ile Val Val Ala Ser Glu Ala Pro Pro Trp Val
                85                  90                  95

Gly Pro Leu Asp Val Leu Ile Val Ala Gly Asp Asp Pro Gly Asp Pro
            100                 105                 110

Ala Leu Val Gly Ala Ala Ala Thr Ala Val Gly Arg Gly Ala Arg Val
        115                 120                 125

Val Val Val Ala Pro Tyr Glu Gly Pro Leu Arg Asp Ala Thr Ala Gly
    130                 135                 140

Arg Val Ala Val Leu Glu Pro Arg Leu Arg Ile Pro Asn Glu Phe Gly
145                 150                 155                 160

Leu Cys Arg Tyr Leu Ala Ala Gly Leu Ala Ala Leu Gln Thr Val Asp
                165                 170                 175

Pro Arg Leu Arg Leu Asp Leu Ala Met Leu Ala Asp Glu Leu Asp Ser
            180                 185                 190

Glu Ala Leu His Asn Ser Val Gly Tyr Glu Val Phe Thr Asn Pro Ala
        195                 200                 205

Lys Thr Leu Ala Ala Ser Val Ser Gly His Arg Val Ala Leu Ala Gly
    210                 215                 220

Asp Cys Ala Ala Thr Leu Ala Leu Ala Arg His Gly Ser Ser Val Leu
225                 230                 235                 240
```

Leu Arg Ile Ala His Gln Val Thr Ser Ala Thr Gly Leu Ser Asp Ala
245 250 255

Val Val Ala Val Arg Ser Ser Val Asp Val Ala Asp Tyr Ala Pro Thr
260 265 270

Ser Val Asp Val Leu Phe His Asp Glu Glu Ile Asp Gly Ser Leu Pro
275 280 285

Glu Arg Leu Arg Val Leu Ala Leu Thr Leu Ala Ser Glu Arg Thr Val
290 295 300

Val Ala Ala Arg Val Val Gly Leu Asp Asp Val Tyr Leu Val Ala Ala
305 310 315 320

Glu Asp Val Pro Asp Gly Pro Ser Gly Leu Ala Gly Leu Pro Val Ser
325 330 335

Gly Gly Ala Asp Arg Ala Glu Gln Glu Leu Ala Met Leu Ala Val Arg
340 345 350

Leu Glu Met Ala Ala Val Tyr Leu Arg Leu Val Arg Gly
355 360 365

<210> 80

<211> 85

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0776, ML.tab 920258:920515 forward MW:8946

<400> 80

Val Ala Gly Cys Gly Val Phe Ala Thr Arg Trp Ser Asp Ala Cys Thr
1 5 10 15

Ala Glu Leu Ser Val Ala Ala Gly Glu Pro Arg Val Val Ser Leu Cys
20 25 30

Val Asp Pro Leu Val Pro Val Val Val Leu Gly Arg Tyr Val Gly Ala
35 40 45

Arg Arg Gln Ala Ile Leu Ala Met Lys Glu His Gly Arg Arg Asn Leu
50 55 60

Val Ala Leu Pro Thr Arg Gln Cys Val Ser Arg Leu Gly Ser Cys Thr
65 70 75 80

Leu Pro Gly Arg Gly
85

<210> 81

<211> 173

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0806, ML.tab 955206:955727 forward MW:17808

<400> 81

Val Asp Arg Val Ile Ala Leu Leu Ser Ser Gly Ala Ile Val Gly Pro
1 5 10 15

Cys Asp Tyr Ala Asp Val Val Thr Leu Pro His Lys Arg Ala Val Phe
20 25 30

Ser Arg Ala Pro Ala Ala Val Arg Gly Ala Gly Leu Ile Val Val Val
35 40 45

Gln Gly Ala Val Ala Leu Val Val Ala Ala Ala Leu Val Val Arg Gly
50 55 60

Leu Thr Gly Ala Asp Gln Arg Ile Val Asn Gly Leu Gly Thr Ala Ile
65 70 75 80

Trp Phe Val Val Val Gly Val Ala Val Leu Ala Ala Gly Cys Ala Leu
85 90 95

Leu Val Gly Lys Arg Trp Gly Arg Gly Leu Ala Val Phe Thr Gln Leu
100 105 110

Leu Leu Leu Pro Val Ala Trp Tyr Leu Val Val Gly Ser His Gln Ser
115 120 125

Ala Phe Gly Phe Pro Met Gly Ile Val Ala Leu Ile Ala Leu Ile Leu
130 135 140

Leu Phe Ser Pro Pro Ala Val Arg Trp Ser Ala Gly Ala Tyr Gln Arg
145 150 155 160

Ser Val Ala Ser Ser Ala Asn Arg Lys Ala Asp Ser Arg
165 170

<210> 82

<211> 407

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0810, ML.tab 958882:960105 reverse MW:42979

<400> 82

```
Met Val Arg Pro Glu Arg Arg Thr Lys Ala Asp Thr Ile Ala Ala Met
1               5                  10                  15

Thr Ile Thr Val Val Met Ala Ala Met Val Ser Leu Ile Trp Trp Thr
            20                  25                  30

Ser Asp Ala Gln Ala Thr His Ser Arg Pro Ala Thr Ile Pro Ala Pro
        35                  40                  45

Asn Pro Thr Pro Ala Arg Glu Val Pro Thr Ala Phe Asn Gln Leu Trp
    50                  55                  60

Ala Ala Ala Ser Pro Ala Thr Thr Ala Pro Val Val Val Gly Gly Ala
65                  70                  75                  80

Val Ile Thr Gly Asp Gly His Gln Ile Asp Gly Arg Asn Pro Val Thr
                85                  90                  95

Gly Glu Ser Arg Trp Ser Tyr Ala Arg Asp Ser Asp Leu Cys Gly Val
            100                 105                 110

Ser Trp Val Tyr His Tyr Ala Val Ala Val Tyr Arg Asp Asp Arg Gly
        115                 120                 125

Cys Gly Gln Val Ser Thr Ile Asp Gly Ser Thr Gly Arg Arg Glu Ala
    130                 135                 140

Ala Arg Ser Ser Tyr Ala Asp Pro His Val Arg Leu Ser Ser Asp Gly
145                 150                 155                 160

Thr Ala Val Leu Ser Ala Gly Asp Thr Arg Leu Glu Leu Trp Arg Ser
                165                 170                 175

Asp Met Val Arg Met Leu Ala Tyr Gly Glu Ile Asp Ala Arg Val Lys
            180                 185                 190

Pro Pro Ala Arg Gly Leu His Ser Gly Cys Thr Leu Glu Ser Thr Ala
        195                 200                 205

Ala Ser Ser Ser Ala Val Ala Val Leu Glu Ala Cys Ala Asn Gln Asp
    210                 215                 220

Asp Leu Gln Leu Val Leu Leu Arg Pro Gly Lys Glu Asp Asp Glu Pro
225                 230                 235                 240

Gln Gln His Leu Val Ala Glu Pro Arg Val Arg Ser Gly Ser Gly Ala
                245                 250                 255
```

Arg Val Leu Thr Val Ser Asp Thr His Thr Ala Val Tyr Leu Pro Gly
260 265 270

Glu Ala Gly Thr Gln Pro Arg Val Asp Val Ile Asp Glu Thr Gly Thr
275 280 285

Thr Val Ala Ser Thr Leu Leu Thr Lys Pro Pro Ser Ser Ser Ala Val
290 295 300

Val Ser Gln Ala Gly Asn Leu Val Thr Trp Trp Thr Gly Asp Thr Leu
305 310 315 320

Met Val Phe Asn Gln Ser Asn Leu Thr Leu Arg Tyr Thr Ile Ala Ala
325 330 335

Gly Glu Thr Thr Ala Pro Val Gly Pro Gly Val Met Met Ala Gly Gln
340 345 350

Leu Leu Val Pro Val Thr Gly Lys Ile Gly Val Tyr Asp Leu Phe Ser
355 360 365

Gly Ala Asn Asn Arg Tyr Ile Pro Val Arg Arg Pro Pro Ser Ser Ser
370 375 380

Ala Val Ile Pro Ala Val Ser Gly Ser Thr Val Phe Glu Gln Arg Gly
385 390 395 400

Asp Thr Leu Val Ala Leu Gly
405

<210> 83

<211> 195

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0813, ML.tab 962707:963294 reverse MW:20353

<400> 83

Met Arg Leu Thr Glu Thr Thr Ser Ile Arg Arg Thr Thr Thr Thr Ser
1 5 10 15

Tyr Ser Gly His Pro Ile Val Asp Gly Arg Gln Val Ala Ala Leu Leu
20 25 30

Gly Ser Val Ala Ala Leu Cys Ala Ile Ala Thr Ala Val Ile Ile Asn
35 40 45

Ser Gly Asp Asn Ala Thr Thr Lys Ala Ile Val Gly Ala Pro Thr Pro

50 55 60

Arg Pro Val Leu Thr Thr Pro Ser Ile Pro Leu Pro Ala Thr Pro Ser
65 70 75 80

Ser Thr Pro Pro Leu Leu Leu Leu Pro Asp Thr Ala Thr Ala Thr Ile
85 90 95

Pro His Lys Ala Ala Pro Pro Ala Leu His Pro Arg Thr Val Val Tyr
100 105 110

Asn Val Thr Gly Met Lys Glu Leu Leu Asp Leu Val Thr Val Val Tyr
115 120 125

Thr Asp Ala Arg Gly Tyr Pro Lys Thr Glu Phe Asn Val Val Leu Pro
130 135 140

Trp Thr Lys Ala Val Val Leu Asn Leu Gly Val Lys Thr Gln Ser Val
145 150 155 160

Val Ala Thr Ser Phe His Ser Gln Leu His Cys Ser Ile Val Asn Ala
165 170 175

Glu Gly Gln Pro Val Val Ala Ser Thr Asn Asn Ala Val Ile Ala Thr
180 185 190

Cys Thr Arg
195

<210> 84

<211> 82

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0814, ML.tab 963593:963841 forward MW:8652

<400> 84

Val Glu Val Lys Ile Gly Ile Thr Asp Ser Pro Arg Glu Leu Thr Phe
1 5 10 15

Ser Ser Ala Gln Thr Pro Gly Glu Ile Glu Glu Leu Val Ser Ala Ala
20 25 30

Leu Arg Glu Gly Leu Gly Leu Leu Val Leu Thr Asp Glu Arg Gly Arg
35 40 45

Arg Phe Leu Ile His Gly Ala Lys Ile Ala Tyr Val Glu Ile Gly Val
50 55 60

Ala Asp Ala Arg Arg Val Gly Phe Gly Ile Gly Ala Glu Ser Ala Thr
65 70 75 80

Asn Gly

<210> 85

<211> 341

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0816, ML.tab 964701:965726 forward MW:37443

<400> 85

Val Ser Ser Pro Gly Pro Val Gly Ser Pro Gly Arg Val Pro Val Leu
1 5 10 15

Arg Glu Glu Trp Arg Ala Pro Leu Arg Ala Gln Arg Glu Pro Leu Ala
20 25 30

Arg Gly Glu Gly Arg Val Arg Val Asn Arg Gly Arg Ser Arg Arg Trp
35 40 45

Arg Lys Gln Thr Arg Leu Gly Arg Phe Val Ser Val Phe Gly Trp Arg
50 55 60

Ala Tyr Ala Leu Pro Phe Leu Met Ala Leu Thr Ala Val Val Leu Tyr
65 70 75 80

Gln Thr Val Thr Gly Thr Asn Ala Pro Glu Pro Ala Ala Ser Glu Pro
85 90 95

Ile Thr Glu Pro Pro Val Ile Gly Ala Val Gly Thr Ala Ile Met Asp
100 105 110

Val Pro Pro Arg Gly Leu Ala Ala Phe Asp Ala Asn Leu Pro Ala Gly
115 120 125

Thr Leu Pro Asp Gly Gly Ala Phe Thr Glu Ala Gly Asp Lys Thr Trp
130 135 140

His Val Val Pro Gly Thr Met Pro Gln Ile Ser Gln Ser Ala Thr Lys
145 150 155 160

Val Phe Lys Tyr Ser Ile Glu Ile Glu Asn Gly Leu Asp Pro Thr Met
165 170 175

Phe Gly Gly Asp Gly Ala Phe Ala Gln Met Val Asp Gln Thr Leu Ala
180 185 190

Asn Pro Lys Gly Trp Thr His Asn Pro Gln Phe Ala Phe Thr Arg Ile
195 200 205

Asp Thr Gly Met Pro Asp Phe Arg Ile Ser Leu Val Ser Pro Leu Thr
210 215 220

Ile Arg Ala Gly Cys Gly Tyr Glu Phe Arg Leu Glu Thr Ser Cys Tyr
225 230 235 240

Asn Pro Ser Phe Gly Pro Asp Arg Gln Ala Arg Val Leu Ile Asn Glu
245 250 255

Ala Arg Trp Leu Arg Gly Ala Leu Pro Phe Glu Gly Asp Val Gly Ser
260 265 270

Tyr Arg Gln Tyr Val Ile Asn His Glu Val Gly His Ala Ile Gly Tyr
275 280 285

Val Arg His Glu Pro Cys Asp Lys Gln Gly Gly Leu Ala Pro Val Met
290 295 300

Met Gln Gln Thr Phe Ser Thr Ser Asn Asn Asp Gly Ala Lys Phe Asp
305 310 315 320

Pro Glu Trp Val Lys Pro Asp Gly Lys Thr Cys Arg Phe Asn Pro Trp
325 330 335

Pro Tyr Pro Ile Ala
340

<210> 86

<211> 297

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0818, ML.tab 967172:968065 forward MW:32374

<400> 86

Leu Arg Ser Pro Arg Ser Gly Ser Thr Arg Leu Thr Arg Val Thr Val
1 5 10 15

Glu Pro Pro Pro Glu His Val Leu Ser Ala Phe Gly Leu Thr Gly Val
20 25 30

Gln Pro Val Pro Leu Gly Ala Ser Trp Glu Gly Gly Trp Arg Cys Gly
35 40 45

Glu Val Val Leu Ser Met Val Ala Asp Asn Ala Arg Ala Ala Trp Ser

50 55 60

Ala Arg Val Arg Glu Thr Leu Phe Val Asp Gly Ile Arg Leu Ala Arg
65 70 75 80

Pro Val Arg Ser Thr Asp Gly Arg Tyr Val Val Ser Cys Trp Arg Ala
85 90 95

Asn Thr Phe Val Ala Gly Thr Pro Glu Ala Arg His Asp Glu Val Val
100 105 110

Ser Ala Ala Val Arg Leu His Glu Ala Thr Gly Lys Leu Glu Arg Pro
115 120 125

Arg Phe Leu Thr Gln Gly Pro Thr Ala Arg Trp Ala Asp Val Asp Ile
130 135 140

Phe Ile Ala Ala Asp Arg Ala Ala Trp Glu Gly Arg Pro Leu Gln Ser
145 150 155 160

Val Pro Ser Gly Val Trp Ala Ala Pro Met Thr Thr Asp Gly Gln Arg
165 170 175

Ser Val Asp Leu Ile Asn Gln Leu Ala Gly Leu Arg Lys Pro Thr Arg
180 185 190

Ser Pro Asn Gln Leu Val His Gly Asp Leu Tyr Gly Thr Met Leu Phe
195 200 205

Val Gly Thr Ala Ala Pro Gly Ile Thr Asp Ile Thr Pro Tyr Trp Arg
210 215 220

Pro Ala Ser Trp Ala Ala Gly Val Val Val Asp Ala Leu Ser Trp
225 230 235 240

Gly Glu Ala Asp Asp Gly Leu Ile Glu Arg Trp Asn Ala Leu Pro Glu
245 250 255

Trp Pro Gln Met Leu Leu Arg Ala Leu Met Phe Arg Leu Ala Val His
260 265 270

Ala Leu His Pro Arg Ser Thr Ala Glu Ala Phe Pro Gly Leu Ala Arg
275 280 285

Thr Ala Ala Leu Val Arg Leu Val Leu
290 295

<210> 87

<211> 100

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0834, ML.tab 990401:990703 reverse MW:10909

<400> 87

Val Arg Gln Asp Gly Ala Ser Arg Thr Val Val Gly Gly Thr Ala Leu
1 5 10 15

Ile Arg Tyr Val Ile Val Leu Gly Leu Gly Tyr Val Leu Gly Ala Lys
20 25 30

Ala Gly Arg Arg Arg Tyr Glu Gln Ile Val Gly Ile Tyr Arg Thr Leu
35 40 45

Thr Gly Ser Pro Met Ala Lys Ser Met Ile Ala Glu Gly Arg Arg Lys
50 55 60

Val Ala Asn Arg Ile Ser Pro Asp Glu Gly Phe Val Thr Leu Ala Glu
65 70 75 80

Ile Asp Asn Gln Thr Thr Val Ile Glu Arg Ser Ala Glu Trp Arg Glu
85 90 95

Asn Gly Gly Asn
100

<210> 88

<211> 250

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0857, ML.tab 1019690:1020442 reverse MW:26808

<400> 88

Met Ala Lys Pro Arg Asn Ala Ala Ala His Lys Ala Ala Arg Ala Glu
1 5 10 15

Ala Lys Ala Ala Arg Lys Ala Ala Ser Arg Gln Arg Arg Leu Gln Leu
20 25 30

Trp Gln Ala Phe Thr Ile Gln Arg Thr Glu Asp Lys Arg Leu Ile Pro
35 40 45

Tyr Met Ile Ala Ala Phe Ser Leu Met Val Ser Ala Ser Val Thr Ala
50 55 60

Gly Val Leu Val Gly Gly Leu Thr Met Ile Thr Leu Ile Leu Leu Gly
65 70 75 80

Val Val Leu Gly Ala Leu Val Ala Phe Ile Ile Phe Gly Arg Arg Thr
85 90 95

Gln Gln Ser Val Tyr His Lys Ala Glu Gly Gln Thr Gly Gly Ala Ala
100 105 110

Trp Ala Leu Asp Asn Leu Arg Gly Lys Trp Arg Val Ser Pro Gly Val
115 120 125

Ala Ala Asn Gly His Phe Asp Ala Val His Arg Val Ile Gly Arg Pro
130 135 140

Gly Val Ile Phe Val Ala Glu Gly Ser Ala Ala Arg Val Lys Pro Leu
145 150 155 160

Leu Ala Gln Glu Lys Lys Arg Thr Ala Arg Leu Val Gly Asp Val Pro
165 170 175

Ile Tyr Asp Ile Ile Val Gly Asn Gly Asp Gly Glu Val Ala Leu Val
180 185 190

Lys Leu Glu Arg His Leu Ala Arg Leu Pro Ala Asn Ile Ser Val Lys
195 200 205

Gln Val Asp Ile Leu Glu Ser Arg Leu Ala Ala Leu Gly Ser Arg Ala
210 215 220

Gly Ala Ser Leu Ile Pro Lys Gly Pro Leu Pro Asn Ala Gly Lys Met
225 230 235 240

Arg Gly Val Gln Arg Thr Val Arg Arg Lys
245 250

<210> 89

<211> 124

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0869, ML.tab 1033201:1033575 reverse MW:13804

<400> 89

Met Met Ala Gly Glu Glu Ala Tyr Leu Pro Pro Arg Asp Gln Gly Pro
1 5 10 15

Val Arg Arg Tyr Ile Arg Asp Leu Val Asp Ala Arg Arg Asn Ala Leu
20 25 30

Gly Leu Phe Thr Pro Ser Ala Leu Val Leu Leu Phe Ile Thr Phe Gly

35 40 45

Val Pro Gln Leu Gln Leu Tyr Met Ser Pro Ala Met Leu Val Leu Leu
50 55 60

Ser Val Met Gly Ile Asp Gly Ile Ile Leu Gly Arg Lys Ile Ser Lys
65 70 75 80

Leu Val Asp Val Lys Phe Pro Ser Asn Thr Glu Ser His Trp Arg Leu
85 90 95

Gly Leu Tyr Ala Ala Gly Arg Ala Ser Gln Met Arg Arg Leu Arg Val
100 105 110

Pro Arg Pro Gln Val Glu His Gly Ser Ser Val Gly
115 120

<210> 90

<211> 171

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0872, ML.tab 1035615:1036130 reverse MW:19047

<400> 90

Met Leu Pro Pro Ala Val Ser Tyr Pro Arg Arg Arg Ser Lys Arg Leu
1 5 10 15

Ile Ile Ser Val Leu Val Ala Ile Ala Leu Val Ala Ala Met Thr Ala
20 25 30

Val Ile Ile Tyr Gly Val Arg Thr Asn Gly Ser Lys Thr Gly Gly Thr
35 40 45

Phe Ser Glu Val Thr Ala Lys Thr Ala Ile Glu Asp Tyr Leu Lys Ala
50 55 60

Leu Glu Gln Ser Asn Ile Asn Thr Ile Ala Arg Asn Ala Leu Cys Gly
65 70 75 80

Met Tyr Asp Ser Val Arg Asp Gln Arg Pro Asp Gln Ala Leu Ala Gln
85 90 95

Leu Ser Ser Asp Ala Phe Arg Lys Gln Phe Ser Gln Val Glu Leu Thr
100 105 110

Ser Ile Asp Gln Ile Val Tyr Trp Ser Pro Tyr Gln Ala Gln Val Leu
115 120 125

Phe Thr Met Arg Thr Ser Pro Ala Thr Gly Gly Pro Lys Arg Arg Gln
130 135 140

Ile Gln Gly Ile Ala Gln Leu Leu Tyr Arg Arg Asn Gln Val Leu Val
145 150 155 160

Cys Ser Tyr Met Leu Arg Thr Ala Asp Ser His
165 170

<210> 91

<211> 139

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0876, ML.tab 1040896:1041315 forward MW:14969

<400> 91

Met His Ile Glu Ala Arg Leu Phe Glu Phe Val Ala Val Phe Phe Val
1 5 10 15

Ile Met Ala Val Leu Tyr Gly Val Leu Thr Ser Met Phe Ala Thr Gly
20 25 30

Gly Val Asp Trp Val Gly Thr Thr Ala Leu Ala Leu Thr Gly Gly Leu
35 40 45

Ala Leu Ile Val Ala Thr Phe Phe Arg Phe Val Ala Arg Arg Leu Asp
50 55 60

Ile Arg Pro Glu Asp Tyr Glu Gly Ala Glu Ile Ser Asp Gly Ala Gly
65 70 75 80

Glu Leu Gly Phe Phe Ser Pro His Ser Trp Trp Pro Val Leu Val Ala
85 90 95

Leu Ser Gly Ser Val Ala Ala Val Gly Ile Ala Leu Trp Leu Pro Trp
100 105 110

Leu Ile Val Ala Gly Val Val Phe Val Leu Ala Ser Ala Ala Gly Leu
115 120 125

Val Phe Glu Tyr Tyr Val Gly Pro Glu Lys His
130 135

<210> 92

<211> 212

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0878, ML.tab 1042383:1043021 forward MW:22756

<400> 92

```
Met Met Asn Arg Tyr Ser Pro Tyr Arg Arg Gly Ser Asp Thr Ile Ala
1               5                  10                  15

Ser Asp Val Ile Asp Arg Ile Leu Val Gly Val Cys Ala Ala Val Trp
            20                  25                  30

Leu Val Leu Ile Gly Val Ser Val Ala Ala Ala Val Ala Leu Glu Asp
        35                  40                  45

Leu Gly Arg Gly Phe His Lys Ile Ala Ser Asp Pro His Thr Thr Trp
    50                  55                  60

Val Leu Tyr Gly Ile Ile Val Val Ser Val Leu Ile Ile Ala Gly Ala
65                  70                  75                  80

Val Pro Val Leu Leu Trp Ala Arg Arg Val Ala Arg Val Glu Pro Pro
                85                  90                  95

Ile Arg Pro Ala Gly Val Pro Glu Arg Gly Gly Val Arg Gln Leu Val
            100                 105                 110

Ser Ala Gly Arg Ser Thr Ala Arg Ile Glu Val Glu Arg Val Cys Ala
        115                 120                 125

Glu Glu Arg Val Gln Ser Val Ala Gln Pro Gly Glu Trp Phe Asp Ala
    130                 135                 140

Ala Val Asp Arg Ile Trp Leu Arg Gly Thr Val Gly Leu Thr Gly Thr
145                 150                 155                 160

Met Gly Ala Ala Leu Val Ala Val Ala Ala Ser Thr Tyr Leu Met Ala
                165                 170                 175

Val Gly Arg Asp Gly Ala Ser Trp Val Gly Tyr Val Leu Ala Gly Ile
            180                 185                 190

Val Thr Ala Val Met Pro Val Ile Glu Trp Ile Tyr Val Arg Gln Leu
        195                 200                 205

Arg Arg Val Gly
    210
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<210> 93

<211> 135

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0888, ML.tab 1055260:1055667 forward MW:15125

<400> 93

Met Asn Ser Thr Asn Ser Ile Gln Ile Ala Asp Glu Thr Tyr Val Ala
1 5 10 15

Ala Asp Arg Ala Leu Ile Gly Ala Ala Val Ala Asp Arg Ser Ser Trp
20 25 30

His Arg Trp Trp Pro Asp Leu Arg Leu Gln Val Val Glu Asp Arg Ala
35 40 45

Glu Lys Gly Ile Arg Trp Ala Val Thr Gly Thr Leu Thr Gly Thr Met
50 55 60

Glu Ile Trp Leu Glu Pro Leu Thr Glu Glu Leu Asp Gly Val Val Leu
65 70 75 80

His Tyr Phe Leu His Ala Glu Pro Ala Gly Val Ala Ala Trp Gln Leu
85 90 95

Ala Lys Met Asn Met Ala Lys Val Thr His Arg Arg Arg Val Ala Gly
100 105 110

Lys Ala Met Ala Phe Glu Val Lys Lys Thr Leu Glu Arg Ser Arg Ser
115 120 125

Ile Gly Val Ser Pro Val Ile
130 135

<210> 94

<211> 144

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0889, ML.tab 1055786:1056220 forward MW:16483

<400> 94

Val Ala Asp Lys Thr Thr Gln Thr Phe Tyr Ile Asp Ala Asn Pro Gly
1 5 10 15

Glu Val Met Lys Thr Ile Ala Asp Ile Glu Ser Tyr Pro Gln Trp Ile
20 25 30

Ser Glu Tyr Lys Glu Val Glu Val Leu Glu Val Asp Asp Glu Asp Phe
35 40 45

Pro Lys Arg Ala Arg Met Leu Met Asp Ala Lys Ile Phe Lys Asp Thr
50 55 60

Leu Ile Met Ser Tyr Asp Trp Thr Ala Asp His Gln Ser Val Ser Trp
65 70 75 80

Ile Leu Glu Ser Ser Ser Leu Leu Lys Ser Leu Glu Gly Ser Tyr Arg
85 90 95

Leu Val Pro Lys Gly Ser Thr Thr Glu Val Thr Tyr Glu Leu Ala Val
100 105 110

Asp Phe Ala Ile Pro Met Ile Gly Met Leu Lys Arg Lys Ala Glu His
115 120 125

Arg Leu Ile Asp Gly Ala Leu Lys Asp Leu Lys Lys Arg Val Glu Gly
130 135 140

<210> 95

<211> 130

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0891, ML.tab 1057485:1057877 forward MW:13550

<400> 95

Met Ser Gly Gly Tyr Ala Asp Ile Gly Pro Glu Leu Arg Lys Leu Ala
1 5 10 15

Gln Met Thr Leu Asp Gly Ile Gly Pro Ala Val Arg Ser Ala Ala Ala
20 25 30

Leu Val Ala Gly Ala Arg Gly Thr Gly Lys Cys Gln Gln Ala Trp Cys
35 40 45

Pro Val Cys Ala Leu Thr Ala Leu Val Ile Gly Glu Gln His Pro Leu

50 55 60

Leu Thr Val Ile Ala Asp His Ser Val Ala Leu Leu Asp Val Ile Arg
65 70 75 80

Ala Ile Val Asp Asp Ile Asp Gln Ser Asn Lys Ile Pro Pro Asp Ser
85 90 95

Pro His Gly Gly Gly Leu Asp Thr Glu Thr Pro Ala Gln Thr Asn Thr
100 105 110

Ser Asn Gly Thr Val Arg Arg Arg Tyr Gln Pro Ile Pro Val Ser Val
115 120 125

Glu Asp
130

<210> 96

<211> 171

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0895, ML.tab 1061008:1061523 forward MW:19954

<400> 96

Met Arg Tyr Phe Tyr Asp Thr Glu Phe Ile Glu Asp Gly Arg Thr Ile
1 5 10 15

Glu Leu Val Ser Ile Gly Val Val Ala Glu Asp Gly Arg Glu Tyr Tyr
20 25 30

Ala Val Ser Asn Glu Phe Asp Pro Glu Arg Ala Gly Asn Trp Val Arg
35 40 45

Val Asn Val Leu Ser Lys Leu Pro Pro Leu Ala Ser Gln Leu Trp Arg
50 55 60

Ser Arg Arg Gln Ile Arg Leu Asp Leu Glu Glu Phe Phe Gly Val Asp
65 70 75 80

Gly Ser Glu Pro Thr Glu Pro Ile Glu Leu Trp Ala Trp Val Gly Ala
85 90 95

Tyr Asp His Val Ala Leu Cys Gln Leu Trp Gly Pro Met Pro Asp Leu
100 105 110

Pro Glu Ala Leu Pro Arg Phe Thr Arg Glu Ile Arg Gln Leu Trp Glu
115 120 125

Asp Arg Gly Cys Pro Arg Met Pro Pro Arg Pro Arg Asp Leu His Asp
130 135 140

Ala Leu Val Asp Ala Arg Asp Gln Leu Arg Arg Phe Arg Ile Ile Met
145 150 155 160

Ser Ala Asp Asp Val Gly Ser Leu Pro Thr His
165 170

<210> 97

<211> 134

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0898, ML.tab 1064343:1064747 forward MW:14698

<400> 97

Val Gly Ser Ile Pro Ala Gly Asp Asp Val Leu Asp Pro Asp Glu Pro
1 5 10 15

Thr Tyr Asp Leu Thr Gln Val Ala Glu Leu Leu Gly Ile Pro Val Ser
20 25 30

Arg Val His Arg Lys Leu Cys Glu Gly Tyr Leu Val Ala Val Arg Arg
35 40 45

Gly Asp Ser Leu Val Val Pro Gln Ile Phe Phe Thr Asn Ser Gly Ala
50 55 60

Val Val Lys Ser Leu Pro Gly Leu Leu Thr Ile Leu His Asp Gly Ser
65 70 75 80

Phe His Glu Thr Glu Ile Val Arg Trp Leu Phe Thr Pro Asp Pro Ser
85 90 95

Leu Thr Leu Thr Arg Asp Gly Ser Arg Asp Val Val Ser Asn Ala Arg
100 105 110

Pro Val Asp Ala Leu His Thr His Gln Ala Arg Glu Val Val Arg Arg
115 120 125

Ala Gln Ala Met Ala Tyr
130

<210> 98

<211> 239

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0902, ML.tab 1068511:1069230 reverse MW:25542

<400> 98

```
Val Arg Ala Arg Phe Pro Pro Leu Phe Thr Arg Gly Cys Thr Ala Gln
1               5                  10                  15

Arg Arg Arg Thr Leu Thr Ile Ala Leu Leu Leu Val Ala Met Val Pro
            20                  25                  30

Leu Ala Thr Gly Cys Leu Arg Val Thr Ala Ser Ile Thr Ile Ser Pro
        35                  40                  45

Asp Asn Leu Val Ser Gly Lys Ile Ile Ala Ala Ala Lys Pro Lys Asn
    50                  55                  60

Lys Asn Asp Ala Gly Pro Gln Leu Asn Asp Asn Leu Pro Phe Ser Gln
65                  70                  75                  80

Lys Ile Ala Val Ser Asn Tyr Asn Ser Asp Gly Tyr Val Gly Ser Gln
                85                  90                  95

Ala Val Phe Ser Asp Leu Thr Phe Ala Glu Leu Pro Gln Leu Ala Asn
            100                 105                 110

Met Asn Ser Ser Thr Thr Asp Val Thr Leu Ser Leu Arg Arg Asn Gly
        115                 120                 125

Asn Leu Val Ile Leu Glu Ser Arg Ala Asp Leu Thr Ser Val Thr Asp
    130                 135                 140

Pro Asp Ala Asp Val Glu Leu Thr Val Ala Phe Pro Gly Val Val Thr
145                 150                 155                 160

Ser Thr Asn Gly Asp Arg Ile Glu Thr Lys Val Val Ala Trp Lys Leu
                165                 170                 175

Lys Pro Gly Val Val Ser Thr Met Ser Ala Arg Ala Arg Tyr Thr Asp
            180                 185                 190

Pro Asp Thr Arg Ser Phe Thr Gly Ala Ala Val Trp Leu Gly Ile Ala
        195                 200                 205

Ser Phe Ser Ala Ala Ser Val Val Val Leu Leu Ala Trp Asn Glu Arg
    210                 215                 220

Lys Ser Ser Ala Arg Leu Gln Ile Pro Arg Asp Ser Ser Ser Ser
225                 230                 235
```

<210> 99

<211> 210

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0903, ML.tab 1069302:1069934 reverse MW:23864

<400> 99

```
Leu Ala Ile Phe Leu Ile Asn Leu Ser Pro Asn Glu Met Glu Arg Arg
1               5                  10                  15

Leu Asn Glu Ala Leu Glu Val Tyr Val Asp Ala Met Arg Tyr Pro Arg
            20                  25                  30

Asn Thr Glu Asn Leu Arg Ala Gly Ile Trp Leu Glu His Ile Arg Arg
        35                  40                  45

Pro Gly Trp Gln Ala Val Ala Ala Val Glu Val Arg Ile Glu Val Ala
    50                  55                  60

Asp Val Ala Asp Met Ala Asp Gly Pro Ala His Pro Ala Pro Ser Ala
65                  70                  75                  80

Asp Glu Leu Asn Asn Ala Pro Leu Arg Gly Val Ala Tyr Gly Tyr Pro
                85                  90                  95

Gly Ala Pro Gly Gln Trp Trp Gln Gln Gln Val Val Gln Gly Leu Gln
            100                 105                 110

Arg Ser Gly Leu Ser Thr Leu Glu Ile Ala Arg Leu Met Asn Ser Tyr
        115                 120                 125

Phe Glu Leu Thr Glu Leu His Ile His Pro His Thr Gln Gly Arg Gly
    130                 135                 140

Ile Gly Glu Ala Leu Thr Arg Arg Leu Leu Ala His Arg Arg Glu Asn
145                 150                 155                 160

Asn Val Leu Leu Ser Thr Pro Glu Thr Asn Gly Glu Thr Asn Arg Ala
                165                 170                 175

Trp Arg Leu Tyr Arg Arg Leu Gly Phe Met Asp Ile Ile Arg Arg His
            180                 185                 190

Tyr Phe Ala Gly Asp Pro Arg Ala Phe Ala Ile Leu Gly Arg Thr Leu
        195                 200                 205

Pro Leu
    210
```

<210> 100

<211> 134

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0904, ML.tab 1070251:1070655 forward MW:14614

<400> 100

Met Pro Leu Ser Asp His Glu Gln Arg Met Leu Asp Gln Ile Glu Ser
1 5 10 15

Ala Leu Tyr Ala Glu Asp Pro Lys Phe Val Ser Ser Val Arg Gly Gly
20 25 30

Gly Leu Arg Val Pro Thr Ala Arg Arg Arg Thr Gln Gly Ala Ala Leu
35 40 45

Phe Val Ile Gly Leu Gly Met Leu Val Cys Gly Val Ala Phe Lys Ala
50 55 60

Thr Met Ile Gly Ser Phe Pro Ile Leu Ser Val Phe Gly Phe Val Val
65 70 75 80

Met Phe Gly Gly Val Leu Phe Ala Ile Thr Gly Ser Arg Leu Ser Gly
85 90 95

Arg Glu Asp His Pro Gly Leu Ala Pro Gly Thr Ser Arg Gln Arg Arg
100 105 110

Ser Lys Gly Ala Ala Gly Ser Phe Thr Ser Arg Met Glu Asp Arg Phe
115 120 125

Arg Arg Arg Phe Asp Glu
130

<210> 101

<211> 377

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0907, ML.tab 1072702:1073835 forward MW:39543

<400> 101

```
Met Lys Ala Gln Arg Asp Thr Pro Ile Arg Arg Gly Asp Ser Gly Arg
1               5                  10                  15

Pro Gly Gly Arg Asp Gly Ala Ala Arg Ser Gly Lys Arg Thr Ala Asn
            20                  25                  30

Glu Ala Gly Ser Arg Arg Leu Arg Thr His Ala Gly Lys Ile Ser Ala
        35                  40                  45

Ser Ala Arg Glu Val Gly Val Pro Lys Ser Gly Pro Arg Thr Ser Pro
    50                  55                  60

Met Ser Arg Pro Val Glu Arg Pro Ala Arg Pro Arg Asn Thr Thr Gln
65                  70                  75                  80

Ala Lys Ala Arg Ala Lys Ala Arg Lys Ala Lys Ala Pro Lys Val Val
                85                  90                  95

Arg Pro Arg Leu Gly Glu Cys Leu Ile Ala Arg Leu Ala Leu Ile Asp
            100                 105                 110

Leu Arg Pro Arg Thr Leu Val Asn Lys Val Pro Phe Val Val Leu Val
        115                 120                 125

Ile Ser Ser Leu Gly Val Gly Leu Gly Leu Thr Leu Trp Leu Ser Thr
    130                 135                 140

Asp Ser Ala Glu Arg Ser Tyr Gln Leu Gly Asp Ala Arg Glu Gln Ala
145                 150                 155                 160

Arg Met Leu Gln Gln Gln Lys Glu Ala Leu Glu Arg Asp Val Arg Glu
                165                 170                 175

Ala Glu Ser Ala Pro Ala Leu Ala Glu Thr Ala Arg Lys Gln Gly Met
            180                 185                 190

Ile Pro Thr Arg Asp Thr Ala His Leu Val Gln Gly Pro Gly Gly Asn
        195                 200                 205

Trp Val Val Val Gly Thr Pro Lys Pro Ala Asp Gly Val Pro Pro Pro
    210                 215                 220

Pro Leu Asn Thr Lys Leu Pro Asp Ala Gly Pro Pro Ser Leu Lys Pro
225                 230                 235                 240

Pro Glu Ile Pro Leu Glu Val Pro Val Arg Val Val Pro Gly Pro Gly
                245                 250                 255

Gly Pro Pro Pro Pro Ala Arg Ser Gly Pro Gln Met Trp Leu Arg Val
            260                 265                 270

Pro Asp Gly Ala Thr Thr Leu Gly Gly Gln His Leu Pro Gln Glu Leu
        275                 280                 285
```

Pro Gln Leu Pro Gly Met Leu Asn Gly Pro Ala Ala Ala Gln Val Gln
290 295 300

Val Pro Gly Phe Met Pro Thr Pro Gly Leu Pro Ile Pro Gly Ser Thr
305 310 315 320

Met Arg Val Pro Val Pro Ala Pro Ala Pro Thr Glu Val Pro Val Arg
325 330 335

Leu Gln Pro Gly Leu Val Ser Pro Ala Val Thr Ser Pro Val Ile Ser
340 345 350

Thr Ser Pro Val Pro Thr Pro Val Asn Ser Glu Gln Phe Gly Pro Val
355 360 365

Thr Ala Thr Ala Pro Gly Thr Ser Arg
370 375

<210> 102

<211> 210

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0920, ML.tab 1090054:1090686 forward MW:24016

<400> 102

Met Ser Thr Leu His Lys Val Lys Ala Tyr Phe Gly Met Ala Pro Met
1 5 10 15

Glu Asp Tyr Asp Asp Glu Tyr Tyr Asp Asp Arg Ser Pro Thr His Gly
20 25 30

Tyr Gly Arg Ser Arg Phe Glu Glu Gly Tyr Gly Arg Tyr Glu Gly Arg
35 40 45

Asp Tyr Ser Asp Leu Arg Gly Asp Pro Thr Gly Tyr Leu Pro Leu Gly
50 55 60

Tyr Arg Gly Gly Tyr Gly Asp Glu His Arg Phe Arg Pro Arg Glu Phe
65 70 75 80

Asp Arg Pro Asp Leu Ser Arg Pro Arg Leu Gly Ser Trp Leu Arg Asn
85 90 95

Ser Thr Arg Gly Ala Leu Ala Met Asp Pro Arg Arg Met Ala Met Leu
100 105 110

Phe Asp Glu Gly Ser Pro Leu Ser Lys Ile Thr Thr Leu Arg Pro Lys

115 120 125

Asp Tyr Ser Glu Ala Arg Thr Ile Gly Glu Arg Phe Arg Asp Gly Thr
130 135 140

Pro Val Ile Ile Asp Leu Val Ser Met Asp Asn Ala Asp Ala Lys Arg
145 150 155 160

Leu Val Asp Phe Ala Ala Gly Leu Ala Phe Ala Leu Arg Gly Ser Phe
165 170 175

Asp Lys Val Ala Thr Lys Val Phe Leu Leu Ser Pro Ala Asp Val Asp
180 185 190

Val Ser Pro Glu Glu Arg Arg Arg Ile Ala Glu Thr Gly Phe Tyr Ala
195 200 205

Tyr Gln
210

<210> 103

<211> 96

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0921, ML.tab 1090811:1091101 forward MW:10769

<400> 103

Leu Ala Leu Phe Tyr Gln Ile Leu Gly Leu Ala Leu Phe Val Phe Trp
1 5 10 15

Leu Leu Leu Ile Ala Arg Val Val Val Glu Phe Ile Arg Ser Phe Ser
20 25 30

Arg Asp Trp Arg Pro Asn Gly Val Thr Val Val Ile Leu Glu Thr Ile
35 40 45

Met Ser Ile Thr Asp Pro Pro Val Lys Leu Leu Arg Arg Leu Ile Pro
50 55 60

Gln Leu Thr Ile Gly Ala Val Arg Phe Asp Leu Ser Ile Met Val Leu
65 70 75 80

Leu Leu Val Ala Phe Ile Gly Met Gln Leu Ala Leu Ser Ala Ala Ala
85 90 95

<210> 104

<211> 130

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0923, ML.tab 1092221:1092613 forward MW:13650

<400> 104

Met Leu Ile Ile Ala Leu Val Leu Ala Leu Ile Gly Leu Val Val Leu
1 5 10 15

Val Phe Ala Val Ala Thr Ser Asn Leu Leu Met Ala Trp Val Cys Ile
20 25 30

Gly Ala Ser Val Leu Gly Val Leu Leu Leu Ile Val Asp Ala Val Arg
35 40 45

Glu His Gln Cys Ile Asp Ala Ala Asn Asn Glu Asp Lys Glu Asp Thr
50 55 60

Asp Gln Asp Asp Gly Ala Val Tyr Val Asp Tyr Leu Asp Glu Val Pro
65 70 75 80

Ala Gly Thr Ser Thr Glu Ala Pro Asp Ala Gly Ser Gln Glu Gly Asp
85 90 95

Thr Asn Ser Gly Glu Leu Ser Gly Tyr Trp Gly Arg Leu Thr Ile Asp
100 105 110

Thr Gly Glu Gln Ser Ala Val Ala Ala Asp Asp His Asp Asn Asp Arg
115 120 125

Ala Thr
130

<210> 105

<211> 149

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0984, ML.tab 1151024:1151473 reverse MW:16902

<400> 105

Val Ala Ile Ala Glu Leu Thr Glu Ala Ser Val Gln Gly Val Glu Asn
1 5 10 15

Ile Arg Thr Val Glu Val Phe Leu Ala Ala Leu Gln Asp Ala Gly Leu
20 25 30

Arg Asn Arg Ile Arg Asp Val Gly Arg Gln Pro Arg Val Tyr Gln Asn
35 40 45

Val Gly Leu Pro Thr Ile His Gly Arg Ser Lys Thr Ile Thr Leu Trp
50 55 60

Arg Lys Met Ala Asp Cys Ile Gly Phe Glu Ile Lys Ile His Arg Ile
65 70 75 80

Ala Ala Val Ala Ile Ala Val Leu Cys Glu Arg Ala Asp Ala Val Ile
85 90 95

Val Gly Pro Leu Trp Met Gln Phe Trp Val Cys Gly Thr Phe Glu Val
100 105 110

Gln Asn Lys Arg Ile Met Leu Trp Arg Asn Tyr Phe Asp Leu Phe Asp
115 120 125

Leu Phe Lys Ala Thr Met Arg Ser Leu Val Ala Leu Arg Ile Pro Ser
130 135 140

Leu Asn Ala Ala Phe
145

<210> 106

<211> 67

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0986, ML.tab 1152702:1152905 forward MW:7514

<400> 106

Leu Ala Gly Val Arg Leu Thr Glu Phe His Glu Arg Val Val Leu Arg
1 5 10 15

Phe Gly Ala Ala Tyr Gly Ala Ser Val Leu Val Asp His Val Leu Thr
20 25 30

Gly Phe Asp Gly Arg Thr Val Ala Gln Ala Ile Glu Asp Gly Val Glu

35 40 45

Leu Arg Asp Val Trp Arg Ala Leu Cys Val Asp Phe Asp Val Pro Arg
50 55 60

Asp Gln Trp
65

<210> 107

<211> 209

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0990, ML.tab 1157281:1157910 forward MW:22743

<400> 107

Met Asn Glu Glu Pro Asn Ile Val Asp Phe Pro Asp Ser Asn Pro Leu
1 5 10 15

Gln Ala Ala Leu Glu Ala Glu Glu Leu Arg Val Val Arg Glu Ile Asp
20 25 30

Ser Gly Ala Lys Ile Phe Val Leu Ile Ala Val Leu Val Phe Met Leu
35 40 45

Leu Gly Ser Phe Ile Leu Pro His Thr Gly Gln Val Arg Gly Trp Asp
50 55 60

Val Leu Phe Asp Ser His Gly Ala Gly Ala Ala Ala Val Ala Leu Pro
65 70 75 80

Leu Arg Ile Phe Ala Trp Leu Ser Leu Val Phe Gly Val Gly Phe Ser
85 90 95

Met Leu Ala Leu Met Thr Arg Arg Trp Val Leu Ala Trp Ile Ala Leu
100 105 110

Ala Gly Ala Ala Met Ala Ser Ile Val Gly Leu Leu Ala Val Trp Ser
115 120 125

Arg Gln Thr Val Ala Val Gly Gln Pro Gly Pro Gly Val Gly Leu Ile
130 135 140

Val Ala Trp Ile Thr Leu Ile Leu Leu Thr Phe His Trp Ala Arg Val
145 150 155 160

Val Trp Ser Ser Thr Ile Val Gln Leu Ala Thr Glu Glu Gln Arg Arg
165 170 175

Arg Val Val Ala Gln Gln Ser Lys Thr Leu Leu Asp Gly Leu Tyr
180 185 190

Ser Ala Gly Asn Arg Asp Thr Arg Thr Arg Ser Asp Pro Gln Val Gly
195 200 205

Ser

<210> 108

<211> 232

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML0994, ML.tab 1162620:1163318 forward MW:23576

<400> 108

Val Leu Ser Ala Ile Ala Ile Val Pro Ser Ala Pro Val Leu Val Pro
1 5 10 15

Glu Leu Thr Gly Ala Ala Ala Ala Glu Val Ala Asp Leu Arg Ser Ala
20 25 30

Val Leu Ala Val Ala Ala Cys Leu Pro Pro Cys Trp Ile Val Val Gly
35 40 45

Thr Gly Arg Ala Asp Asp Val Val Gly Pro Gly Gly Cys Leu Gly Thr
50 55 60

Phe Ala Gly Phe Gly Ala Asp Val Arg Val Arg Leu Ser Pro Gln Val
65 70 75 80

Gly Gly Glu Ala Glu Leu Leu Val Asp Phe Pro Val Cys Ala Leu Ile
85 90 95

Ala Ala Trp Val Arg Gly Gln Ser Gln Leu Asp Ala Ser Ala Gln Val
100 105 110

Arg Val Tyr Cys Gly Asp His Asp Pro Asp Met Ala Leu Ala Cys Gly
115 120 125

Arg Gln Leu Arg Val Glu Ile Glu Gln Ala Pro Asp Pro Ile Gly Val
130 135 140

Leu Val Val Ala Asp Gly Ala Thr Thr Leu Thr Ser Ser Ser Pro Gly
145 150 155 160

Gly Tyr Asp Pro Ser Ala Ala Asp Ala Glu Leu Val Leu Asp Asp Ala
165 170 175

Leu Ala Ser Gly Asp Val Ala Ala Leu Thr Arg Leu Ser Cys Gln Ile
180 185 190

Ser Gly Arg Val Ala Phe Gln Val Leu Ala Gly Leu Val Glu Pro Gly
195 200 205

Pro Arg Leu Ala Lys Glu Leu Tyr Arg Gly Ala Pro Tyr Gly Val Gly
210 215 220

Tyr Phe Val Gly Val Trp Gln Pro
225 230

<210> 109

<211> 91

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1001, ML.tab 1172599:1172874 reverse MW:10150

<400> 109

Met Pro Asp Pro Val Val Met Pro Val Pro Cys Pro Thr Ser Gly Phe
1 5 10 15

Thr Gln Tyr Ser Pro Tyr Tyr Arg Gly Ala Gln Ile Thr Leu Leu Gln
20 25 30

Gln Thr Ile Leu Ala Lys Leu Asn Gln Lys Tyr Tyr Asn Asn Arg Tyr
35 40 45

Arg Val Asp Val Glu Met Val Leu Ser His Thr Gly Val Glu Ala Asp
50 55 60

Ser Ala Ala Ser His Thr Ile Leu Gly Leu Ser Ser Ser Ile Leu Pro
65 70 75 80

Pro Tyr Gly Cys Arg Thr Lys Lys Gln Arg Ser
85 90

<210> 110

<211> 164

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1004, ML.tab 1176008:1176502 forward MW:17108

<400> 110

Met Leu Val Ile Tyr Ala Val Pro Pro Leu Ile Gly Asn Val Arg His
1 5 10 15

Pro Met Ser Arg Pro Ile Leu Gly Pro Arg Cys Gly Ser Gly Glu Ser
20 25 30

Ala Gly Ser Arg Arg Pro Ala Pro Ser Arg Ser Ala Ser Ala Pro Met
35 40 45

Arg Tyr Ser Gly Ala Ser Val Ala Met Leu Val Ala Pro His Arg Gly
50 55 60

Arg Thr Val Ser Leu Ala Lys Thr Ile Gly Leu Ala Leu Leu Ala Gly
65 70 75 80

Met Ile Thr Leu Trp Leu Gly Leu Met Ala Asp Val Ser Gln Val Ile
85 90 95

Asp Gly Asp Ala Thr Gly Phe Val Thr His Val Pro Asn Arg Leu Ala
100 105 110

Val Val Arg Val Glu Ala Gly Glu Ser Leu Gln Asp Val Ala Ala Arg
115 120 125

Val Ala Pro Asp Ala Pro Val Arg Gln Val Ser Glu Arg Ile Arg Glu
130 135 140

Leu Asn Val Leu Asp Ser Ser Met Leu Val Ala Gly Gln Thr Leu Ile
145 150 155 160

Ala Pro Val Gly

<210> 111

<211> 326

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1009, ML.tab 1179519:1180499 reverse MW:36153

<400> 111

```
Met Ser His Ser His Tyr Gln Asp Pro Asp Asp Glu Gln His Tyr Gln
1               5                  10                  15

Pro Gly Gln Pro Gly Met Tyr Val Leu Glu Phe Pro Ala Pro Gln Leu
            20                  25                  30

Leu Ala Ser Asp Gly Arg Gly Pro Val Leu Ile His Ala Leu Glu Gly
        35                  40                  45

Phe Ser Asp Ala Gly His Ala Ile Arg Leu Ala Ala Thr His Leu Lys
    50                  55                  60

Ala Ala Leu Asn Thr Glu Leu Val Ala Ser Phe Ala Ile Asp Glu Leu
65                  70                  75                  80

Leu Asp Tyr Arg Ser Arg Arg Pro Leu Met Thr Phe Lys Thr Asp His
                85                  90                  95

Phe Thr His Tyr Asp Asp Pro Glu Leu Ser Leu Tyr Ala Leu Arg Asp
            100                 105                 110

Ser Val Gly Thr Pro Phe Leu Leu Leu Ala Gly Met Glu Pro Asp Leu
        115                 120                 125

Lys Trp Glu Arg Phe Ile Thr Ala Val Arg Leu Leu Ala Glu Arg Leu
    130                 135                 140

Gly Val Arg Gln Thr Ile Ser Leu Gly Thr Val Pro Met Ala Val Pro
145                 150                 155                 160

His Thr Arg Pro Ile Thr Leu Thr Ala His Ser Asn Asn Gly Glu Leu
                165                 170                 175

Ile Ala Asp Phe Thr Pro Trp Ile Thr Glu Ile Gln Val Pro Gly Ser
            180                 185                 190

Ala Ser Asn Leu Leu Glu Tyr Arg Met Gly Gln His Gly His Glu Val
        195                 200                 205

Val Gly Phe Thr Val His Val Pro His Tyr Leu Thr Gln Thr Asp Tyr
    210                 215                 220

Pro Ala Ala Ala Gln Ala Leu Leu Glu Gln Val Ala Lys Thr Gly Ala
225                 230                 235                 240

Leu Gln Leu Pro Leu Ser Ala Leu Ala Glu Ala Ala Ala Glu Ile Arg
                245                 250                 255

Ala Lys Ile Asp Glu Gln Val Gln Ala Ser Thr Glu Val Ala Gln Val
            260                 265                 270

Val Ala Ala Leu Glu Arg Gln Tyr Asp Ala Phe Ile Asp Ala Gln Glu
        275                 280                 285

Asn Arg Ser Leu Leu Arg Arg Asp Glu Asp Leu Pro Ser Gly Asp Glu
    290                 295                 300

Leu Gly Ala Glu Phe Glu Arg Phe Leu Ala Gln Gln Ala Glu Lys Lys
305                 310                 315                 320
```

Arg Asp Asp Asp Leu Thr
325

<210> 112

<211> 139

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1015, ML.tab 1185456:1185875 reverse MW:15761

<400> 112

Val Gly Lys Leu Ser Thr Ala Pro Asn Arg Gly Thr Thr Asp Thr Phe
1 5 10 15

Asp Asp Asn Ser Arg Pro Val Leu Ile Thr Thr Ala Ala Pro Ser Tyr
20 25 30

Glu Glu Glu Arg Arg Thr Arg Val Arg Lys Tyr Met Thr Leu Met Ala
35 40 45

Phe Arg Ile Pro Ala Leu Met Leu Thr Thr Val Ala Tyr Ser Ala Trp
50 55 60

His Asn Gly Leu Ile Ser Leu Leu Ile Val Ala Ala Ser Val Pro Leu
65 70 75 80

Pro Trp Met Ala Val Leu Ile Ala Asn Asp Arg Pro Leu Arg Arg Thr
85 90 95

Glu Glu Pro Arg Arg Phe Asp Ser Arg Arg Arg Arg Thr Pro Leu Leu
100 105 110

Leu Thr Thr Glu Gln Pro Ala Phe Lys Ser Leu Arg Arg Pro Pro Pro
115 120 125

Lys Pro Thr Ser Leu Ala Thr Asp Ser Arg Ser
130 135

<210> 113

<211> 107

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1016, ML.tab 1185903:1186226 forward MW:11848

<400> 113

Val Ser Gly Phe Cys Phe Ser Val Gly Arg Val Arg Arg His Asn Val
1 5 10 15

Thr Met Leu Gly Arg His Asn Val Thr Met Leu Gly Met Gln Thr Gln
20 25 30

Thr Ile Glu His Thr Tyr Thr Asp Glu His Val Asp Asp Gly Thr Gly
35 40 45

Ser Asp Thr Pro Lys Tyr Phe His Tyr Val Lys Lys Asp Lys Ile Val
50 55 60

Glu Ser Ala Val Met Gly Ser His Val Val Ala Leu Cys Gly Glu Val
65 70 75 80

Phe Pro Val Thr Arg Ala Ala Lys Pro Gly Ser Pro Val Cys Ser Asp
85 90 95

Cys Lys Arg Val Tyr Asp Met Leu Lys Lys Gly
100 105

<210> 114

<211> 216

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1025, ML.tab 1192722:1193372 reverse MW:22931

<400> 114

Val Val Thr Gln Ile Thr Glu Gly Thr Ala Phe Asp Lys His Gly Arg
1 5 10 15

Pro Phe Arg Arg Arg Asn Ala Arg Pro Ala Ile Phe Val Val Val Phe
20 25 30

Leu Val Ile Val Ala Gly Val Ser Trp Thr Ile Ala Leu Thr Arg Pro
35 40 45

Ala Lys Val Arg Glu Pro Glu Val Cys Asn Pro Pro Thr Gln Ser Thr

50 55 60

Gly Ser Val Pro Thr Gln Leu Gly Lys Gln Val Pro Arg Thr Glu Met
65 70 75 80

Thr Asp Val Thr Pro Ala Lys Leu Ser Asp Thr Lys Val His Val Leu
85 90 95

Asn Ala Ser Gly Arg Asp Gly Gln Ala Ala Asp Ile Ala Gly Ala Leu
100 105 110

Arg Asp Leu Gly Phe Ala Gln Pro Thr Ala Ala Asn Asp Pro Met Tyr
115 120 125

Ala Asp Thr Leu Leu Asn Cys Gln Gly Gln Leu Arg Phe Gly Thr Ala
130 135 140

Gly Gln Ala Thr Val Ala Ala Val Trp Leu Val Ala Pro Cys Thr Glu
145 150 155 160

Leu Leu His Asp Asn Arg Thr Asp Asp Ser Val Asp Leu Ala Leu Gly
165 170 175

Thr Asp Phe Thr Ala Leu Ala His Asn Asp Asp Ile Asp Ala Val Leu
180 185 190

Ala Ser Leu Arg Pro Gly Ala Thr Glu Pro Ser Asp Pro Ala Leu Leu
195 200 205

Gln Lys Ile His Ala Asn Ser Cys
210 215

<210> 115

<211> 100

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1026, ML.tab 1193568:1193870 forward MW:10969

<400> 115

Met Pro Thr Asp Tyr Asp Ala Pro Arg Arg Thr Glu Thr Asp Asn Val
1 5 10 15

Pro Glu Asp Ser Leu Glu Glu Leu Lys Ala Arg Arg Asn Glu Ala Ala
20 25 30

Ser Ala Val Val Asp Val Asp Glu Ser Glu Ser Ala Glu Ser Phe Glu
35 40 45

Leu Pro Gly Ala Asp Leu Ser Gly Glu Glu Leu Ser Val Arg Val Ile
50 55 60

Pro Lys Gln Ala Asp Glu Phe Thr Cys Ser Ser Cys Phe Leu Val Gln
65 70 75 80

His Arg Ser Arg Leu Ala Ser Glu Lys Asn Gly Val Met Ile Cys Thr
85 90 95

Asp Cys Thr Ala
100

<210> 116

<211> 157

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1027, ML.tab 1193875:1194348 reverse MW:17131

<400> 116

Val Ser Gly Thr Pro Val Ala Pro His Asn Val Arg Tyr Arg Glu Arg
1 5 10 15

Leu Trp Val Pro Trp Trp Trp Trp Pro Leu Ala Phe Ala Leu Ala Ser
20 25 30

Leu Ile Ala Phe Glu Val Asn Leu Ser Gly Ala Thr Leu Pro Ser Trp
35 40 45

Leu Pro Phe Ala Val Ala Ala Gly Thr Leu Leu Trp Leu Gly Arg Val
50 55 60

Glu Ile Gln Val Ile Ala Asp Ala Pro Leu Gly Gly Ser Val Glu Leu
65 70 75 80

Trp Ala Gly Asn Ala His Leu Pro Ile Thr Ala Ile Ala Gln Ser Ala
85 90 95

Ala Ile Ser Arg Ser Ala Lys Ser Ala Ala Leu Gly Arg Gln Leu Asp
100 105 110

Pro Ala Ala Tyr Val Leu His Arg Ala Trp Val Gly Pro Met Ile Leu
115 120 125

Val Val Leu Asp Asp Pro Asp Asp Pro Thr Pro Tyr Trp Leu Val Ser
130 135 140

Cys Arg His Pro Glu Arg Val Leu Ser Ala Leu Arg Ser
145 150 155

<210> 117

<211> 273

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1029, ML.tab 1194835:1195656 forward MW:29018

<400> 117

```
Val Thr Ala Asp Asp Asp Ala Glu Arg Ser Asp Glu Asp Gly Ala Ala
1               5                  10                  15

Val Met Ala Thr Phe Gly Lys Arg Thr Gly Lys Asp Gly Ala Ser Arg
            20                  25                  30

Thr Leu Thr Glu Pro Ala Asp Pro Glu Ala Thr Glu Leu Pro Ala Ala
        35                  40                  45

Ser Glu Pro Asp Ser Glu Glu Val Asp Glu Leu Glu Gly Pro Phe Asp
    50                  55                  60

Ile Asp Asp Phe Glu Asp Pro Ala Val Ala Val Leu Ala Arg Leu Asp
65                  70                  75                  80

Leu Gly Ser Val Leu Ile Pro Leu Pro Glu Gly Ser Gln Leu Gln Val
                85                  90                  95

Glu Leu Thr Asp Val Gly Val Pro Asn Ala Val Trp Val Val Thr Ala
            100                 105                 110

Asn Gly Arg Phe Thr Ile Thr Ala Tyr Ala Ala Pro Lys Thr Gly Gly
        115                 120                 125

Leu Trp Arg Glu Val Ala Gly Glu Leu Ala Asp Ser Leu Arg Asn Asp
    130                 135                 140

Ser Ala Lys Val Thr Val Lys Asp Gly Pro Trp Gly Arg Glu Val Val
145                 150                 155                 160

Gly Thr Asn Thr Gly Val Val Arg Phe Ile Gly Val Asp Gly Tyr Arg
                165                 170                 175

Trp Met Ile Arg Cys Val Val Asn Gly Pro Leu Glu Thr Ile Asp Val
            180                 185                 190

Leu Ser Glu Glu Ala Arg Ala Ala Leu Ala Asp Thr Val Val Arg Arg
        195                 200                 205

Gly Asp Thr Pro Leu Pro Val Arg Thr Pro Leu Pro Val Gln Leu Pro
```

210 215 220

Glu Gln Met Ala Glu Gln Leu Arg Glu Ala Ala Val Ala Gln Gln Ser
225 230 235 240

Ala Gln His Ala Asp Ala Arg Gln Gln Ser Arg Glu Leu Ala Pro Arg
245 250 255

Arg Gly Ala Ala Gly Ser Ala Met Gln Gln Leu His Asn Thr Thr Gly
260 265 270

Gly

<210> 118

<211> 232

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1030, ML.tab 1195701:1196399 reverse MW:23579

<400> 118

Val Ala Val Asp Leu Arg Asn Val Thr Thr Val Leu Leu Pro Gly Thr
1 5 10 15

Gly Ser Asp Asp Asp Tyr Val Tyr Arg Ala Phe Ser Gly Pro Leu His
20 25 30

Arg Val Gly Ala Ala Val Leu Thr Pro Pro Pro Gln Pro Asn Arg Leu
35 40 45

Ile Asp Gly Tyr Leu Ser Ala Leu Asp Asp Ala Ala Arg Ala Gly Pro
50 55 60

Ile Gly Val Gly Gly Val Ser Ile Gly Ala Ala Val Ala Ala Ala Trp
65 70 75 80

Ala Leu Ala His Pro Glu Arg Ala Val Ala Val Leu Ala Ala Leu Pro
85 90 95

Ala Trp Asn Gly Ala Pro Glu Ser Ala Pro Ala Ala Leu Ala Ala Arg
100 105 110

Tyr Ser Ala Ser His Leu Arg Arg Asp Gly Leu Ala Ala Thr Thr Leu
115 120 125

Gln Met Gln Ala Ser Ser Pro Pro Trp Leu Ala Asp Glu Leu Ala Arg
130 135 140

Ser Trp Cys Gly Gln Trp Pro Leu Leu Pro Asp Ala Met Glu Glu Ala
145 150 155 160

Ala Ala Tyr Ile Ala Pro Ser Cys Ala Glu Leu Ala Arg Leu Ala Thr
165 170 175

Pro Leu Gly Val Ala Ala Ala Val Asp Asp Pro Ile His Pro Leu Gln
180 185 190

Val Gly Val Asp Trp Val Thr Ala Ala Pro His Ala Ala Leu Gln Thr
195 200 205

Val Thr Leu Asn Gln Ile Gly Thr Asn Ala Ala Ala Leu Gly Thr Ala
210 215 220

Cys Leu Ala Ala Leu Ala Leu Thr
225 230

<210> 119

<211> 184

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1037, ML.tab 1200579:1201133 reverse MW:19903

<400> 119

Val Ser His Glu Tyr Trp Ser Thr Ala Val Ser Cys Asn Pro Gly Ile
1 5 10 15

His His Ile Val Arg Leu Asp Val Ala His Thr Pro Arg Thr Thr Gln
20 25 30

Thr Tyr Arg His Ser Met Leu Ala Glu Asp Ile Ala Glu Asp Phe Pro
35 40 45

Ala Ile Ser Ile Asn Ser Ser Ala Leu Asp Ala Ala Arg Met Leu Ala
50 55 60

Glu His Gly Leu Pro Gly Leu Leu Val Thr Asp Met Ser Asp Lys Pro
65 70 75 80

Tyr Ala Val Leu Pro Ala Ser Gln Val Val Arg Phe Ile Val Pro Arg
85 90 95

Tyr Ile Gln Asp Asp Pro Ser Leu Ala Gly Val Leu Asn Glu Ser Thr
100 105 110

Ala Asp Gln Ala Ala Glu Lys Leu Ser Ser Lys Lys Val Arg Asp Val
115 120 125

Leu Pro Asp His Leu Val Asn Val Ser Pro Val Asn Ala Asp Asp Thr
130 135 140

Ile Ile Glu Val Ala Ala Thr Met Ser Arg Gln Arg Ser Pro Leu Leu
145 150 155 160

Ala Val Val Lys Gly Gly Gln Leu Leu Gly Val Ile Thr Ala Ser Arg
165 170 175

Leu Leu Arg Ala Ala Leu Lys His
180

<210> 120

<211> 196

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1041, ML.tab 1206538:1207128 reverse MW:21153

<400> 120

Val Ala Pro Val Thr Ala Ala Glu Pro Thr Pro Phe Arg Glu Ala Val
1 5 10 15

Ala Ala Met Asn Ala Phe Thr Val Arg Pro Glu Ile Glu Leu Gly Pro
20 25 30

Ile Arg Pro Pro Gln Arg Leu Ala Pro Tyr Ser Tyr Ala Leu Gly Ala
35 40 45

Gln Val Lys His Pro Glu Leu Asp Ile Val Pro Glu Gln Ser Glu Asp
50 55 60

Asn Ala Phe Gly Arg Leu Ile Leu Leu Tyr Asp Pro Asp Gly Ser Asp
65 70 75 80

Ala Trp Asp Gly Thr Ile Arg Leu Val Ala Tyr Ile Gln Ser Asp Leu
85 90 95

Asp Ser Arg Glu Ala Ile Asp Pro Leu Leu Pro Glu Val Ala Trp Ser
100 105 110

Trp Leu Ile Glu Ala Leu Glu Ser Arg Ile Asp His Val Thr Ala Leu
115 120 125

Gly Gly Thr Val Thr Ala Thr Thr Ser Val Arg Tyr Gly Asp Ile Ser
130 135 140

Gly Pro Pro Arg Ala His Gln Leu Glu Leu Arg Ala Ser Trp Thr Ala

145 150 155 160

Thr Thr Pro Glu Val Gly Val His Val Lys Ala Phe Cys Glu Val Leu
165 170 175

Glu His Ala Ala Gly Leu Pro Pro Ala Gly Val Ile Asp Leu Gly Ser
180 185 190

Arg Ser Arg Ser
195

<210> 121

<211> 99

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1053, ML.tab 1220374:1220673 forward MW:10117

<400> 121

Met Pro Leu Phe Leu Asn Ala Glu Pro Gln Ala Leu Thr Ala Ala Ala
1 5 10 15

Asn Thr Leu Glu Gly Leu Ser Ala Ala Thr Val Ala Ser Asn Ala Ala
20 25 30

Ala Ala Gln Leu Thr Thr Glu Ile Ala Pro Pro Ala Ala Asp Asp Val
35 40 45

Ser Ile Leu Leu Ala His Phe Phe Ser Gly His Gly Arg Gln Tyr Gln
50 55 60

Ala His Ala Ser Gln Gly Ala Thr Asn His Gln Asp Leu Ile Gln Ser
65 70 75 80

Leu Leu Thr Ser Ser Ser Ala Tyr Ala Gly Thr Glu Thr Ala Asn His
85 90 95

Asp Ser Leu

<210> 122

<211> 100

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1055, ML.tab 1221433:1221735 forward MW:11298

<400> 122

Met Thr Ala Ala His Phe Met Thr Asp Pro Gln Ala Met Arg Asp Met
1 5 10 15

Ala Arg Lys Phe Asp Met His Ala Gln Asn Val Arg Asp Glu Ser His
20 25 30

Lys Met Phe Met Ser Ser Met Asp Ile Ala Gly Ala Gly Trp Ser Gly
35 40 45

Thr Ala Gln Leu Thr Ser His Asp Thr Met Gly Gln Ile Asn Gln Ala
50 55 60

Phe Arg His Ile Val Thr Leu Leu Gln Asp Val Arg Asp Gln Leu Gly
65 70 75 80

Thr Ala Ala Asp Arg Tyr Glu His Gln Glu Glu Asn Ser Arg Lys Ile
85 90 95

Leu Ser Gly Ser
100

<210> 123

<211> 95

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1056, ML.tab 1221787:1222074 forward MW:10260

<400> 123

Met Gly Asn Ile Asn Tyr Gln Phe Gly Glu Ile Asp Ala His Gly Ala
1 5 10 15

Ala Ile Arg Ala Gln Ala Ala Ala Leu Glu Thr Thr His Gln Ala Ile
20 25 30

Leu Ala Thr Val Arg Asp Ala Ala Glu Phe Trp Gly Gly Gln Gly Ser
35 40 45

Thr Ala His Glu Met Phe Ile Ala Asp Leu Gly Arg Asn Phe Gln Met
50 55 60

Ile Tyr Glu Gln Ala Asn Ser His Gly Gln Lys Val Gln Arg Ala Ser
65 70 75 80

Ser Ser Met Ala Asp Thr Asp Arg Ser Val Ser Ser Ala Trp Ser
85 90 95

<210> 124

<211> 114

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1065, ML.tab 1230644:1230988 forward MW:11933

<400> 124

Val Ala Leu Val Leu Leu Tyr Leu Val Val Leu Val Leu Val Ala Ile
1 5 10 15

Val Leu Phe Gly Ala Ala Ser Leu Leu Phe Gly Arg Gly Glu Arg Leu
20 25 30

Pro Pro Leu Pro Arg Gly Thr Thr Ala Thr Val Leu Pro Ala His Gly
35 40 45

Val Thr Gly Ala Asp Val Asp Ala Val Lys Phe Thr Gln Val Leu Arg
50 55 60

Gly Tyr Lys Pro Ser Glu Val Asp Trp Val Leu Asp Arg Leu Gly Arg
65 70 75 80

Glu Leu Glu Ala Leu Arg Gly Gln Leu Ala Ala Ile Ala Asp Ala Glu
85 90 95

Ala Asp Ala Asp Val Ser Asn Val Pro Ser Gly Asp Asp Gly Gln Asp
100 105 110

Val Thr

<210> 125

<211> 75

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1067, ML.tab 1231777:1232004 forward MW:7998

<400> 125

Met Leu Gly Ala Glu Trp Val Arg Glu Gly Gly Pro Ala Arg Val Trp
1 5 10 15

Arg Glu His Thr Met Ala Ala Met Lys Pro Arg Thr Gly Asp Gly Pro
20 25 30

Leu Glu Ala Thr Lys Glu Gly Arg Gly Ile Val Met Arg Val Pro Leu
35 40 45

Glu Gly Gly Gly Arg Leu Val Val Glu Leu Thr Pro Asp Glu Ala Ala
50 55 60

Ala Leu Ser Asp Glu Leu Lys Gly Val Thr Ser
65 70 75

<210> 126

<211> 139

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1077, ML.tab 1240278:1240697 forward MW:15219

<400> 126

Val Met Ala Asp Arg Gly Gln Val Phe Arg Arg Val Phe Ser Trp Leu
1 5 10 15

Pro Ala Gln Phe Ala Ser Gln Asn Asp Ala Pro Val Gly Ala Pro Arg
20 25 30

Arg Phe Gly Ser Thr Glu His Leu Ser Val Glu Ala Ile Ala Ala Phe
35 40 45

Val Asp Gly Glu Leu Arg Met Asn Ala His Leu Arg Ala Ala His His
50 55 60

Ile Ser Leu Cys Ala Gln Cys Ala Ala Glu Val Asp Asp Gln Ser Arg
65 70 75 80

Thr Arg Ala Ala Leu Arg Asp Ser His Pro Ile Arg Ile Pro Ser Thr
85 90 95

Leu Phe Gly Leu Leu Thr Ala Ile Pro Arg Cys Ser Pro Asp Tyr Thr
100 105 110

Ser Pro Val Ser Glu Pro Phe Ser Glu Gly Ser Val Ser Asp Arg Phe
115 120 125

Val Asp Gly Val Ala Arg Glu Gln Gly Lys Arg
130 135

<210> 127

<211> 120

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1079, ML.tab 1242373:1242735 forward MW:13348

<400> 127

Val Phe Ala Asn Ile Gly Trp Gly Glu Met Leu Val Leu Val Val Val
1 5 10 15

Gly Leu Val Val Leu Gly Pro Glu Arg Phe Pro Gly Ala Ile Arg Trp
20 25 30

Thr Leu Gly Ala Leu Arg Gln Thr Arg Asp Tyr Leu Ser Gly Val Thr
35 40 45

Asn Gln Leu Arg Glu Asp Ile Gly Pro Glu Phe Asp Asp Leu Arg Gly
50 55 60

Gln Phe Gly Glu Leu Gln Lys Leu Arg Gly Met Thr Pro Arg Ala Ala
65 70 75 80

Leu Thr Lys His Leu Leu Asp Gly Asp Asp Ser Leu Phe Thr Gly Asn
85 90 95

Phe Asp Arg Pro Ala Ala Ala Lys Gln Gln Asp Arg Asp His His Gln
100 105 110

Thr Pro Phe Asp Thr Asp Ala Thr
115 120

<210> 128

<211> 285

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1093, ML.tab 1257729:1258586 forward MW:29736

<400> 128

```
Met Arg Val Gly Arg Leu Ala Ala Leu Leu Leu Ala Gly Val Gly Val
1               5                  10                  15

Phe Val Ala Gly Gly Cys Ala Thr Asp Arg Gly Asp Arg His Pro Glu
            20                  25                  30

Leu Val Val Gly Ser Lys Pro Asp Ser Glu Ser Thr Leu Leu Ala Ala
        35                  40                  45

Ile Tyr Val Ala Ala Leu Arg Ser Tyr Gly Phe Gly Ala Arg Gly Glu
    50                  55                  60

Thr Gly Ala Asp Pro Met Ala Met Leu Asp Ser Gly Gly Phe Thr Val
65                  70                  75                  80

Val Pro Gly Phe Thr Gly Lys Val Leu Gln Ile Leu Gln Pro Arg Ala
                85                  90                  95

Ala Val Leu Ser Ala Ala Arg Val Tyr Arg Ala Met Val Ser Ala Leu
            100                 105                 110

Pro Glu Gly Ile Ala Ala Gly Asp Tyr Thr Thr Ala Ala Glu Asp Lys
        115                 120                 125

Pro Thr Leu Val Val Thr Pro Asp Thr Ala Lys Ala Trp Ser Gly Ser
    130                 135                 140

Asp Leu Ser Leu Val Leu Ser His Cys Asn Glu Leu Val Val Gly Ile
145                 150                 155                 160

Val Ala Gly Thr His Thr Pro Ser Ala Val Gly Ser Cys Arg Leu Pro
                165                 170                 175

Ala Ala Arg Glu Phe Pro Asp Tyr Pro Thr Met Phe Ala Ala Leu Arg
            180                 185                 190

Ala Gly Gln Leu Thr Ala Gly Trp Thr Thr Thr Ala Asn Pro Asp Leu
        195                 200                 205

Pro Ala Asp Leu Ile Val Leu Thr Asp Gly Lys Ala Thr Leu Ile Gln
    210                 215                 220

Ala Glu Asn Val Val Pro Leu Tyr Arg Arg Asn Val Leu Thr Asp Arg
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225 230 235 240

Gln Met Leu Ala Ile Asn Glu Val Ala Gly Val Leu Asp Thr Ala Ala
245 250 255

Leu Ile Glu Met Arg Arg Gln Val Ile Arg Gly Ala Asp Ser Gln Ala
260 265 270

Ile Ala Asp Gly Trp Leu Ala Glu His Pro Met Gly Arg
275 280 285

<210> 129

<211> 224

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1096, ML.tab 1263932:1264606 reverse MW:23505

<400> 129

Leu Ala Gln Val Ile Glu Arg Ser Val Trp Ile Gln Gly Pro Ala Ala
1 5 10 15

Glu Ala Tyr Val Ala Arg Leu Arg Arg Thr His Pro Ser Ala Ser Pro
20 25 30

Thr Glu Ile Val Ala Lys Leu Glu Lys His Tyr Leu Ala Ala Leu Thr
35 40 45

Ala Ser Gly Ala Val Val Gly Ser Val Ala Thr Leu Pro Gly Ile Gly
50 55 60

Thr Leu Ala Ala Val Ser Ala Asn Ala Gly Glu Thr Val Phe Phe Leu
65 70 75 80

Glu Ala Thr Ala Val Phe Val Leu Thr Ile Ala Ser Val Tyr Gly Ile
85 90 95

Pro Ala Asn His Arg Glu Arg Arg Arg Ala Leu Val Leu Ala Val Leu
100 105 110

Ala Gly Asp Asp Thr Arg Leu Thr Ile Gly Glu Leu Ile Gly Pro Gly
115 120 125

Arg Thr Asn Gly Gly Trp Leu Leu Glu Gly Met Ala Ser Leu Pro Leu
130 135 140

Ser Thr Trp Ser Gln Leu His Thr Arg Met Leu Arg Tyr Ala Ala Lys
145 150 155 160

Arg Cys Thr Val Arg Arg Gly Ala Leu Met Phe Gly Lys Ile Leu Pro
165 170 175

Ile Gly Ile Gly Ala Ala Val Gly Gly Ala Gly Asn Arg Val Val Gly
180 185 190

Lys Lys Ile Ile Ser Asn Thr Arg Asn Ala Phe Gly Thr Ala Pro Ser
195 200 205

Arg Trp Pro Ala Thr Leu Ile Leu Leu Pro Thr Val His Asn Ala Gly
210 215 220

<210> 130

<211> 1152

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1098, ML.tab 1266648:1270106 reverse MW:126012

<400> 130

Val Phe Val Thr Asp Glu Thr Ile Val Tyr Ser Ala Ser Asp Leu Ala
1 5 10 15

Ala Ala Ser Arg Cys Glu Tyr Ala Leu Leu Arg Asp Phe Asp Ala Arg
20 25 30

Leu Gly Arg Gly Pro Val Val Ala Thr Thr Glu Asp Glu Leu Phe Ala
35 40 45

Arg Thr Ser Ala Leu Gly Ala Asp His Glu Gln Arg His Leu Asp Gln
50 55 60

Leu Arg His Glu Phe Gly Asp Ala Val Ala Val Ile Gly Arg Pro Ala
65 70 75 80

Tyr Thr Tyr Ala Gly Phe Ala Ala Ala Ala Glu Ala Thr Gln Arg Ala
85 90 95

Ile Ala Asn Arg Ala Pro Ala Val Tyr Gln Ala Ala Met Phe Asp Gly
100 105 110

Arg Phe Val Gly Phe Ile Asp Phe Leu Val Arg Asp Gly Glu Gln Tyr
115 120 125

Arg Val Val Asp Thr Lys Leu Ala Arg Ser Pro Lys Val Thr Ala Leu
130 135 140

Leu Gln Leu Ala Ala Tyr Ala Asp Ala Leu Ala His Ser Gly Val Pro
145 150 155 160

```
Val Ala Pro Glu Ala Glu Leu Arg Leu Gly Asp Gly Met Val Val Ser
                165                 170                 175

Tyr Arg Ile Cys Asp Leu Ile Pro Val Tyr Arg Ser Gln Arg Ser Leu
            180                 185                 190

Leu Gln Arg Leu Leu Asp Arg His Tyr Thr Ala Gly Thr Ala Val Arg
        195                 200                 205

Trp Gln Asp Asp Glu Val Arg Ser Cys Phe Arg Cys Pro Gln Cys Thr
    210                 215                 220

Glu Gln Leu Arg Ala Thr Asp Asp Leu Leu Leu Ile Ala Gly Met Arg
225                 230                 235                 240

Ile Ser Gln Arg Ser Lys Leu Leu Asn Val Gly Ile Thr Thr Ile Ala
                245                 250                 255

Glu Leu Ala Asp His Ser Gly Pro Val Pro Asp Leu Ser Ser Ser Ala
            260                 265                 270

Leu Ser Glu Leu Thr Ala Gln Ala Lys Leu Gln Val Gln Gln Arg Asn
        275                 280                 285

Thr Gly Thr Pro Gln Phe Glu Ile Val Asp Pro Gln Pro Leu Ala Leu
    290                 295                 300

Leu Pro Asp Pro Asp Pro Gly Asp Leu Phe Phe Asp Phe Glu Gly Asp
305                 310                 315                 320

Pro Leu Trp Thr Val Asp Gly Gln Glu Trp Gly Leu Glu Tyr Leu Phe
                325                 330                 335

Gly Val Leu Asp Ser Glu Ile Ser Gly Thr Phe Arg Pro Leu Trp Ala
            340                 345                 350

His Asn Arg Val Glu Glu Arg Lys Ala Leu Thr Glu Phe Leu Lys Met
        355                 360                 365

Val Thr Lys Arg Arg Lys Gln Arg Pro His Met His Val Tyr His Tyr
    370                 375                 380

Ala Pro Tyr Glu Lys Thr Ala Leu Leu Arg Leu Ala Gly Arg Tyr Gly
385                 390                 395                 400

Val Cys Glu Asp Glu Val Asp Glu Leu Leu Arg Ser Gly Thr Leu Val
                405                 410                 415

Asp Leu Tyr Pro Leu Val Ser Lys Ser Ile Arg Val Gly Ala Glu Ser
            420                 425                 430

Phe Ser Leu Lys Ala Leu Glu Pro Leu Tyr Met Gly Lys Gln Leu Arg
        435                 440                 445

Ser Gly Asp Val Thr Thr Ala Thr Asp Ser Ile Thr Cys Tyr Gly Arg
    450                 455                 460

Tyr Cys Glu Leu Leu Ser Ala Gly Asn Phe Asp Glu Ala Ala Thr Val
465                 470                 475                 480
```

Leu Lys Glu Ile Glu Asp Tyr Asn His Tyr Asp Cys Arg Ser Thr Arg
485 490 495

Glu Leu Arg Asn Trp Leu Leu Leu Gln Ala Tyr Glu Ala Gly Val Val
500 505 510

Pro Val Gly Ala Gln Pro Val Pro Glu Gly Asn Thr Val Lys Asp Asp
515 520 525

Asp Glu Leu Ser Ala Ile Leu Ser Ala Leu Ser Gly Phe Thr Gly Asp
530 535 540

Val Ala Val Gly Asp Arg Thr Pro Glu Gln Thr Ala Ile Ala Leu Val
545 550 555 560

Ala Ala Ala Arg Gly Tyr His Arg Arg Glu Asp Lys Pro Phe Trp Trp
565 570 575

Gly His Phe Asp Arg Leu Asn Phe Pro Val Gly Glu Trp Ala Asp Asn
580 585 590

Thr Asp Val Phe Val Ala Asp Asp Ala Ser Ile Ile Ile Asp Trp His
595 600 605

Thr Pro Pro Arg Ala Arg Lys Pro Gln Arg Arg Val Arg Leu Arg Gly
610 615 620

Arg Leu Ala Arg Gly Asn Leu Gly Ser Ala Val Phe Ala Leu Tyr Asp
625 630 635 640

Pro Pro Ala Pro Leu Ala Met Asp Val His Pro Gly Arg Arg Ala Ala
645 650 655

Gly Arg Ala Glu Val Val Glu Ala Asp Asp Leu Ser Ile Pro Thr Glu
660 665 670

Val Val Ile Val Glu Arg Val Gly Asn Asp Gly Asn Thr Phe His Gln
675 680 685

Leu Pro Phe Ala Leu Thr Pro Gly Pro Pro Ile Ala Thr Thr Ala Leu
690 695 700

Arg Asp Ser Ile Glu Ser Thr Ala Thr Thr Leu Ala Ala Ser Leu Pro
705 710 715 720

Gln Leu Pro Arg Thr Ala Leu Ile Asp Ile Leu Leu Arg Arg Ile Pro
725 730 735

Arg Thr His Ser Gly Ala Thr Leu Pro Arg Gly Thr Asp Thr Val Ala
740 745 750

Asp Ile Thr Ala Ala Val Leu Asp Leu Asp Ser Ser Tyr Leu Ala Val
755 760 765

His Gly Pro Pro Gly Thr Gly Lys Thr His Thr Ala Ala His Val Ile
770 775 780

Thr Gln Leu Val Ser Asn His Ser Trp Arg Ile Gly Val Val Ala Gln
785 790 795 800

Ser His Ala Ala Val Glu Asn Leu Leu Asp Gly Val Ile Thr Ala Gly

805 810 815

Leu Asp Ala Arg Gln Val Ala Lys Lys Arg His Asp Arg Ser Ala Pro
820 825 830

Pro Trp Gln Glu Ile Asp Gly Asn Asp Tyr Pro Thr Phe Ile Ala Asp
835 840 845

Pro Met Gly Cys Val Ile Gly Gly Thr Ala Trp Asp Phe Ala Asn Arg
850 855 860

Asn Arg Val Pro Pro Gly Ser Leu Asp Leu Leu Val Ile Asp Glu Ala
865 870 875 880

Gly Gln Phe Cys Leu Ala Asn Thr Ile Ala Val Ala Pro Ala Ala Ala
885 890 895

Asn Leu Met Leu Leu Gly Asp Pro Gln Gln Leu Pro Gln Val Ser Gln
900 905 910

Gly Thr His Pro Glu Pro Val Asn Thr Ser Ala Leu Asp Trp Leu Val
915 920 925

Glu Gly Gln Arg Thr Leu Pro Asn Glu Arg Gly Tyr Phe Leu Asp Arg
930 935 940

Ser Tyr Arg Met His Pro Ala Ile Cys Ala Ala Val Ser Thr Leu Ser
945 950 955 960

Tyr Glu Gly Lys Leu His Ala His Thr Glu Tyr Thr Ala Ala Arg Arg
965 970 975

Leu Asn Glu Tyr Gln Pro Gly Val His Val Leu Ala Val His His Gln
980 985 990

Gly Asn Ser Thr Glu Ser Pro Glu Glu Ala Gly Ala Ile Thr Ala Glu
995 1000 1005

Ile Glu Arg Leu Leu Gly Thr Pro Trp Thr Asp Glu His Gly Thr
1010 1015 1020

Arg Pro Leu Asp Val Ser Asp Ile Leu Val Leu Ala Pro Tyr Asn
1025 1030 1035

Ala Gln Val Ala Leu Val Arg Gln Gln Leu Met Ser Ala Gly Phe
1040 1045 1050

Ser Gly Val Arg Val Gly Thr Val Asp Lys Phe Gln Gly Gly Gln
1055 1060 1065

Ala Pro Val Val Phe Ile Ser Met Thr Ser Ser Ser Val Glu Val
1070 1075 1080

Val Pro Arg Gly Ile Ser Phe Leu Leu Asn Arg Asn Arg Leu Asn
1085 1090 1095

Val Ala Val Ser Arg Ala Gln Tyr Ala Ala Val Ile Val Arg Ser
1100 1105 1110

Glu Thr Leu Thr Glu Tyr Leu Pro Ala Thr Pro Val Gly Leu Ile
1115 1120 1125

Asp Leu Gly Ala Phe Leu Thr Leu Thr Thr Phe Asn Gly Thr Gly
1130 1135 1140

Arg Leu Glu Ser Arg Leu Asp Lys Pro
1145 1150

<210> 131

<211> 202

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1099, ML.tab 1270157:1270765 reverse MW:20773

<400> 131

Val Arg Asp Val Trp Ser Leu Pro Cys Arg Lys Ser Leu Leu Gly Val
1 5 10 15

Ala Ala Val Val Leu Val Ser Gly Thr Leu Thr Gly Cys Ser Ser Gly
20 25 30

Asp Ser Thr Val Ala Lys Thr Pro Val Pro Pro Ser Thr Thr Thr Gly
35 40 45

Thr Ile Ser Thr Ile Ile Ser Ser Ala Pro Ser Pro Pro Phe Ala Thr
50 55 60

Ala Ala Pro Pro Thr Ser Asn Thr Pro Pro Asp Asp Pro Cys Ala Val
65 70 75 80

Asn Leu Ala Ser Pro Thr Ile Ala Arg Val Val Ser Glu Leu Pro Arg
85 90 95

Asp Pro Arg Ser Ala Gln Pro Trp Asn Pro Glu Pro Leu Ala Gly Asn
100 105 110

Tyr Asn Glu Cys Ala Gln Leu Ser Ala Val Ile Ile Lys Ala Asn Thr
115 120 125

Asn Ala Val Asn Pro Thr Thr Arg Ala Val Leu Phe His Leu Gly Arg
130 135 140

Phe Ile Pro Gln Gly Val Pro Asp Thr Tyr Gly Phe Asn Gly Ile Asp
145 150 155 160

Pro Ala Gln Thr Thr Gly Asp Thr Val Ala Leu Thr Tyr Pro Ser Ser
165 170 175

Ile Asp Gly Leu Ala Thr Ala Val Arg Phe His Trp Asn Gly Asn Ala

180 185 190

Val Glu Leu Ile Ser Asn Ile Ala Gly Gly
195 200

<210> 132

<211> 229

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1105, ML.tab 1279262:1279951 forward MW:24905

<400> 132

Val Leu Ser Gly Gly Ala Gly Ser Ile Pro Glu Leu Asn Ala Gln Ile
1 5 10 15

Ser Val Cys Arg Ala Cys Pro Arg Leu Val Asp Trp Arg Glu Glu Val
20 25 30

Ala Val Val Lys Arg Arg Ala Phe Ala Asp Gln Pro Tyr Trp Gly Arg
35 40 45

Pro Val Pro Gly Trp Gly Ser Glu Gln Pro Arg Leu Leu Ile Val Gly
50 55 60

Leu Ala Pro Ala Ala His Gly Ala Asn Arg Thr Gly Arg Met Phe Thr
65 70 75 80

Gly Asp Arg Ser Gly Asp Gln Leu Tyr Ala Ala Leu His Arg Ala Gly
85 90 95

Leu Val Asn Leu Pro Ile Ser Met Asp Ala Ala Asp Gly Leu Gln Ala
100 105 110

Asn Gln Ile Arg Ile Thr Ala Pro Val Arg Cys Ala Pro Pro Gly Asn
115 120 125

Ala Pro Thr Gln Ala Glu Trp Val Thr Cys Ser Pro Trp Leu Glu Ala
130 135 140

Glu Trp Arg Leu Val Ser Glu Tyr Val Arg Ala Ile Val Ala Leu Gly
145 150 155 160

Gly Phe Ala Trp Gln Ile Val Leu Arg Leu Pro Gly Val Ser Ala Met
165 170 175

Arg Lys Pro Arg Phe Ser His Gly Val Val Ala Gln Leu Tyr Ala Gly
180 185 190

Val Arg Leu Leu Gly Cys Tyr His Pro Ser Gln Gln Asn Met Phe Thr
195 200 205

Gly Arg Leu Thr Pro Ala Met Leu Asp Asp Ile Phe Arg Asp Ala Lys
210 215 220

Lys Leu Ala Gly Ile
225

<210> 133

<211> 188

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1115, ML.tab 1291563:1292129 forward MW:19913

<400> 133

Val Arg Cys Asp Val Arg Ala Leu Ala Leu Ala Ala Arg Gly Leu Ile
1 5 10 15

Glu Leu Met Ile Val Ile Pro Met Val Ala Gly Cys Ser Asn Ala Gly
20 25 30

Ser Asn Lys Ser Val Gly Thr Ile Ser Ser Thr Pro Gly Asn Thr Glu
35 40 45

Gly His His Gly Pro Met Phe Pro Arg Cys Gly Gly Ile Ser Asp Gln
50 55 60

Thr Met Ser Gln Leu Thr Lys Val Thr Gly Leu Thr Asn Thr Ala Arg
65 70 75 80

Asn Ser Val Gly Cys Gln Trp Leu Ala Gly Gly Gly Ile Val Gly Pro
85 90 95

His Phe Ser Phe Ser Trp Tyr Arg Gly Ser Pro Ile Gly Arg Glu Arg
100 105 110

Lys Thr Glu Glu Leu Ser Arg Ala Ser Val Asp Asp Ile Asn Ile Asn
115 120 125

Gly His Ser Gly Phe Ile Ala Val Gly Asn Glu Pro Ser Leu Gly Asp
130 135 140

Ser Leu Cys Glu Val Gly Ile Gln Phe Gln Asp Asp Phe Ile Glu Trp
145 150 155 160

Ser Val Ser Phe Ser Gln Lys Pro Phe Pro Ser Pro Cys Gly Ile Ala
165 170 175

Lys Glu Leu Thr Arg Gln Ser Ile Ala Asn Ser Lys
180 185

<210> 134

<211> 187

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1116, ML.tab 1292138:1292701 forward MW:19839

<400> 134

Met Arg Leu Ser Val Arg Gly Arg Arg Ser Val Phe Ala Gly Val Ala
1 5 10 15

Val Leu Val Ser Ala Ala Leu Val Val Thr Gly Cys Ser Arg Ser Ile
20 25 30

Gly Gly Thr Ala Val Lys Ala Gly Ser His Asp Val Pro Arg Asn Asn
35 40 45

Asn Ser Gln Gln Gln Tyr Pro Asn Leu Leu Lys Glu Cys Glu Val Leu
50 55 60

Thr Thr Asp Ile Leu Ala Lys Thr Val Gly Ala Asp Ser Leu Asp Ile
65 70 75 80

Gln Ser Thr Phe Val Gly Ala Ile Cys Arg Trp Gln Ala Ala Asn Pro
85 90 95

Ala Ser Leu Ile Asp Ile Thr Arg Phe Trp Phe Glu Gln Gly Ser Leu
100 105 110

Ala Asn Glu Arg Lys Val Ala Asp Phe Leu Lys Tyr Lys Val Glu Asn
115 120 125

Arg Ser Ile Ala Gly Val Asp Ser Ile Val Met Arg Pro Asp Asp Pro
130 135 140

Asn Gly Ala Cys Gly Val Ala Ser Asp Ala Ala Gly Val Val Gly Trp
145 150 155 160

Trp Ile Asn Pro Gln Ala Ser Gly Ile Asp Ala Cys Gly Gln Ala Ile
165 170 175

Lys Leu Met Glu Leu Thr Leu Ala Thr Asn Ser
180 185

<210> 135

<211> 161

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1117, ML.tab 1292709:1293194 reverse MW:17617

<400> 135

Met Arg His Ala Lys Ser Ser Tyr Pro Arg Gly Phe Pro Asp His Ile
1 5 10 15

Ala Asp His Asp Arg Arg Leu Ala Pro Arg Gly Val Arg Glu Ala Ser
20 25 30

Leu Ala Gly Gly Trp Leu Arg Thr Asn Val Pro Ala Ile Glu Lys Val
35 40 45

Leu Cys Ser Thr Ala Met Arg Ala Arg Glu Thr Leu Thr His Ser Gly
50 55 60

Ile Glu Ala Pro Val Arg Tyr Thr Glu Arg Leu Tyr Arg Ala Asp Pro
65 70 75 80

Asp Thr Val Ile Lys Glu Ile Lys Ala Ile Ser Asp Glu Val Thr Thr
85 90 95

Ser Leu Ile Val Ser His Glu Pro Thr Ile Ser Ala Val Ala Leu Ala
100 105 110

Leu Thr Gly Ser Gly Thr Asn Asn Asp Ala Ala Gln Arg Ile Ser Thr
115 120 125

Lys Phe Pro Thr Ser Gly Ile Ala Val Leu Asn Val Ala Gly Arg Trp
130 135 140

Gln His Leu Glu Leu Glu Ser Ala Glu Leu Val Ala Phe His Val Pro
145 150 155 160

Arg

<210> 136

<211> 383

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1119, ML.tab 1294763:1295914 forward MW:41281

<400> 136

Met Arg Phe Leu His Thr Ala Asp Trp Gln Leu Gly Met Thr Arg His
1 5 10 15

Phe Leu Ala Gly Asp Ala Gln Pro Arg Tyr Ser Ala Ala Arg Arg Asp
20 25 30

Ala Val Ala Gly Leu Gly Ala Leu Ala Ala Glu Val Gly Ala Glu Phe
35 40 45

Val Val Val Ala Gly Asp Val Phe Glu His Asn Gln Leu Ala Pro Gln
50 55 60

Val Val Ser Gln Ser Leu Glu Ala Ile Arg Ala Ile Gly Ile Pro Val
65 70 75 80

Tyr Leu Leu Pro Gly Asn His Asp Pro Leu Asp Ala Ser Ser Val Tyr
85 90 95

Thr Ser Ala Leu Phe Thr Ala Glu Cys Pro Asp Asn Ile Asn Val Leu
100 105 110

Asp Arg Ala Gly Val His Gln Val Arg Pro Gly Leu Glu Ile Val Ala
115 120 125

Ala Pro Trp Arg Ser Lys Ala Pro Thr Thr Asp Leu Val Ala Glu Met
130 135 140

Leu Gly Gly Leu Thr Ala Asp Ile Val Thr Arg Val Leu Val Ala His
145 150 155 160

Gly Ser Ile Asp Val Phe Asp Pro Asp Arg Asp Lys Pro Ser Leu Ile
165 170 175

Arg Leu Ala Gly Ile Asp Asp Ala Leu Ala Gly Gly Ala Val His Tyr
180 185 190

Val Ala Leu Gly Asp Arg His Ser Leu Thr Gln Val Gly Ser Ser Gly
195 200 205

Arg Val Trp Tyr Ser Gly Ser Pro Glu Val Thr Asn Phe Asp Asp Ile
210 215 220

Glu Ser Asn Ser Gly His Val Leu Val Val Glu Ile Asp Glu Asn Asp
225 230 235 240

Pro Arg Arg Pro Val Thr Val Thr Ala Arg His Val Gly His Trp Arg
245 250 255

Phe Phe Thr Leu His Trp Gln Val Asp Asn Gly Arg Asp Ile Ala Asp

260 265 270

Leu Asp Met Asn Leu Asp Gln Met Met Asp Lys Asp Arg Ser Val Val
275 280 285

Arg Leu Ala Leu Thr Gly Ser Leu Thr Ile Thr Asp Arg Ala Val Leu
290 295 300

Asp Ala Cys Leu Asp Arg Tyr Ala Arg Leu Phe Ala Trp Leu Gly Leu
305 310 315 320

Trp Glu Arg Arg Ser Asp Leu Ala Val Ile Pro Ala Asp Gly Glu Phe
325 330 335

Thr Asp Ile Gly Ile Gly Gly Phe Ala Ala Ala Ala Val Asp Glu Leu
340 345 350

Val Ala Thr Ala Arg Glu Gly Asp Thr Glu Ser Ala Ile Asp Ala Gln
355 360 365

Ala Ala Leu Ala Leu Leu Leu Arg Leu Ala Asp Arg Gly Val Ala
370 375 380

<210> 137

<211> 873

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1120, ML.tab 1295911:1298532 forward MW:94011

<400> 137

Met Lys Leu His Arg Leu Ala Leu Thr Asn Tyr Arg Gly Thr Ala Arg
1 5 10 15

Arg Glu Ile Glu Phe Pro Asp Arg Gly Val Ile Leu Val Cys Gly Ala
20 25 30

Asn Glu Ile Gly Lys Ser Ser Met Ile Glu Ala Leu Asp Leu Leu Leu
35 40 45

Glu Phe Arg Asp Arg Ser Thr Lys Lys Glu Val Lys Gln Val Lys Pro
50 55 60

Ala Asn Ala Asp Ile Gly Ser Glu Val Cys Ala Glu Ile Ser Ser Gly
65 70 75 80

Thr Tyr Arg Phe Val Tyr Arg Lys Arg Phe Asn Lys Lys Cys Glu Thr
85 90 95

```
Ala Leu Thr Val Leu Ala Pro His Arg Glu Gln Leu Thr Gly Asp Glu
            100                 105                 110

Ala His Glu Arg Val Arg Ala Met Leu Ala Glu Thr Val Asp Asn Asp
        115                 120                 125

Leu Trp His Ala Gln Arg Val Leu Gln Ala Ala Ser Thr Ala Ala Val
    130                 135                 140

Asp Leu Ser Gly Cys Asp Ala Leu Ser Arg Ala Leu Asp Leu Ala Ala
145                 150                 155                 160

Gly Asp His Ala Glu Leu Ser Gly Thr Glu Pro Leu Leu Ile Glu Arg
                165                 170                 175

Ile Glu Ala Glu Tyr Arg Arg Tyr Phe Thr Ser Thr Gly Arg Pro Thr
            180                 185                 190

Gly Glu Trp Ala Val Ala Ile Ser Arg Leu Ser Asp Ala Glu Thr Ala
        195                 200                 205

Val Gly Glu Cys Ala Ala Ala Val Ala Glu Val Asp Asp Arg Val Arg
    210                 215                 220

Arg His Ala Val Leu Thr Glu Arg Val Ala Gly Leu Ala Gln Gln Arg
225                 230                 235                 240

Phe Ala Ala Gly Pro Arg Leu Ala Val Ala Gln Ala Ala Ala Asp Lys
                245                 250                 255

Val Ala Val Leu Thr Arg Gln Ala Arg Glu Ala Glu Leu Val Ala Ala
            260                 265                 270

Ala Ala Thr Ala Thr Asn Ala Ala Ala Val Ala Ala His Thr Ser Arg
        275                 280                 285

Leu Arg Leu Leu Ala Glu Ile Asp Thr Arg Ala Val Val Leu Ala Ala
    290                 295                 300

Thr Gln Asp Glu Ala Gln Glu Ala Val Asp Ala Val Ser Thr Met Arg
305                 310                 315                 320

Ala Asp Ala Glu Ala Ser Asp Ala Ala Val Glu Glu Ser Thr Glu Ala
                325                 330                 335

Leu Met Ala Ala Gln Gln Arg Ala Asp Ile Ala Arg Ser Thr Val Asp
            340                 345                 350

Gln Leu Val Asp Arg Gln Glu Ala Asp Arg Leu Ser Thr Arg Leu Ala
        355                 360                 365

Lys Ile Asp Ala Ile Gln Gly Glu Arg Asp Leu Ile Cys Ala Glu Leu
    370                 375                 380

Ser Ala Val Thr Leu Thr Glu Gln Leu Leu Gln Arg Ile Glu Asn Ala
385                 390                 395                 400

Ala Ala Ile Val Asp Arg Thr Gly Glu Gln Leu Lys Leu Ile Ser Ala
                405                 410                 415

Ala Val Glu Phe Thr Ala Thr Ala Asp Ile Glu Ile Ser Val Gly Gln
```

420 425 430

Gln Arg Val Ser Leu Glu Ala Gly Gln Ser Trp Ser Thr Thr Ala Thr
435 440 445

Gly Pro Thr Glu Val Glu Val Leu Gly Val Leu Thr Ala Cys Val Ile
450 455 460

Pro Gly Ala Thr Ala Leu Asp Ala Gln Ser Lys Tyr Val Ala Ala Gln
465 470 475 480

Glu Glu Leu Ser Val Ala Leu Ala Asp Gly Gly Val Val Asp Leu Ala
485 490 495

Ala Ala Arg Cys Ala Asn Gln Arg Arg Arg Glu Leu Gln Ser Ser Leu
500 505 510

Asp Gln Leu Ser Ala Ala Leu Ala Gly Val Cys Gly Asp Asp Gln Ile
515 520 525

Asp Gln Leu Arg Ala Arg Leu Glu Gln Leu Arg Asp Gly Tyr Pro Gly
530 535 540

Glu Pro Asp Leu Leu Ala Val Asp Ile Gly Ser Ala Arg Ala Glu Leu
545 550 555 560

Glu Ala Ala Glu Thr Val Arg Ala Ala Val Asp Phe Glu Arg Glu Val
565 570 575

Cys Arg Arg Thr Ala Ala Ala Ala Asn Cys Arg Leu Val Glu Thr Ser
580 585 590

Ala Arg Ala Asn Phe Leu Leu Lys Lys Ala Glu Thr Gln Arg Ala Glu
595 600 605

Leu Asp Gln Asp Ile Asp Gln Leu Ala Gln Gln Arg Ala Ser Val Ser
610 615 620

Asp Glu Asp Leu Ala Ser Ala Ala Glu Ala Gly Leu Arg Ala Val Gln
625 630 635 640

Ile Ala Glu Gln Arg Val Ala Lys Leu Thr Glu Glu Leu Val Ala Ala
645 650 655

Glu Pro Glu Ala Val Thr Ala Glu Leu Val Ala Ala Thr Ala Ala Ala
660 665 670

Glu Ser Leu Arg Asp Gln His Glu Asp Ala Ala Gly Ala Leu Arg Glu
675 680 685

Ile Ser Ile Glu Leu Ser Val Phe Gly Thr Glu Gly Arg Gln Gly Lys
690 695 700

Leu Asp Thr Ala Glu Ala Glu Arg Glu His Ala Ile Ser Gln His Thr
705 710 715 720

Gln Ile Gly Arg Arg Ala Arg Ala Ala Gln Leu Leu Arg Ser Val Met
725 730 735

Ala Arg His Arg Asp Thr Thr Arg Leu Arg Tyr Val Glu Pro Tyr Arg
740 745 750

Thr Glu Leu Gln Arg Leu Gly Arg Pro Val Phe Gly Pro Thr Phe Glu
755 760 765

Val Asp Ile Asp Ser Asp Leu Arg Ile Arg Ser Arg Thr Leu Asp Gly
770 775 780

Ile Thr Val Pro Phe Glu Ser Leu Ser Gly Gly Ala Lys Glu Gln Leu
785 790 795 800

Gly Ile Leu Ala Arg Phe Ala Gly Ala Thr Leu Val Ala Lys Glu Asp
805 810 815

Asn Val Pro Val Val Val Asp Asp Ala Leu Gly Phe Thr Asp Pro Asp
820 825 830

Arg Leu Ala Lys Met Gly Glu Met Phe Asp Thr Val Gly Ala His Gly
835 840 845

Gln Val Ile Val Leu Thr Cys Ser Pro Asp Arg Tyr Asp Gly Phe Thr
850 855 860

Gly Ala His Arg Ile Asp Leu Asn Val
865 870

<210> 138

<211> 153

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1138, ML.tab 1329962:1330423 forward MW:16168

<400> 138

Val Thr Thr Pro Ala Gln Asp Ala Pro Leu Val Leu Pro Ala Val Ala
1 5 10 15

Phe Arg Pro Val Arg Leu Phe Ile Ile Asn Ile Val Leu Thr Gly Leu
20 25 30

Ala Met Leu Ala Ala Gly Leu Ser Gly His Leu Met Val Gly Val Phe
35 40 45

Phe Gly Ile Gly Leu Leu Leu Gly Leu Leu Asn Ala Leu Leu Val Arg
50 55 60

Cys Ser Val Glu Ser Ile Thr Ala Gln Gly His Pro Leu Lys Arg Ser
65 70 75 80

Met Ala Leu Asn Ser Ala Ser Arg Leu Ala Ile Ile Thr Val Phe Gly

85 90 95

Leu Ile Ile Ala Tyr Ala Phe Pro Leu Ala Gly Leu Gly Val Val Phe
100 105 110

Gly Leu Ala Leu Phe Gln Val Leu Leu Val Leu Ser Thr Met Leu Pro
115 120 125

Val Trp Arg Lys Phe Arg Phe Gly Glu Ala Asp Gly Gly Val Leu Lys
130 135 140

Gly Ser Glu Gly Glu Glu Gln Gln Arg
145 150

<210> 139

<211> 147

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1147, ML.tab 1337937:1338380 forward MW:16518

<400> 139

Met Ser Ala Pro Met Val Gly Met Val Val Leu Val Val Thr Leu Gly
1 5 10 15

Ala Ala Val Leu Ala Leu Ser Tyr Arg Leu Trp Lys Leu Arg Gln Gly
20 25 30

Gly Thr Ala Gly Ile Met Arg Asp Ile Pro Ala Val Gly Gly His Gly
35 40 45

Trp Arg His Gly Val Ile Arg Tyr Arg Gly Glu Ala Ala Ala Phe Tyr
50 55 60

Arg Leu Ser Ser Leu Arg Leu Trp Pro Asp Arg Arg Leu Ser Arg Arg
65 70 75 80

Gly Val Glu Ile Val Ala Arg Arg Gly Pro Arg Gly Asp Glu Phe Asp
85 90 95

Ile Met Thr Asp Lys Ile Val Val Leu Glu Leu Arg Asp Thr Thr Gln
100 105 110

Asp Arg Arg Ser Gly Tyr Glu Ile Ala Leu Asp Gln Gly Ala Leu Ala
115 120 125

Ala Phe Leu Ser Trp Leu Glu Ser Arg Pro Ser Pro Arg Thr Arg Arg
130 135 140

Arg Ser Val
145

<210> 140

<211> 301

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1159, ML.tab 1354280:1355185 forward MW:31923

<400> 140

Met Ala Gly Ala Val Asp Leu Ser Gly Leu Lys Gln Arg Ala Arg Gln
1 5 10 15

Lys Ala Ser Thr Ser Asp Pro Ala Ser Arg Ala Thr Leu Gly Ala Arg
20 25 30

Gly Thr Gly Ser Ser Glu Asn Thr Ser Val Ile Glu Ile Thr Glu Ala
35 40 45

Asn Phe Glu Asp Glu Val Leu Val Arg Ser His Glu Val Pro Ile Leu
50 55 60

Val Leu Val Trp Ser Pro Arg Ser Asp Ala Cys Val Lys Leu Leu Glu
65 70 75 80

Thr Leu Ser Gly Leu Ala Val Ala Asp Ser Gly Thr Trp Leu Leu Ala
85 90 95

Thr Val Asn Val Asp Ala Val Pro Arg Val Ala Gln Ile Phe Gly Val
100 105 110

Asp Ala Val Pro Thr Val Val Ala Leu Ala Ala Gly Gln Pro Leu Ser
115 120 125

Ser Phe Gln Gly Met Gln Ser Val Asp Gln Leu Arg Arg Trp Leu Asp
130 135 140

Ser Leu Leu Ser Val Thr Ala Gly Lys Leu Arg Gly Pro Thr Arg Ser
145 150 155 160

Glu Asp Ser Ala Glu Ile Asp Pro Ala Ile Ala Gln Ala Arg Gln Gln
165 170 175

Leu Glu Ala Gly Asp Phe Leu Thr Ala Lys Gln Ser Tyr His Ala Ile
180 185 190

Leu Asp Ala Asp Pro Ala Ser Val Glu Ala Lys Ala Ala Ile Arg Gln
195 200 205

Ile Asp Phe Leu Thr Arg Ala Thr Ala Gln His Pro Asp Ala Val Ala
210 215 220

Val Ala Asp Ala Ala Pro Gly Asp Ile Ala Ala Ala Phe Ala Ala Ala
225 230 235 240

Asp Val Gln Ile Leu Asn Gln Asp Val Thr Ala Ala Phe Glu Arg Leu
245 250 255

Ile Val Leu Val Arg Ser Thr Ser Gly Asp Glu Arg Ser Ser Val Arg
260 265 270

Thr Arg Leu Ile Glu Leu Phe Glu Leu Phe Asp Pro Asp Asp Pro Asn
275 280 285

Val Ile Val Gly Arg Arg Asn Leu Ala Asn Ala Leu Tyr
290 295 300

<210> 141

<211> 195

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1166, ML.tab 1364964:1365551 forward MW:21484

<400> 141

Val Arg Lys Trp Lys Arg Val Glu Thr Ala Asn Gly Pro Arg Phe Arg
1 5 10 15

Ser Val Val Ala Pro His Glu Val Ala Leu Leu Lys His Leu Val Gly
20 25 30

Ala Leu Leu Gly Leu Leu Asn Glu Arg Glu Ser Ser Ser Pro Leu Asp
35 40 45

Glu Leu Glu Val Ile Thr Gly Ile Lys Ala Gly Asn Ala Gln Arg Pro
50 55 60

Glu Asp Pro Thr Leu Arg Arg Leu Leu Pro Asp Phe Tyr Thr Pro Asp
65 70 75 80

Asp Lys Asp Gln Leu Asp Pro Ala Ala Leu Asp Ala Val Asp Ser Leu
85 90 95

Asn Ala Ala Leu Arg Ser Leu His Glu Pro Glu Ile Val Asp Ala Lys
100 105 110

Arg Ser Ala Ala Gln Gln Leu Leu Asp Thr Leu Pro Glu Ser Asp Gly

115 120 125

Arg Leu Glu Leu Thr Glu Ala Ser Ala Asn Ala Trp Ile Ala Ala Val
130 135 140

Asn Asp Leu Arg Leu Ala Leu Gly Val Ile Leu Glu Ile Asp Arg Pro
145 150 155 160

Ala Pro Glu Arg Val Pro Ala Gly His Pro Leu Ser Val His Phe Asp
165 170 175

Val Tyr Gln Trp Leu Thr Val Leu Gln Glu Tyr Leu Val Leu Ala Leu
180 185 190

Met Ala Thr
195

<210> 142

<211> 119

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1176, ML.tab 1372485:1372844 reverse MW:13792

<400> 142

Met Thr Arg Pro Glu Thr Pro Gln Ala Pro Asp Phe Asp Phe Glu Lys
1 5 10 15

Ser Arg Thr Ala Leu Leu Gly Tyr Arg Ile Met Ala Trp Thr Thr Gly
20 25 30

Ile Trp Leu Ile Ala Leu Cys Tyr Glu Ile Val Ser His Leu Val Phe
35 40 45

His His Glu Ile Arg Trp Ile Glu Val Val His Gly Trp Val Tyr Phe
50 55 60

Val Tyr Val Leu Thr Ala Phe Asn Leu Ala Ile Lys Val Arg Trp Pro
65 70 75 80

Ile Gly Lys Thr Val Gly Val Leu Leu Ala Gly Thr Val Pro Leu Leu
85 90 95

Gly Ile Ile Val Glu His Phe Gln Thr Lys Asp Val Lys Thr Arg Phe
100 105 110

Gly Leu Arg His Ser Arg Thr
115

<210> 143

<211> 126

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1177, ML.tab 1372841:1373221 reverse MW:14447

<400> 143

Val Ser Thr Thr Arg Arg Arg Arg Pro Ala Leu Val Ala Leu Val Thr
1 5 10 15

Ile Ala Ala Cys Gly Cys Leu Ala Leu Gly Trp Trp Gln Trp Thr Arg
20 25 30

Phe Gln Ser Ala Ser Gly Thr Phe Gln Asn Leu Gly Tyr Ala Leu Gln
35 40 45

Trp Pro Leu Phe Ala Gly Phe Cys Leu Tyr Thr Tyr His Asn Phe Val
50 55 60

Arg Tyr Glu Glu Ser Pro Pro Gln Pro Arg His Met Asn Cys Ile Ala
65 70 75 80

Glu Ile Pro Pro Glu Leu Leu Pro Ala Arg Pro Lys Pro Glu Gln Gln
85 90 95

Pro Pro Asp Asp Pro Ala Leu Arg Lys Tyr Asn Thr Tyr Leu Ala Glu
100 105 110

Leu Ala Lys Gln Asp Ala Glu Asn His Asn Arg Thr Thr Thr
115 120 125

<210> 144

<211> 95

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1180, ML.tab 1380300:1380587 reverse MW:10260

<400> 144

Met Gly Asn Ile Asn Tyr Gln Phe Gly Glu Ile Asp Ala His Gly Ala
1 5 10 15

Ala Ile Arg Ala Gln Ala Ala Ala Leu Glu Thr Thr His Gln Ala Ile
20 25 30

Leu Ala Thr Val Arg Asp Ala Ala Glu Phe Trp Gly Gly Gln Gly Ser
35 40 45

Thr Ala His Glu Met Phe Ile Ala Asp Leu Gly Arg Asn Phe Gln Met
50 55 60

Ile Tyr Glu Gln Ala Asn Ser His Gly Gln Lys Val Gln Arg Ala Ser
65 70 75 80

Ser Ser Met Ala Asp Thr Asp Arg Ser Val Ser Ser Ala Trp Ser
85 90 95

<210> 145

<211> 100

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1181, ML.tab 1380639:1380941 reverse MW:11298

<400> 145

Met Thr Ala Ala His Phe Met Thr Asp Pro Gln Ala Met Arg Asp Met
1 5 10 15

Ala Arg Lys Phe Asp Met His Ala Gln Asn Val Arg Asp Glu Ser His
20 25 30

Lys Met Phe Met Ser Ser Met Asp Ile Ala Gly Ala Gly Trp Ser Gly
35 40 45

Thr Ala Gln Leu Thr Ser His Asp Thr Met Gly Gln Ile Asn Gln Ala
50 55 60

Phe Arg His Ile Val Thr Leu Leu Gln Asp Val Arg Asp Gln Leu Gly
65 70 75 80

Thr Ala Ala Asp Arg Tyr Glu His Gln Glu Glu Asn Ser Arg Lys Ile
85 90 95

Leu Ser Gly Ser

100

<210> 146

<211> 421

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1182, ML.tab 1381004:1382269 reverse MW:43120

<400> 146

Met Phe Asp Phe Ala Ala Leu Ser Pro Glu Thr Asn Ser Thr Arg Met
1 5 10 15

Tyr Leu Gly Pro Gly Ser Ser Pro Ile Leu Thr Ala Ala Ala Ala Trp
20 25 30

Val Val Leu Ala Lys Glu Leu Thr Ala Ala Ala Gln Gly Leu Gln Ser
35 40 45

Ala Val Glu Ala Leu Leu Thr Thr Phe Glu Gly Glu Ser Ala Ala Ala
50 55 60

Leu Ala Glu Arg Val Thr Pro Tyr Glu Lys Trp Leu Thr Gln Asn Ala
65 70 75 80

Ala Ser Ala Glu Leu Thr Ala Thr Gln Leu Thr Val Ala Ala Asn Ala
85 90 95

Tyr Glu Thr Ala Phe Thr Met Thr Val Pro Pro Leu Met Val Phe Val
100 105 110

Asn Arg Ala Gln Ala Cys Leu Leu Ile Met Ser Asn Ile Phe Gly Gln
115 120 125

Asn Ser Thr Ala Ile Ala Glu Lys Glu Ala Glu Tyr Thr Glu Met Trp
130 135 140

Ile Gln Asp Ala Ala Ala Met Thr Ser Tyr Gln Ala Ser Val Leu Glu
145 150 155 160

Ala Val Gly Ala Thr Lys Ala Phe Thr Ala Pro Pro Leu Gly Val Asn
165 170 175

Glu Val Gly Leu Ala Gln Glu Val Val Glu Glu Val Val Glu Glu Val
180 185 190

Val Glu Glu Val Val Glu Glu Val Val Glu Ala Glu Gln Ala Ile Ser
195 200 205

Gln Ala Ala Leu Asp Gln Ala Val Asn Glu Gly Met Glu Ala Thr Val
210 215 220

Val Pro Gln Val Asp Gln Gln Val Asn Val Asp Val Ala Thr Pro Gln
225 230 235 240

Thr Ala Val Pro Asp Ser Ser Ser Ala Ala Ala Pro Gln Leu Trp Gly
245 250 255

Gly Phe Ala Gln His Leu Ser Pro Ile Asn Asp Thr Leu Ser Met Ile
260 265 270

Asn Asn His Ala Gly Met Ala Asn Ala Gly Leu Ser Leu Val Asn Gly
275 280 285

Met Gly Ser Ala Met Lys Ser Leu Ala Pro Thr Thr Thr Lys Ala Ala
290 295 300

Glu Ser Ala Phe Lys Ala Met Gly Ser Ala Val Gln Ser Thr Gly Arg
305 310 315 320

Gly Leu Leu Gly Ser Ser Ser Gly Gly His Val Thr Ala Gln Leu Gly
325 330 335

Arg Ala Ala Ser Ile Gly Ser Leu Arg Val Pro Gln Thr Trp Thr Thr
340 345 350

Ala Ser Gln Pro Val Thr Ala Ala Thr Arg Ala Leu Ser Pro Ala Arg
355 360 365

Val Ala Val Ala Thr Glu Ser Glu Ser Ala Pro Leu Leu Gly Gly Gly
370 375 380

Leu Pro Met Ala Pro Met Val Pro Gly Gly Gly Ser Gly Thr Gly Gly
385 390 395 400

Val Asn Thr Ala Leu Arg Leu Gln Pro Arg Ala Phe Val Met Pro Arg
405 410 415

Asn Pro Ala Ala Gly
420

<210> 147

<211> 99

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1183, ML.tab 1382326:1382625 reverse MW:10117

<400> 147

```
Met Pro Leu Phe Leu Asn Ala Glu Pro Gln Ala Leu Thr Ala Ala Ala
1               5                  10                  15

Asn Thr Leu Glu Gly Leu Ser Ala Ala Thr Val Ala Ser Asn Ala Ala
            20                  25                  30

Ala Ala Gln Leu Thr Thr Glu Ile Ala Pro Pro Ala Ala Asp Asp Val
        35                  40                  45

Ser Ile Leu Leu Ala His Phe Phe Ser Gly His Gly Arg Gln Tyr Gln
    50                  55                  60

Ala His Ala Ser Gln Gly Ala Thr Asn His Gln Asp Leu Ile Gln Ser
65                  70                  75                  80

Leu Leu Thr Ser Ser Ser Ala Tyr Ala Gly Thr Glu Thr Ala Asn His
                85                  90                  95

Asp Ser Leu
```

<210> 148

<211> 239

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1190, ML.tab 1395291:1396010 forward MW:25342

<400> 148

```
Met Ser Val Ser Arg Arg Asp Val Leu Lys Phe Ala Thr Val Thr Pro
1               5                  10                  15

Gly Leu Leu Gly Leu Gly Val Ala Ala Ala Ala Leu Cys Ala Val Pro
            20                  25                  30

Ala Ser Thr Ala Gly Ser Leu Gly Thr Leu Leu Asp Tyr Ala Ala Gly
        35                  40                  45

Val Ile Pro Ala Ser Gln Ile Arg Ala Thr Gly Ala Val Gly Ala Ile
    50                  55                  60

Arg Tyr Val Ser Asp Pro Arg Gly Thr Trp Ala Val Gly Lys Pro Ile
65                  70                  75                  80

Gln Val Thr Glu Ala Arg Asp Leu Ile Asn Asn Gly Leu Lys Ile Val
                85                  90                  95

Ser Cys Tyr Gln Tyr Gly Lys Gly Asn Thr Ala Asp Trp Leu Gly Gly
```

100 105 110

Ala Thr Ala Gly Leu Arg His Ala Gln Arg Gly Val Gln Leu His Thr
115 120 125

Ala Ala Gly Gly Pro Val Ser Ala Pro Ile Tyr Ala Ser Ile Asp Ser
130 135 140

Asn Pro Thr Tyr Glu Gln Tyr Lys Gln Gln Val Ala Pro Tyr Leu Arg
145 150 155 160

Ser Trp Glu Ser Val Ile Gly His Gln Arg Thr Gly Val Tyr Ala Asn
165 170 175

Ser Arg Thr Ile Ala Trp Ala Leu Gln Asp Gly Leu Ala Ser Tyr Phe
180 185 190

Trp Gln His Asn Trp Gly Ser Pro Lys Gly Tyr Thr His Pro Ala Ala
195 200 205

Asn Leu His Gln Val Glu Ile Asp Arg Arg Thr Val Gly Gly Val Gly
210 215 220

Val Asp Val Asn Thr Ile Leu Lys Pro Gln Phe Gly Gln Trp Ala
225 230 235

<210> 149

<211> 80

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1221, ML.tab 1443565:1443807 forward MW:8793

<400> 149

Val Val Gln Asp Leu Pro Thr Pro Ile Gly Ala Gly Ile Tyr Asn Ile
1 5 10 15

Tyr Thr Gly Val Lys His Arg Asp Glu Leu Ala Gly Ala Ser Met Pro
20 25 30

Thr Val Ala Gln Leu Gly Leu Glu Pro Pro Arg Phe Cys Ala Glu Cys
35 40 45

Gly Arg Arg Met Val Val Gln Val Arg Pro Asp Gly Trp Arg Ala Lys
50 55 60

Cys Ser Arg His Gly Gln Val Asp Ser Val Asp Met Glu Ala Lys Arg
65 70 75 80

<210> 150

<211> 198

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1222, ML.tab 1443804:1444400 forward MW:20601

<400> 150

```
Val Thr Glu His Cys Ala Ser Asp Ile Ser Asp Val Ser Cys Pro Pro
1               5                  10                  15

Arg Gly Arg Val Ile Val Gly Val Val Leu Gly Leu Ala Gly Thr Gly
            20                  25                  30

Ala Leu Ile Gly Gly Leu Trp Ala Trp Ile Ala Pro Pro Ile His Ala
        35                  40                  45

Val Val Gly Leu Thr Arg Thr Gly Glu Arg Gly His Asp Tyr Leu Gly
    50                  55                  60

Asn Glu Ser Glu His Phe Phe Val Ala Pro Cys Leu Met Leu Gly Leu
65                  70                  75                  80

Leu Thr Val Leu Ala Val Thr Ala Ser Val Leu Ala Trp Gln Leu Arg
                85                  90                  95

Gln His Arg Gly Pro Gly Met Val Ile Gly Leu Ala Ile Gly Leu Met
            100                 105                 110

Ile Cys Ala Ala Thr Ala Ala Ala Val Gly Ala Leu Leu Val Trp Met
        115                 120                 125

Arg Tyr Gly Ala Leu Asn Phe Asp Ala Val Pro Leu Ser Tyr Asp His
    130                 135                 140

Lys Val Ala His Val Ile Gln Ala Pro Pro Val Phe Phe Ala His Gly
145                 150                 155                 160

Leu Leu Gln Val Ala Ala Thr Val Leu Trp Pro Ala Gly Ile Ala Ala
                165                 170                 175

Leu Val Tyr Ala Val Leu Ala Ala Ala Asn Gly Arg Asp Asp Leu Gly
            180                 185                 190

Gly Arg Leu Cys Ser Arg
        195
```

<210> 151

<211> 358

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1232, ML.tab 1465612:1466688 reverse MW:38687

<400> 151

```
Met Lys Arg Leu Leu Ala Thr Thr Leu Ala Ala Leu Thr Val Gly Thr
1               5                  10                  15

Val Ser Gly Phe Gly Ser Thr Val Ala Ser Ser Glu Pro Gly Glu Pro
            20                  25                  30

Trp Leu Pro Pro Ser Pro Val Pro Val Arg Glu Asn Ser Pro Ala Lys
        35                  40                  45

Ile Val Tyr Ala Leu Gly Gly Ala Arg Pro Pro Thr Phe Asp Trp Asp
    50                  55                  60

Tyr Tyr Thr Ile Arg Ala Gly Asp Glu Phe Phe Pro Asp Val Asn Arg
65                  70                  75                  80

Lys Leu Ile Asp Tyr Pro Ala Arg Ala Pro Phe Arg Tyr Val Pro Thr
                85                  90                  95

Phe Leu Val Pro Gly Pro Arg Asp Glu Val Thr Ile Gly Glu Ala Ile
            100                 105                 110

Ala Val Ala Thr Lys Asn Leu Asn Gln Ala Ile His Arg Gly Thr Glu
        115                 120                 125

Pro Ala Ala Val Val Gly Leu Ser Gln Gly Ser Leu Ala Leu Asp Thr
    130                 135                 140

Glu Gln Glu Gln Leu Ala Thr Asp Pro Thr Ala Pro Pro Pro Asp Gln
145                 150                 155                 160

Leu Thr Phe Asn Thr Phe Gly Asp Pro Ser Gly Tyr His Gly Phe Gly
                165                 170                 175

Lys Ser Val Leu Ala Ser Ile Phe Arg Pro Gly Asp Tyr Ile Pro Leu
            180                 185                 190

Ile Asp Tyr Thr Met Pro Gln Arg Met Asp Ser Gln Tyr Asp Ser Asn
        195                 200                 205

Arg Val Val Ala Ala Tyr Asp Gly Leu Ser Glu Phe Pro Asp Arg Ala
    210                 215                 220

Asp Asn Leu Leu Ala Gln Leu Asn Cys Phe Ala Gly Gly Ala Ile Ser
```

225 230 235 240

His Thr Pro Ser Gly Phe Phe Asn Pro Glu Asp Val Pro Pro Gln Asn
245 250 255

Ile Arg Thr Thr Val Asn Ser Arg Gly Ala Lys Thr Thr Thr Tyr Leu
260 265 270

Ile Pro Val Asn His Leu Pro Leu Thr Leu Pro Leu Arg Tyr Leu Gly
275 280 285

Trp Ser Asp Ala Leu Val Asp Gln Ile Asp Ala Val Leu Gln Pro Lys
290 295 300

Ile Asp Ala Ala Tyr Ala Tyr Asn Asp Asn Pro Leu Asn Lys Pro Ile
305 310 315 320

Ser Val Asp Pro Val Asn Gly Met Asp Pro Ile Ala Gly Ile Asp Ala
325 330 335

Glu Leu Arg Asp Ser Ile Leu Asn Val Phe Ala Gln Leu Arg Ser Ile
340 345 350

Leu Pro Pro Pro Pro Gly
355

<210> 152

<211> 230

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1233, ML.tab 1466853:1467545 reverse MW:24400

<400> 152

Met Trp Ile Thr Ile Leu Leu Met Ala Ile Ala Ile Ser Leu Glu Pro
1 5 10 15

Phe Arg Ile Gly Met Thr Val Leu Met Leu Asn Arg Pro Arg Pro Thr
20 25 30

Leu Gln Leu Leu Val Phe Leu Cys Ser Gly Phe Thr Met Gly Met Thr
35 40 45

Val Gly Phe Val Val Leu Phe Val Phe Arg Arg Arg Leu Met Ala Ser
50 55 60

Met Gln Leu Thr Leu Pro Lys Val Gln Ile Leu Ile Gly Val Leu Ala
65 70 75 80

Leu Leu Val Ala Ala Val Leu Thr Val Gln Val Cys Ile Ser Ser Glu
85 90 95

Pro Pro Ala Glu Ser Pro Val Asp Ser Ala Ser Gly Pro Pro Lys Pro
100 105 110

Ser Lys Trp Ala Pro Arg Pro Leu Ala Arg Leu Leu Asn Gly Asp Ser
115 120 125

Leu Trp Val Ala Gly Val Ala Gly Leu Gly Ile Ala Leu Pro Ser Val
130 135 140

Asp Tyr Leu Ala Ala Leu Ala Val Ile Leu Thr Ser Gly Ala Ala Ala
145 150 155 160

Thr Thr Gln Val Gly Ala Leu Leu Met Phe Asn Val Val Ala Phe Ala
165 170 175

Leu Ile Glu Ile Pro Leu Ala Ala Tyr Leu Leu Ala Pro Asp Thr Thr
180 185 190

Arg Ala Trp Thr Ala Ala Leu Asn Asn Trp Ile Arg Ser Arg Arg Arg
195 200 205

Leu Glu Val Ala Thr Leu Leu Ala Gly Val Ser Cys Leu Leu Leu Ala
210 215 220

Val Gly Ile Ala Gly Leu
225 230

<210> 153

<211> 491

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1244, ML.tab 1482817:1484292 forward MW:52449

<400> 153

Met Ala Asp Ser Val Glu Gly Ile Gly Pro Phe Asp Glu Leu Gly Ala
1 5 10 15

Leu Asp Tyr Leu Leu His Arg Gly Glu Ala Asn Pro Arg Thr Arg Ala
20 25 30

Gly Ile Met Ala Val Glu Leu Leu Asp Thr Thr Pro Asp Trp Asn Arg
35 40 45

Phe Arg Ser Arg Ile Glu Asp Val Ser Gln Arg Val Leu Arg Leu Arg
50 55 60

```
Gln Lys Val Val Val Pro Thr Leu Pro Thr Ala Ala Pro Arg Trp Val
65                  70                  75                  80

Val Asp Pro Asp Phe Glu Leu Asp Phe His Val Arg Arg Val Arg Val
                85                  90                  95

Pro Asp Pro Gly Thr Leu Arg Glu Val Phe Asp Leu Ala Glu Val Ile
            100                 105                 110

Gln Gln Ser Pro Met Asp Val Ser Arg Pro Leu Trp Thr Ala Thr Leu
        115                 120                 125

Val Glu Gly Leu Ala Ala Gly Arg Ala Ala Met Leu Leu Gln Ile Ser
    130                 135                 140

His Ala Ile Thr Asp Gly Val Gly Ser Val Glu Met Phe Ala Glu Met
145                 150                 155                 160

Tyr Asp Leu Glu Arg Asp Pro Pro Ser Arg Pro Arg Ser Pro Gln Pro
                165                 170                 175

Ile Pro Gln Asp Leu Ser Arg Asn Asp Leu Met Leu Gln Gly Ile Asn
            180                 185                 190

His Leu Pro Val Ala Leu Ala Gly Gly Val Val Gly Gly Leu Ser Gly
        195                 200                 205

Val Ala Ser Val Ala Gly Arg Ala Ile Leu Arg Pro Ala Ser Thr Val
    210                 215                 220

Ser Gly Val Val Gly Tyr Val Arg Ser Gly Ile Arg Val Leu Ser Gln
225                 230                 235                 240

Ala Ala Glu Pro Ser Pro Leu Leu Arg Gln Arg Ser Leu Ala Thr Arg
                245                 250                 255

Thr Glu Ala Ile Glu Ile Gln Leu Ser Asp Leu His Lys Ala Ala Lys
            260                 265                 270

Ala Gly Asp Gly Ser Ile Asn Asp Ala Tyr Leu Ala Gly Leu Val Gly
        275                 280                 285

Ala Leu Arg Arg Tyr His Glu Ala Leu Gly Val Ser Ile Ser Thr Leu
    290                 295                 300

Pro Met Ala Val Pro Val Asn Val Arg Thr Glu Ala Asp Val Val Gly
305                 310                 315                 320

Ser Asn Arg Phe Val Gly Val Thr Leu Ala Ala Pro Leu Gly Thr Asn
                325                 330                 335

Asp Pro Ala Ala Arg Met Gln Lys Ile Arg Ser Gln Met Thr Gln Arg
            340                 345                 350

Arg Asp Glu Pro Ala Met Asn Ile Ile Gly Ser Leu Ala Pro Leu Met
        355                 360                 365

Thr Val Leu Pro Ala Ser Val Leu Asp Phe Ile Val Asp Ser Val Ala
    370                 375                 380
```

Ser Ser Asp Val Asn Ala Ser Asn Ile Pro Ala Tyr Pro Gly Asp Thr
385 390 395 400

Tyr Phe Ala Gly Ala Lys Ile Leu Arg Gln Tyr Gly Ile Gly Pro Arg
405 410 415

Pro Gly Val Ala Met Met Ala Val Leu Met Ser Arg Gly Gly Phe Cys
420 425 430

Thr Val Thr Val Arg Tyr Asp Arg Ala Ser Val Lys Ser Glu Ala Leu
435 440 445

Phe Ala Arg Cys Leu Leu Glu Gly Phe Asp Glu Val Leu Ala Leu Ala
450 455 460

Gly Asp Pro Thr Pro His Ala Val Pro Ala Ser Phe Ala Ala Arg Ser
465 470 475 480

Ser Gly Ser Pro Ala Gly Trp Leu Ser Ser Ser
485 490

<210> 154

<211> 1622

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1249, ML.tab 1490899:1495767 forward MW:177878

<400> 154

Met Thr Ile Asp Pro Gly Ala Thr His Val Ala Glu Leu Cys Thr Thr
1 5 10 15

Phe Thr Gln Gly Ala Asp Val Pro Asp Trp Ile Ser Lys Ala Tyr Ile
20 25 30

Asp Ser Tyr Arg Gly Ser His Gly Asp Val Arg Glu Ala Pro Glu Thr
35 40 45

Ser Arg Val Asn Pro Asn Ala Leu Val Thr Pro Ala Met Leu Ser Ala
50 55 60

His Tyr Arg Leu Gly Gln Cys Arg Pro Asn Gly Arg Asn Cys Val Arg
65 70 75 80

Val Tyr Pro Ala Asp Asp Pro Ala Gly Phe Gly Pro Ala Leu Gln Ile
85 90 95

Val Thr Asp His Gly Gly Met Val Met Asp Ser Ile Thr Val Leu Leu
100 105 110

```
His Arg Leu Gly Val Thr Tyr Thr Ala Met Met Thr Pro Val Phe Met
        115                 120                 125

Val Leu Arg Ser Pro Thr Gly Glu Leu Leu Gly Val Glu Pro Arg Ala
    130                 135                 140

Ser Ser Thr Ser His Ser Ile Glu Gly Thr Trp Val Gly Glu Val Trp
145                 150                 155                 160

Ile Tyr Ile Gln Leu Leu Pro Ala Val Asp Ser Lys Ser Leu Ala Glu
                165                 170                 175

Val Glu Gln Leu Leu Pro Arg Thr Leu Val Asp Val Gln Arg Val Ala
            180                 185                 190

Ala Asp Ala Ala Ala Leu Asn Ala Thr Leu Ser Gly Leu Ala Ala Asp
        195                 200                 205

Val Lys Thr Asn Lys Glu Gly His Phe Ser Ala Ser Asp Arg Asp Asp
    210                 215                 220

Val Ala Ala Leu Leu His Trp Leu Gly Asn Gly Asn Phe Leu Leu Leu
225                 230                 235                 240

Gly Tyr Gln Arg Cys Arg Val His Tyr Gly Leu Val Ser Cys Asp Arg
                245                 250                 255

Ser Thr Gly Leu Gly Val Leu Arg Ala Arg Thr Gly Ser Arg Pro Arg
            260                 265                 270

Leu Thr Asp Asp Asn Glu Leu Leu Val Leu Ala Gln Ala Ala Val Gly
        275                 280                 285

Asn Tyr Leu Arg Tyr Gly Ala Tyr Pro Tyr Ala Ile Ala Val Arg Glu
    290                 295                 300

Tyr Asp Asp Gly Gly Asp Gly Gly Ile Ile Glu His Arg Phe Val Gly
305                 310                 315                 320

Leu Phe Thr Val Ala Ala Met Asn Ala Asp Val Leu Glu Ile Pro Ser
                325                 330                 335

Ile Ser His Arg Val Arg Ala Ala Leu Ala Met Ala Asn Ser Asp Pro
            340                 345                 350

Ile Tyr Pro Gly Gln Leu Leu Leu Asp Val Ile Gln Thr Val Pro Arg
        355                 360                 365

Ser Glu Leu Phe Thr Leu Ser Ala Glu Arg Leu Phe Thr Met Ala Lys
    370                 375                 380

Glu Val Val Asp Leu Gly Ser Gly Arg Arg Ala Leu Leu Phe Leu Arg
385                 390                 395                 400

Ala Asp Arg Leu Gln Tyr Phe Val Ser Cys Leu Val Tyr Val Pro Arg
                405                 410                 415

Asp Arg Tyr Thr Thr Gly Val Arg Leu Gln Ile Glu Asp Ile Leu Val
            420                 425                 430
```

Arg Glu Phe Gly Gly Thr Gln Val Glu Phe Thr Ala Arg Val Ser Glu
435 440 445

Ser Pro Trp Ala Leu Met His Phe Met Val Arg Leu Ser Glu Gly Ala
450 455 460

Ala Thr Gly Ser Val Asp Val Ser Glu Gly Asn Arg Ile Arg Ile Gln
465 470 475 480

Ala Met Leu Ser Glu Ala Ala Arg Thr Trp Ser Asp Arg Leu Ile Ala
485 490 495

Ala Ala Ala Ser Phe Ser Glu Gly Ser Val Ser Tyr Ala Glu Ala Glu
500 505 510

His Tyr Ala Ala Thr Phe Ser Glu Thr Tyr Lys Gln Ala Val Thr Pro
515 520 525

Ala Asp Ala Ile Asp His Ile Ala Ile Ile Lys Glu Leu Ala Asp Asp
530 535 540

Ser Val Lys Leu Val Phe Phe Glu Arg Lys Ala Asp Gly Phe Ala Gln
545 550 555 560

Leu Thr Trp Phe Leu Gly Gly Arg Ser Ala Ser Leu Ser Gln Leu Leu
565 570 575

Pro Met Leu Gln Ser Met Gly Val Val Val Leu Glu Glu Arg Pro Phe
580 585 590

Thr Val Ala Arg Thr Asp Gly Leu Pro Val Trp Ile Tyr Gln Phe Lys
595 600 605

Ile Ser Pro His Pro Thr Ile Pro Leu Ala Ser Thr Ala Asn Glu Arg
610 615 620

Glu Leu Thr Ala Lys Arg Phe Ser Asp Ala Val Thr Ala Ile Trp Gln
625 630 635 640

Gly Arg Val Glu Ile Asp Arg Phe Asn Glu Leu Val Met Arg Ala Arg
645 650 655

Leu Thr Trp Gln Gln Val Val Leu Leu Arg Ala Tyr Ala Lys Tyr Leu
660 665 670

Arg Gln Ala Gly Phe Asn Tyr Ser Gln Ser Tyr Ile Glu Ser Val Leu
675 680 685

Asn Glu His Pro Ser Thr Ala Arg Ser Leu Val Ala Leu Phe Glu Ala
690 695 700

Leu Phe Asp Pro Ser Pro Leu Ser Ser Ser Thr Asn Cys Asp Ala Gln
705 710 715 720

Ala Ala Ala Ala Ala Val Ala Ala Asp Ile Asp Ala Leu Val Ser Leu
725 730 735

Asp Thr Asp Arg Ile Leu Arg Ala Phe Ala Ser Leu Val Gln Ala Thr
740 745 750

Leu Arg Thr Asn Tyr Phe Val Thr Gln Lys Phe Ser Ala Arg Ser Lys

```
        755                 760                 765

Gly Val Leu Val Leu Lys Leu Asp Ala Gln Leu Ile Asn Glu Leu Pro
    770                 775                 780

Leu Pro Arg Pro Lys Phe Glu Ile Phe Val Tyr Ser Pro Arg Val Glu
785                 790                 795                 800

Gly Val His Leu Arg Phe Gly Ala Val Ala Arg Gly Gly Leu Arg Trp
                805                 810                 815

Ser Asp Arg Leu Asp Asp Phe Arg Thr Glu Ile Leu Gly Leu Val Lys
            820                 825                 830

Ala Gln Ala Val Lys Asn Ala Val Ile Val Pro Val Gly Ala Lys Gly
        835                 840                 845

Gly Phe Val Leu Lys Arg Pro Pro Leu Pro Thr Gly Asp Ala Ala Ala
    850                 855                 860

Asp Arg Asp Ala Met Arg Ala Glu Gly Ile Ala Cys Tyr Gln Leu Phe
865                 870                 875                 880

Ile Ser Gly Leu Leu Asp Ile Thr Asp Asn Val Asp His Ala Thr Gly
                885                 890                 895

Lys Val Asn Ala Pro Pro Gln Val Val Arg Arg Asp Ser Asp Asp Ala
            900                 905                 910

Tyr Leu Val Val Ala Ala Asp Lys Gly Thr Ala Thr Phe Ser Asp Ile
        915                 920                 925

Ala Asn Asp Val Ala Lys Ser Tyr Gly Phe Trp Leu Gly Asp Ala Phe
    930                 935                 940

Ala Ser Gly Gly Ser Val Gly Tyr Asp His Lys Ala Met Gly Ile Thr
945                 950                 955                 960

Ala Lys Gly Ala Trp Glu Ala Val Lys Arg His Phe Arg Glu Met Gly
                965                 970                 975

Val Asp Thr Gln Asn Glu Asp Phe Thr Val Val Gly Ile Gly Asp Met
            980                 985                 990

Ser Gly Asp Val Phe Gly Asn Gly  Met Leu Leu Ser Lys  His Ile Arg
        995                 1000                1005

Leu Ile  Ala Ala Phe Asp His  Arg His Val Phe Leu  Asp Pro Asp
    1010                1015                1020

Pro Asp  Ala Ala Val Ser Trp  Ala Glu Arg Gln Arg  Met Phe Asp
    1025                1030                1035

Leu Pro  Arg Ser Ser Trp Asp  Asp Tyr Asn Lys Ser  Leu Ile Ser
    1040                1045                1050

Glu Gly  Gly Gly Val Tyr Ser  Arg Glu Gln Lys Ala  Ile Pro Thr
    1055                1060                1065

Ser Pro  Gln Val Arg Thr Ala  Leu Gly Ile Asp Gly  Glu Val Thr
    1070                1075                1080
```

```
Glu Met Ala Pro Pro Asn Leu Ile Arg Ala Ile Leu Gln Ala Pro
1085                1090                1095

Val Asp Leu Leu Phe Asn Gly Gly Ile Gly Thr Tyr Ile Lys Ala
1100                1105                1110

Glu Thr Glu Ser Val Ala Asp Val Gly Asp Arg Ala Asn Asp Pro
1115                1120                1125

Val Arg Val Asn Ala Asn Gln Val Arg Ala Lys Val Ile Gly Glu
1130                1135                1140

Gly Gly Asn Leu Gly Val Thr Ala Leu Gly Arg Val Glu Phe Asp
1145                1150                1155

Leu Ser Gly Gly Arg Ile Asn Thr Asp Ala Met Asp Asn Ser Ala
1160                1165                1170

Gly Val Asp Cys Ser Asp His Glu Val Asn Ile Lys Ile Leu Ile
1175                1180                1185

Asp Ser Leu Val Thr Ala Gly Lys Val Lys Val Glu Glu Arg Lys
1190                1195                1200

His Leu Leu Glu Ser Met Thr Asp Glu Val Ala Arg Leu Val Leu
1205                1210                1215

Thr Asp Asn Glu Asp Gln Asn Asp Leu Ile Gly Thr Ser Arg Ala
1220                1225                1230

Asn Ala Ala Asn Met Leu Ser Val His Ala Met Gln Ile Lys Tyr
1235                1240                1245

Leu Val Asp Glu Arg Gly Val Asn Arg Glu Leu Glu Ala Leu Pro
1250                1255                1260

Ser Glu Lys Glu Ile Gln Arg Arg Ser Glu Ala Gly Ile Gly Leu
1265                1270                1275

Thr Ser Pro Glu Leu Ser Thr Leu Met Ala His Val Lys Leu Ala
1280                1285                1290

Leu Lys Glu Gln Met Leu Ala Thr Glu Leu Pro Asp Gln Asp Val
1295                1300                1305

Phe Val Ser Arg Leu Pro Arg Tyr Phe Pro Lys Pro Leu Arg Glu
1310                1315                1320

Arg Phe Thr Pro Glu Ile Arg Ser His Gln Leu Arg Arg Glu Ile
1325                1330                1335

Val Thr Thr Met Leu Ile Asn Asp Leu Val Asp Thr Ala Gly Ile
1340                1345                1350

Ser Tyr Ala Phe Arg Ile Ala Glu Asp Ile Gly Val Gly Pro Ile
1355                1360                1365

Asp Ala Ile Arg Thr Tyr Val Ala Thr Asp Ala Ile Phe Gly Val
1370                1375                1380
```

```
Gly Asp  Val Leu Arg Arg Ile  Arg Ala Ala Asn Leu  Ser Val Val
    1385                 1390                 1395

Leu Ser  Asp Arg Met Thr Leu  Asp Thr Arg Arg Leu  Ile Asp Arg
    1400                 1405                 1410

Ala Gly  Arg Trp Leu Leu Asn  Tyr Arg Pro Gln Pro  Leu Ala Val
    1415                 1420                 1425

Gly Ala  Glu Ile Asn Arg Phe  Ala Ala Lys Val Lys  Ala Leu Thr
    1430                 1435                 1440

Pro Arg  Met Ser Glu Trp Leu  Arg Gly Asp Asp Gln  Ala Ile Val
    1445                 1450                 1455

Glu Gln  Gln Ala Thr Glu Phe  Val Ser Gln Gly Ala  Pro Glu Asp
    1460                 1465                 1470

Leu Ala  Tyr Arg Val Ala Val  Gly Leu Tyr Arg Tyr  Ser Leu Leu
    1475                 1480                 1485

Asp Ile  Ile Asp Ile Ala Asp  Ile Thr Glu Leu Asp  Pro Ala Glu
    1490                 1495                 1500

Val Ala  Asp Thr Tyr Phe Ser  Leu Met Asp Arg Leu  Gly Thr Asp
    1505                 1510                 1515

Gly Leu  Leu Thr Ala Val Ser  Lys Leu Pro Gln Asn  Asp Arg Trp
    1520                 1525                 1530

His Ser  Leu Ala Arg Leu Ala  Ile Arg Asp Asp Ile  Tyr Ala Ser
    1535                 1540                 1545

Leu Arg  Ser Leu Cys Phe Asp  Val Leu Ala Val Gly  Glu Pro Asp
    1550                 1555                 1560

Glu Ser  Gly Glu Glu Lys Ile  Ala Glu Trp Glu His  Ile Ser Ala
    1565                 1570                 1575

Ser Arg  Val Glu Arg Ala Arg  Leu Met Leu Ala Glu  Ile His Ala
    1580                 1585                 1590

Ser Gly  Glu Lys Asp Leu Ala  Thr Leu Ser Val Ala  Ala Arg Gln
    1595                 1600                 1605

Ile Arg  Arg Met Thr Arg Thr  Ser Gly Arg Gly Ser  Ser Gly
    1610                 1615                 1620
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<210> 155

<211> 163

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1255, ML.tab 1499768:1500259 forward MW:16842

<400> 155

Met Gly His Gln Ser Ser Gln Ser Glu Val Ala Pro Val Val Arg Gly
1 5 10 15

Asp Val Val Thr Glu Leu Pro Lys Gly Trp Val Ile Thr Thr Ser Gly
20 25 30

Arg Val Ser Gly Val Thr Glu Pro Gly Asp Arg Ser Val His Tyr Pro
35 40 45

Phe Pro Ile Lys Asp Leu Val Ala Leu Asp Asp Ala Leu Thr Tyr Ser
50 55 60

Ser Arg Ala Ser His Ala Arg Phe Ala Val Tyr Leu Gly Asp Leu Gly
65 70 75 80

Asn Asp Thr Ala Ala Leu Ala Arg Glu Ile Leu Ala Gln Val Pro Thr
85 90 95

Pro Asp Asp Ala Val Leu Val Ala Val Ser Pro Asn Gln Cys Ala Ile
100 105 110

Glu Val Val Tyr Gly Ser Gln Val Arg Gly Arg Gly Ala Glu Ser Ala
115 120 125

Ala Pro Leu Gly Val Ala Ala Ala Ser Ser Ala Phe Glu Gln Gly Asn
130 135 140

Leu Ile Asp Gly Leu Ile Ser Ala Val Arg Val Leu Ser Ala Gly Ile
145 150 155 160

Ser Arg Ser

<210> 156

<211> 265

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1270, ML.tab 1513725:1514522 forward MW:27833

<400> 156

Val Met Ala Pro Asp Ile Lys Ser Ala Arg Ala Gly Arg Leu Thr Ile
1 5 10 15

Gln Ile Ala Gln Leu Leu Leu Val Val Ala Ala Gly Ala Leu Trp Met
20 25 30

Ala Ala Arg Leu Pro Trp Val Val Ile Arg Ser Phe Asp Gly Leu Gly
35 40 45

Pro Pro Lys Glu Val Ala Leu Ser Gly Ala Ser Trp Ser Ala Val Leu
50 55 60

Leu Pro Leu Ala Leu Leu Met Leu Ala Ala Thr Val Ala Ala Ile Ala
65 70 75 80

Val Arg Gly Trp Pro Leu Arg Val Leu Ala Gly Leu Leu Ala Val Ala
85 90 95

Ser Phe Leu Val Gly Tyr Leu Gly Val Ser Leu Trp Val Leu Pro Asp
100 105 110

Val Thr Val Arg Gly Ala Val Leu Ala His Val Ser Leu Leu Ser Leu
115 120 125

Val Gly Ser Gln Arg His His Leu Gly Ala Gly Ala Ala Val Ala Ala
130 135 140

Ser Gly Cys Thr Leu Ile Ala Ala Val Leu Leu Met Arg Ser Ala Ser
145 150 155 160

Val Ile Gly Ser Ala Arg Gln Gly Thr Ser Lys Tyr Val Val Pro Ala
165 170 175

Gln Arg Arg Ser Ile Ala Arg Arg Asp Gly Ala Ala Thr Ala Ile Ser
180 185 190

Gln Met Ser Glu Arg Met Ile Trp Asp Ala Leu Asp Glu Asp Arg Asp
195 200 205

Pro Thr Asp Arg Leu Arg Glu Pro Asp Thr Glu Gly Arg Trp Trp Thr
210 215 220

Ala Cys Arg Arg Ser Leu Pro Phe Met Asn Val Val Glu Ile Gly Gly
225 230 235 240

Cys Thr Gly Ser Val Ala Gly Arg Trp Val Thr Ser Gly Lys Gly Asn
245 250 255

Asp Thr His Val Ser Gly Asn Cys Ala
260 265

<210> 157

<211> 111

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1296, ML.tab 1545740:1546075 forward MW:12349

<400> 157

Met Tyr Arg Phe Gly Met Arg Tyr Leu Asp Ser Met Thr Val Thr Val
1 5 10 15

Asp Arg His Val Ala Gly Asn Glu Phe Thr Val Glu Glu Ile Ser Thr
20 25 30

Gly Ile Phe Ala Ser Gly Tyr Gly Gln Val Gly Asp Gly Arg Ser Phe
35 40 45

Ser Phe His Ile Glu His Trp Ser Leu Val Val Glu Ile Tyr Arg Thr
50 55 60

Arg Leu Ala Gly Leu Val Pro Gln Thr Glu Glu Val Val Pro Arg Ala
65 70 75 80

Ile Arg Gly Leu Val Asn Ile Asp Leu Thr Asp Glu Arg Ser Leu Ala
85 90 95

Ala Ala Val Arg Asp Leu Val Ala Arg Thr Leu Thr Val Ser Gly
100 105 110

<210> 158

<211> 196

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1299, ML.tab 1547791:1548381 forward MW:21454

<400> 158

Met Ala Arg Ala Ile His Val Phe Arg Thr Pro Asp Arg Phe Val Ala
1 5 10 15

Gly Thr Val Gly Gln Pro Gly Asn Arg Thr Phe Tyr Ile Gln Ala Val
20 25 30

His Asp Ser Arg Val Val Ser Val Val Leu Glu Lys Gln Gln Val Ala
35 40 45

Val Leu Ala Glu Arg Ile Gly Ala Leu Leu Leu Glu Val His Arg Arg

50 55 60

Phe Gly Thr Pro Val Pro Pro Glu Pro Ala Glu Ile Asn Asp Leu Asn
65 70 75 80

Pro Leu Val Met Pro Val Asp Ala Glu Phe Arg Val Gly Thr Met Gly
85 90 95

Leu Gly Trp Asp Ser Glu Ala Gln Thr Val Val Val Glu Leu Leu Ala
100 105 110

Val Thr Asp Ala Glu Phe Asp Ala Ser Val Val Leu Asp Asp Thr Asp
115 120 125

Glu Gly Pro Asp Ala Val Arg Val Phe Leu Thr Pro Glu Ser Ala Arg
130 135 140

Gln Phe Ala Thr Arg Ser Asn Arg Val Ile Leu Ala Gly Arg Pro Pro
145 150 155 160

Cys Pro Leu Cys Asp Glu Pro Leu Asp Pro Glu Gly His Val Cys Ala
165 170 175

Arg Thr Asn Gly Tyr Lys Arg Ser Ala Leu Leu Gly Pro Lys Asp Asp
180 185 190

Asp Thr Glu Trp
195

<210> 159

<211> 262

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1300, ML.tab 1548392:1549180 forward MW:28681

<400> 159

Val Leu Arg Asn Gly Glu Leu Thr Val Leu Gly Arg Ile Arg Ser Ala
1 5 10 15

Ser Asn Ala Thr Phe Leu Cys Glu Ser Thr Leu Asp Gln Arg Ser Val
20 25 30

His Cys Val Tyr Lys Pro Val Ser Gly Glu Gln Pro Leu Trp Asp Phe
35 40 45

Pro Glu Gly Thr Leu Ala Gly Arg Glu Leu Ser Ala Tyr Leu Val Ser
50 55 60

Thr Asp Leu Gly Trp Asn Ile Val Pro Tyr Thr Val Ile Arg Asp Gly
65 70 75 80

Pro Ala Gly Pro Gly Met Leu Gln Leu Trp Val Gln Gln Pro Gly Asp
85 90 95

Val Ala Asp Ser Ala Pro Arg Ser Gly Pro Asp Met Val Asp Leu Phe
100 105 110

Pro Ala Asp Lys Leu Gln Ser Gly Tyr Leu Pro Val Leu Arg Ser Tyr
115 120 125

Asn Tyr Ala Gly Asp Glu Val Ile Leu Met His Ala Asp Asp Thr Gln
130 135 140

Leu Arg Arg Leu Ala Val Phe Asp Val Leu Ile Asn Asn Ala Asp Arg
145 150 155 160

Lys Gly Gly His Ile Leu Tyr Gly Leu Asp Gly His Val Tyr Gly Val
165 170 175

Asp His Gly Val Ser Leu His Val Glu Asp Lys Leu Arg Thr Val Leu
180 185 190

Trp Gly Trp Ala Gly Lys Pro Ile Asp Asn Gln Thr Leu Glu Glu Val
195 200 205

Ala Gly Leu Ala Asp Ala Leu Ser Gly Pro Leu Ala Asp Thr Leu Ala
210 215 220

Gly Gln Ile Thr Trp Ala Glu Ile Ile Ala Leu Arg Arg Arg Ala Tyr
225 230 235 240

Ala Met Leu Asp Asn Pro Val Met Pro Gly Pro Asn Arg Asp Arg Ala
245 250 255

Ile Pro Trp Pro Ala Phe
260

<210> 160

<211> 274

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1306, ML.tab 1555819:1556643 reverse MW:30377

<400> 160

Val Ala Ala Phe Glu Gly Trp Asn Asp Ala Ser Asp Ala Ala Ser Gly
1 5 10 15

Ala Leu Glu His Leu Asn Ala Val Trp Glu Ala Asp Pro Ile Val Glu
20 25 30

Ile Asp Asp Glu Ala Tyr Tyr Asp Tyr Gln Val Asn Arg Pro Val Ile
35 40 45

Arg Gln Val Asp Gly Val Thr Arg Glu Leu Val Trp Pro Ala Met Arg
50 55 60

Ile Ser Tyr Cys Arg Pro Pro Gly Ser Asp Arg Asn Val Val Leu Met
65 70 75 80

His Gly Val Glu Pro Asn Met Arg Trp Arg Thr Phe Cys Thr Glu Leu
85 90 95

Leu Thr Ile Ala Asp Arg Leu Asn Val Asp Thr Val Val Ile Leu Gly
100 105 110

Ala Leu Leu Ala Asp Thr Pro His Thr Arg Pro Val Pro Val Ser Gly
115 120 125

Ala Ala Tyr Ser Pro Glu Ser Ala Arg Arg Phe Gly Leu Glu Glu Thr
130 135 140

Arg Tyr Glu Gly Pro Thr Gly Ile Ala Gly Val Phe Gln Asp Ala Cys
145 150 155 160

Val Ala Ala Arg Ile Pro Ala Val Met Phe Trp Ala Ala Val Pro His
165 170 175

Tyr Val Ser His Pro Pro Asn Pro Lys Ala Thr Val Ala Leu Leu Arg
180 185 190

Arg Val Glu Asp Val Leu Asp Val Glu Val Pro Leu Ala Asp Leu Pro
195 200 205

Thr Gln Ala Glu Asp Trp Glu Gln Ala Ile Thr Glu Ile Ala Ala Glu
210 215 220

Asp Asp Glu Leu Ala Glu Tyr Val His Ser Leu Glu Gln Arg Gly Asp
225 230 235 240

Ala Glu Val Asp Val Asn Asp Ala Leu Gly Lys Ile Asp Gly Asp Ala
245 250 255

Leu Ala Ala Glu Phe Glu Arg Tyr Leu Arg Arg Arg Arg Pro Gly Phe
260 265 270

Gly Arg

<210> 161

<211> 194

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1315, ML.tab 1567372:1567956 reverse MW:20428

<400> 161

Val Ser Arg Trp Thr His Arg Thr Phe Phe Ile Ala Leu Ser Ala Ile
1 5 10 15

Val Thr Thr Ala Gly Phe Gly Ser Ser Gly Cys Ala His Gly Asn Ser
20 25 30

Ser Thr Ser Glu Ser Ala Val Pro Ser Thr Phe Pro Gly Ile Ser Ser
35 40 45

Ser Ile Thr Ala Pro Pro Ala Thr Gly Leu Pro Ala Pro Glu Val Leu
50 55 60

Thr Asn Val Leu Ser Arg Leu Ala Asp Pro Asn Ile Pro Gly Ile Asp
65 70 75 80

Lys Leu Pro Leu Ile Glu Ser Ala Thr Pro Asp Ser Ala Val Thr Leu
85 90 95

Asp Lys Phe Ser Asn Ala Leu Arg Asp Asn Gly Tyr Leu Pro Met Thr
100 105 110

Phe Thr Ala Asn Asn Ile Ala Trp Ser Asn Lys Asn Pro Ser Asp Val
115 120 125

Leu Ala Thr Ile Ser Val Asn Ile Ala Gln Thr Asn Asn Ser Val Phe
130 135 140

Ser Phe Pro Met Glu Phe Thr Pro Phe Pro Pro Pro Gln Gln Ser Trp
145 150 155 160

Gln Leu Ser Lys Arg Thr Ala Asp Met Leu Leu Glu Phe Gly Asn Ser
165 170 175

Ser Gly Leu Thr Asn Pro Ala Pro Ile Lys Ala Pro Thr Pro Thr Pro
180 185 190

Ser His

<210> 162

<211> 63

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1321, ML.tab 1575493:1575684 forward MW:7067

<400> 162

Met Ala Gln Glu Gln Thr Arg Arg Gly Gly Gly Gly Asp Asp Asp Glu
1 5 10 15

Phe Thr Ser Ser Thr Ser Val Gly Gln Glu Arg Arg Glu Lys Leu Thr
20 25 30

Glu Glu Thr Asp Asp Leu Leu Asp Glu Ile Asp Asp Val Leu Glu Glu
35 40 45

Asn Ala Glu Asp Phe Val Arg Ala Tyr Val Gln Lys Gly Gly Gln
50 55 60

<210> 163

<211> 272

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1334, ML.tab 1587322:1588140 forward MW:29047

<400> 163

Met Ser Glu Pro Gln Gly Ser Asp Pro Gly Lys Gln Trp Gln Ser Pro
1 5 10 15

Gly Glu Gly Val Glu Asn His Ser Ser Asp Gln Pro Thr Gln Ala Ala
20 25 30

Ser Pro Trp Gln Gln Gln Pro Ser Thr Gln Asp Ser Thr Trp His Pro
35 40 45

Pro Ala Tyr Ala Ser Pro Glu Cys Tyr Asn Tyr Pro Gln Leu Thr Glu
50 55 60

Pro Val Tyr Pro His Gln Tyr Pro Ser Ala Thr Pro Gly Tyr Gly Gln
65 70 75 80

Pro Gly Tyr Phe Gly Ala Gln Phe Ser Gln Cys Gly Ile Pro Gly Gln
85 90 95

Tyr Pro Gln Ser Gly Ser Pro Gly Gln Tyr Gly Ser Pro Gly Gln Tyr

100 105 110

Gly Pro Pro Gly Gln Tyr Gly Pro Pro Gly Gln Tyr Gly Pro Pro Gly
115 120 125

Gln Tyr Gly Pro Pro Gly Gln Tyr Gly Pro Pro Gly Gln Tyr Gly Pro
130 135 140

Pro Gly Gln Tyr Ser Gln Gln Phe Gln Pro Tyr Glu Gln Pro Gly Thr
145 150 155 160

Lys Gly Phe Val Ala Leu Ile Gly Ser Ile Ala Gly Val Ile Gly Val
165 170 175

Leu Ile Phe Ala Ala Ile Leu Val Thr Gly Phe Leu Trp Pro Ala Trp
180 185 190

Leu Val Thr Thr Lys Leu Asp Val Asn Lys Ala Gln Ala Ser Val Gln
195 200 205

Gln Val Leu Thr Asp Glu Thr Asn Gly Tyr Gly Ala Lys Asn Val Lys
210 215 220

Asp Val Lys Cys Asn Asn Gly Ala Asp Pro Thr Val Lys Lys Gly Asp
225 230 235 240

Thr Phe Asp Cys Ser Val Ser Ile Asp Gly Met Gln Lys Arg Val Thr
245 250 255

Val Thr Phe Gln Asp Asp Lys Gly Thr Tyr Glu Val Gly Arg Pro Gln
260 265 270

<210> 164

<211> 440

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1338, ML.tab 1595449:1596771 reverse MW:50163

<400> 164

Val Tyr Gly Ala Leu Val Thr Ala Ala Asp Ser Thr Gln Thr Gly Leu
1 5 10 15

Arg Asn Trp Leu Leu Ala Val Phe His Pro Arg Thr His Thr Pro Ser
20 25 30

Thr Ala Thr Ile Val Arg Ser Ala Leu Trp Pro Ala Ala Ile Leu Ser
35 40 45

```
Val Leu His Arg Ser Thr Val Ile Thr Thr Asn Gly Asn Ile Thr Asp
    50                  55                  60

Asp Phe Lys Pro Val Tyr Arg Ala Val Leu Asn Phe Arg His Gly Trp
65                  70                  75                  80

Asp Ile Tyr Asn Glu His Phe Asp Tyr Val Asp Pro His Tyr Leu Tyr
                85                  90                  95

Pro Pro Gly Gly Thr Leu Leu Met Ala Pro Phe Gly Tyr Leu Pro Phe
            100                 105                 110

Ala Pro Ser Arg Tyr Leu Phe Ile Leu Ile Asn Thr Gly Ala Ile Leu
        115                 120                 125

Ile Ala Trp Tyr Leu Ile Leu Arg Leu Phe Lys Tyr Thr Leu Ser Ser
    130                 135                 140

Val Ala Ala Pro Thr Leu Leu Leu Ala Met Phe Cys Thr Glu Thr Val
145                 150                 155                 160

Thr Ser Thr Leu Val Phe Thr Asn Ile Asn Gly Cys Ile Met Leu Leu
                165                 170                 175

Glu Val Leu Phe Leu Trp Trp Leu Ile Asn Gly Ser Glu Pro Lys Thr
            180                 185                 190

Val Ser Gln Gln Trp Trp Ala Gly Gly Ala Ile Gly Leu Thr Leu Val
        195                 200                 205

Leu Lys Pro Leu Leu Gly Pro Leu Leu Cys Leu Pro Leu Leu Asn Arg
    210                 215                 220

Gln Trp Gln Ala Leu Val Pro Ala Ile Ala Leu Pro Val Val Ile Asn
225                 230                 235                 240

Leu Ala Ala Leu Pro Leu Val Ser His Pro Met Asp Phe Phe Thr Arg
                245                 250                 255

Thr Val Pro Tyr Ile Leu Gly Thr Arg Asp Tyr Phe Asn Ser Ser Ile
            260                 265                 270

Glu Gly Asn Gly Val Tyr Phe Gly Leu Pro Thr Trp Leu Ile Val Phe
        275                 280                 285

Leu Arg Leu Leu Phe Thr Val Leu Ala Ile Cys Ser Leu Trp Leu Leu
    290                 295                 300

Asn Arg Tyr Tyr Arg Thr Arg Asp Pro Leu Phe Trp Phe Thr Cys Ser
305                 310                 315                 320

Thr Gly Val Leu Leu Leu Trp Ser Trp Leu Val Leu Pro Leu Ala Gln
                325                 330                 335

Gly Tyr Tyr Ser Met Met Leu Phe Pro Phe Leu Met Thr Val Val Leu
            340                 345                 350

Pro Asn Ser Leu Ile Arg Asn Trp Pro Ala Trp Leu Gly Ile Tyr Gly
        355                 360                 365

Phe Leu Thr Leu Asp Arg Trp Leu Leu Phe Asn Trp Met Arg Tyr Gly
```

370 375 380

Arg Ala Leu Glu Tyr Leu Lys Ile Thr Tyr Gly Trp Ser Leu Leu Leu
385 390 395 400

Ile Val Val Ser Thr Val Leu Cys Phe Arg Tyr Leu Asp Ala Lys Ala
405 410 415

Glu Asn Arg Leu Asp His Gly Ile Asp Pro Ala Trp Leu Thr Ala Glu
420 425 430

Arg Glu Arg Ala Ser Val Asn Ala
435 440

<210> 165

<211> 61

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1357, ML.tab 1617916:1618101 forward MW:6609

<400> 165

Met Thr Ile Asp Pro Asp Gln Ile Arg Ala Glu Ile Asp Ala Leu Leu
1 5 10 15

Ala Gln Leu Pro Asp Phe Ala Asp Leu Glu Asp Ser Val Ser Gly Leu
20 25 30

Ser Leu Ala Gln Leu Glu Glu Val Ala Leu Arg Phe Ser Glu Val His
35 40 45

Ser Val Leu Leu Gln Ala Leu Glu Ser Ala Glu Lys Gly
50 55 60

<210> 166

<211> 393

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1361, ML.tab 1621823:1623004 forward MW:42405

<400> 166

```
Met Arg Met Ser Ala Leu Leu Ser Arg Asn Asn Ser Arg Pro Gly Leu
1               5                  10                  15

Val Gly Thr Ala Arg Val Asp Arg Asn Ile Asp Arg Leu Leu Arg Arg
            20                  25                  30

Ile Cys Pro Gly Asp Ile Val Val Leu Asp Val Leu Asp Leu Asp Arg
        35                  40                  45

Ile Thr Ala Asp Ala Leu Val Glu Ala Asp Ile Val Ala Val Val Asn
    50                  55                  60

Ala Ser Pro Ser Val Ser Gly Arg Tyr Pro Asn Leu Gly Pro Glu Val
65                  70                  75                  80

Leu Val Asn Asn Gly Val Thr Leu Ile Asp Glu Thr Gly Pro Glu Val
                85                  90                  95

Phe Lys Lys Ile Lys Asp Gly Ala Lys Ile Arg Leu His Glu Gly Gly
            100                 105                 110

Val Tyr Ser Gly Asp Arg Arg Leu Ile Cys Gly Thr Glu Arg Thr Asp
        115                 120                 125

His Asp Ile Ala Asp Leu Met Arg Glu Ala Lys Ser Gly Leu Ala Thr
    130                 135                 140

His Leu Glu Ala Phe Ala Gly Asn Thr Ile Glu Phe Ile Lys Ser Glu
145                 150                 155                 160

Ser Pro Leu Leu Ile Asp Gly Ile Gly Ile Pro Asp Ile Asp Val Asp
                165                 170                 175

Leu Arg Arg Arg His Val Val Ile Val Ala Asp Glu Pro Ser Ala Ala
            180                 185                 190

Asp Asp Leu Lys Ser Leu Lys Pro Phe Ile Lys Glu Tyr Gln Pro Val
        195                 200                 205

Leu Val Gly Val Ser Gly Gly Ala Asp Val Leu Arg Lys Ala Gly Tyr
    210                 215                 220

Arg Pro Gln Leu Ile Val Gly Asp Pro Glu Gln Ile Ser Thr Glu Ala
225                 230                 235                 240

Leu Arg Cys Gly Ala His Val Val Leu Pro Ala Asp Ala Asp Gly His
                245                 250                 255

Ala Pro Gly Leu Glu Arg Ile Gln Asp Leu Gly Val Gly Ala Met Thr
            260                 265                 270

Phe Pro Ala Ala Gly Ser Ala Thr Asp Leu Ala Leu Leu Leu Ala Asp
        275                 280                 285

His His Gly Ala Ala Leu Leu Val Thr Ala Gly His Thr Ala Asn Ile
    290                 295                 300
```

Glu Thr Phe Phe Asp Arg Thr Arg Thr Gln Ser Asn Pro Ser Thr Phe
305 310 315 320

Leu Thr Arg Leu Arg Val Gly Glu Lys Leu Val Asp Ala Lys Ala Val
325 330 335

Ala Thr Leu Tyr Arg Asn His Ile Ser Phe Gly Ala Ile Ala Leu Leu
340 345 350

Ala Leu Ile Met Leu Ile Ala Val Ile Val Ala Leu Trp Val Ser Arg
355 360 365

Thr Asp Gly Val Val Leu His Gly Val Ile Asp Tyr Trp Asn Arg Phe
370 375 380

Ser Leu Trp Ile Gln Arg Leu Ile Ala
385 390

<210> 167

<211> 317

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1362, ML.tab 1623026:1623979 forward MW:32360

<400> 167

Met Ile Ser Leu Arg Gln His Ala Phe Ser Leu Ala Ala Val Phe Leu
1 5 10 15

Ala Leu Ala Val Gly Val Val Leu Gly Ser Gly Phe Leu Ser Asp Thr
20 25 30

Leu Leu Ser Ser Leu Arg Asp Glu Lys Arg Asp Leu Tyr Thr Gln Ile
35 40 45

Ser Gly Leu Asn Asp Gln Lys Asn Met Leu Asn Glu Lys Val Ser Ala
50 55 60

Ala Asn Asn Phe Asp Asn Gln Leu Leu Gly Arg Ile Val His Asp Val
65 70 75 80

Leu Gly Gly Thr Ser Val Val Val Phe Arg Thr Pro Asp Ala Lys Asp
85 90 95

Asp Asp Val Ala Ala Val Ser Lys Ile Val Val Gln Ala Gly Gly Thr
100 105 110

Val Thr Gly Thr Val Ser Leu Thr Gln Glu Phe Val Asp Ala Asn Ser

115 120 125

Thr Glu Lys Leu Arg Ser Val Val Asn Ser Ser Ile Leu Pro Ala Gly
130 135 140

Ala Gln Leu Ser Thr Lys Leu Val Asp Gln Gly Ser Gln Ala Gly Asp
145 150 155 160

Leu Leu Gly Ile Thr Leu Leu Val Asn Ala Asn Pro Ala Val Pro Asn
165 170 175

Val Gly Asp Ala Gln Arg Ser Thr Val Leu Val Ala Leu Arg Asp Thr
180 185 190

Gly Phe Ile Thr Tyr Gln Thr Tyr Asn Arg Asn Asp His Leu Gly Ala
195 200 205

Ala Asn Ala Ala Leu Val Ile Thr Gly Gly Leu Leu Pro Gln Asp Ala
210 215 220

Gly Asn Gln Gly Val Ser Val Ala Arg Phe Ser Ala Ala Leu Ala Pro
225 230 235 240

His Gly Ser Gly Thr Leu Leu Ala Gly Arg Asp Gly Ser Ala Thr Gly
245 250 255

Val Ala Ala Val Ala Val Ala Arg Ala Asp Ala Gly Met Ala Ala Thr
260 265 270

Ile Ser Thr Val Asp Asn Val Asp Ala Glu Pro Gly Arg Ile Thr Ala
275 280 285

Ile Leu Gly Leu His Asp Leu Leu Ser Gly Gly His Thr Gly Gln Tyr
290 295 300

Gly Val Gly His Gly Ala Thr Ser Ile Thr Val Pro Gln
305 310 315

<210> 168

<211> 527

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1389, ML.tab 1665174:1666757 reverse MW:57894

<400> 168

Val Thr Ser Ile Met Ser Val Ser Ala Leu Glu Gln Ser Ala Ala Asp
1 5 10 15

```
Val Gly Asp Asn Ser Ala Arg Gln His Ala His Gly Ala Leu Pro Asp
            20                  25                  30

Ser Leu Ala Ile Ala Met Leu Ala Thr Val Ile Ser Gly Ala Trp Ala
        35                  40                  45

Ser Arg Pro Ser Leu Trp Phe Asp Glu Ala Ala Thr Ile Ser Ala Ser
    50                  55                  60

Ala Ser Arg Thr Val Pro Glu Leu Trp Arg Leu Leu Ser His Ile Asp
65                  70                  75                  80

Ala Val His Gly Leu Tyr Tyr Leu Leu Met His Gly Trp Phe Ala Ile
                85                  90                  95

Phe Pro Ser Thr Glu Phe Trp Ser Arg Val Pro Ser Cys Leu Ala Ile
            100                 105                 110

Gly Ala Ala Ala Ala Gly Val Thr Val Phe Thr Arg Gln Phe Ala Thr
        115                 120                 125

Arg Thr Thr Ala Val Tyr Ala Gly Ile Val Phe Ala Ile Leu Pro Arg
    130                 135                 140

Ile Thr Trp Ala Gly Ile Glu Ala Arg Ser Ser Ala Leu Ser Val Ala
145                 150                 155                 160

Ala Ala Met Trp Leu Thr Val Leu Leu Val Ala Ser Val Gln Arg Asn
                165                 170                 175

Arg Pro Arg Leu Trp Leu Cys Tyr Ala Leu Thr Leu Met Leu Ser Ile
            180                 185                 190

Leu Leu Asn Leu Thr Leu Ala Thr Leu Val Leu Val Tyr Ala Val Ile
        195                 200                 205

Leu Pro Trp Leu Ala Pro Asn Lys Phe Arg Asn Ser Pro Phe Ile Trp
    210                 215                 220

Trp Ala Val Thr Ser Val Val Ala Leu Gly Thr Ile Thr Pro Phe Ile
225                 230                 235                 240

Leu Phe Ala His Gly Gln Val Trp Gln Val Asp Trp Ile Phe Arg Val
                245                 250                 255

Ser Trp His Tyr Val Phe Asp Ile Thr Gln Arg Gln Tyr Phe Asp His
            260                 265                 270

Ser Val Ser Phe Ala Ile Ala Thr Ala Val Ile Ile Val Pro Ala Ile
        275                 280                 285

Ala Thr Arg Leu Ala Gly Leu Arg Ala Pro Ala Gly Asp Leu Arg Ser
    290                 295                 300

Leu Val Ile Ile Cys Thr Ala Trp Ile Val Ile Pro Thr Thr Leu Met
305                 310                 315                 320

Val Gly Tyr Ser Ala Val Ile Glu Pro Val Tyr Tyr Pro Arg Tyr Leu
                325                 330                 335

Ile Leu Thr Ala Pro Ala Ala Ala Ile Val Ile Ala Val Cys Ile Val
```

340 345 350

Thr Val Ala Arg Lys Pro Trp Pro Ile Ala Gly Val Leu Val Leu Phe
355 360 365

Ala Val Ala Ala Phe Pro Asn Tyr Leu Phe Thr Gln Arg Gly Arg Tyr
370 375 380

Ala Lys Glu Gly Trp Asp Tyr Ser Gln Val Ala Asp Val Ile Ser Ser
385 390 395 400

Gln Ala Ala Pro Gly Asp Cys Leu Ile Val Asp Asn Thr Val Pro Trp
405 410 415

Arg Pro Gly Pro Ile Arg Ala Leu Leu Ala Ala Arg Pro Ala Ala Phe
420 425 430

Arg Ser Leu Ile Asp Ile Glu Arg Gly Phe Tyr Gly Pro Thr Val Gly
435 440 445

Thr Leu Trp Asp Gly His Val Pro Val Trp Leu Val Thr Ala Lys Ile
450 455 460

Asn Lys Cys Ser Thr Val Trp Thr Val Ser Asp Arg Asp Thr Ser Leu
465 470 475 480

Pro Asp His Gln Ala Gly Gln Leu Leu Ser Pro Gly Leu Ile Leu Gly
485 490 495

Arg Ala Pro Ala Tyr Gln Phe Pro Ser Tyr Leu Gly Phe Arg Ile Val
500 505 510

Glu Arg Trp Gln Phe His Tyr Ser Gln Val Ile Lys Ser Thr Arg
515 520 525

<210> 169

<211> 324

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1399, ML.tab 1679214:1680188 forward MW:34653

<400> 169

Leu Pro Pro Ser Ala Lys Ser Thr Tyr Pro Gly Gln Val Glu Gly Ala
1 5 10 15

Pro His Asp Gly Thr Pro Ser Ala Pro Gln Glu Pro Asp Glu Asp Thr
20 25 30

Val Thr Val Pro Ala Pro Ala Leu Ile Arg Arg Ser Ser Val Ser Met
35 40 45

Pro Asn Ala Ala Gln Trp Leu His Thr Thr Asn Arg Ser Pro Arg Leu
50 55 60

Val Ala Met Val Arg Arg Ala Arg Arg Leu Leu Pro Gly Asp Pro Asp
65 70 75 80

Phe Gly Asp Pro Leu Ser Thr Ala Gly Glu Gly Gly Pro Arg Ala Ala
85 90 95

Ala Arg Ala Ala Asp Arg Leu Leu Gly Asp Arg Gly Ala Ala Ser Arg
100 105 110

Glu Val Ser Leu Ser Val Leu Gln Val Trp Gln Ala Leu Thr Glu Ala
115 120 125

Ile Ala Arg Arg Pro Val Asn Pro Glu Val Thr Leu Val Phe Thr Asp
130 135 140

Leu Val Gly Phe Ser Gly Trp Ser Leu Gln Ala Gly Asp Glu Ala Thr
145 150 155 160

Leu Ala Leu Leu Arg Gln Val Ala Arg Ala Val Glu Ser Pro Leu Leu
165 170 175

Asp Ala Gly Gly His Ile Val Lys Arg Met Gly Asp Gly Ile Met Ala
180 185 190

Val Phe Arg Asp Pro Ser Val Ala Val Gln Ala Val Leu Ala Ala Thr
195 200 205

Glu Ala Met Lys Ser Val Glu Val Gly Gly Tyr Thr Pro Arg Ile Arg
210 215 220

Val Gly Ile His Thr Gly Arg Pro Gln Arg Leu Ala Ala Asp Trp Leu
225 230 235 240

Gly Val Asp Val Asn Ile Ala Ala Arg Val Met Glu Arg Ala Thr Lys
245 250 255

Gly Gly Ile Met Ile Ser Gly Pro Thr Leu Asp Leu Ile Pro Gln Ser
260 265 270

Asp Leu Lys Glu Leu Gly Ile Ile Thr Arg Arg Val Arg Lys Pro Met
275 280 285

Phe Thr Ser Lys Phe Thr Gly Ile Pro Pro Asp Met Val Ile Tyr Arg
290 295 300

Ile Lys Ala Arg Arg Glu Leu Thr Ala Ser Asp Glu Thr Ala Gln Thr
305 310 315 320

Asn Ser Leu Thr

<210> 170

<211> 111

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1439, ML.tab 1733347:1733682 forward MW:12946

<400> 170

Met Ala Asp Arg Val Leu Arg Gly Ser Arg Leu Gly Ala Val Ser Tyr
1 5 10 15

Glu Thr Asp Arg Asn His Asp Leu Ala Pro Arg Gln Ile Ala Arg Tyr
20 25 30

Arg Thr Asp Asn Gly Glu Glu Phe Glu Val Pro Phe Ala Asp Asp Ala
35 40 45

Asp Ile Pro Gly Thr Trp Leu Cys Arg Asn Gly Met Glu Gly Thr Leu
50 55 60

Ile Glu Gly Asp Leu Pro Glu Pro Lys Met Val Lys Pro Pro Arg Thr
65 70 75 80

His Trp Asp Met Leu Leu Glu Arg Arg Ser Ile Glu Glu Leu Glu Glu
85 90 95

Leu Leu Lys Glu Arg Leu Asp Leu Ile Arg Ser Arg Arg Arg Gly
100 105 110

<210> 171

<211> 232

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1444, ML.tab 1738595:1739293 forward MW:25220

<400> 171

Met Thr Lys Ile Gln Ile Asp Ala Pro Asp Gly Pro Ile Asp Ala Leu
1 5 10 15

Leu Ser Val Pro Pro Gly Pro Glu Pro Trp Pro Gly Val Val Val Ile

20 25 30

His Asp Ala Ile Gly Tyr Glu Pro Asp Lys Glu Ser Thr Asn Asn His
35 40 45

Ile Ala Met Ala Gly Tyr Val Ala Ile Thr Pro Asn Leu Tyr Ser Arg
50 55 60

Gly Ser Arg Ala Arg Cys Ile Thr Arg Val Met Arg Glu Leu Leu Thr
65 70 75 80

Lys Arg Gly Arg Ala Phe Asp Asp Ile Leu Ala Thr Arg Asp Tyr Leu
85 90 95

Leu Ala Met Pro Lys Cys Ser Gly Arg Val Gly Ile Ala Gly Phe Cys
100 105 110

Met Gly Gly Arg Phe Ala Leu Val Met Ser Pro Lys Gly Phe Asp Ala
115 120 125

Ser Ala Pro Phe Tyr Gly Thr Pro Leu Pro Arg Asn Leu Ser Glu Thr
130 135 140

Leu Asn Gly Ala Cys Pro Ile Val Ala Ser Phe Gly Gly Arg Asp Pro
145 150 155 160

Leu Gly Ile Gly Ala Pro Lys Arg Leu Arg Gln Ala Thr Gln Thr Arg
165 170 175

His Ile Thr Thr Asp Ile Lys Val Tyr Pro Asp Ala Gly His Ser Phe
180 185 190

Ala Asn Lys Leu Pro Gly Gln Pro Leu Met Arg Ile Thr Gly Phe Gly
195 200 205

Tyr Asn Gln Ala Ala Thr Glu Asp Ala Trp Ser Arg Val Phe Ala Phe
210 215 220

Phe Asp Lys His Leu Arg Thr Asp
225 230

<210> 172

<211> 128

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1446, ML.tab 1740098:1740484 reverse MW:13769

<400> 172

```
Val Thr Pro Thr Phe Ala Asp Leu Ala Lys Ala Lys Tyr Ile Leu Leu
1               5                  10                  15

Thr Thr Phe Thr Lys Asp Gly Arg Pro Lys Pro Thr Pro Ile Trp Ala
            20                  25                  30

Ala Ala Asp Gly Asp Arg Leu Leu Ala Ile Ser Ala Gly Lys Ala Trp
        35                  40                  45

Lys Val Lys Arg Ile Arg Asn Asn Pro Arg Ile Thr Leu Ala Thr Cys
    50                  55                  60

Asn Val Arg Gly Cys Ala Thr Ser Ala Gly Val Gln Gly Asn Ala Thr
65                  70                  75                  80

Ile Leu Asp Lys Leu Gln Thr Gly Ser Val Tyr Asp Ala Ile Cys Lys
                85                  90                  95

Gln Tyr Gly Ile Gln Gly Arg Leu Phe Asn Phe Val Ser Lys Leu Arg
            100                 105                 110

Gly Gly Met Gln Asn Asn Val Gly Leu Glu Leu Arg Val Ser Gly Ser
        115                 120                 125
```

<210> 173

<211> 123

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1470, ML.tab 1768618:1768989 reverse MW:12909

<400> 173

```
Met Thr Asp Ser Pro Gly Glu His Gly Pro Gln Lys Pro Leu Pro Ser
1               5                  10                  15

Ala Asp Pro Trp Lys Ser Phe Ala Gly Val Met Ala Ala Ile Leu Phe
            20                  25                  30

Leu Glu Ala Ile Val Val Leu Leu Ala Leu Pro Val Leu Gly Ala Ser
        35                  40                  45

Gly Gly Leu Thr Leu Ser Ala Leu Ser Phe Leu Ile Gly Leu Ala Gly
    50                  55                  60

Leu Leu Ile Val Leu Val Gly Leu Gln Arg Lys Ala Trp Ala Ile Trp
65                  70                  75                  80

Val Asn Leu Gly Val Gln Val Val Val Leu Val Gly Cys Ala Val Tyr
                85                  90                  95
```

Pro Val Leu Gly Phe Val Gly Val Leu Phe Ala Gly Leu Trp Ala Leu
100 105 110

Ile Val Tyr Phe Arg Ala Glu Val Ser Arg Arg
115 120

<210> 174

<211> 207

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1485, ML.tab 1787915:1788538 reverse MW:23064

<400> 174

Met Pro Glu Lys Ala Ser Val Lys Tyr Gln Ala Asp Leu Trp Phe Asp
1 5 10 15

Pro Leu Cys Pro Trp Cys Trp Ile Thr Ser Arg Trp Ile Leu Glu Val
20 25 30

Glu Lys Val Arg Asp Val Glu Val His Phe His Val Met Ser Leu Ala
35 40 45

Ile Leu Asn Glu Asn Arg Glu Asp Leu Thr Glu Asn Tyr Leu Glu Asn
50 55 60

Ile Thr Lys Ala Trp Gly Pro Ala Arg Val Val Ile Ala Ala Glu Gln
65 70 75 80

Ala Asn Gly Ala Ser Val Leu Asp Pro Leu Tyr Thr Ala Met Gly Ile
85 90 95

Arg Ile His Asn Glu Asp Asn Lys Asn Leu Asp Glu Val Ile Lys Arg
100 105 110

Ser Leu Ala Asp Thr Gly Leu Pro Ala Glu Leu Ala Ala Ala Ala Gln
115 120 125

Ser Asn Ala Tyr Asp Asp Ala Leu Arg Glu Ser His His Ala Gly Met
130 135 140

Asp Pro Val Gly Asp Asp Val Gly Thr Pro Thr Val His Val Asn Gly
145 150 155 160

Val Ala Phe Phe Gly Pro Val Leu Ser Lys Ile Pro Arg Gly Glu Glu
165 170 175

Ala Gly Lys Leu Trp Asp Ala Ser Leu Thr Leu Ala Ala Tyr Pro His

180 185 190

Phe Phe Glu Leu Lys Arg Thr Arg Thr Glu Pro Pro Gln Phe Ala
195 200 205

<210> 175

<211> 117

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1494, ML.tab 1801370:1801723 reverse MW:12353

<400> 175

Met Arg Ile Val Val Leu Val Leu Phe Ala Ala Asp Gly Val Leu Ser
1 5 10 15

Ala Val Val Gly Ala Met Leu Met Pro Leu Tyr Ile Gly Ser Val Pro
20 25 30

Phe Pro Ile Ser Gly Leu Ile Ser Gly Leu Val Asn Ala Val Leu Val
35 40 45

Trp Ala Ala Arg Leu Trp Thr Arg Ser Pro Trp Leu Val Ala Leu Pro
50 55 60

Leu Trp Val Trp Leu Leu Thr Val Gly Leu Leu Ser Leu Gly Gly Pro
65 70 75 80

Gly Val Asp Val Val Ser Gly Gln Ser Val Met Ala Ser Gly Ala Leu
85 90 95

Trp Leu Ile Leu Leu Gly Val Ser Pro Pro Ala Cys Val Leu Trp Arg
100 105 110

Cys Asn Arg Tyr Gly
115

<210> 176

<211> 94

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1503A, ML.tab 1815091:1815375 forward MW:10624

<400> 176

Met Thr Val Leu Thr Asp Glu Gln Val Asp Ala Ala Leu Leu Asp Leu
1 5 10 15

Asn Asp Trp Lys His Thr Asp Gly Ala Leu Cys Arg Ser Ile Lys Phe
20 25 30

Pro Thr Phe Leu Ala Gly Ile Asp Ala Val Cys Arg Val Ala Glu His
35 40 45

Ala Glu Thr Lys Asp His His Pro Asp Ile Asp Ile Arg Tyr Arg Thr
50 55 60

Val Thr Phe Ile Leu Val Thr His Tyr Ala Asp Gly Ile Thr Lys Lys
65 70 75 80

Asp Ile Thr Met Ala Arg Asp Ile Asp Arg Leu Ile Gly Asp
85 90

<210> 177

<211> 182

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1505, ML.tab 1816758:1817306 forward MW:17516

<400> 177

Met Ala Thr Ile Trp Thr Tyr Leu Arg Ala Thr Ala Ile Val Val Gly
1 5 10 15

Ser Ser Ala Ala Leu Leu Thr Gly Gly Ile Ala His Ala Asp Thr Ala
20 25 30

Pro Ala Pro Ala Pro Ala Pro Ala Pro Ala Pro Ala Pro Ala Leu Asn
35 40 45

Ile Pro Gln Gln Leu Ile Ser Ser Ala Ala Asn Ala Pro Gln Ile Leu
50 55 60

Gln Asn Leu Ala Thr Ala Leu Gly Ala Thr Pro Pro Val Thr Pro Ser
65 70 75 80

Ala Pro Gly Ile Ser Phe Pro Gly Leu Thr Pro Ala Ala Ala Thr Val
85 90 95

Pro Thr Ser Ser Ala Ala Thr Leu Pro Ser Leu Pro Gly Ile Met Ala
100 105 110

Pro Ala Ile Ser Asn Thr Pro Thr Thr Pro Gly Leu Pro Ala Ser Thr
115 120 125

Pro Gly Phe Pro Gln Ala Arg Val Asp Met Pro Ala Met Pro Phe Leu
130 135 140

Pro Val Ser Val Pro Pro Gln Ile Ser Leu Pro Gly Asp Leu Gln Ala
145 150 155 160

Leu Ala Ser Ser Ala Ser Ala Ala Ala Ala Pro Val Ala Ala Pro Thr
165 170 175

Leu Leu Ser Ala Leu Pro
180

<210> 178

<211> 348

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1506, ML.tab 1817334:1818380 forward MW:34620

<400> 178

Leu Lys Thr Gly Gly Phe Val Thr Ser Ala Trp Asn Leu Pro Lys Gly
1 5 10 15

Leu Val Ala Val Val Thr Ala Ser Thr Ala Ala Phe Gly Leu Cys Gln
20 25 30

Asn Ala Ala Ala Asp Pro Ala Asn Pro Tyr Gly Thr Pro Pro Asn Pro
35 40 45

Thr Gln Gln Leu Pro Gly Leu Pro Ala Leu Ala Gln Leu Ser Pro Ile
50 55 60

Val Gln Gln Ala Ala Asn Asn Pro Gln Gln Ala Thr Gln Leu Leu Met
65 70 75 80

Glu Ala Val Ser Ala Leu Thr Gln Asn Pro Thr Ala Pro Ile Ala Ser
85 90 95

Lys Asn Leu Ala Thr Ser Val Ser Gln Phe Met Gln Glu Pro Asn Asn
100 105 110

Pro Asn Pro Gly Ala Ser Ala Leu Asp Ile Pro Thr Ser Gly Val Pro
115 120 125

Ala Pro Ala Ala Asn Gly Ile Thr Pro Leu Asp Val Val Leu Val Pro
130 135 140

His Leu Pro Ser Ala Gly Ala Glu Pro Gly Ala Gln Ala His Leu Pro
145 150 155 160

Thr Gly Ile Asp Pro Val His Ala Ala Gly Pro Ala Thr Ala Ala Thr
165 170 175

Pro Thr Pro Gly Ser Pro Thr Asn Arg Thr Ala Ala Pro Pro Thr Pro
180 185 190

Val Ala Ser Pro Ala Pro Thr Thr Pro Glu Leu Pro Ala Thr Thr Pro
195 200 205

Gly Phe Gly Pro Asp Ala Pro Pro Thr Gln Asp Phe Ile Tyr Pro Ser
210 215 220

Ile Ser Thr Asn Cys Leu Ala Asp Gly Ser Ser Ser Ile Ala Thr Ala
225 230 235 240

Leu Ser Val Ala Gly Pro Ala Lys Ile Pro Leu Pro Gly Pro Gly Pro
245 250 255

Gly Gln Ala Ala Tyr Val Phe Thr Ala Val Gly Thr Pro Gly Pro Ala
260 265 270

Asp Val Gln Lys Leu Pro Leu Asn Val Thr Trp Val Asn Leu Thr Thr
275 280 285

Gly Lys Ser Gly Ser Ala Thr Leu Lys Pro Arg Pro Asp Ile Asn Pro
290 295 300

Glu Gly Pro Thr Thr Leu Thr Val Ile Ala Asp Thr Gly Ser Gly Ser
305 310 315 320

Ile Met Ser Thr Ile Phe Gly Gln Val Thr Thr Lys Glu Lys Gln Cys
325 330 335

Gln Phe Met Pro Thr Ile Gly Ser Thr Val Val Pro
340 345

<210> 179

<211> 163

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1508, ML.tab 1819557:1820048 reverse MW:18221

<400> 179

Met Arg Phe Gly Ala Ser Leu Leu Arg Val Arg Arg Arg Leu Tyr Gly
1 5 10 15

Met Gly Ser Gln Val Phe Asp Asp Lys Leu Leu Ala Val Ile Ser Gly
20 25 30

Asn Ser Ile Gly Val Leu Ala Thr Ile Lys Arg Asp Gly Arg Pro Gln
35 40 45

Leu Ser Asn Val Gln Tyr His Phe Asp Pro Arg Asp Leu Ala Val Arg
50 55 60

Val Ser Ile Thr Glu Pro Gly Val Lys Thr Arg Asn Leu Arg Arg Asp
65 70 75 80

Pro Arg Ala Ser Ile Leu Val Asp Val Asp Asp Gly Trp Ser Tyr Ala
85 90 95

Val Ala Glu Gly Thr Ala Glu Leu Thr Pro Pro Ala Ala Ala Pro Asp
100 105 110

Asp Asp Thr Val Glu Ala Leu Ile Val Leu Tyr Arg Asn Ile Val Gly
115 120 125

Glu His Leu Asp Trp Asp Glu Tyr Arg Gln Ala Met Val Thr Asp Arg
130 135 140

Arg Val Leu Leu Thr Leu Pro Ile Leu His Val Tyr Gly Leu Pro Pro
145 150 155 160

Gly Ile Arg

<210> 180

<211> 151

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1525, ML.tab 1840011:1840466 reverse MW:15892

<400> 180

Met Thr Lys Thr Leu Leu Val Val His His Thr Pro Ser Pro Thr Thr
1 5 10 15

Arg Glu Leu Leu Glu Ala Val Leu Ala Gly Ala Asn Asp Ser Glu Ile
20 25 30

Asp Gly Val Glu Val Val Ser Arg Pro Ala Leu Ala Ala Thr Ile Pro
35 40 45

Asp Met Leu Asn Ala Asp Gly Tyr Leu Phe Gly Thr Thr Ala Asn Phe
50 55 60

Gly Tyr Met Ser Gly Ala Leu Lys His Phe Phe Asp Thr Val Tyr Tyr
65 70 75 80

Pro Ile Leu Asp His Val Ser Gly Arg Pro Tyr Gly Leu Trp Val His
85 90 95

Gly Asn Asn Asp Thr Val Gly Ala Ala Val Ala Val Gly Lys Leu Ala
100 105 110

Thr Gly Leu Ser Leu Thr His Ala Ala Asp Val Leu Glu Val Val Gly
115 120 125

Pro Val Asp Ala Met Val Cys Glu Arg Ala His Glu Leu Gly Gly Thr
130 135 140

Leu Ala Ala Met Leu Met Glu
145 150

<210> 181

<211> 160

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1526, ML.tab 1840474:1840956 reverse MW:17670

<400> 181

Met Asn Asp Thr Val Met Thr Lys Arg Ser Leu Tyr Ile Leu Tyr Ile
1 5 10 15

Gln Leu Leu Ile Ala Ala Leu Cys Phe Ala Met Leu Ala Tyr Leu Val
20 25 30

Leu Leu Gly Arg Met Ala Val Ala Met Ile Gly Ser Gly Gln Ala Ala
35 40 45

Ala Val Ser Leu Gly Leu Ala Leu Leu Ile Met Pro Val Ile Gly Leu
50 55 60

Trp Ala Met Ile Ala Thr Leu Arg Ala Gly Phe Ala His Gln Lys Leu
65 70 75 80

Ala Arg Leu Ile Ala Ala Asp Gly Met Glu Leu Asp Thr Ser Val Leu
85 90 95

Leu Arg Arg Pro Ser Gly Arg Ile Gln Arg Asp Ala Ala Asp Ala Leu
100 105 110

Phe Ala Thr Val Arg Ala Glu Leu Ala Gly Asp Pro Asp Asn Trp Arg
115 120 125

Cys Trp Tyr Arg Leu Ala Arg Ala Tyr Asp Tyr Ala Gly Asp Arg Arg
130 135 140

Arg Ala Arg Glu Ala Met Lys Thr Ala Leu Glu Leu His Gly Arg Asp
145 150 155 160

<210> 182

<211> 401

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1537, ML.tab 1853559:1854764 reverse MW:43686

<400> 182

Met Lys Ala Gln Arg Arg Leu Gly Leu Ala Leu Ser Trp Ser Arg Val
1 5 10 15

Thr Thr Val Phe Val Val Ala Ile Val Val Leu Val Leu Ala Ser His
20 25 30

Val Pro Glu Leu Trp Gln Ala Gly His His Val Ala Trp Cys Val Gly
35 40 45

Val Gly Ile Thr Val Val Val Met Val Leu Val Leu Val Ser Tyr His
50 55 60

Gly Ile Thr Leu Met Ser Gly Leu Ala Thr Trp Val Trp Asp Cys Phe
65 70 75 80

Ala Asp Pro Arg Ala Ala Leu Ala Ala Gly Cys Thr Pro Ala Ile Asp
85 90 95

His Gln Arg Arg Phe Gly Arg Asp Val Val Gly Val Arg Glu Tyr Lys
100 105 110

Gly Arg Leu Val Thr Val Ile Ala Val Asp Asp Gly Glu Asp Asp Pro
115 120 125

Val Gly Arg His Arg His Arg Thr Thr Pro Ala Gly Leu Pro Val Gln

130 135 140

Ala Val Ala Asp Gly Leu Arg Gln Phe Asp Ile Arg Leu Asp Ser Ile
145 150 155 160

Asp Ile Val Ser Val Lys Ile Arg Arg Gly Gly Asn Ala Ala Lys Phe
165 170 175

Ser Ala Leu Asp Asn Trp Gly Ser Glu Glu Trp Gly Leu Val Cys Ala
180 185 190

Cys Pro Pro Thr Tyr Gln Arg Cys Thr Trp Leu Val Leu Arg Met Asn
195 200 205

Pro Gln His Asn Val Val Ala Val Ala Ala Arg Asp Ser Leu Ala Ser
210 215 220

Thr Leu Val Ala Ala Thr Glu Arg Leu Ala Gln Asp Leu Asp Gly Gln
225 230 235 240

Asn Cys Ala Ala Arg Pro Leu Ala Ala Gly Glu Leu Ala Glu Val Asp
245 250 255

Ser Ala Val Leu Ala Asp Leu Glu Pro Thr Trp Ser Tyr Pro Gly Trp
260 265 270

Arg His Ile Lys Tyr Val Asn Gly Phe Ala Thr Ser Phe Trp Val Thr
275 280 285

Pro Ser Asp Ile Asp Ser Glu Thr Leu Asn Glu Leu Trp Leu Ser Asp
290 295 300

Leu Pro Asp Ile Lys Ala Thr Val Ile Thr Ile Arg Leu Ala Ser Arg
305 310 315 320

Ser Cys Gln Thr Arg Leu Ser Ala Trp Val Arg His His Ser Glu Thr
325 330 335

Arg Leu Ser Lys Glu Ala Cys Arg Gly Leu Asn Gln Leu Thr Gly Arg
340 345 350

Gln Leu Ala Ala Val Arg Ala Ser Leu Pro Ala Pro Ala Thr Arg Pro
355 360 365

Val Leu Val Val Pro Ser Arg Glu Leu Ser Asp His Asp Glu Leu Val
370 375 380

Leu Pro Val Gly Gln Gly Arg Glu Gly Ser Ala Ser Leu Phe Ala Gly
385 390 395 400

Gln

<210> 183

<211> 300

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1540, ML.tab 1858295:1859197 reverse MW:32551

<400> 183

```
Met Asp His Gln Ser Thr Arg Thr Asp Ile Thr Val Asn Val Asp Gly
1               5                  10                  15

Phe Trp Leu Leu Gln Ala Leu Leu Asp Ile Arg His Val Ala Pro Glu
            20                  25                  30

Leu Arg Cys Arg Pro Phe Val Ser Thr Asp Ser Asn Asp Trp Leu His
        35                  40                  45

Glu His Pro Gly Met Ala Val Met Arg Glu Gln Gly Ile Val Val Asn
    50                  55                  60

Gly Asn Val Asn Glu His Val Ala Thr Arg Met Arg Val Phe Ala Ala
65                  70                  75                  80

Pro Asp Leu Glu Val Val Ala Leu Leu Ser Arg Gly Lys Leu Leu Tyr
                85                  90                  95

Gly Ala Val Asn Asp Glu Asn Gln Pro Pro Gly Ser Arg Asp Ile Pro
            100                 105                 110

Glu Asn Glu Phe Arg Val Val Leu Val Arg Arg Gly Ser His Trp Ala
        115                 120                 125

Ser Ala Val Arg Val Gly Asn Asp Ile Thr Ile Asp Asp Val Ala Ile
    130                 135                 140

Ala Asp Ser Ala Ser Ile Thr Ser Leu Val Met Asp Gly Leu Glu Ser
145                 150                 155                 160

Ile His His Ala Asp Pro Ala Ala Ile Asn Ala Val Asn Val Pro Leu
                165                 170                 175

Glu Glu Met Leu Glu Ala Thr Lys Ser Trp Gln Asp Ala Gly Phe Asn
            180                 185                 190

Val Phe Ser Gly Arg Asp Leu Arg Arg Met Gly Ile Ser Ala Ala Thr
        195                 200                 205

Val Ala Ala Leu Gly Gln Ala Leu Ser Asp Pro Ala Ala Glu Ala Ala
    210                 215                 220

Val Tyr Ala Arg Gln Tyr Arg Asp Asp Ala Lys Gly Pro Ser Ala Ser
225                 230                 235                 240

Val Leu Ser Leu Lys Asp Ser Ser Ser Gly Arg Ile Ala Ile Tyr Gln
                245                 250                 255

Gln Ala Arg Thr Ala Gly Leu Gly Asp Ala Trp Leu Ala Ile Cys Pro
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260 265 270

Ala Thr Pro Gln Leu Val Gln Leu Gly Leu Lys Thr Val Leu Asp Thr
275 280 285

Leu Pro Tyr Gly Asp Trp Lys Thr His Ser Arg Val
290 295 300

<210> 184

<211> 506

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1544, ML.tab 1866369:1867889 reverse MW:53849

<400> 184

Val Ala Glu Glu Ser Ser Gly Arg Arg Gly Ser Glu Tyr Gly Leu Gly
1 5 10 15

Leu Ser Thr Arg Thr Gln Val Thr Gly Tyr Gln Phe Leu Ala Arg Arg
20 25 30

Thr Ala Met Ala Leu Thr Arg Trp Arg Val Arg Met Glu Val Glu Pro
35 40 45

Gly Arg Arg Gln Thr Leu Ala Val Val Ala Ser Val Ser Ala Ala Leu
50 55 60

Leu Gly Cys Leu Gly Ala Leu Leu Trp Ser Phe Ile Ser Pro Ser Gly
65 70 75 80

Gln Leu Asn Glu Ser Pro Ile Ile Ile Asp Arg Asp Ser Gly Ala Leu
85 90 95

Tyr Val Arg Val Gly Asp Arg Leu Tyr Pro Ala Leu Asn Leu Ala Ser
100 105 110

Ala Arg Leu Ile Thr Gly Arg Pro Asp Asn Pro His Ala Val Arg Ser
115 120 125

Ser Gln Ile Ala Thr Leu Pro His Gly Pro Leu Val Gly Ile Pro Gly
130 135 140

Ala Pro Ser Glu Leu Ser Pro Glu Thr Pro Gln Thr Ser Ser Trp Leu
145 150 155 160

Val Cys Asp Thr Val Ala Thr Ser Thr Gly Ile Gly Ser Ser Ser Gly
165 170 175

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Val Thr Val Thr Val Ile Asp Gly Ser Pro Asp Leu Ser Gly His Arg
            180                 185                 190

Arg Val Leu Thr Gly Ser Asp Ala Val Val Leu His Tyr Gly Gly Asp
        195                 200                 205

Ala Trp Val Ile Arg Gln Gly Arg Arg Ser Arg Ile Asp Ala Met Asn
    210                 215                 220

Arg Ser Val Leu Leu Pro Leu Gly Leu Thr Pro Glu Gln Val Ser Gln
225                 230                 235                 240

Ala Arg Pro Met Ser Arg Ala Leu Phe Asp Ala Leu Pro Val Gly Pro
                245                 250                 255

Asp Leu Val Val Pro Asp Val Pro Asn Glu Gly Asn Pro Ala Ser Phe
            260                 265                 270

Pro Gly Ala Pro Gly Pro Val Gly Thr Val Ile Val Thr Pro Gln Ile
        275                 280                 285

Ser Gly Pro Gln Gln Tyr Ser Leu Val Leu Ala Asp Gly Val Glu Thr
    290                 295                 300

Val Ser Pro Leu Val Ala Gln Ile Met Gln Asn Ala Gly Lys Pro Gly
305                 310                 315                 320

Asn Thr Lys Leu Ile Thr Val Ala Pro Ser Val Leu Val Lys Met Pro
                325                 330                 335

Val Val Asn Lys Leu Asp Leu Ser Val Tyr Pro Asp Thr Pro Leu Gln
            340                 345                 350

Val Val Asp Leu Arg Glu Asn Pro Ser Thr Cys Trp Trp Trp Glu Arg
        355                 360                 365

Thr Ala Gly Glu Ser Arg Ser Arg Ile Gln Val Ile Thr Gly Ser Thr
    370                 375                 380

Ile Pro Ile Asn Ser Ala Asp Val Lys Lys Val Val Ser Leu Val Lys
385                 390                 395                 400

Ala Asp Thr Thr Gly Arg Glu Ala Asp Gln Val Tyr Phe Gly Ser Asn
                405                 410                 415

Tyr Ala Asn Phe Val Ala Val Thr Gly Asn Asn Pro Ala Ala Gln Thr
            420                 425                 430

Thr Glu Ser Leu Trp Trp Val Thr Arg Thr Gly Ala Arg Phe Gly Val
        435                 440                 445

Glu Asp Thr Lys Asp Val Arg Asp Ala Leu Gly Leu Asn Gly Thr Pro
    450                 455                 460

Asn Leu Ala Pro Trp Val Ala Leu Arg Leu Leu Ser Gln Gly Pro Thr
465                 470                 475                 480

Leu Ser Arg Ala Asp Ala Leu Met Glu His Asp Thr Leu Pro Met Asp
                485                 490                 495

Met Thr Pro Ala Glu Leu Val Val Pro Lys
```

500 505

<210> 185

<211> 321

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1548, ML.tab 1872638:1873603 reverse MW:37427

<400> 185

Val Ala Lys Gln Glu Pro Met Cys Gly Val Glu Pro Thr Leu Trp Ala
1 5 10 15

Ile Ser Asp Leu His Thr Gly His Val Gly Asn Lys Pro Val Ala Glu
20 25 30

Ser Leu Tyr Pro Leu Ser Pro Asp Asp Trp Leu Ile Val Ala Gly Asp
35 40 45

Val Ala Glu Cys Thr Asp Glu Ile Arg Trp Thr Leu Glu Leu Leu Arg
50 55 60

His Arg Phe Ala Lys Val Ile Trp Val Pro Gly Asn His Glu Leu Trp
65 70 75 80

Thr Thr Asn Arg Asp Pro Met Gln Ile Phe Gly Arg Ala Arg Tyr Asp
85 90 95

Tyr Leu Ile Asn Met Cys Asp Gln Met Gly Val Val Thr Ser Glu His
100 105 110

Pro Phe Pro Leu Trp Thr Glu Arg Gly Gly Pro Ala Thr Ile Val Pro
115 120 125

Met Phe Leu Leu Tyr Asp Tyr Thr Phe Leu Pro Thr Gly Ala Asp Ser
130 135 140

Lys Ala Lys Gly Leu Ala Ile Ala Arg Glu Arg Asn Val Val Ala Thr
145 150 155 160

Asp Glu Tyr Leu Leu Ser Ser Glu Pro Tyr Ala Thr Arg Glu Ala Trp
165 170 175

Cys Arg Asp Arg Leu Asp Val Thr Arg Ser Arg Leu Glu Gln Leu Asp
180 185 190

Trp Met Thr Pro Thr Val Leu Val Asn His Phe Pro Leu Val Arg Glu
195 200 205

Pro Cys Asp Ala Leu Phe Tyr Pro Glu Phe Ser Leu Trp Cys Gly Thr
210 215 220

Thr Lys Thr Ala Asp Trp His Ile Arg Tyr Asn Ala Val Cys Ser Val
225 230 235 240

Tyr Gly His Leu His Ile Pro Arg Thr Thr Trp Tyr Asn Glu Val Arg
245 250 255

Phe Glu Glu Val Ser Val Gly Tyr Pro Arg Glu Trp Arg Arg Arg Lys
260 265 270

Pro Tyr Ser Trp Leu Arg Gln Val Leu Pro Asp Pro Gln Tyr Ala Pro
275 280 285

Gly Tyr Leu Asn Asp Phe Gly Gly His Phe Val Ile Thr Ser Glu Met
290 295 300

Arg Ala Gln Ala Val Gln Phe Arg Glu Arg Leu Arg Gln Lys Gln Ser
305 310 315 320

Arg

<210> 186

<211> 106

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1557, ML.tab 1883016:1883336 reverse MW:11540

<400> 186

Val Arg Thr Cys Val Gly Cys Arg Lys Arg Glu Leu Ala Val Glu Leu
1 5 10 15

Leu Arg Val Val Ala Pro Ser Thr Gly Lys Gly Ser Tyr Ala Val Ile
20 25 30

Val Asp Thr Ala Ser Ser Leu Ser Gly Arg Gly Ala Trp Leu His Pro
35 40 45

Asp Met Gln Cys Val Gln Gln Ala Ile Arg Arg Arg Ala Phe Thr Gly
50 55 60

Ala Leu Arg Ile Ala Gly Ser Pro Asp Thr Ser Ala Val Val Glu His
65 70 75 80

Ile Glu Phe Leu Ser Glu Leu Asp Arg Pro Gly Asn Arg Thr Gly Ser
85 90 95

Lys Glu His Glu His Thr Val Lys Ser Arg
100 105

<210> 187

<211> 178

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1560, ML.tab 1885239:1885775 forward MW:17494

<400> 187

Met Leu Leu Val Pro Ser Ala Val Pro Val Ile Asn Arg Arg Gly Val
1 5 10 15

Leu Ala Gly Gly Ala Thr Leu Thr Val Leu Gly Val Cys Phe Ser Ala
20 25 30

Cys Ser Lys Ser Pro Ser Lys Thr Pro Glu Ile Glu Glu Leu Leu Gly
35 40 45

Pro Leu Asp Gln Ala Arg His Asp Ser Ala Leu Ala Ser Ala Ala Ala
50 55 60

Ala Ala Ile Gly Asn Leu Pro Gln Ile Thr Ala Ala Leu Ala Val Val
65 70 75 80

Ala Thr Gln Arg Ala Ala His Ala Arg Ala Leu Val Thr Glu Ile Ser
85 90 95

Arg Ala Thr Gly Lys Leu Ala Ser Ser Ser Ser Asp Thr Thr Ser Pro
100 105 110

Gly Leu Ser Pro Ala Ser Pro Pro Ser Lys Pro Pro Pro Pro Val Ser
115 120 125

Asp Val Ile Asp Ala Leu Arg Thr Ser Ala Glu Gly Ala Gly Arg Leu
130 135 140

Val Ser Thr Ala Ser Gly Tyr Arg Ala Gly Leu Leu Ala Ser Ile Ala
145 150 155 160

Ala Ser Cys Thr Ala Ser Tyr Thr Val Ala Leu Val Ser Gly Gly Pro
165 170 175

Ser Ile

<210> 188

<211> 165

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1561, ML.tab 1885772:1886269 forward MW:17495

<400> 188

Met Thr Ser Ile Glu Pro Ser Ala Pro Thr Pro Val Ala Thr Pro Lys
1 5 10 15

Arg Thr Pro Val Ser Gln Asp Ser Asp Asn Ala Gly Leu Ser Glu Ala
20 25 30

Leu Val Val Glu His Ser Thr Ile Tyr Gly Tyr Gly Ile Val Leu Ala
35 40 45

Leu Ser Pro Pro Asn Ala Asn Ser Leu Val Val Asp Ala Leu Ile Gln
50 55 60

His Arg Gln Arg Arg Asp Asp Ile Ile Val Met Leu Thr Ala Arg Arg
65 70 75 80

Val Ser Pro Pro Val Ala Ala Ser Gly Tyr Gln Leu Pro Met Leu Val
85 90 95

Gly Ser Ala Ala Asp Ala Ala Arg Leu Ala Val Arg Met Glu Asn Asp
100 105 110

Gly Ala Thr Ala Trp Arg Ala Val Ala Glu His Ala Glu Thr Ala Asp
115 120 125

Asp Arg Thr Phe Ala Ala Met Ala Leu Ala Gln Ser Ala Val Met Ala
130 135 140

Ala Arg Trp Asn Lys Met Leu Gly Ala Trp Pro Ile Thr Thr Thr Phe
145 150 155 160

Pro Gly Ser Asn Glu
165

<210> 189

<211> 84

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1584, ML.tab 1909590:1909844 forward MW:9465

<400> 189

Val Ala Ser Thr Glu Gly Glu His Asn Ala Gly Val Asp Pro Ala Glu
1 5 10 15

Val Pro Ser Val Ala Trp Gly Trp Ser Arg Ile Asn His His Thr Trp
20 25 30

His Ile Val Gly Leu Phe Ala Ile Gly Leu Leu Leu Ala Met Leu Arg
35 40 45

Gly Asn His Ile Gly His Val Glu Asn Trp Tyr Leu Ile Gly Phe Ala
50 55 60

Ala Leu Val Phe Phe Val Leu Ile Arg Asp Leu Leu Gly Arg Arg Arg
65 70 75 80

Gly Trp Ile Arg

<210> 190

<211> 96

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1607, ML.tab 1932700:1932990 reverse MW:11018

<400> 190

Met Thr Thr His Lys Ala Met Thr Arg Val Gln Leu Glu Ala Met Gly
1 5 10 15

Glu Val Phe Ala Val Asp Asn Leu Thr Arg Met Gly Leu Arg Gly Leu
20 25 30

His Cys Asn Trp Arg Cys Arg Tyr Gly Glu Cys Asp Val Ile Ala Ser
35 40 45

Glu Thr Ala His Arg Thr Val Val Ser Arg Leu Arg Ser Ile Ala Ala
50 55 60

Thr Val Met Glu Gly Ser Arg Arg Ser Ala Pro Glu Gln Lys Val Arg
65 70 75 80

Trp Leu Arg Trp Leu Ala Gly Leu Trp Pro Ala Asn Gln Asp Glu Phe
85 90 95

<210> 191

<211> 101

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1610, ML.tab 1935020:1935325 reverse MW:12258

<400> 191

Met Ser Ala Glu Asp Leu Glu Lys Tyr Glu Thr Glu Met Glu Leu Ser
1 5 10 15

Leu Tyr Arg Glu Tyr Lys Asp Ile Val Gly Gln Phe Ser Tyr Val Val
20 25 30

Glu Thr Glu Arg Arg Phe Tyr Leu Ala Asn Ser Val Glu Met Met Pro
35 40 45

Arg Asn Thr Asp Gly Glu Val Tyr Phe Glu Leu Arg Leu Ala Asp Ala
50 55 60

Trp Val Trp Asp Met Tyr Arg Pro Ala Arg Phe Val Lys Gln Val Arg
65 70 75 80

Val Val Thr Phe Lys Asp Val Asn Ile Glu Glu Val Glu Lys Pro Glu
85 90 95

Leu Arg Leu Pro Glu
100

<210> 192

<211> 596

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1624, ML.tab 1947637:1949427 forward MW:65207

<400> 192

```
Met Thr Gln Ser Asp His Arg His Thr Arg Pro Ser Ser Tyr Gly Gly
1               5                  10                  15

Thr Val Leu Thr Gln Arg Val Ser Gln Ala Thr Val Glu Asp Ser Arg
            20                  25                  30

Pro Leu Arg Gly Trp Gln Arg Arg Ala Met Val Lys Tyr Leu Ala Ser
        35                  40                  45

Gln Pro Arg Asp Phe Leu Ala Val Ala Thr Pro Gly Ser Gly Lys Thr
    50                  55                  60

Thr Phe Ala Leu Arg Val Met Thr Glu Leu Leu Asn Ser His Ala Val
65                  70                  75                  80

Glu Gln Val Thr Val Val Val Pro Thr Glu His Leu Lys Val Gln Trp
                85                  90                  95

Thr Arg Ala Ala Ala Thr His Gly Leu Ala Leu Asp Pro Lys Phe Ser
            100                 105                 110

Asn Thr Asn Pro Arg Thr Ser Pro Glu Tyr His Gly Val Thr Met Thr
        115                 120                 125

Tyr Ala Gln Val Ala Ala His Pro Thr Leu His Arg Val Arg Thr Glu
    130                 135                 140

Gly Arg Arg Thr Leu Val Ile Phe Asp Glu Ile His His Gly Gly Asn
145                 150                 155                 160

Ala Lys Ala Trp Gly Asp Ala Ile Arg Glu Ala Phe Ser Asp Ala Thr
                165                 170                 175

Arg Arg Leu Ala Leu Thr Gly Thr Pro Phe Arg Ser Asp Asp Lys Pro
            180                 185                 190

Ile Pro Phe Val Thr Tyr Ala Leu Asp Ala Asp Gly Leu Met His Ser
        195                 200                 205

Gln Ala Asp His Thr Tyr Ser Tyr Ala Glu Gly Leu Ala Asp Gly Val
    210                 215                 220

Val Arg Pro Val Val Phe Leu Val Tyr Ser Gly Gln Ala Arg Trp Arg
225                 230                 235                 240

Asn Ser Ala Gly Glu Glu His Ala Ala Arg Leu Gly Glu Pro Leu Ser
                245                 250                 255

Ala Glu Gln Thr Ala Arg Ala Trp Arg Thr Ala Leu Asp Pro Ser Gly
            260                 265                 270

Glu Trp Met Pro Ala Val Ile Ser Ala Ala Asp Gln Arg Leu Arg Gln
        275                 280                 285
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Leu Arg Thr His Val Pro Asp Ala Gly Gly Met Ile Ile Ala Ser Asp
     290                 295                 300

Gln Thr Ala Ala Arg Ala Tyr Ala Asn Leu Leu Ala Gln Met Thr Ser
305                 310                 315                 320

Glu Thr Pro Thr Leu Val Leu Ser Asp Asp Pro Gly Ser Ser Ala Arg
                325                 330                 335

Ile Thr Glu Phe Ala Lys Asn Thr Ser Gln Trp Leu Ile Ala Val Arg
            340                 345                 350

Met Val Ser Glu Gly Val Asp Ile Pro Arg Leu Ser Val Gly Ile Tyr
        355                 360                 365

Ala Thr Ser Ala Ser Thr Pro Leu Phe Phe Ala Gln Ala Ile Gly Arg
    370                 375                 380

Phe Val Arg Ser Arg His Pro Gly Glu Thr Ala Ser Ile Phe Val Pro
385                 390                 395                 400

Ser Val Pro Asn Leu Leu Gln Leu Ala Ser Glu Leu Glu Thr Gln Arg
                405                 410                 415

Asn His Val Leu Gly Lys Pro His Arg Glu Ser Thr Asp Asn Pro Leu
            420                 425                 430

Gly Gly Asn Pro Ala Thr Met Thr Gln Thr Glu Gln Asp Asp Thr Glu
        435                 440                 445

Lys Tyr Phe Thr Ala Ile Gly Ala Asp Ala Glu Leu Asp Gln Ile Ile
    450                 455                 460

Phe Asp Gly Ser Ser Phe Gly Thr Ala Thr Pro Ala Gly Ser Glu Glu
465                 470                 475                 480

Glu Ala Tyr Tyr Leu Gly Ile Pro Gly Leu Leu Asp Ala Asp Gln Met
                485                 490                 495

Arg Ala Leu Leu His Arg Arg Gln Asn Glu Gln Leu Gln Lys Arg Thr
            500                 505                 510

Ala Ala Gln Gln Ala Ser Ser Thr Pro Asp Arg Thr Ser Gly Ala Pro
        515                 520                 525

Ala Ser Val His Gly Gln Leu Arg Glu Leu Arg Arg Glu Leu Asn Ser
    530                 535                 540

Leu Val Ser Ile Ala His His His Thr Gly Lys Pro His Gly Trp Ile
545                 550                 555                 560

His Asn Glu Leu Arg Arg Arg Cys Gly Gly Pro Pro Ile Ala Ala Ala
                565                 570                 575

Thr His Asp Gln Leu Lys Ala Arg Ile Asp Ala Val Arg Gln Leu Asn
            580                 585                 590

Ala Glu Pro Ser
        595
```

<210> 193

<211> 232

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1638, ML.tab 1975122:1975820 reverse MW:25842

<400> 193

Leu Ser Lys Leu Asp Asp Glu Leu Ser Arg Ile Ala His Arg Ala Asn
1 5 10 15

Tyr Leu Pro Gln Arg Glu Ala Tyr Glu Arg Met Arg Val Glu Arg Thr
20 25 30

Gly Ala Asn Asp Arg Leu Val Ala Val Gln Ile Ala Leu Glu Asp Val
35 40 45

Asp Thr Gln Val Phe Leu Leu Glu Ser Glu Ile Asp Ala Met Arg Gln
50 55 60

Arg Glu Asp Arg Asp Arg Leu Leu Leu Asn Ser Gly Ala Thr Asp Ala
65 70 75 80

Lys Gln Leu Ser Asp Leu Gln Pro Glu Phe Gly Thr Trp Gln Arg Arg
85 90 95

Lys Asn Ser Leu Glu Asp Ser Leu Arg Glu Val Met Lys Arg Arg Gly
100 105 110

Glu Leu Gln Asp Gln Leu Thr Ala Glu Leu Gly Ala Ile Glu Arg Met
115 120 125

Gln Thr Asp Leu Val Gly Ala Arg Gln Thr Leu Asp Val Ala Phe Ala
130 135 140

Glu Ile Asp Gln Val Gly Gln Pro His Ser Ser Gln Cys Asp Val Leu
145 150 155 160

Ile Ala Glu Leu Ala Pro Ala Leu Ser Ala Pro Tyr Glu Arg Leu Cys
165 170 175

Ala Gly Gly Gly Leu Gly Val Gly Gln Leu Gln Gly His Arg Cys Gly
180 185 190

Ala Cys Arg Ser Glu Ile Gly Arg Gly Glu Leu Ser Cys Ile Ser Val
195 200 205

Asp Val Asp Asp Glu Val Val Lys Tyr Pro Glu Ser Gly Ala Ile Gln
210 215 220

Leu Leu Asp Lys Gly Phe Phe Gln
225 230

<210> 194

<211> 270

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1644, ML.tab 1978961:1979773 forward MW:30049

<400> 194

Met Arg His Leu Ala Leu Leu Leu Arg Pro Gly Trp Ile Ala Leu Thr
1 5 10 15

Leu Val Val Thr Ala Phe Thr Tyr Leu Cys Phe Met Val Leu Ala Pro
20 25 30

Trp Gln Leu Gly Lys Asn Thr Arg Met Ser Arg Glu Asn Asn Gln Ile
35 40 45

Glu Tyr Ser Leu Asn Thr Pro Pro Val Pro Val Lys Thr Leu Leu Ser
50 55 60

His Gln Asp Leu Ser Thr Ser Lys Ser Gln Trp Arg Gln Val Thr Ala
65 70 75 80

Thr Gly Arg Tyr Leu Pro Asp Val Gln Val Leu Ala Arg Leu Arg Val
85 90 95

Val Asp Ser Gly Gln Ala Phe Glu Val Leu Ala Pro Phe Val Val Asp
100 105 110

Asp Gly Pro Thr Val Leu Val Asp Arg Gly Tyr Val Arg Pro Glu Pro
115 120 125

Gly Ser His Val Pro Pro Ile Pro Arg Pro Pro Asn Glu Ala Val Ser
130 135 140

Ile Thr Ala Arg Leu Arg Asp Ser Glu Pro Val Met Lys Asp Lys Glu
145 150 155 160

Pro Phe Ser Arg Asp Gly Val Gln Gln Val Tyr Ser Ile Asn Ile Glu
165 170 175

Gln Val Ala Arg Leu Thr Lys Ile Pro Leu Ala Gly Ser Tyr Leu Gln
180 185 190

Leu Val Asp Asn Gln Pro Gly Gly Leu Gly Val Ile Asp Ile Pro His

195 200 205

Leu Asp Ala Gly Pro Phe Leu Ser Tyr Gly Ile Gln Trp Ile Ser Phe
210 215 220

Gly Ile Ile Ala Pro Ile Gly Leu Gly Tyr Leu Ala Tyr Ala Glu Ile
225 230 235 240

Arg Thr His Arg Gln Glu Lys Leu Ala Lys Pro Ser Gln Ala Pro Met
245 250 255

Ala Val Glu Glu Lys Leu Ala Asp Arg Tyr Gly His Pro Arg
260 265 270

<210> 195

<211> 140

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1649, ML.tab 1987829:1988251 reverse MW:15144

<400> 195

Val Val Ala Ala Asp His Thr Pro Ser Phe Ala Arg Lys Leu Gly Ile
1 5 10 15

Gln Gln Gly Gln Val Val Gln Glu Trp Gly Trp Asp Glu Asp Thr Asp
20 25 30

Asp Asp Ile Arg Ala Ser Val Glu Glu Ala Cys Gly Gly Glu Leu Leu
35 40 45

Asp Glu Asp Thr Asp Glu Val Val Asp Val Val Leu Leu Trp Trp Arg
50 55 60

Asp Gly Asp Gly Asp Leu Val Asp Thr Leu Met Asp Ala Ile Thr Pro
65 70 75 80

Arg Ala Glu Asp Gly Val Ile Trp Val Leu Thr Pro Lys Thr Gly Lys
85 90 95

Pro Gly His Val Pro Pro Ala Glu Ile Ala Glu Ala Ala Pro Thr Ala
100 105 110

Gly Leu Met Leu Thr Ser Ser Val Asn Leu Gly Asp Trp Ser Ala Ser
115 120 125

Arg Leu Val Gln Pro Lys Ser Arg Ile Gly Lys Arg
130 135 140

<210> 196

<211> 414

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1652, ML.tab 1992060:1993304 forward MW:44873

<400> 196

Val Asn His Asn His Phe Val Pro Ala Pro Pro Arg Arg Leu Pro Leu
1 5 10 15

Glu Leu Leu Asp Thr Val Pro Asp Ser Leu Leu Arg Arg Leu Lys Gln
20 25 30

Tyr Ser Gly Arg Leu Ala Thr Glu Ala Val Thr Ala Met Gln Glu Arg
35 40 45

Leu Pro Phe Phe Ala Asp Leu Glu Ala Ser Gln Arg Ala Ser Val Thr
50 55 60

Leu Val Val Gln Thr Ala Val Val Asn Phe Val Gln Trp Met Gln Asn
65 70 75 80

Pro His Ser Asp Val Ser Tyr Thr Ala Gln Ala Phe Glu Leu Val Pro
85 90 95

Gln Asp Leu Ala Arg Arg Ile Ala Leu Arg His Thr Val Asp Met Val
100 105 110

Arg Val Thr Met Glu Phe Phe Glu Glu Val Val Pro Leu Leu Ala Arg
115 120 125

Ser Glu Glu Gln Leu Thr Ala Leu Thr Val Gly Ile Leu Lys Tyr Ser
130 135 140

Arg Asp Leu Ala Phe Thr Ala Ala Thr Ala Tyr Ala Asp Ala Ala Glu
145 150 155 160

Ala Arg Gly Thr Trp Asp Ser Arg Met Glu Ala Ser Val Val Asp Ala
165 170 175

Val Val Arg Gly Asp Thr Gly Pro Glu Leu Leu Ser Arg Ala Ala Ala
180 185 190

Leu Asn Trp Asp Thr Thr Ala Pro Ala Thr Val Val Val Gly Thr Pro
195 200 205

Thr Pro Asn His Asp Gly Pro Asn Gly Gln Val Ser Ser Glu Arg Ala
210 215 220

```
Ser Gln Glu Val Arg Glu Ile Ala Ala Arg His Gly Arg Ala Ala Leu
225                 230                 235                 240

Thr Asp Val His Gly Thr Trp Leu Val Ala Ile Ile Ser Gly Gln Leu
                245                 250                 255

Ala Pro Thr Asp Lys Phe Phe Ser Asp Leu Leu His Ala Phe Ser Asp
            260                 265                 270

Gly Pro Val Val Ile Gly Pro Thr Ala Pro Met Leu Thr Ala Ala Tyr
        275                 280                 285

His Ser Ala Ser Glu Ala Val Ser Gly Met Asn Ala Val Ala Gly Trp
    290                 295                 300

Ser Gly Ala Pro Arg Pro Val Gln Ala Arg Glu Leu Leu Pro Glu Arg
305                 310                 315                 320

Ala Leu Met Gly Asp Ala Ser Ala Ile Val Ala Leu His Thr Asp Val
                325                 330                 335

Met Leu Pro Leu Ala Asp Ala Gly Pro Thr Leu Ile Glu Thr Leu Asp
            340                 345                 350

Ala Tyr Leu Asp Cys Gly Gly Ala Ile Glu Ala Cys Ala Arg Lys Leu
        355                 360                 365

Phe Val His Pro Asn Thr Val Arg Tyr Arg Leu Lys Arg Ile Thr Asp
    370                 375                 380

Phe Thr Gly His Asp Pro Thr Leu Pro Arg Asp Ala Tyr Val Leu Arg
385                 390                 395                 400

Val Ala Ala Thr Val Gly Lys Leu Asn Tyr Pro Thr His His
                405                 410
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<210> 197

<211> 217

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1660, ML.tab 2001607:2002260 reverse MW:23449

<400> 197

```
Val Thr Val Ala Leu Ala Leu Arg Asp Gly Cys Arg Arg Ile Ser Thr
1               5                   10                  15

Met Thr Arg Gln Tyr Gly Val Thr Thr Gln Arg His Leu Ile Ser Pro
```

20 25 30

Val Val Phe Asp Ile Thr Pro Leu Gly Arg Arg Pro Gly Ala Ile Ile
35 40 45

Ala Leu Gln Lys Thr Val Pro Ser Leu Ala Arg Ile Gly Leu Glu Leu
50 55 60

Val Val Ile Glu Trp Gly Ala Pro Ile Asn Leu Asp Leu Arg Val Glu
65 70 75 80

Ser Val Ser Glu Asp Val Leu Val Ala Gly Thr Val Thr Ala Pro Thr
85 90 95

Val Ser Glu Cys Val Arg Cys Leu Thr Ala Val His Gly His Val Gln
100 105 110

Val Thr Leu Asn Gln Leu Phe Ala Tyr Pro Tyr Ser Ala Thr Lys Val
115 120 125

Thr Thr Glu Glu Asp Ala Val Gly His Val Val Asp Gly Thr Ile Asp
130 135 140

Leu Glu Gln Ser Ile Ile Asp Ala Val Gly Ile Glu Leu Pro Phe Ala
145 150 155 160

Pro Met Cys Arg Ser Asp Cys Pro Gly Leu Cys Ala Glu Cys Gly Thr
165 170 175

Ser Leu Val Val Glu Pro Gly His Pro His Asp Arg Ile Asp Pro Trp
180 185 190

Trp Ala Lys Leu Thr Asp Met Leu Ala Pro Asp Val Pro Gln Thr Ser
195 200 205

Glu Thr Asp Gly Ser Arg Ser Glu Trp
210 215

<210> 198

<211> 214

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1666, ML.tab 2009601:2010245 reverse MW:23370

<400> 198

Val Ser Ala Gln Pro Val Glu Arg Pro Gly Asp Leu Lys Pro Ala Pro
1 5 10 15

Ala Ser Val Leu Pro Met Pro Val Pro Thr Ala Trp Trp Val Leu Ile
20 25 30

Ala Gly Val Ile Gly Leu Val Ala Ser Met Met Leu Thr Val Glu Lys
35 40 45

Ile Arg Ile Leu Leu Asn Ser Ala Tyr Val Pro Ser Cys Asn Val Asn
50 55 60

Pro Ile Val Ala Cys Gly Ser Val Met Ser Thr Pro Gln Ala Ser Val
65 70 75 80

Leu Gly Phe Pro Asn Pro Leu Leu Gly Ile Val Gly Phe Thr Leu Val
85 90 95

Thr Val Thr Gly Val Leu Ser Val Ala Glu Val Ser Leu Pro Gln Trp
100 105 110

Tyr Trp Ile Gly Leu Ala Val Gly Thr Leu Ala Gly Val Gly Phe Val
115 120 125

His Trp Leu Ile Phe Gln Ser Leu Tyr Arg Ile Gly Ala Leu Cys Ala
130 135 140

Tyr Cys Met Val Ile Trp Ala Val Ser Val Ser Leu Leu Val Val Val
145 150 155 160

Thr Ala Ile Val Phe Arg Pro Leu Leu Glu Val Leu Pro Gly Arg Thr
165 170 175

Ser Ala Ile Ala Arg Gly Ile Tyr Gln Trp Arg Trp Ser Ile Ala Thr
180 185 190

Leu Trp Phe Ile Thr Val Phe Leu Leu Ile Met Val Arg Phe Trp Asn
195 200 205

Tyr Trp Gln Thr Leu Leu
210

<210> 199

<211> 191

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1677, ML.tab 2021235:2021810 forward MW:19668

<400> 199

Val Thr Ser Asn Ser Asp Ala Gly Ser Ala Val Asp Ala Gly Gly Pro
1 5 10 15

Pro Arg Thr Val Ile Ile Ala Ala Val Val Leu Thr Ala Ala Thr Ile
20 25 30

Gly Thr Ile Leu Val Leu Ala Ala Thr Leu His Glu Pro Pro Gln Pro
35 40 45

Val Val Ile Thr Ala Val Pro Ala Pro Gln Ala Thr Thr Ala Ala Cys
50 55 60

Arg Ser Leu Thr Gln Ala Leu Pro Gln Arg Leu Gly Asp Tyr Glu Arg
65 70 75 80

Ala Pro Val Ala Gln Pro Ala Pro Asp Ala Val Ala Ala Trp Arg Thr
85 90 95

Gly Ser Asp Thr Glu Pro Val Val Leu Arg Cys Gly Leu Asp Gly Pro
100 105 110

Ala Glu Phe Val Val Gly Ser Pro Ile Gln Ala Val Asp Gln Val Gln
115 120 125

Trp Phe Glu Val Asp Ala Lys Pro Lys Pro Ala Ile Asp Ala Gly Arg
130 135 140

Ser Thr Trp Tyr Thr Val Asp Arg Pro Val Tyr Val Ala Leu Thr Leu
145 150 155 160

Pro Ser Gly Ser Gly Pro Thr Pro Ile Gln Glu Leu Ser Asp Val Ile
165 170 175

Asp Arg Thr Leu Ala Ala Ile Pro Ile Ser Pro Ala Gln Ser His
180 185 190

<210> 200

<211> 277

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1698, ML.tab 2046984:2047817 reverse MW:29424

<400> 200

Val Thr Gly Gln Ser His Asp Glu His Trp Arg Arg Pro Gly Glu Cys
1 5 10 15

Pro Glu Pro Ile Pro Gly Arg Pro Ala Ser Ala Ser Leu Val Asp Pro
20 25 30

Glu Asp Asp Leu Thr Pro Val Gly Tyr Pro Gly Asp Phe Gly Thr Thr

35 40 45

Thr Val Ile Pro Tyr Ser Asp Pro Asp His Leu Lys Gly Pro Gly Gly
50 55 60

Thr Gly Tyr Asn Leu Leu Asp Gln Gln Glu Pro Leu Pro Tyr Val Gln
65 70 75 80

Pro Gln Ala Arg His Ala Val Ala Glu Pro Thr Glu Ile Asp Ser Asp
85 90 95

Gln Asp Asn Glu Arg Leu His Thr Val Gly Arg Arg Gly Thr Gln His
100 105 110

Leu Gly Leu Leu Val Leu Arg Val Gly Leu Gly Val Val Leu Ala Ala
115 120 125

Gln Gly Leu His Lys Leu Phe Gly Trp Trp Gly Gly Gln Gly Leu Thr
130 135 140

Gly Phe Lys Asn Ser Leu Thr Gln Val Gly Tyr Gln His Ala Asp Ile
145 150 155 160

Leu Ala Tyr Val Ser Ala Gly Gly Glu Ala Val Ala Gly Val Leu Leu
165 170 175

Val Leu Gly Leu Phe Ala Pro Val Val Ala Ala Gly Ala Leu Ala Phe
180 185 190

Leu Ile Asn Gly Leu Leu Ala Ala Trp Pro His Ser Pro Leu Phe Ser
195 200 205

Phe Phe Leu Pro Asp Gly Asn Glu His Gln Ile Thr Leu Ile Val Met
210 215 220

Asp Val Thr Val Ile Leu Cys Gly Pro Gly Arg Tyr Gly Leu Asp Ala
225 230 235 240

Gly Arg Arg Trp Ala Tyr Arg Pro Phe Ile Gly Ser Phe Ile Val Leu
245 250 255

Ile Ala Gly Ile Ala Ala Gly Ile Ala Val Trp Val Leu Leu Asn Gly
260 265 270

Val Asn Pro Leu Ala
275

<210> 201

<211> 232

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1704, ML.tab 2055043:2055741 forward MW:24598

<400> 201

Val Glu Met Pro Leu Thr Gln Arg Tyr Ala Thr Val Leu Ala Val Pro
1 5 10 15

Ser Tyr Leu Leu Arg Ile Glu Leu Ala Asp Arg Pro Gly Ser Leu Gly
20 25 30

Ser Leu Ala Val Ala Leu Gly Ser Val Gly Gly Asp Ile Leu Ser Leu
35 40 45

Asp Val Val Glu Arg Ser Gly Gly Tyr Ala Ile Asp Asp Leu Val Ile
50 55 60

Glu Val Pro Ser Gly Ala Met Pro Asp Lys Leu Ile Thr Ala Phe Glu
65 70 75 80

Ser Leu Pro Gly Val Arg Val Asp Ser Val Arg Pro His Ser Gly Leu
85 90 95

Leu Glu Ala His Arg Glu Leu Glu Leu Leu Asp Gln Val Ala Ala Ala
100 105 110

Asp Asp Asn Ala Ser Lys Leu Gln Val Leu Ala Asp Glu Ala Pro Lys
115 120 125

Val Leu Arg Val Ser Trp Cys Thr Val Leu Arg Ser Ser Gln Gly Lys
130 135 140

Leu Leu Arg Leu Ala Ala Ser Val Gly Ala Pro Glu Thr Arg Ala Asn
145 150 155 160

Ser Ala Pro Trp Leu Pro Ile Glu Arg Ala Ala Pro Leu Asp Gly Thr
165 170 175

Ala Glu Trp Val Pro Gln Ser Leu Arg Asp Met Asn Thr Thr Met Ile
180 185 190

Ala Ala Pro Leu Gly Asp Pro His Thr Ala Val Val Leu Gly Arg Pro
195 200 205

Gly Pro Glu Phe Arg Pro Ser Glu Val Ala Arg Leu Gly Tyr Leu Ala
210 215 220

Gly Ile Val Ala Thr Met Leu Arg
225 230

<210> 202

<211> 337

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1706, ML.tab 2057887:2058900 reverse MW:34564

<400> 202

Met Ser Val Phe Ala Thr Ala Ser Gly Val Gly Ser Trp Pro Gly Ser
1 5 10 15

Ser Pro Tyr Pro Ala Ala Lys Val Val Val Gly Glu Leu Ala Gly Ala
20 25 30

Leu Ala His Ile Val Glu Leu Pro Ala Arg Gly Val Gly Ala Asp Met
35 40 45

Leu Gly Arg Ala Gly Ala Leu Leu Ile Asp Val Ala Ile Asp Thr Val
50 55 60

Pro Arg Gly Tyr Arg Ile Ala Ala Arg Pro Gly Ala Val Thr Arg Arg
65 70 75 80

Ala Phe Ser Leu Leu Asp Glu Asp Met Asp Ala Phe Glu Ala Ala Trp
85 90 95

Glu Met Ala Gly Leu Arg Gly Arg Gly Arg Val Val Lys Val Gln Ala
100 105 110

Pro Gly Pro Ile Thr Leu Ala Ala Gly Leu Glu Leu Ala Asn Gly His
115 120 125

Arg Ala Ile Thr Asp Ser Cys Ala Val Arg Asp Leu Ala Glu Ser Leu
130 135 140

Ala Glu Gly Val Ala Ala His Arg Ala Ala Leu Ala Arg Arg Leu Asp
145 150 155 160

Thr Gln Val Val Val Gln Phe Asp Glu Val Ser Leu Pro Ala Ala Leu
165 170 175

Gly Gly Leu Leu Thr Gly Val Thr Ala Phe Ser Pro Val Ala Pro Leu
180 185 190

Asp Glu Thr Leu Ala Ala Thr Leu Phe Asp Ser Cys Val Ala Thr Val
195 200 205

Gly Ala Asp Val Leu Leu His Ser Cys Ala Ala Glu Leu Pro Trp Asn
210 215 220

Phe Leu Gln Arg Ser Ala Ile Arg Ala Val Ser Val Asp Val Asn Val
225 230 235 240

Leu Arg Thr Gly Asp Leu Asp Gly Ile Ala Ala Phe Val Glu Ser Gly
245 250 255

Arg Thr Val Val Leu Gly Val Val Pro Ala Thr Ala Pro Gln Arg Leu
260 265 270

Pro Ser Val Glu Gln Val Ala Ala Ala Val Val Gly Val Thr Asp Arg
275 280 285

Leu Gly Phe Gly Arg Ser Ala Leu Arg Asp Arg Ile Gly Val Ser Pro
290 295 300

Ala Cys Gly Leu Ala Gly Ala Thr Pro His Trp Ala Cys Thr Ala Ile
305 310 315 320

Glu Leu Ala Arg Lys Thr Ala Glu Ala Phe Ala Gln Asp Pro Asp Ala
325 330 335

Ile

<210> 203

<211> 364

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1720, ML.tab 2076101:2077195 forward MW:38298

<400> 203

Leu Ala Ala Gly Pro Ala Leu Ser Ala Arg Gly Tyr Leu Ala Met Asn
1 5 10 15

Ala Gln Thr Gln Ala Gly Cys Ser Leu Met Glu Trp Glu Asn Asn Asp
20 25 30

Asn Gly Arg Gln Arg Trp Cys Val Arg Leu Val Gln Gly Gly Gly Phe
35 40 45

Gly Gly Pro Leu Phe Asp Gly Phe Glu Asn Leu Tyr Val Gly Glu Pro
50 55 60

Gly Thr Ile Phe Ser Phe Pro Met Thr Gln Trp Thr Arg Trp Arg Gln
65 70 75 80

Pro Val Ile Gly Met Pro Ser Thr Pro Arg Phe Leu Gly Asn Gly Gln
85 90 95

Leu Leu Val Thr Thr His Leu Gly Gln Val Leu Val Phe Asp Ala His
100 105 110

Arg Gly Met Val Val Gly Ser Pro Leu Asp Leu Val Asp Gly Val Asn
115 120 125

Pro Thr Asp Pro Thr Arg Gly Leu Ala Asp Cys Val Ser Ala Gln Arg
130 135 140

Gly Cys Pro Val Ala Ser Ala Pro Ala Tyr Ser Pro Ala Ser Gln Thr
145 150 155 160

Val Val Leu Asp Ile Trp Gln Pro Gly Ala Pro Thr Ala Gly Leu Ile
165 170 175

Gly Leu Lys Tyr His Ser Arg Gln Thr Pro Leu Leu Ala Arg Ala Trp
180 185 190

Thr Ser Asp Ala Ile Gly Ala Gly Val Leu Ala Ser Pro Val Leu Ser
195 200 205

Ala Asp Gly Ser Thr Val Tyr Val Asn Gly Arg Asp Gln His Leu Trp
210 215 220

Ala Leu His Ala Ala Asn Gly Lys Pro Lys Trp Ser Val Pro Leu Glu
225 230 235 240

Phe Leu Ala Gln Thr Pro Pro Thr Val Thr Pro Gln Gly Leu Ile Val
245 250 255

Ser Gly Gly Gly Pro Asp Thr Arg Leu Ala Ala Phe Lys Asp Ala Gly
260 265 270

Asp His Ala Gln Gln Ile Trp Arg Arg Asp Asp Leu Thr Pro Leu Ser
275 280 285

Thr Ser Ser Leu Ala Gly Val Ser Val Gly Tyr Thr Val Val Ser Ser
290 295 300

Ser Pro Ala Ala Asp Ala Pro Gly Met Ser Leu Leu Ala Phe Asp Pro
305 310 315 320

Arg Asn Gly His Thr Leu Asn Ser Tyr Pro Leu Pro Ala Ala Thr Gly
325 330 335

Tyr Pro Val Gly Val Ser Ile Ala Asn Asn Arg Arg Val Ile Thr Val
340 345 350

Thr Ser Asp Gly Gln Leu Tyr Ser Phe Ala Pro Thr
355 360

<210> 204

<211> 327

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1723, ML.tab 2079775:2080758 reverse MW:36615

<400> 204

Met Thr Arg Ser Thr Glu Ile Ser Ala Asn Ala Val Pro Asn Pro His
1 5 10 15

Ala Thr Ala Glu Gln Val Ala Ala Ala Arg Lys Asp Ser Lys Leu Ala
20 25 30

Gln Val Leu Tyr His Asp Trp Glu Ala Glu Asn Tyr Asp Glu Lys Trp
35 40 45

Ser Ile Ser Tyr Asp Gln Arg Cys Val Asp Tyr Val Arg His Cys Phe
50 55 60

Asp Ala Ile Val Pro Asp Glu Leu Phe Thr Glu Leu Pro Tyr Asp Cys
65 70 75 80

Ala Leu Glu Leu Gly Cys Gly Thr Gly Phe Phe Leu Leu Asn Leu Ile
85 90 95

Gln Ser Gly Val Ala Arg Arg Gly Ser Val Thr Asp Leu Ser Pro Gly
100 105 110

Met Val Lys Ile Ala Thr Arg Asn Gly Gln Ser Leu Gly Leu Asp Ile
115 120 125

Asn Gly Arg Val Ala Asp Ala Glu Gly Ile Pro Tyr Asp Asp Asn Thr
130 135 140

Phe Asp Leu Val Val Gly His Ala Val Leu His His Ile Pro Asp Val
145 150 155 160

Glu Leu Ser Leu Arg Glu Val Leu Arg Val Leu Lys Pro Gly Gly Arg
165 170 175

Phe Val Phe Ala Gly Glu Pro Thr Asp Val Gly Asn Arg Tyr Ala Arg
180 185 190

Val Phe Ala Asp Leu Thr Trp Lys Val Thr Ile Arg Val Val Gln Leu
195 200 205

Pro Gly Leu Ser Ala Trp Arg Arg Thr Gln Val Glu Ile Asp Glu Asn
210 215 220

Ser Arg Ala Ala Ala Leu Glu Trp Val Val Asp Leu His Thr Phe Glu
225 230 235 240

Pro Lys Val Leu Glu Thr Met Ala Thr Asn Ala Gly Ala Val Gln Val
245 250 255

Lys Thr Val Thr Glu Glu Phe Thr Ala Ala Met Leu Gly Trp Pro Leu
260 265 270

Arg Thr Phe Glu Ser Thr Met Pro Pro Ser Lys Leu Gly Trp Gly Trp
275 280 285

Ala Arg Phe Ala Phe Thr Ser Trp Lys Thr Leu Ser Trp Val Asp Ala
290 295 300

Asn Val Trp Arg Arg Val Ile Pro Lys Ser Trp Phe Tyr Asn Ile Ile
305 310 315 320

Ile Thr Gly Val Lys Pro Ser
325

<210> 205

<211> 170

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1781, ML.tab 2157673:2158185 reverse MW:18049

<400> 205

Met Arg Ala Ser Asn Gln Phe Ala Asp Ala Thr Ala Gly Val Val Tyr
1 5 10 15

Val His Ala Ser Pro Ala Ala Val Cys Pro His Val Glu Trp Ala Leu
20 25 30

Ser Ser Thr Leu Gln Thr Lys Ala Asn Leu Val Trp Thr Pro Gln Pro
35 40 45

Ala Met Pro Gly Gln Leu Arg Ala Val Thr Asn Trp Thr Gly Pro Val
50 55 60

Gly Thr Gly Ala Arg Leu Ala Asn Ala Leu Arg Ser Trp Ser Val Leu
65 70 75 80

Arg Phe Glu Val Thr Glu Asp Pro Ser Pro Gly Val Asp Gly Gln Arg
85 90 95

Phe Ser His Thr Pro Gln Leu Gly Leu Trp Ser Gly Ser Met Ser Ala
100 105 110

Asn Gly Asp Ile Met Val Gly Glu Met Arg Leu Arg Ala Met Met Ala
115 120 125

His Gly Ala Asp Thr Leu Ala Ala Glu Leu Asp Ser Val Leu Gly Thr
130 135 140

Ala Trp Asp Asp Ala Leu Glu Val Tyr Arg Asp Gly Gly Asp Val Gly
145 150 155 160

Glu Val Thr Trp Leu Ser Arg Gly Val Gly
165 170

<210> 206

<211> 273

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1782, ML.tab 2158324:2159145 reverse MW:29017

<400> 206

```
Met Val Ala Leu Asp Ala Leu Asp Asp Trp Pro Val Pro Thr Thr Ala
1               5                  10                  15

Ala Ala Val Val Gly Pro Thr Gly Val Leu Ala Ala Arg Gly Asp Thr
            20                  25                  30

Glu Gln Val Phe Pro Leu Ala Ser Val Thr Lys Pro Leu Val Ala Arg
        35                  40                  45

Ala Val Gln Ile Ala Ile Glu Glu Gly Val Val Asp Leu Asp Thr Val
    50                  55                  60

Ala Gly Pro Pro Gly Ser Thr Ile Arg His Leu Leu Ala His Ala Ser
65                  70                  75                  80

Gly Leu Ala Met His Ser Lys Tyr Val Met Ala Pro Pro Gly Thr Arg
                85                  90                  95

Arg Ile Tyr Ser Asn Tyr Gly Phe Arg Val Leu Ala Glu Thr Val Gln
            100                 105                 110

Arg Glu Ala Gly Ile Gly Phe Ser Arg Tyr Leu Thr Glu Ala Val Leu
        115                 120                 125

Glu Pro Leu Ala Met Thr Ala Thr Lys Leu Glu Asp Gly Thr Trp Ala
    130                 135                 140

Ala Gly Phe Gly Ala Thr Ser Thr Val Ala Asp Leu Ala Ala Phe Ala
145                 150                 155                 160

Asn Asp Leu Leu Arg Pro Ala Thr Val Ser Ala Gln Ile His Ala Glu
                165                 170                 175

Ala Thr Ser Val Gln Phe Pro Asp Leu Asp Gly Val Leu Pro Gly His
            180                 185                 190

Gly Val Gln Arg Pro Asn Asp Trp Gly Leu Gly Tyr Glu Ile Lys Asn
        195                 200                 205

Ser Lys Leu Pro His Trp Thr Gly Thr Leu Asn Ser Ala Arg Thr Tyr
    210                 215                 220

Gly His Phe Gly Gln Ser Gly Gly Phe Ile Trp Ala Asp Pro Glu Ala
225                 230                 235                 240
```

Glu Leu Ala Leu Val Val Leu Thr Asp Arg Asp Phe Gly Glu Trp Ala
245 250 255

Leu Gln Leu Trp Pro Ala Ile Ser Asp Ala Val Ile Ser Glu Tyr Ala
260 265 270

Arg

<210> 207

<211> 147

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1791, ML.tab 2165620:2166063 reverse MW:16468

<400> 207

Leu Gly Lys Ile Phe Ile Met Leu Pro Thr Val Thr His Gln Ala Ile
1 5 10 15

Thr Cys Thr Val Arg Arg Val Arg Trp Ile Val Asp Ala Met Asn Val
20 25 30

Ile Gly Thr Arg Pro Asp Cys Trp Trp Lys Asp Arg Arg Gly Ala Met
35 40 45

Val Arg Leu Val Gly Lys Leu Glu Arg Trp Ala Ser Thr Glu Arg Asn
50 55 60

His Val Thr Val Val Phe Glu Arg Pro Pro Ser Pro Ser Ile Arg Ser
65 70 75 80

Ser Val Ile Val Ile Ala His Ala Pro Lys Ala Phe Pro Asp Ser Ala
85 90 95

Asp Asp Glu Ile Val Arg Leu Val Gln Ala Asp Pro Glu Pro Gln Gly
100 105 110

Ile Cys Val Val Thr Ser Asp Ser Ala Leu Thr Asp Arg Val Gln Glu
115 120 125

Val Gly Ala Leu Ala Tyr Pro Ala Ala Arg Phe Arg Lys His Ile Asp
130 135 140

Ser Ile Asp
145

<210> 208

<211> 190

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1813, ML.tab 2194277:2194849 reverse MW:20227

<400> 208

```
Met Thr Gly Gln Asp Val Val Val Gln Gln Pro Gln Thr Ile Pro Met
1               5                  10                  15

Leu Pro Ile Tyr Ile Pro Gln Asp Val Asp Met Thr Val Val Lys Ser
            20                  25                  30

Glu Val Ala Ala Ala Gly Val Ser Ala Ser Pro Ala Ala Met Pro Gly
        35                  40                  45

Leu Leu Glu Val Val Ser His Ala Gln Ala Glu Gly Ile Asn Leu Lys
    50                  55                  60

Ile Val Leu Leu Asp His Asn Leu Pro Asn Asp Thr Pro Leu Arg Asp
65                  70                  75                  80

Ile Ala Thr Val Val Gly Ala Asp Tyr Pro Asp Val Thr Val Leu Thr
                85                  90                  95

Leu Ser Pro Asn Tyr Val Gly Ser Tyr Ser Thr His Tyr Pro Arg Val
            100                 105                 110

Thr Leu Glu Ala Gly Glu Asp Ile Ser Lys Thr Gly Asn Pro Val Gln
        115                 120                 125

Ser Ala Gln Asn Phe Leu Gly Glu Leu Asn Val Pro Glu Phe Pro Trp
    130                 135                 140

Thr Val Leu Thr Ile Val Leu Leu Ile Gly Val Leu Val Ala Ala Ile
145                 150                 155                 160

Gly Thr Arg Phe Met Gln Leu Arg Ser Lys Arg Leu Ala Thr Ser Leu
                165                 170                 175

Asp Ala Ala Gly Ile Leu Ala Glu Asp Val Asn Arg Ala Asp
            180                 185                 190
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<210> 209

<211> 166

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1908, ML.tab 2293144:2293644 reverse MW:18864

<400> 209

Val Ala Leu Lys Thr Asp Ile Arg Gly Met Val Trp Arg Tyr Ser Asp
1 5 10 15

Tyr Phe Ile Val Gly Arg Glu Gln Cys Arg Glu Phe Ala Arg Ala Ile
20 25 30

Lys Cys Asp His Pro Ala Tyr Phe Ser Glu Asp Ala Ala Ala Glu Leu
35 40 45

Gly Tyr Asp Ala Ile Val Ala Pro Leu Thr Phe Val Thr Ile Phe Ala
50 55 60

Lys Tyr Val Gln Leu Asp Phe Phe Arg Asn Val Asp Val Gly Met Glu
65 70 75 80

Thr Met Gln Ile Val Gln Val Asp Gln Arg Phe Val Phe His Lys Pro
85 90 95

Val Leu Val Gly Asp Lys Leu Trp Ala Arg Met Asp Ile His Ser Val
100 105 110

Ser Glu Arg Phe Gly Ala Asp Ile Val Val Thr Lys Asn Ser Cys Thr
115 120 125

Ser Asp Asp Gly Glu Leu Val Met Glu Ala Tyr Thr Thr Leu Met Gly
130 135 140

Gln Gln Gly Asp Asn Ser Ser Gln Leu Lys Trp Asp Lys Glu Ser Gly
145 150 155 160

Gln Val Ile Arg Ser Ala
165

<210> 210

<211> 142

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1909, ML.tab 2293648:2294076 reverse MW:14875

<400> 210

Met Ala Arg Arg Glu Phe Ser Ser Val Lys Val Gly Asp Leu Leu Pro
1 5 10 15

Glu Lys Thr Tyr Pro Leu Thr Arg Gln Asp Leu Val Asn Tyr Ala Gly
20 25 30

Val Ser Gly Asp Leu Asn Pro Ile His Trp Asp Asp Glu Ile Ala Lys
35 40 45

Val Val Gly Leu Asp Thr Ala Ile Ala His Gly Met Leu Thr Met Gly
50 55 60

Ile Gly Gly Gly Tyr Val Thr Ser Trp Val Gly Asp Pro Gly Ala Val
65 70 75 80

Ile Glu Tyr Asn Val Arg Phe Thr Ala Val Val Pro Val Pro Asn Asp
85 90 95

Gly Gln Gly Ala Val Leu Val Phe Ser Gly Lys Val Lys Ser Val Asp
100 105 110

Pro Asp Thr Lys Ser Val Thr Ile Ala Leu Ser Ala Thr Thr Gly Gly
115 120 125

Lys Lys Ile Phe Gly Arg Ala Ile Ala Ser Ala Lys Leu Ala
130 135 140

<210> 211

<211> 159

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1910, ML.tab 2294063:2294542 reverse MW:17608

<400> 211

Val Gly Leu Thr Thr Asn Ile Val Gly Met His Tyr Arg Tyr Pro Asp
1 5 10 15

His Tyr Glu Val Glu Arg Glu Lys Ile Arg Glu Tyr Ala Val Ala Val
20 25 30

Gln Asn Glu Asp Thr Ser Tyr Phe Glu Glu Asp Ala Ala Ala Glu Leu
35 40 45

Gly Tyr Lys Gly Leu Leu Ala Pro Leu Thr Phe Ile Cys Leu Phe Gly
50 55 60

Tyr Lys Ala Gln Ser Ala Phe Phe Lys His Ala Asn Ile Ala Val Thr
65 70 75 80

Asp Gln Gln Ile Val Gln Ile Asp Gln Val Leu Lys Phe Val Lys Pro
85 90 95

Ile Val Ala Gly Asp Lys Leu Tyr Cys Asp Val Tyr Val Asp Ser Met
100 105 110

Arg Glu Ala His Gly Thr Gln Ile Ile Val Thr Lys Asn Val Val Thr
115 120 125

Asn Glu Val Gly Asp Ile Val Gln Glu Thr Tyr Thr Thr Leu Ala Gly
130 135 140

Arg Val Gly Glu Gly Gly Glu Glu Gly Phe Ser Asp Gly Ala Ala
145 150 155

<210> 212

<211> 71

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1911A, ML.tab 2295156:2295371 reverse MW:7998

<400> 212

Met Leu Lys Lys Val Glu Ile Glu Val Asp Asp Asp Leu Val Gln Glu
1 5 10 15

Val Ile Arg Arg Tyr Gly Leu Leu Gly Arg Arg Glu Ala Val His Leu
20 25 30

Ala Leu Lys Ala Leu Leu Gly Glu Pro Gly Val Gly Gly Leu Ser Glu
35 40 45

Gln Asp Pro Glu Tyr Asp Glu Phe Ser Asn Pro Asp Ala Trp Arg Thr
50 55 60

Arg Arg Ser Ser Asp Thr Gly
65 70

<210> 213

<211> 263

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1918, ML.tab 2301835:2302626 reverse MW:27133

<400> 213

```
Val Leu Asp Leu Glu Pro Arg Gly Pro Leu Pro Thr Glu Ile Tyr Trp
1               5                  10                  15

Arg Arg Arg Gly Leu Ala Val Gly Ile Thr Val Ile Val Ile Val Ile
            20                  25                  30

Ala Ala Ile Val Ala Val Val Gly Asn Gly Ala Ala Ala Gln Pro Ala
        35                  40                  45

Asn Val Asp Lys Pro Gly Ser Ser Gln Asn His Pro Gly Ser Ala Thr
    50                  55                  60

Pro Lys Val Leu Pro Pro Asn Gly His Glu Gly Asn Leu Ala Pro Ala
65                  70                  75                  80

Pro Pro Gln Gly Arg Asn Pro Glu Ser Ser Thr Ser Thr Ala Ala Val
                85                  90                  95

Gln Pro Pro Pro Val Leu Arg Glu Gly Asp Asp Cys Pro Asp Ser Thr
            100                 105                 110

Leu Ala Val Lys Gly Leu Thr Asn Val Pro Gln Tyr Phe Leu Gly Asp
        115                 120                 125

Gln Pro Lys Phe Thr Met Val Val Thr Asn Ile Gly Leu Val Ser Cys
    130                 135                 140

Lys Arg Asp Val Gly Ala Ala Val Leu Ala Ala Tyr Val Tyr Ser Leu
145                 150                 155                 160

Asp Asn Lys Arg Leu Trp Ser Asn Leu Asp Cys Ala Pro Ser Asn Glu
                165                 170                 175

Thr Leu Val Lys Thr Phe Thr Pro Gly Glu Gln Val Thr Thr Ala Val
            180                 185                 190

Thr Trp Thr Gly Met Gly Ser Ser Pro His Cys Pro Leu Pro Arg Pro
        195                 200                 205

Ala Ile Gly Pro Gly Thr Tyr Asn Leu Val Val Gln Leu Gly Asn Leu
    210                 215                 220

His Ser Met Pro Val Pro Phe Ile Leu Asn Gln Pro Pro Pro Pro Pro
225                 230                 235                 240
```

Gly Ser Ser Gly Pro Ala Leu Ala Pro Ser Pro Glu Ala Pro Pro Ala
245 250 255

Asn Val Pro Val Ser Gly Gly
260

<210> 214

<211> 167

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1926, ML.tab 2311558:2312061 reverse MW:17296

<400> 214

Leu Val Asp Thr Val Gly Leu Val Asn Lys Cys Val Pro Asp Ser Ser
1 5 10 15

Gly Leu Pro Leu Arg Ala Met Val Met Val Leu Leu Phe Leu Gly Val
20 25 30

Ile Phe Leu Leu Leu Gly Trp Gln Ala Leu Gly Ser Ser Gly Asn Ser
35 40 45

Asp Asp Tyr Ser Ala Leu Pro Met Ser Ser Met Pro Asn Thr Pro Thr
50 55 60

Thr Pro Ala Ala Thr Ser Thr Ser Ser Thr Ser Ala Ala Asn Gln Ala
65 70 75 80

Glu Val Arg Val Tyr Asn Ile Ser Ser Lys Glu Gly Ile Ala Ala Arg
85 90 95

Thr Arg Asp Gln Leu Thr Thr Ala Gly Phe Lys Val Thr Glu Val Asp
100 105 110

Asn Leu Val Val Ser Asp Val Ser Ala Thr Thr Val Tyr Tyr Ser Asp
115 120 125

Ala Glu Gly Glu Tyr Ala Thr Ala Asp Ala Val Gly Gln Lys Leu Gly
130 135 140

Ala Pro Val Glu Pro Arg Ile Ala Ala Ile Thr Asn Gln Pro Pro Gly
145 150 155 160

Val Ile Val Leu Val Thr Ser
165

<210> 215

<211> 102

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1927, ML.tab 2312092:2312400 reverse MW:11799

<400> 215

Met Asp Gly Ala Met Ala Arg Ala His Arg Ala Gly Asp Asp Val Glu
1 5 10 15

Ile Val Asp Gly Leu Thr Arg Arg Glu His Asp Ile Leu Ala Phe Glu
20 25 30

Arg Gln Trp Trp Lys Phe Ala Gly Val Lys Glu Glu Ala Ile Lys Glu
35 40 45

Leu Phe Ser Met Ser Ala Thr Arg Tyr Tyr Gln Val Leu Asn Ala Leu
50 55 60

Val Asp Arg Pro Glu Ala Leu Ala Val Asp Pro Met Leu Val Lys Arg
65 70 75 80

Leu Arg Arg Leu Arg Ala Ser Arg Gln Lys Ala Arg Ala Ala Arg Arg
85 90 95

Leu Gly Phe Glu Val Thr
100

<210> 216

<211> 410

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1937, ML.tab 2323320:2324552 forward MW:46582

<400> 216

Met Glu Arg Pro Asn Glu Tyr Met Ala Arg Gln Arg Ser Ile Leu Asn
1 5 10 15

```
Lys Val Phe Thr Gly Phe Ser Ala Tyr Cys Arg Tyr Gly Gln His Val
            20                  25                  30

Ser Lys Gln Gln Ala Arg Ser Thr Val Glu Ser Thr Tyr Arg Ser Ile
        35                  40                  45

Leu Pro Asn Ile Pro Gly Val Pro Trp Trp Ala Ala Leu Leu Ile Ala
    50                  55                  60

Thr Thr Ala Ser Ala Ile Gly Tyr Ala Ile Asp Ala Gly Asn Thr Asp
65                  70                  75                  80

Leu Thr Thr Val Phe Thr Gly Phe Tyr Ile Thr Gly Cys Val Ala Ala
                85                  90                  95

Val Leu Ala Val Arg Gln Ser Gly Leu Phe Thr Ala Val Ile Gln Pro
            100                 105                 110

Pro Leu Ile Leu Phe Cys Ala Val Pro Ala Ala Tyr Trp Leu Phe His
        115                 120                 125

Gly Ser Lys Ile Lys Ser Leu Lys Asp Leu Leu Ile Asn Cys Gly Tyr
    130                 135                 140

Pro Leu Ile Glu Arg Phe Pro Leu Met Leu Gly Thr Ala Gly Ser Val
145                 150                 155                 160

Leu Leu Ile Gly Leu Val Arg Trp Phe Phe Gln Leu Met Tyr Arg Thr
                165                 170                 175

Thr Ala Ser Ser Asn Ser Glu Asp Asp Thr Val Ser Lys Pro Asn Ser
            180                 185                 190

Leu Ile Ser Gly Ile Thr Ala Val Leu Asn Ser Ile Leu Cys Ile Tyr
        195                 200                 205

Ser Asn Asp Gln Asn His Arg Ala Asn Gln Asp Thr Ala Asp Thr Glu
    210                 215                 220

Leu Met His Ser Asp Pro Pro Leu Arg Thr Arg Gln Thr Ala Arg Asp
225                 230                 235                 240

Asn Arg Ser Ala Arg Thr His Ser Gly Gln Ala Arg Arg Val Val Glu
                245                 250                 255

Tyr Thr Ser Glu Pro Leu Val Glu Pro Trp Gln His Ser Ser Gln Arg
            260                 265                 270

Ser Ser Glu Gln Ala Arg Asp Phe Asp Ala Gly Glu Ser Pro Arg Arg
        275                 280                 285

Ser Arg Arg Gln Pro Thr Pro Gln Ser Asp Pro Glu Leu Arg Ser Gln
    290                 295                 300

Pro Pro Arg Glu Ile Arg Arg Asp Ala Tyr Gly His Arg Ser Gly Pro
305                 310                 315                 320

Tyr Glu Trp Pro Thr Asn His Ser Ser His Leu Glu Pro Tyr Arg Arg
                325                 330                 335
```

Tyr Lys Gln Pro Gly Pro Pro Glu His Phe Thr Glu His Gly Gln Leu
340 345 350

Tyr Glu Arg Tyr Lys Gln Pro Arg Arg Arg Ala Thr Pro Pro Arg Ala
355 360 365

Ser Ser Val Asn Pro Ile Ser Gln Val Arg Tyr Arg Gly Ser Thr Ala
370 375 380

Arg Asp Asp Pro Arg Val Asp Arg Gln Arg Ser Gln Thr Pro Arg Arg
385 390 395 400

Pro Val Thr Glu Ser Trp Glu Phe Asp Val
405 410

<210> 217

<211> 257

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1945, ML.tab 2331776:2332549 reverse MW:27316

<400> 217

Met Val Asn Asp Cys Pro Arg Ser Arg Ser Ala Thr Trp Ser Trp Ala
1 5 10 15

Leu Ala Val Asn Gln Gln Gly Trp Asp Thr Arg Arg Val Thr Phe Glu
20 25 30

Trp Gln Pro Asn Ser Glu Val Ala Asn Lys Pro Gly Ser Val Ser Trp
35 40 45

Ser Ala Lys Pro Arg Leu Leu Gln Asp Gly Arg Asp Met Phe Trp Ser
50 55 60

Leu Val Pro Leu Val Val Gly Cys Ile Leu Leu Ala Gly Met Ala Gly
65 70 75 80

Thr Cys Thr Phe Ala Pro Gly Gly Thr Thr Lys Ser Thr Val Ser Ser
85 90 95

Tyr Asp Ala Ala Ala Ala Leu Arg Ala Asp Ala Arg Ala Leu Gly Phe
100 105 110

Pro Val Arg Leu Pro Glu Leu Pro Thr Gly Trp Arg Ser Asn Ser Gly
115 120 125

Ser Arg Gly Ser Ile Glu Asp Gly Arg Met Asp Leu Ser Thr Gly Lys
130 135 140

Arg Leu Pro Ala Val Thr Ser Thr Val Gly Tyr Ile Thr Pro Thr Gly
145 150 155 160

Met Tyr Leu Ser Leu Thr Gln Ser Asn Ala Asp Glu Asp Arg Leu Val
165 170 175

Ala Ser Ile His Pro Ser Ser His Pro Thr Gly Thr Val Asp Val Ala
180 185 190

Gly Thr Lys Trp Val Val Tyr Gln Gly Ser Asp Gln Lys Lys Asp His
195 200 205

Ser Gly Ala Ala Ala Glu Pro Val Trp Thr Ser Arg Phe Ala Ser Pro
210 215 220

Val Gly Ala Ala Gln Ile Ala Ile Thr Gly Ala Gly Cys Ser Ser Gln
225 230 235 240

Phe Arg Met Leu Ala Ser Ala Thr Gln Ser Gln Gln Pro Leu Pro Ala
245 250 255

Arg

<210> 218

<211> 155

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1983, ML.tab 2367418:2367885 forward MW:16955

<400> 218

Met Ser Asn Arg Lys Phe Ser Phe Glu Val Thr Arg Thr Ser Ser Ala
1 5 10 15

Ser Ala Ala Val Leu Phe Arg Leu Val Thr Asp Gly Ala Asn Trp Ala
20 25 30

Lys Trp Ala Lys Pro Ile Val Leu Gln Ser Ser Trp Ala Arg Leu Gly
35 40 45

Asp Leu Arg Pro Gly Gly Ile Gly Ala Val Arg Lys Ile Gly Ile Trp
50 55 60

Pro Ile Leu Val Arg Glu Glu Thr Val Glu Tyr Glu Gln Asp Arg Arg
65 70 75 80

His Leu Tyr Lys Leu Ile Gly Pro Pro Asn Pro Ala Lys Asp Tyr Leu

85 90 95

Gly Glu Val Leu Leu Ala Pro Asn Ala Ala Gly Gly Thr Asn Ile His
100 105 110

Trp Ser Gly Ser Phe Thr Glu Asn Ile Pro Gly Thr Gly Pro Val Met
115 120 125

Arg Ala Ala Leu Lys Gly Ala Val Arg Cys Leu Thr Val Arg Leu Val
130 135 140

Lys Thr Ala Glu Arg Glu Ser Asp Gly Val Gln
145 150 155

<210> 219

<211> 237

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1988, ML.tab 2375705:2376418 reverse MW:25568

<400> 219

Met Asp Cys Glu Val Ala Arg Glu Ala Leu Ser Ala Arg Leu Asp Gly
1 5 10 15

Glu Arg Glu Ala Val Pro Ser Val Arg Val Asp Glu His Leu Gly Glu
20 25 30

Cys Ser Ala Cys Arg Ala Trp Phe Asp Gln Val Ala Asp Gln Ala Arg
35 40 45

Asp Leu Arg Gln Leu Val Asp Ser Arg Pro Ala Ile Thr Pro Val Asp
50 55 60

Ala Leu Gly Ile Val Ala Pro Pro Arg Arg Arg Arg Pro Leu Met Thr
65 70 75 80

Trp Gln Arg Trp Ala Leu Leu Cys Val Gly Ile Ala Gln Ile Val Leu
85 90 95

Ala Thr Val Gln Gly Leu Gly Val Ser Val Gly Leu Thr His Asp Arg
100 105 110

Ala Met Ser Phe Gly Ser Tyr Leu Leu His Glu Ser Thr Ala Trp Ser
115 120 125

Ala Ser Leu Gly Val Ile Met Met Ala Ala Val Leu Trp Pro Gly Val
130 135 140

Ala Ala Gly Leu Ala Gly Val Leu Thr Val Phe Val Gly Leu Leu Thr
145 150 155 160

Val Tyr Val Val Val Asp Val Val Ala Gly Ala Thr Ile Thr Leu Arg
165 170 175

Ile Leu Met His Leu Pro Val Ala Ile Gly Ala Val Leu Ala Ile Ala
180 185 190

Val Trp Arg His Ser Ser Thr Pro Arg Pro Thr Phe Asp Asp Glu Val
195 200 205

Asp Val Asp Leu Asp Ile Val Leu Pro Arg Asn Ala Ser Arg Gly Arg
210 215 220

Arg Arg Gly His Leu Trp Pro Thr Asp Gly Ser Ala Val
225 230 235

<210> 220

<211> 183

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1993, ML.tab 2380915:2381466 forward MW:20576

<400> 220

Met Ser Ala Glu Leu Ala Pro Ser Leu Gln Asn Ala Ala Glu Ser Thr
1 5 10 15

Asn Thr Phe Pro Met Ala Glu Asp Leu Leu Gly Ser Ile Leu Glu Pro
20 25 30

Tyr Ser Tyr Lys Gly Cys Arg Tyr Leu Ile Asp Ala Gln Tyr Arg Ala
35 40 45

Ser Pro Asp Ser Val Phe Ala Tyr Gly Asn Phe Gly Ile Glu Glu Ser
50 55 60

Ala Tyr Ile Arg Gly Thr Gly His Phe Asn Ala Val Glu Leu Met Leu
65 70 75 80

Cys Phe Asn Gln Leu Gly Tyr Ser Ala Tyr Ala Gln Ser Val Val Asn
85 90 95

Lys Asp Ile Ser Ala Leu Arg Gly Trp Ser Ile Ala Asp Tyr Cys Arg
100 105 110

Asn Gln Leu Ser Gly Ile Leu Ile Lys Asn Thr Ser Ser Arg Phe Lys
115 120 125

Lys Leu Ile Asn Pro Gln Lys Phe Ser Ala Arg Leu His Val Tyr Asp
130 135 140

Leu Arg Ile Val Glu Arg Thr Trp Arg Tyr Leu Gln Leu Ser Asn Thr
145 150 155 160

Ile Glu Phe Trp Asp Asp Asn Gly Gly Ser Ala Ile Gly Glu Phe Glu
165 170 175

Val Ala Ile Leu Asn Ile Pro
180

<210> 221

<211> 78

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1995, ML.tab 2383087:2383323 forward MW:8810

<400> 221

Val Thr Glu Thr Ala Arg Glu Arg Ile Leu Thr Ala Val Cys Glu Val
1 5 10 15

Leu Tyr Ile Ala Glu Ser Asp Leu Val Asp Gly Asp Glu Thr Asp Leu
20 25 30

Arg Asp Leu Gly Leu Asp Ser Val Arg Phe Thr Leu Leu Met Lys Gln
35 40 45

Leu Gly Leu Ser Gln Glu Ala Glu Met Gln Ser Lys Leu Met Asp Asn
50 55 60

Phe Ser Ile Ala Asn Trp Val Arg Gln Leu Glu Ser Ser Thr
65 70 75

<210> 222

<211> 210

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML1997, ML.tab 2387532:2388164 reverse MW:23261

<400> 222

```
Met Ile Asp Asp Leu Leu Leu Arg Trp Val Val Thr Gly Leu Phe Val
1               5                  10                  15

Leu Ser Ala Ala Glu Cys Gly Phe Ala Cys Leu Ala Cys Arg Arg Pro
            20                  25                  30

Trp Thr Leu Val Pro Ser Asn Gly Leu His Phe Ala Met Ala Ile Ala
        35                  40                  45

Met Ala Val Met Ala Trp Pro Arg Gly Ala Gln Leu Pro Thr Thr Gly
    50                  55                  60

Thr Val Val Phe Cys Gly Leu Val Gly Ala Trp Phe Val Ile Leu Ala
65                  70                  75                  80

Thr Val Ser Ser Arg Arg Ile Ala Glu Arg Ala Ala Tyr Ala Tyr Pro
                85                  90                  95

Ala Leu Met Met Leu Ala Met Val Trp Met Tyr Val Ile Met Asp Ser
            100                 105                 110

His Leu His Asp His Trp Ala Thr Gly His His Thr Ser Pro His Thr
        115                 120                 125

Ser Met Leu Gly Val Asp Met Thr Thr Thr Val Val Pro Ala Ser Gly
    130                 135                 140

Ile Pro Gly Trp Ile Ser Ile Ile Asn Trp Leu Trp Phe Ala Phe Phe
145                 150                 155                 160

Cys Ile Ala Thr Val Phe Trp Thr Tyr Arg Ser Phe Ala Thr Ser Arg
                165                 170                 175

Arg Asn Ala Gly Phe Ser Arg Tyr Cys Ser Leu His Pro Ser Gly Gln
            180                 185                 190

Ala Met Met Ser Thr Gly Met Ala Ile Met Phe Gly Val Leu Leu Phe
        195                 200                 205

His Val
    210
```

<210> 223

<211> 153

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2010, ML.tab 2402973:2403434 forward MW:15613

<400> 223

Met Trp Leu Thr Ala Ala Pro Ala Ala Ala Arg Phe Val Val Ala Ser
1 5 10 15

Val Ile Ala Ala Ser Cys Ala Ala Ser Thr Gly Val Ala Gly Ala Asp
20 25 30

Pro Gln Ser Pro Ser Ala Pro Lys Thr Thr Ile Asp His Asp Gly Thr
35 40 45

Tyr Ala Val Gly Thr Asp Ile Ala Pro Gly Thr Tyr Ser Ser Ala Gly
50 55 60

Pro Val Gly Asn Gly Thr Cys Tyr Trp Lys Arg Ile Asp Asn Pro Asp
65 70 75 80

Gly Pro Ile Asp Asn Ala Met Ser Lys Lys Pro Lys Ile Val Gln Ile
85 90 95

Glu Ala Ser Asn Lys Ala Phe Lys Thr Thr Gly Cys Gln Pro Trp Gln
100 105 110

Gln Thr Ser Asn Thr Thr Val Ser Thr Asp Leu Pro Gly Pro Ile Ala
115 120 125

Gly Ile Gln Leu Glu Ser Asn Leu Gly Ile Leu Asn Gly Leu Leu Ala
130 135 140

Ser Asn Gly Gln Gln Val Pro Arg Ser
145 150

<210> 224

<211> 174

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2022, ML.tab 2413644:2414168 reverse MW:18955

<400> 224

Met Ser Gly Pro Ser Ser Ser Cys Arg Cys Leu Pro Cys Cys Pro His

1 5 10 15

Asp Arg Ser Ser Gln Pro Arg Cys Gly Glu Ser Leu Gly Trp Gln Gly
20 25 30

Tyr Gly Arg Val Tyr Leu Glu Ser Pro Trp Pro Phe Gly Leu Lys Gln
35 40 45

Ile Leu Gln Ile Leu Arg Tyr Gly Ala Glu Tyr Ala Gly Lys Ile Leu
50 55 60

Ala Gln Pro Ser Lys Pro Thr Asp Val Ser Ser Gly Pro Arg Arg Lys
65 70 75 80

Thr Gln Val Phe Ala Lys Ala Thr Val Val Pro Lys Ile Leu Gln Pro
85 90 95

Lys Glu Thr Gln Met Thr Phe Asp Pro Lys Asn Ala Val Asn Ala Ala
100 105 110

Arg Asp Ile Ala Thr Asn Phe Val Glu Lys Ala Ser Asp Ile Val Glu
115 120 125

Asn Val Ser Asp Ile Ile Lys Gly Asp Ile Ala Gly Gly Ala Asn Asp
130 135 140

Ile Val Gln Asn Ser Ile Asp Ile Ala Thr His Ala Val Asp Lys Ala
145 150 155 160

Lys Glu Ile Phe Ile Gly Lys Gly Glu Tyr Asp Glu Leu Glu
165 170

<210> 225

<211> 134

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2023, ML.tab 2414264:2414668 reverse MW:14091

<400> 225

Met Ile Arg Glu Leu Leu Ala Ile Ser Ala Ile Ala Ser Gly Ala Val
1 5 10 15

Asn Ser Ala Pro Arg Ala Ala Ala Asn Pro His Tyr Asp Gly Asp Val
20 25 30

Pro Gly Met Ser Tyr Asp Ala Ser Leu Ser Ala Pro Cys Phe Ser Trp
35 40 45

Glu Arg Tyr Ile Phe Gly Arg Gly Pro Ser Gly Gln Ala Glu Ala Cys
50 55 60

His Phe Pro Pro Pro Asn Gln Phe Pro Pro Ala Asn Thr Gly Tyr Trp
65 70 75 80

Val Ile Ser Tyr Pro Leu Tyr Gly Val Gln Gln Ala Gly Ala Pro Cys
85 90 95

Pro Lys Thr Gln Ala Ala Ala Gln Ser Ala Asp Gly Leu Pro Met Leu
100 105 110

Cys Leu Gly Gly Gln Gly Trp Gln Pro Gly Trp Phe Thr Asp Lys Gly
115 120 125

Phe Phe Pro Pro Ala Gly
130

<210> 226

<211> 157

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2030, ML.tab 2420647:2421120 forward MW:16613

<400> 226

Leu Asp Met Pro Gly Glu Met Leu Asp Val Arg Lys Leu Cys Lys Leu
1 5 10 15

Phe Val Lys Ser Ala Val Val Ser Gly Ile Val Thr Ala Ser Met Ala
20 25 30

Leu Ser Thr Ser Thr Gly Met Ala Asn Ala Val Pro Arg Glu Pro Asn
35 40 45

Trp Asp Ala Val Ala Gln Cys Glu Ser Gly Arg Asn Trp Arg Ala Asn
50 55 60

Thr Gly Asn Gly Phe Tyr Gly Gly Leu Gln Phe Lys Pro Thr Ile Trp
65 70 75 80

Ala Arg Tyr Gly Gly Val Gly Asn Pro Ala Gly Ala Ser Arg Glu Gln
85 90 95

Gln Ile Thr Val Ala Asn Arg Val Leu Ala Asp Gln Gly Leu Asp Ala
100 105 110

Trp Pro Lys Cys Gly Ala Ala Ser Asp Leu Pro Ile Thr Leu Trp Ser
115 120 125

His Pro Ala Gln Gly Val Lys Gln Ile Ile Asn Asp Ile Ile Gln Met
130 135 140

Gly Asp Thr Thr Leu Ala Ala Ile Ala Leu Asn Gly Leu
145 150 155

<210> 227

<211> 151

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2031, ML.tab 2421151:2421606 forward MW:17306

<400> 227

Met Glu Gly Ser Val Thr Val His Met Ala Ala Pro Ala Asp Lys Val
1 5 10 15

Trp Asn Leu Ile Ala Asp Val Arg Asn Thr Gly Arg Phe Ser Pro Glu
20 25 30

Thr Phe Glu Ala Glu Trp Leu Asp Asp Val Thr Gly Pro Ala Leu Asn
35 40 45

Ala Lys Phe Arg Gly His Val Arg Arg Asn Glu Ile Gly Pro Val Tyr
50 55 60

Trp Thr Thr Cys Lys Val Thr Ala Cys Glu Pro Gly Arg Glu Phe Gly
65 70 75 80

Phe Thr Val Leu Leu Gly Asn Lys Pro Val Asn Asn Trp His Tyr Arg
85 90 95

Leu Val Thr Ser Gly Asp Gly Thr Tyr Val Thr Glu Ser Phe Arg Phe
100 105 110

Asn Arg Ser Pro Leu Leu Thr Val Tyr Trp Leu Leu Gly Gly Phe Leu
115 120 125

Arg Lys Arg Arg Asn Ile Arg Asp Met Thr Lys Thr Leu Arg Arg Ile
130 135 140

Lys Asp Val Val Glu Ala Glu
145 150

<210> 228

<211> 85

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2048, ML.tab 2437805:2438062 forward MW:9877

<400> 228

Met Thr Asn Leu Trp Asp Leu Lys Gln Lys Val Ile Tyr Ser Ile Gln
1 5 10 15

Trp Leu Val Val Asn Ser Leu Gly His Gln Leu Pro Arg Thr Met Leu
20 25 30

Glu Thr Ile Arg Arg Lys Thr Gly Gln Pro Trp Arg Thr Ala Ala Gly
35 40 45

Val His Pro Val Asp Asn Gln Phe Gly Met Val Cys Glu Asn Ser Glu
50 55 60

Tyr Ser Asp Tyr Val Tyr Asn Ile Lys Ala Asn Thr Ala Val Arg Thr
65 70 75 80

His Lys Ser Lys Ile
85

<210> 229

<211> 99

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2054, ML.tab 2442182:2442481 reverse MW:10350

<400> 229

Met Asp Val Met Ala Ala Thr Glu Tyr Leu Ala Arg Ser Thr Thr Leu
1 5 10 15

Thr Ser Val Gly Trp Ile Gly Tyr Ile Ile Ile Gly Gly Ile Ala Gly
20 25 30

Trp Ile Ala Gly Lys Ile Val Gln Gly Gly Gly Ser Gly Ile Leu Met

35 40 45

Asn Ile Val Ile Gly Val Val Gly Ala Leu Ile Gly Gly Phe Leu Leu
50 55 60

Ser Phe Phe Val Asn Thr Ala Ala Gly Gly Trp Trp Phe Thr Leu Phe
65 70 75 80

Thr Ser Ile Leu Gly Ser Val Ile Leu Leu Trp Val Val Gly Arg Val
85 90 95

Arg Lys Thr

<210> 230

<211> 142

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2063, ML.tab 2450656:2451084 forward MW:16160

<400> 230

Met Ala Lys Leu Thr Arg Leu Gly Asp Leu Glu Arg Ala Val Met Asp
1 5 10 15

His Leu Trp Ser Arg Gln Glu Pro Gln Thr Val Arg Gln Val His Glu
20 25 30

Ala Leu Ser Ala Arg Arg Asp Leu Ala Tyr Thr Thr Val Met Thr Val
35 40 45

Leu Gln Arg Leu Ala Lys Lys Asn Leu Val Ser Gln Ile Arg Asn Asn
50 55 60

Arg Ala His Arg Tyr Ala Pro Val His Gly Arg Asp Glu Leu Val Ala
65 70 75 80

Gly Leu Met Val Asp Ala Leu Asp Gln Ala Glu Asp Ser Asp Ser Arg
85 90 95

Gln Ala Ala Leu Val His Phe Val Glu Arg Val Gly Ala Asp Glu Ala
100 105 110

Asp Ala Leu Arg Arg Ala Leu Ala Glu Leu Glu Thr His Gln Arg His
115 120 125

Val Arg His Leu Val Ala Leu Gln Arg Thr Thr Glu Gly Asp
130 135 140

<210> 231

<211> 316

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2064, ML.tab 2451089:2452039 forward MW:32995

<400> 231

```
Val Ser Ala Leu Ala Phe Thr Ile Leu Ala Val Leu Leu Val Gly Pro
1               5                  10                  15

Thr Pro Thr Leu Val Ala Arg Ser Thr Trp Pro Leu Arg Ala Pro Arg
            20                  25                  30

Ala Ala Met Val Leu Trp Gln Thr Ile Ala Leu Ala Ala Ala Leu Ser
        35                  40                  45

Thr Phe Ser Ala Gly Ile Ala Ile Ala Ser Arg Val Leu Met Pro Gly
    50                  55                  60

Pro Asp Gly Arg Leu Thr Ala Ser Val Ile Gly Ala Ala Gly Arg Leu
65                  70                  75                  80

Gly Trp Pro Leu Trp Ala Ala Tyr Val Ala Ala Phe Ala Leu Thr Val
                85                  90                  95

Leu Val Gly Ala Arg Leu Ile Val Ala Ile Val Arg Val Ala Ile Ala
            100                 105                 110

Thr Arg Arg Arg Arg Ala His His Arg Met Val Val Asp Leu Val Gly
        115                 120                 125

Val Gly His Asn Ala Ala Leu Ala Gln Pro Cys Ala Arg Ala Arg Asp
    130                 135                 140

Leu Arg Val Leu Glu Val Ala Gln Pro Leu Ala Tyr Cys Leu Pro Gly
145                 150                 155                 160

Val Arg Ser Arg Val Val Val Ser Glu Gly Ala Leu Thr Lys Leu Asn
                165                 170                 175

Asp Thr Glu Val Thr Ala Ile Leu Thr His Glu Arg Ala His Leu Arg
            180                 185                 190

Ala Arg His Asp Leu Val Leu Glu Ala Phe Thr Ala Val His Ala Ala
        195                 200                 205

Phe Pro Arg Leu Val Arg Ser Ser Ala Ala Leu Ser Ala Val Arg Leu
    210                 215                 220
```

Leu Val Glu Leu Leu Ala Asp Asp Ala Ala Val Arg Ala Ala Gly Arg
225 230 235 240

Thr Pro Leu Ala Arg Ala Leu Val Ala Cys Ala Ser Gly Gln Ala Pro
245 250 255

Ser Gly Ala Leu Ala Ala Gly Gly Asn Thr Thr Val Leu Arg Val Arg
260 265 270

Arg Leu Ser Gly Arg Ser Asn Ser Ala Val Val Ser Ala Ala Ala Tyr
275 280 285

Leu Ala Ala Ala Ile Val Leu Leu Val Pro Thr Val Ala Leu Ala Val
290 295 300

Pro Trp Leu Thr Glu Leu Gln Arg Leu Phe Asn Ile
305 310 315

<210> 232

<211> 733

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2070, ML.tab 2460317:2462518 forward MW:77018

<400> 232

Met Thr Lys Leu Gly Ala Glu Phe Lys Pro Asp Gln Thr Arg Ile Asn
1 5 10 15

Arg Lys Ala Ala Asn Thr Gly Met Gly Arg His Ser Met Pro Asp Pro
20 25 30

Glu Asp Ser Ile Asp Gln Pro Ser Asn Gln Phe Ala Ala Ser Gly Pro
35 40 45

Asp Gln Ser Asp Glu Ile Asp His Gly Tyr Gln Ser Arg Met Gly Tyr
50 55 60

Pro Glu Pro Val Phe Glu Pro Ala Ala Thr Gly Ser Pro Ser Tyr Arg
65 70 75 80

Ser Tyr Pro His Gly Ala Glu His Pro Ala Asp Ser Thr Pro Glu Ala
85 90 95

Leu Asp Glu Thr Ile Asp Tyr Gln Ser Tyr Trp Ala Glu Asp Arg Asn
100 105 110

Glu Asp Leu Phe Val Asp Gly Ala Ala Asp Asp His Pro Asp Phe Pro

115 120 125

Pro Arg Pro Ala Gly Ser Ser Thr Ser Ser Gln Ala Pro Thr Ser Leu
130 135 140

Ser His Leu Phe Lys Ala Ser His Arg Ser Val Gly Lys Trp Gln Gly
145 150 155 160

Gly His Arg Ser Asp Gly Gly Arg Arg Gly Val Ser Ile Gly Val Ile
165 170 175

Ala Thr Leu Val Ala Val Val Val Leu Val Gly Ala Val Ile Met Trp
180 185 190

Ser Phe Leu Gly His Ile Leu Asn Asn Arg Lys His Gln Ala Ala Ala
195 200 205

Arg Cys Val Gly Gly His Gln Thr Val Ala Val Val Ala Asp Pro Ser
210 215 220

Ile Ala Asp Tyr Leu Gln Glu Phe Ala Gln Ser Tyr Asn Ala Ser Ala
225 230 235 240

Arg Pro Val Gly Asp His Cys Met Met Val Thr Val Lys Pro Val Gly
245 250 255

Ser Glu Ala Ala Leu Thr Gly Phe Asn Asp Ser Trp Pro Ala Asn Leu
260 265 270

Gly Asp Lys Pro Ala Leu Trp Ile Pro Gly Ser Ser Ile Ser Ala Ala
275 280 285

Arg Leu Ala Val Thr Ala Asp Gln Lys Thr Ile Ser Glu Ser His Ser
290 295 300

Leu Val Thr Ser Pro Val Leu Leu Ala Val Arg Pro Glu Phe Glu Gln
305 310 315 320

Ala Leu Ala Asn Lys Gly Trp Ala Ala Leu Pro Gly Leu Gln Thr Asn
325 330 335

Pro Asn Ser Leu Ala Asp Leu Asn Leu Pro Ala Trp Gly Ser Leu Arg
340 345 350

Leu Ala Leu Pro Met Asn Gly Asn Ser Asp Ala Thr Phe Leu Ala Gly
355 360 365

Glu Ala Val Ala Thr Ala Ser Val Pro Ala Gly Ala Pro Ala Ile Gln
370 375 380

Gly Val Gly Ala Val Arg Thr Leu Met Ser Ala Gln Pro Lys Leu Ala
385 390 395 400

Asp Ser Thr Trp Ala Glu Ala Met Ser Thr Leu Leu Lys Pro Gly Asp
405 410 415

Val Ala Thr Ala Pro Val His Ala Val Ile Thr Thr Glu Gln Gln Leu
420 425 430

Phe Gln Arg Gly Gln Ser Leu Ser Asp Ala Lys Ser Ala Leu Gly Ser
435 440 445

```
Trp Leu Pro His Gly Pro Ala Pro Val Ala Asp Tyr Pro Ala Val Leu
    450                 455                 460

Leu Asn Gly Ser Trp Leu Thr Gln Glu Gln Ala Ala Ala Ala Ser Glu
465                 470                 475                 480

Phe Ala Arg Phe Val Gln Lys Pro Asp Gln Leu Ala Lys Leu Ala Lys
                485                 490                 495

Ala Gly Phe Arg Val Asn Gly Val Thr Pro Pro Ser Ser Ser Val Thr
            500                 505                 510

Ser Phe Ala Ala Val Pro Ser Thr Val Ser Val Gly Asp Asp Gly Met
        515                 520                 525

Arg Ala Thr Leu Val Glu Glu Met Ile Gln Pro Ser Ser Gly Val Ala
    530                 535                 540

Ala Thr Ile Met Leu Asp Gln Ser Met Pro Thr Asp Glu Gly Gly Lys
545                 550                 555                 560

Thr Arg Leu Ala Asn Val Val Ala Ala Leu Asp Asp Lys Ile Asn Ala
                565                 570                 575

Met Pro Pro Thr Ser Val Met Gly Leu Trp Thr Phe Asp Gly His Lys
            580                 585                 590

Gly Gln Thr Glu Val Thr Thr Gly Gln Leu Ala Asp Pro Val Asn Gly
        595                 600                 605

Gln Pro Arg Ser Ala Ala Leu Thr Ala Ala Leu Asp Lys Gln Tyr Ser
    610                 615                 620

Ser Asn Gly Gly Ala Val Ser Phe Thr Thr Leu Arg Met Ile Tyr Gln
625                 630                 635                 640

Glu Met Leu Ala Asn Tyr His Val Gly Gln Thr Asn Ser Val Leu Val
                645                 650                 655

Ile Thr Ala Gly Pro His Thr Asp Gln Thr Leu Asp Gly Ala Arg Leu
            660                 665                 670

Gln Asp Phe Ile Arg Thr Ser Ala Asp Pro Ala Lys Pro Ile Ala Val
        675                 680                 685

Asn Val Ile Asp Phe Gly Thr Asp Pro Asp Gln Ala Thr Trp Lys Ala
    690                 695                 700

Val Ala Gln Ile Ser Gly Gly Ser Tyr Gln Asn Leu Ser Thr Ser Ala
705                 710                 715                 720

Ser Leu Asp Leu Ala Thr Ala Ile Asn Thr Phe Leu Ser
                725                 730
```

<210> 233

<211> 231

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2073, ML.tab 2466445:2467140 reverse MW:24857

<400> 233

```
Met Thr His Leu Val Thr Arg Ala Arg Ser Ala Arg Gly Asn Thr Val
1               5                  10                  15

Ser Glu Gln Pro Arg Gln Gly Gln Leu Asp Leu Ala Asp Tyr Arg Asp
            20                  25                  30

Thr Pro Thr Ala Thr Thr His Gly Asp Ile Gly Leu Asn Gly Pro Thr
        35                  40                  45

Ala Val Ser Gly Pro Ala Gln Pro Gly Leu Phe Pro Asp Asp Ser Val
    50                  55                  60

Pro Asp Glu Leu Val Gly Tyr Arg Gly Pro Ser Ala Cys Gln Ile Ala
65                  70                  75                  80

Gly Ile Thr Tyr Arg Gln Leu Asp Tyr Trp Ala Arg Thr Ser Leu Val
                85                  90                  95

Val Pro Ser Ile Arg Gly Ala Ala Gly Ser Gly Ser Gln Arg Leu Tyr
            100                 105                 110

Ser Phe Lys Asp Ile Leu Val Leu Lys Ile Val Lys Arg Leu Leu Asp
        115                 120                 125

Thr Gly Ile Ser Leu His Asn Ile Arg Val Ala Val Asp His Leu Arg
    130                 135                 140

Gln Arg Gly Val Gln Asp Leu Ala Asn Ile Thr Leu Phe Ser Asp Gly
145                 150                 155                 160

Thr Thr Val Tyr Glu Cys Thr Ser Ala Glu Glu Val Val Asp Leu Leu
                165                 170                 175

Gln Gly Gly Gln Gly Val Phe Gly Ile Ala Val Ser Gly Ala Met Arg
            180                 185                 190

Glu Leu Thr Gly Val Ile Asp Asp Phe Arg Gly Glu Arg Ala Asp Gly
        195                 200                 205

Gly Glu Ser Ile Ala Ala Pro Glu Asp Glu Leu Ala Ser Arg Arg Lys
    210                 215                 220

His Arg Asp Arg Lys Ile Gly
225                 230
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<210> 234

<211> 251

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2075, ML.tab 2467984:2468739 reverse MW:26531

<400> 234

Val Ser Ala Pro Asp Ser Pro Ala Leu Val Gly Met Ser Ile Gly Ala
1 5 10 15

Val Leu Asp Leu Leu Arg Ser Asp Phe Pro Asp Val Thr Ile Ser Lys
20 25 30

Ile Arg Phe Leu Glu Ala Glu Gly Leu Val Thr Pro Gln Arg Ser Ala
35 40 45

Ser Gly Tyr Arg Arg Phe Thr Ala Tyr Asp Cys Ala Arg Leu Arg Phe
50 55 60

Ile Leu Thr Ala Gln Arg Asp His Tyr Leu Pro Leu Lys Val Ile Arg
65 70 75 80

Ala Gln Leu Asp Ala Gln Pro Asp Gly Glu Leu Pro Ser Phe Gly Ser
85 90 95

Pro Tyr Val Ala Pro Arg Leu Phe Ser Val Thr Gly Gly Pro Gly Ala
100 105 110

Gly Val Gly Ser Gly Val Gly Ser Asp Ile Pro Ala Val Ser Pro Ala
115 120 125

Gly Val Arg Leu Ser Arg Glu Asp Leu Leu Asp Arg Ser Gly Val Ala
130 135 140

Asp Asp Leu Leu Thr Ala Leu Leu Lys Ala Gly Val Ile Thr Thr Gly
145 150 155 160

Pro Gly Gly Phe Phe Asp Glu His Ala Ile Val Ile Leu Gln Cys Ala
165 170 175

Arg Ala Leu Ser Glu Tyr Gly Val Glu Pro Arg His Leu Arg Ala Phe
180 185 190

Arg Ser Ala Ala Asp Arg Gln Ser Asp Leu Ile Val Gln Ile Ala Gly
195 200 205

Pro Ile Val Lys Ala Gly Lys Ala Gly Ala Arg Asp Arg Ala Asp Asp
210 215 220

Leu Ala Arg Glu Val Ala Ala Leu Ala Ile Thr Leu His Thr Ser Leu

225 230 235 240

Ile Lys Ser Ala Val Arg Gly Val Leu His Arg
245 250

<210> 235

<211> 144

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2111, ML.tab 2512539:2512973 reverse MW:15031

<400> 235

Met Ile His Arg Leu Arg Leu Gly Trp Leu Val Ala Phe Phe Ala Thr
1 5 10 15

Ile Val Leu Ile Ser Val Trp Ile Pro Trp Leu Thr Thr Lys Val Asn
20 25 30

Asp Glu Gly Trp Ala Asn Ala Ile Gly Gly Thr His Gly Asn Leu Glu
35 40 45

Leu Pro Ser Gly Phe Gly Ala Gly Gln Leu Ile Val Leu Leu Ser Ser
50 55 60

Thr Leu Leu Val Ala Gly Ala Met Met Gly Arg Gly Leu Ser Val Lys
65 70 75 80

Val Ala Ser Ile Ala Ala Leu Ile Ile Ser Leu Leu Ile Val Val Ile
85 90 95

Val Val Trp Tyr Tyr Gln Leu Asn Val Asn Pro Pro Val Val Ala Glu
100 105 110

Cys Gly Leu Tyr Leu Gly Ala Ala Gly Ala Val Cys Ala Met Val Cys
115 120 125

Ser Val Trp Ala Val Ile Ala Ala Val Ala Ala Gly Arg Ser Ser Leu
130 135 140

<210> 236

<211> 181

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2113, ML.tab 2513870:2514415 reverse MW:19748

<400> 236

Val Thr Ser Arg Ile Lys Arg Met Ala Lys Leu Thr Gly Ser Ile Asp
1 5 10 15

Val Pro Leu Pro Pro Asn Glu Ala Trp Met Cys Ala Ser Asp Leu Ala
20 25 30

Arg Phe Gly Glu Trp Leu Thr Ile His Arg Ala Trp Arg Ser Lys Leu
35 40 45

Pro Glu Val Val Glu Lys Gly Thr Val Ile Glu Ser Tyr Val Glu Val
50 55 60

Lys Gly Met Pro Asn Arg Ile Arg Trp Thr Val Val Arg Tyr Lys Ala
65 70 75 80

Pro Glu Ala Met Thr Leu Asn Gly Asp Gly Val Gly Gly Val Lys Val
85 90 95

Lys Leu Ile Ala Lys Val Ser Pro Lys Asp Asp Gly Ser Val Val Ser
100 105 110

Phe Asp Val His Leu Gly Gly Ser Ala Leu Phe Gly Pro Ile Gly Met
115 120 125

Ile Val Ala Val Ala Leu Arg Thr Asp Ile Arg Glu Ser Leu Gln Asn
130 135 140

Phe Val Thr Ala Phe Ser Arg Pro Glu Pro Gly Leu Ile Arg Ser Arg
145 150 155 160

Ala Leu Val Val Asp Gln His Ser Arg Ala Val Val Glu Gln Arg Ser
165 170 175

Ala Ser Ala Gly Leu
180

<210> 237

<211> 56

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2114, ML.tab 2514412:2514582 reverse MW:6182

<400> 237

Val Leu Asp Lys Ala Lys Asp Ile Leu Val Gln Asn Ala Asp Lys Val
1 5 10 15

Glu Thr Val Leu Asp Lys Ala Gly Glu Phe Val Asp Glu Lys Ala Lys
20 25 30

Gly Lys Tyr Thr Asp Thr Ile Tyr Gln Val Ala Glu Glu Thr Lys Lys
35 40 45

Ala Ala Ser Phe Asp Thr Phe Gly
50 55

<210> 238

<211> 341

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2135, ML.tab 2537496:2538521 reverse MW:40179

<400> 238

Met Ala Arg Thr Arg Met Val Arg Arg Trp Arg Asn Asn Met Glu Val
1 5 10 15

Arg Asp Asp Thr Asp Tyr Val Gly Met Leu Thr Thr Leu Ser Glu Gly
20 25 30

Ser Val Arg Arg Asn Phe Asn Pro Tyr Thr Asp Ile Asp Trp Glu Ser
35 40 45

Pro Ala Phe Ala Val Lys Asp Asn Asp Pro Arg Trp Ile Leu Pro Asp
50 55 60

Thr Asp Pro Leu Gly Arg His Pro Trp Tyr Leu Ala Gln Pro Glu Gln
65 70 75 80

Arg Lys Ile Glu Ile Gly Met Trp Arg Gln Ala Asn Val Ala Lys Val
85 90 95

Gly Leu His Phe Glu Ser Ile Leu Val Arg Gly Leu Met Asn Tyr Thr
100 105 110

Phe Trp Met Pro Asn Gly Ser Pro Glu Tyr Arg Tyr Cys Leu His Glu
115 120 125

Cys Val Glu Glu Cys Asn His Thr Met Met Phe Gln Glu Met Val Asn
130 135 140

Arg Val Gly Ala Asp Val Pro Gly Met Pro Arg Arg Leu Arg Trp Leu
145 150 155 160

Ser Pro Leu Val Pro Leu Val Ala Gly Pro Leu Pro Val Ala Phe Phe
165 170 175

Ile Gly Val Leu Ala Gly Glu Glu Pro Ile Asp His Met Gln Lys Asn
180 185 190

Val Leu Arg Glu Gly Lys Ser Leu His Pro Ile Met Glu Arg Val Met
195 200 205

Ala Ile His Val Ala Glu Glu Ala Arg His Ile Ser Phe Ala His Glu
210 215 220

Phe Leu Arg Lys Arg Leu Thr His Leu Thr Lys Arg Gln Leu Phe Trp
225 230 235 240

Val Ser Leu Tyr Tyr Pro Leu Thr Met Arg Val Leu Cys Asn Ala Ile
245 250 255

Met Val Pro Pro Lys Ala Phe Trp Gln Glu Phe Asn Ile Pro Arg Glu
260 265 270

Val Lys Lys Glu Leu Phe Phe Arg Ser Pro Glu Ser Arg Lys Leu Leu
275 280 285

Arg Asp Ile Phe Ala Asp Val Arg Met Leu Ala Tyr Asp Thr Arg Leu
290 295 300

Met Glu Thr Arg Ser Ala Arg Leu Met Trp His Ile Cys Lys Ile Asp
305 310 315 320

Gly Gln Pro Ser Arg Tyr Arg Gly Glu Pro Gln Arg Gln His Pro Ala
325 330 335

Thr Thr Ser Ala Ala
340

<210> 239

<211> 251

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2137, ML.tab 2539983:2540738 forward MW:27365

<400> 239

Met Arg Glu Leu Lys Val Val Gly Leu Asp Pro Asp Ser Lys Thr Ile
1 5 10 15

Leu Cys Glu Gly Asp Ile Pro Gly Glu Arg Phe Lys Leu Pro Ala Asp
20 25 30

Asp Arg Leu Arg Ala Ala Val Arg Gly Asp Thr Thr Leu Leu Asp Gln
35 40 45

Pro Gln Leu Asp Ile Gln Val Thr Asn Met Leu Ser Pro Lys Glu Ile
50 55 60

Gln Ala Arg Ile Arg Ala Gly Ala Ser Val Glu Gln Val Ala Met Ala
65 70 75 80

Ser Gly Ser Asp Ile Ala Arg Ile Arg Arg Phe Ala His Pro Val Leu
85 90 95

Leu Glu Arg Ser Arg Ala Ala Glu Leu Ala Thr Ala Ala His Pro Val
100 105 110

Leu Ala Asp Gly Pro Ala Val Leu Thr Leu Leu Glu Thr Val Ser Ala
115 120 125

Ala Leu Val Lys Arg Gly Leu Glu Pro Asp Lys Leu Ser Trp Asp Ala
130 135 140

Trp Arg Asn Glu Asp Ser Arg Trp Thr Val Gln Leu Met Trp His Ala
145 150 155 160

Gly Arg Ser Asp Asn Leu Ala His Phe Cys Phe Thr Pro Gly Ala His
165 170 175

Gly Gly Thr Val Thr Ala Ser Asp Asp Ala Ala Asn Glu Leu Ile Asp
180 185 190

Pro Asp Phe Asn Arg Pro Leu Arg Pro Leu Ala Arg Val Ala His Leu
195 200 205

Asp Phe Val Glu Pro Ala Thr Pro Ala Thr Val Thr Pro Asp Asn Gln
210 215 220

Leu Val Ser Ser Arg Arg Gly Lys Pro Thr Ile Pro Ala Trp Glu Asp
225 230 235 240

Val Leu Leu Gly Val Arg Ser Ala Gly Gln Arg
245 250

<210> 240

<211> 91

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2141, ML.tab 2542620:2542895 forward MW:9766

<400> 240

Met Leu Val Glu Pro Asp Arg Ser Arg Glu Pro Pro Pro Leu Pro Ser
1 5 10 15

Met Leu Leu Glu Val Trp Pro Val Ile Met Val Gly Ala Leu Ala Trp
20 25 30

Leu Ile Ala Val Val Ala Ala Phe Val Val Ser Ser Leu Gln Ser Trp
35 40 45

Arg Pro Val Ala Leu Ala Gly Leu Val Val Gly Leu Phe Gly Thr Gly
50 55 60

Ile Phe Val Trp Gln Leu Ala Ala Ala Arg Arg Gly Ala Arg Gly Ala
65 70 75 80

Gln Gly Gly Leu Glu Thr Tyr Leu Asp Pro Arg
85 90

<210> 241

<211> 269

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2142, ML.tab 2543007:2543816 reverse MW:28190

<400> 241

Val Thr Gly Pro Val Glu Asp Ser Ala Val Ala Thr Val Ala Glu Trp
1 5 10 15

Pro Glu Glu Leu Ala Ala Val Leu Thr Asn Ala Ala Asp Asp Ala Arg
20 25 30

Ala Ala Ile Glu Glu Phe Ser Gly Ser Val Thr Val Gly Asp Tyr Leu
35 40 45

Gly Val Gly Tyr Glu Asp Pro Asn Ala Ala Thr His Arg Phe Leu Ala
50 55 60

His Leu Pro Gly Tyr Gln Gly Trp Gln Trp Ala Val Val Val Ala Ala
65 70 75 80

Tyr Pro Gly Ala Glu His Ala Thr Val Ser Glu Val Val Leu Val Pro
85 90 95

Gly Pro Thr Ala Leu Leu Ala Pro Glu Trp Val Pro Trp Glu Gln Arg
100 105 110

Val Arg Pro Gly Asp Leu Gly Pro Gly Asp Leu Leu Ala Pro Thr Ser
115 120 125

Glu Asp Leu Arg Leu Val Pro Gly Tyr Asn Ala Ser Gly Asp Pro Ala
130 135 140

Val Asp Glu Ile Ala Ala Glu Ile Gly Leu Gly Arg Arg Trp Val Met
145 150 155 160

Ser Val Trp Gly Arg Ser Ala Ala Ala Glu Arg Trp His Gly Gly Asp
165 170 175

Tyr Gly Pro Asp Ser Pro Met Ala Arg Ser Thr Lys Arg Val Cys Arg
180 185 190

Asp Cys Gly Phe Phe Leu Ser Leu Val Gly Ser Leu Gly Ala Met Phe
195 200 205

Gly Val Cys Gly Asn Glu Met Ser Ala Asp Gly His Val Val Asp Lys
210 215 220

Leu Tyr Gly Cys Gly Ala His Ser Asp Thr Pro Ala Pro Ala Gly Ser
225 230 235 240

Gly Ser Ser Val Tyr Glu Pro Tyr Asp Asp Gly Val Leu Asp Ile Leu
245 250 255

Glu Pro Ser Thr Val Gln Leu Pro Glu Ser Pro Ala Asp
260 265

<210> 242

<211> 579

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2143, ML.tab 2543926:2545665 forward MW:61675

<400> 242

Val Ser Gly Arg Arg Arg Asn His Pro Gly Arg Leu Ala Ser Ile Pro

```
1               5                   10                  15

Gly Leu Arg Thr Arg Thr Gly Ser Arg Asn Gln His Pro Gly Ile Ala
            20                  25                  30

Asn Tyr Pro Ala Asp Ser Ser Asp Phe Arg Pro Ala Gln Gln Arg Arg
        35                  40                  45

Ala Leu Glu Gln Arg Glu Gln Gln Ala Gly Gln Leu Asp Pro Ala Arg
    50                  55                  60

Arg Ser Pro Ser Met Pro Ser Ala Asn Arg Tyr Leu Pro Pro Leu Gly
65                  70                  75                  80

Gln Gln Gln Ser Glu Pro Gln His Asn Ser Ala Pro Pro Cys Gly Pro
                85                  90                  95

Tyr Pro Gly Glu Arg Ile Lys Val Thr Arg Ala Ala Ala Gln Arg Ser
            100                 105                 110

Arg Glu Met Gly Tyr Arg Met Tyr Trp Met Val Gln Arg Ala Ala Thr
        115                 120                 125

Ala Asp Gly Ala Asp Lys Ser Gly Leu Thr Ala Leu Thr Trp Pro Val
    130                 135                 140

Val Thr Asn Phe Ala Val Asp Ser Ala Met Ala Val Ala Leu Ala Asn
145                 150                 155                 160

Thr Leu Phe Phe Ala Ala Ala Ser Gly Glu Ser Lys Ser Lys Val Ala
                165                 170                 175

Leu Tyr Leu Leu Ile Thr Ile Ala Pro Phe Ala Val Ile Ala Pro Leu
            180                 185                 190

Ile Gly Pro Ala Leu Asp Arg Leu Gln His Gly Arg Arg Val Ala Leu
        195                 200                 205

Ala Thr Ser Phe Val Leu Arg Thr Gly Leu Ala Thr Leu Leu Ile Met
    210                 215                 220

Asn Tyr Asp Gly Ala Thr Gly Ser Tyr Pro Ser Met Val Leu Tyr Pro
225                 230                 235                 240

Cys Ala Leu Ala Met Met Val Leu Ser Lys Ser Phe Ser Val Leu Arg
                245                 250                 255

Ser Ala Val Thr Pro Arg Val Met Pro Pro Ser Ile Asp Leu Val Arg
            260                 265                 270

Val Asn Ser Arg Leu Thr Val Phe Gly Leu Leu Gly Gly Thr Ile Ala
        275                 280                 285

Gly Gly Ala Ile Ala Ala Gly Val Glu Phe Val Cys Ala His Leu Phe
    290                 295                 300

Lys Leu Pro Gly Ala Leu Phe Val Val Ala Ala Ile Thr Ile Ser Gly
305                 310                 315                 320

Ala Leu Leu Ser Met Arg Ile Pro Arg Trp Val Glu Val Thr Ala Gly
                325                 330                 335
```

Glu Ile Pro Ala Thr Leu Ser Tyr Arg Leu His Arg Lys Pro Leu Arg
340 345 350

Gln Ser Trp Pro Glu Glu Val Lys Lys Val Ser Gly Arg Leu Arg Gln
355 360 365

Pro Leu Gly Arg Asn Ile Ile Thr Ser Leu Trp Gly Asn Cys Thr Ile
370 375 380

Lys Val Met Val Gly Phe Leu Phe Leu Tyr Pro Ala Phe Val Ala Lys
385 390 395 400

Glu His Gln Ala Asn Gly Trp Val Gln Leu Gly Met Leu Gly Leu Ile
405 410 415

Gly Thr Ala Ala Ala Ile Gly Asn Phe Ala Gly Asn Phe Thr Ser Ala
420 425 430

Arg Leu Gln Leu Gly Arg Pro Ala Val Leu Val Val Arg Cys Thr Ile
435 440 445

Ala Val Thr Val Leu Ala Leu Ala Ala Ser Val Ala Gly Asn Leu Leu
450 455 460

Met Thr Thr Ile Ala Thr Leu Ile Thr Ser Gly Ser Ser Ala Ile Ala
465 470 475 480

Lys Ala Ser Leu Asp Ala Ser Leu Gln Asn Asp Leu Pro Glu Glu Ser
485 490 495

Arg Ala Ser Gly Phe Gly Arg Ser Glu Ser Thr Leu Gln Leu Ala Trp
500 505 510

Val Leu Gly Gly Ala Leu Gly Val Met Val Tyr Thr Asp Leu Trp Val
515 520 525

Gly Phe Thr Ala Val Ser Ala Leu Leu Ile Leu Gly Leu Ala Gln Thr
530 535 540

Val Val Ser Phe Arg Gly Asp Ser Leu Ile Pro Gly Leu Gly Gly Asn
545 550 555 560

Arg Pro Val Met Ile Glu Gln Glu Ser Met Arg Arg Ala Ala Ala Val
565 570 575

Ser Pro Gln

<210> 243

<211> 162

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2144, ML.tab 2545673:2546161 forward MW:18046

<400> 243

Val Gln Arg Arg Val Thr Val Leu Leu Pro Ala Val Val Met Leu Leu
1 5 10 15

Ala Ala Ala Ala Gly Phe Gly Val Trp Leu Leu Val Arg Glu Pro Asp
20 25 30

Pro Gln Arg Pro Glu Ile Ser Val Tyr Ser His Gly His Leu Thr Arg
35 40 45

Val Gly Pro Tyr Leu His Cys Asn Met Leu Asn Leu Asp Glu Cys Gln
50 55 60

Thr Pro Gln Ala Gln Gly Val Leu Ser Ala Asp Glu His Asn Pro Val
65 70 75 80

Gln Leu Ser Val Pro Glu Thr Ile Ser Arg Ala Pro Trp Arg Leu Leu
85 90 95

Arg Ile Tyr Glu Asp Pro Thr Gly Thr Thr Ser Thr Leu Tyr Arg Pro
100 105 110

Asn Thr Arg Leu Ala Val Thr Ile Pro Thr Leu Asp Pro His Arg Gly
115 120 125

Arg Leu Thr Gly Ile Val Val Gln Leu Leu Thr Leu Val Val Asp Pro
130 135 140

Ala Gly Glu Val His Asp Val Pro His Thr Glu Trp Leu Val Arg Leu
145 150 155 160

Thr Phe

<210> 244

<211> 174

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2151, ML.tab 2554745:2555269 forward MW:17666

<400> 244

```
Met Ser Glu Ser Tyr Arg Lys Leu Thr Thr Ser Ser Ile Ile Val Ala
1               5                  10                  15

Lys Ile Thr Phe Thr Gly Ala Met Leu Asp Gly Ser Ile Ala Leu Ala
            20                  25                  30

Gly Gln Ala Ser Pro Ala Thr Asp Ser Glu Trp Asp Gln Val Ala Arg
        35                  40                  45

Cys Glu Ser Gly Gly Asn Trp Ser Ile Asn Thr Gly Asn Gly Tyr Leu
    50                  55                  60

Gly Gly Leu Gln Phe Ser Gln Gly Thr Trp Ala Ser His Gly Gly Gly
65                  70                  75                  80

Glu Tyr Ala Pro Ser Ala Gln Leu Ala Thr Arg Glu Gln Gln Ile Ala
                85                  90                  95

Val Ala Glu Arg Val Leu Ala Thr Gln Gly Ser Gly Ala Trp Pro Ala
            100                 105                 110

Cys Gly His Gly Leu Ser Gly Pro Ser Leu Gln Glu Val Leu Pro Ala
        115                 120                 125

Gly Met Gly Ala Pro Trp Ile Asn Gly Ala Pro Ala Pro Leu Ala Pro
    130                 135                 140

Pro Pro Pro Ala Glu Pro Ala Pro Pro Gln Pro Pro Ala Asp Asn Phe
145                 150                 155                 160

Pro Pro Thr Pro Gly Asp Val Pro Ser Pro Leu Ala Arg Pro
                165                 170
```

<210> 245

<211> 74

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2155, ML.tab 2556716:2556940 reverse MW:8095

<400> 245

```
Met Lys Ser Val Asn Tyr Tyr Val Val Ala Asp Ile Ala Lys Ser Lys
1               5                  10                  15

Ala His Lys Ser Arg Tyr Val Asp Asn Gly Trp Pro Thr Thr Asp Pro
            20                  25                  30

Asp His His Ala Val Ser Glu Leu Val Thr Asp Cys Ala Gly Ala Leu
        35                  40                  45
```

Ser Pro Phe Gly Asp Leu Val Phe Pro Val Pro Ala Asp Asp Leu Pro
50 55 60

Tyr Val His Pro Val Thr Val Val Asn Arg
65 70

<210> 246

<211> 753

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2156, ML.tab 2557038:2559299 forward MW:80254

<400> 246

Met Thr Asp Asn Thr Pro Asp Ile Pro Leu Gly Ser Trp Leu Ala Asp
1 5 10 15

Leu Ser Asp Glu Arg Leu Ile Gln Leu Leu Glu Leu Arg Pro Asp Leu
20 25 30

Ala Gln Pro Pro Pro Gly Ser Ile Ala Ala Leu Ala Ala Arg Ala Gln
35 40 45

Ala Arg Gln Ser Ile Lys Ala Ala Thr Asp Glu Leu Asn Phe Leu Gln
50 55 60

Phe Ala Val Ile Asp Ala Leu Leu Val Leu Gln Ala Asp Ser Thr Pro
65 70 75 80

Val Pro Thr Thr Lys Leu Lys Ala Leu Ile Gly Asp Arg Ala Pro Gln
85 90 95

Ala Asp Val Val Ser Ala Leu Asp Asn Leu Arg Gln Arg Ala Leu Ala
100 105 110

Trp Gly Glu Thr Thr Val Arg Ile Ala Ala Ala Ala Ala Ala Ala Leu
115 120 125

Pro Trp His Pro Gly Gln Val Thr Leu Glu Asp Ile Ser Ser Thr Gly
130 135 140

Glu Gln Ile Ala Glu Leu Ile Ala Arg Leu Ser Gln Thr Gln Arg Asp
145 150 155 160

Val Leu Gln Lys Leu Leu Glu Gly Ser Pro Leu Gly Arg Thr Arg Asp
165 170 175

Ala Ala Pro Gly Ala Pro Pro Asp Arg Pro Val Pro Gln Leu Leu Ala

180 185 190

Met Gly Leu Leu Arg Arg Ile Asp Ala Asp Thr Val Ile Leu Pro Arg
195 200 205

Arg Val Gly Gln Val Leu Arg Gly Glu Gln Ser Gly Pro Thr Gln Leu
210 215 220

Thr Gln Pro Tyr Pro Val Val Ser Val Thr Thr Pro Asn Asp Ala Asp
225 230 235 240

Ala Glu Ala Ala Gly Ala Val Ile Glu Ala Leu His Glu Leu Asp Val
245 250 255

Leu Leu Glu Thr Leu Gly Ser Ala Pro Val Tyr Glu Leu Arg Asn Gly
260 265 270

Gly Leu Gly Val Arg Glu Phe Lys Arg Leu Ala Lys Ala Thr Gly Ile
275 280 285

Asn Glu Pro Arg Leu Gly Leu Leu Leu Glu Val Thr Ala Ala Ala Gly
290 295 300

Leu Ile Ala Ser Gly Ile Pro Asp Pro Glu Pro Ala Thr Gly Asp Ser
305 310 315 320

Pro Tyr Trp Ala Pro Thr Val Ala Thr Asp Arg Phe Thr Ala Met Pro
325 330 335

Pro Ala Glu Arg Trp His Leu Leu Ala Ser Thr Trp Leu Asp Leu Gln
340 345 350

Cys Arg Pro Ala Leu Ile Gly Ser Arg Gly Pro Asp Ala Lys Ser Tyr
355 360 365

Gly Ala Leu Ser Asn Ser Leu Tyr Ser Thr Ala Ala Pro Leu Asp Arg
370 375 380

Arg Leu Leu Leu Gly Met Leu Ala Glu Leu Pro Ala Gly Val Gly Val
385 390 395 400

Glu Ala Ala Glu Ala Ser Ala Ala Leu Ile Trp Arg Arg Pro Arg Trp
405 410 415

Ala Arg Arg Leu Gln Pro Gly Pro Val Ala Asp Met Leu Ala Glu Gly
420 425 430

His Thr Met Gly Leu Val Gly Arg Gly Ala Ile Ser Thr Pro Gly Arg
435 440 445

Ala Leu Leu Asp Glu Ala Ile Ala Ser Ala Asp Pro Ala Ile Ala Val
450 455 460

Ala Ala Met Thr Arg Ala Leu Pro Glu Pro Ile Asp His Phe Leu Val
465 470 475 480

Gln Ala Asp Leu Thr Val Val Val Pro Gly Pro Leu Gln Arg Asn Leu
485 490 495

Ala Lys Glu Leu Gly Thr Val Ala Thr Val Glu Ser Ala Gly Thr Ala
500 505 510

Met Val Tyr Arg Ile Ser Glu Gln Ser Ile Arg His Ala Leu Asp Ile
515 520 525

Gly Lys Thr Arg Asp Trp Met His Ala Leu Phe Thr Asn His Ser Lys
530 535 540

Thr Pro Val Pro Gln Arg Leu Thr Tyr Leu Ile Asn Asp Val Ala Arg
545 550 555 560

Arg His Gly Gln Leu Arg Ile Gly Met Ala Ala Ser Phe Val Arg Cys
565 570 575

Glu Asp Pro Ala Leu Leu Thr Gln Thr Val Ala Ala Ala Glu Glu Leu
580 585 590

Gln Leu Arg Ala Leu Ala Pro Thr Val Ala Val Ser Pro Ala Pro Ile
595 600 605

Ala Glu Val Leu Val Thr Leu Gln Ser Ala Gly Phe Ala Pro Ala Ala
610 615 620

Glu Asp Ser Ser Gly Ser Ile Val Asp Val Arg Pro Arg Arg Ala Arg
625 630 635 640

Leu Pro Thr Pro Gln His Arg Arg Pro Tyr Arg Pro Leu Gln Arg Pro
645 650 655

Asn Leu Glu Thr Leu Asn Ala Val Ile Ala Val Leu Arg Lys Val Ala
660 665 670

Ala Thr Pro Phe Gly Gly Ile Arg Val Asp Pro Thr Val Thr Met Ser
675 680 685

Leu Leu Gln Arg Ala Thr Lys Glu Lys Thr Thr Leu Val Ile Gly Tyr
690 695 700

Leu Asp Ala Ala Gly Ile Ala Thr Gln Arg Met Val Ser Pro Ile Ala
705 710 715 720

Ile Arg Gly Gly Gln Leu Val Ala Phe Asp Pro Gly Thr Gly Arg Leu
725 730 735

Arg Asp Phe Val Ile His Arg Ile Thr Ser Val Val Ser Ser Asp Ser
740 745 750

Gln

<210> 247

<211> 311

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2193, ML.tab 2608113:2609048 reverse MW:33819

<400> 247

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Met Val Leu Asn Trp Arg Phe Ala Leu Ser Ala Asp Glu Gln Arg Leu
1               5                  10                  15

Val Arg Glu Ile Ile Ser Ala Ala Thr Glu Phe Asp Glu Val Ser Pro
            20                  25                  30

Val Gly Glu Gln Val Leu Arg Glu Leu Gly Tyr Asp Arg Thr Glu His
        35                  40                  45

Leu Leu Val Thr Asp Ser Arg Pro Tyr Ala Pro Ile Ile Gly Tyr Leu
    50                  55                  60

Asn Leu Ser Ser Pro Arg Asp Ala Gly Val Ala Met Ala Glu Leu Val
65                  70                  75                  80

Val His Pro Arg Glu Arg Arg Arg Gly Val Gly Ala Ala Met Val Arg
                85                  90                  95

Ala Ala Leu Ala Lys Thr Gly Gly Arg Asn Arg Phe Trp Ala His Gly
            100                 105                 110

Thr Leu Ala Ser Ala Arg Ala Thr Ala Ser Val Leu Gly Leu Val Pro
        115                 120                 125

Val Arg Glu Leu Val Gln Met Gln Arg Ser Leu Arg Thr Ile Pro Asp
    130                 135                 140

Pro Met Val Pro Asp Gln Leu Gly Val Trp Val Arg Thr Tyr Val Gly
145                 150                 155                 160

Thr Val Asp Asp Ala Glu Leu Leu Arg Val Asn Asn Ala Ala Phe Ala
                165                 170                 175

Gly His Pro Glu Gln Gly Gly Trp Thr Ala Thr Gln Leu Ala Glu Arg
            180                 185                 190

Arg Ser Glu Pro Trp Phe Asp Pro Ala Gly Leu Phe Leu Ala Phe Gly
        195                 200                 205

Asp Ser Ser Ser Asn Gln Pro Gly Lys Leu Leu Gly Phe His Trp Thr
    210                 215                 220

Lys Val His Ala Ala His Pro Gly Leu Gly Glu Val Tyr Val Leu Gly
225                 230                 235                 240

Val Asp Pro Ser Ala Gln Gly Arg Gly Leu Gly Gln Met Leu Thr Ser
                245                 250                 255

Ile Gly Ile Ala Ser Leu Ala Gln Arg Leu Val Gly Pro Ser Ala Glu
            260                 265                 270

Pro Thr Val Met Leu Tyr Val Glu Ser Asp Asn Val Ala Ala Ala Arg
        275                 280                 285
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Thr Tyr Glu Arg Leu Gly Phe Thr Thr Tyr Ser Val Asp Thr Ala Tyr
290 295 300

Ala Leu Ala Arg Ile Asp Asp
305 310

<210> 248

<211> 283

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2195, ML.tab 2609965:2610816 forward MW:30382

<400> 248

Met Val Lys Asp Ala Thr Cys Ile Lys Val Arg His Asn Met Arg Met
1 5 10 15

Arg Lys Val Leu Thr Ser Val Ile Ala Thr Val Val Thr Met Ala Val
20 25 30

Leu Val Val Gly Val Leu Gly Ile Asp Tyr Gly Thr Ser Ile Tyr Ala
35 40 45

Glu Tyr Leu Leu Ser Val Asn Val Arg Asn Ala Ala Asn Leu Gly Ser
50 55 60

Asp Pro Phe Val Ala Ile Leu Ala Phe Pro Phe Ile Pro Gln Ala Met
65 70 75 80

Arg Asp His Tyr Thr Glu Leu Glu Ile Lys Ala Asn Ala Val Asp His
85 90 95

Ala Met Val Gly Lys Ala Ser Leu Glu Ala Thr Met Tyr Ser Ile Asp
100 105 110

Leu Thr Tyr Ala Ser Trp Leu Ile Lys Pro Asp Ala Lys Leu Pro Val
115 120 125

Asp Arg Leu Glu Ser Arg Ile Ile Ile Asp Ser Met His Leu Gly Gln
130 135 140

Tyr Leu Gly Ile Ser Asp Leu Met Val Glu Ala Pro His Arg Glu Thr
145 150 155 160

Asn Asn Ala Thr Gly Gly Thr Thr Glu Ser Gly Ile Ser Ser Gly His
165 170 175

Gly Leu Val Leu Ser Gly Thr Pro Lys Ser Ala Asn Phe Asp His Arg

180 185 190

Val Ser Val Leu Val Asp Leu Ser Ile Ala Pro Glu Asp Gln Ala Thr
195 200 205

Leu Val Phe Thr Pro Thr Gly Ile Ala Thr Gly Pro Asp Thr Ala Asn
210 215 220

Gln Pro Val Pro Asp Asp Lys Arg Asn Pro Val Leu Arg Ala Phe Ser
225 230 235 240

Ala Arg Met Ser Asp Gln Arg Leu Pro Phe Gly Val Ala Pro Thr Ser
245 250 255

Glu Gly Ala Arg Gly Ser Asp Val Ile Ile Glu Gly Ile Thr Gln Gly
260 265 270

Val Thr Ile Thr Leu Asp Gly Phe Lys Gln Ser
275 280

<210> 249

<211> 100

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2199, ML.tab 2612896:2613198 forward MW:10570

<400> 249

Met Cys Ser Glu Pro Lys Gln Arg Leu Ala Leu Pro Ala Asn Val Asn
1 5 10 15

Leu Glu Lys Glu Thr Val Ile Thr Gly Arg Val Val Asp Arg Lys Gly
20 25 30

Gln Ala Val Gly Gly Ala Phe Val Arg Leu Leu Asp Ser Ser Asn Glu
35 40 45

Phe Thr Ala Glu Val Val Thr Ser Ala Thr Gly Asp Phe Arg Phe Phe
50 55 60

Ala Ala Pro Gly Ser Trp Thr Leu Arg Ala Leu Ser Ser Val Gly Asn
65 70 75 80

Gly Asp Ala Met Met Ser Pro Ser Gly Thr Gly Ile His Lys Val Asp
85 90 95

Val Lys Ile Thr
100

<210> 250

<211> 228

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2200, ML.tab 2613457:2614143 forward MW:24489

<400> 250

Val Thr Ser Asp Glu Val Arg Asp Gly Ala Gly Ser Pro Ala Asp Ser
1 5 10 15

Ser Lys Gly Asn Lys Cys Thr Ala Ala Gly Met Phe Gln Ala Ala Lys
20 25 30

Arg Ser Thr Val Ser Ala Ala Arg Asn Ile Pro Ala Phe Asp Asp Leu
35 40 45

Pro Val Pro Ser Asp Thr Ala Asn Leu Arg Glu Gly Ala Asn Leu Asn
50 55 60

Ser Thr Leu Leu Ala Leu Leu Pro Leu Val Gly Val Trp Arg Gly Glu
65 70 75 80

Gly Glu Gly Arg Gly Pro Asn Gly Asp Tyr His Phe Gly Gln Gln Ile
85 90 95

Val Val Ser His Asp Gly Gly Asn Tyr Leu Asn Trp Glu Ala Arg Ser
100 105 110

Trp Arg Leu Asn Asp Ala Gly Glu Tyr Gln Glu Thr Ser Leu Arg Glu
115 120 125

Thr Gly Phe Trp Arg Phe Val Ser Asp Pro Tyr Asp Pro Thr Glu Ser
130 135 140

Gln Ala Ile Glu Leu Leu Leu Ala His Ser Ala Gly Tyr Val Glu Leu
145 150 155 160

Phe Tyr Gly Arg Pro Arg Asn Ala Ser Ser Trp Glu Leu Val Thr Asp
165 170 175

Ala Leu Ala Cys Ser Lys Ser Gly Val Leu Val Gly Gly Ala Lys Arg
180 185 190

Leu Tyr Gly Ile Val Glu Gly Gly Asp Leu Ala Tyr Val Glu Glu Arg
195 200 205

Val Asp Ala Asp Gly Gly Leu Val Pro Asn Leu Ser Ala Arg Leu Tyr
210 215 220

Arg Phe Ala Gly
225

<210> 251

<211> 62

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2204, ML.tab 2619139:2619327 forward MW:7054

<400> 251

Met Gly Arg Gly Arg Ala Lys Ala Lys Gln Thr Lys Val Ala Arg Glu
1 5 10 15

Leu Lys Tyr Ser Ser Pro Gln Thr Asp Phe Gln Arg Leu Gln Arg Glu
20 25 30

Leu Ser Ser Thr Gly Ala Ala Asp Pro Gly Gln Leu Asp Gly Asp Asp
35 40 45

Arg Val Ser Glu Asp Ser Trp Asp Glu Asp Ala Trp Arg Arg
50 55 60

<210> 252

<211> 131

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2207, ML.tab 2622297:2622692 reverse MW:13959

<400> 252

Met Ala Val Cys Asp Arg Ala Asp Pro Ala Lys Thr Arg Gln Ala Val
1 5 10 15

Leu Ala Leu Ala Asp Trp Leu Lys Asp Arg Thr Leu Pro Ala Pro Asp
20 25 30

Arg Asp Ala Val Ala Thr Ala Val Arg Leu Thr Val Arg Thr Leu Ala
35 40 45

Thr Leu Ala Pro Gly Ala Ser Val Glu Val Arg Ile Pro Pro Tyr Val
50 55 60

Ala Val Gln Cys Val Ser Gly Pro Ser His Thr Arg Gly Thr Pro Pro
65 70 75 80

Asn Val Val Glu Thr Asp Ser Arg Thr Trp Leu Leu Val Ala Thr Gly
85 90 95

Leu Met Gln Leu Val Glu Ala Val Ala Thr Gly Ala Leu Arg Met Ser
100 105 110

Gly Ser Arg Ala Gly Asp Ile Glu Val Trp Met Pro Leu Ile Asn Leu
115 120 125

Arg Cys Thr
130

<210> 253

<211> 79

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2219A, ML.tab 2636676:2636915 reverse MW:8613

<400> 253

Val Ala Arg Ala Val Val His Val Met Leu Arg Ala Glu Ile Leu Asp
1 5 10 15

Pro Gln Gly Gln Ala Ile Ala Gly Ala Leu Gly Arg Leu Gly His Thr
20 25 30

Gly Ile Ser Asp Val Arg Gln Gly Lys Arg Phe Glu Leu Glu Ile Asp
35 40 45

Asp Thr Val Asp Asp Ser Glu Leu Ala Met Ile Ala Glu Ser Leu Leu
50 55 60

Ala Asn Thr Val Ile Glu Asp Trp Thr Ile Thr Arg Glu Ser Gln
65 70 75

<210> 254

<211> 206

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2228, ML.tab 2645990:2646610 forward MW:21778

<400> 254

Met Asn Ser Arg Phe Leu Pro Tyr Ala Thr Ser Pro Gly Arg Leu Thr
1 5 10 15

Ile Gln Leu Leu Ser Asp Ile Ala Val Val Met Trp Thr Thr Phe Trp
20 25 30

Val Leu Val Gly Ile Ala Val Tyr Asn Thr Ile Ser Thr Ile Ala Asp
35 40 45

Thr Gly Ala Gln Val Glu Ser Gly Ala His Gly Ile Ala Asp Asn Leu
50 55 60

Ala Ser Ala Ser His Gly Met Gln Leu Ile Pro Val Leu Gly Asn Ala
65 70 75 80

Val Ser Lys Pro Leu Thr Leu Thr Ser Ala Ala Ala Leu Asp Ile Ala
85 90 95

Asp Ala Gly His Ser Leu Asn Thr Thr Ala Ser Trp Leu Ala Val Leu
100 105 110

Leu Ala Leu Ala Val Ile Ala Leu Pro Ile Leu Val Ala Val Val Pro
115 120 125

Trp Leu Val Leu Arg Phe Trp Phe Phe Arg His Lys Trp Thr Val Thr
130 135 140

Thr Leu Ala Ala Thr Pro Ala Gly Lys Gln Leu Leu Ala Leu Arg Ala
145 150 155 160

Leu Thr Leu Arg Ser Pro Ser Lys Leu Ala Ala Val Ser Ala Asp Pro
165 170 175

Val Gly Gly Trp Arg Arg Glu Asp Pro Gly Thr Ile Arg Gly Leu Ala
180 185 190

Ala Leu Glu Leu Gln Ser Ser Gly Ile Thr Leu Arg Val His
195 200 205

<210> 255

<211> 71

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2253, ML.tab 2676319:2676534 reverse MW:8295

<400> 255

Met Pro Asn Asn Ile Ala Phe Ser Arg Ser Tyr Ile Gly Lys Arg Cys
1 5 10 15

Tyr Ser Glu Gln Glu Val Gly Val Phe Ile Asp Leu Ala Glu Gln Glu
20 25 30

Arg Thr Arg His Ile Glu Glu Asp Val Glu Phe Arg Asn Arg Asn Ala
35 40 45

Glu Leu Arg Asn Gln Asp Gly Ala Pro Gln Pro Arg Ser Cys Ala Asp
50 55 60

Arg Ala Arg Asn Cys His Val
65 70

<210> 256

<211> 100

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2258, ML.tab 2682528:2682830 reverse MW:11299

<400> 256

Val Asn Arg Phe Leu Thr Ser Ile Val Ser Trp Leu Arg Ala Gly Tyr
1 5 10 15

Pro Glu Gly Ile Pro Ala Thr Asp Thr Phe Ala Val Leu Ala Leu Leu
20 25 30

Ala Arg Arg Leu Thr Asn Asp Glu Val Lys Leu Val Ala Arg Glu Leu
35 40 45

Ile Arg Arg Gly Glu Phe Asp Lys Ile Asp Ile Gly Val Met Ile Ser
50 55 60

His Leu Thr Asp Glu Leu Pro Ser Pro Gln Asp Ile Glu Arg Val Arg
65 70 75 80

Thr Arg Leu Asn Ala Lys Gly Trp Leu Leu Asp Asn Ala Arg Asp Asn
85 90 95

Gly Glu Pro Thr
100

<210> 257

<211> 96

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2259, ML.tab 2682860:2683150 reverse MW:10541

<400> 257

Leu Ser Pro Trp Phe Asn Tyr Glu Ala Thr Leu Lys Ile Leu Leu Phe
1 5 10 15

Ser Thr Leu Ala Gly Ala Ala Leu Pro Gly Leu Phe Ala Leu Gly Ile
20 25 30

Arg Leu Gln Val Asn Asp Ala Gly Asp Ala Ser Thr Asn Asn Ala Thr
35 40 45

Pro His Arg Lys Pro Ile Leu Val Thr Leu Ala Trp Val Ile Tyr Ala
50 55 60

Leu Val Leu Met Val Val Ile Leu Gly Val Leu Tyr Ile Val Ser Arg
65 70 75 80

Asp Phe Ile Ala His His Thr His Tyr Pro Phe Leu Gly Ile Lys Pro
85 90 95

<210> 258

<211> 138

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2261, ML.tab 2684489:2684905 reverse MW:15612

<400> 258

Met Glu Ile Leu Ala Ser Arg Met Leu Leu Arg Pro Thr Asp Tyr Gln
1 5 10 15

Arg Ser Leu Ser Phe Tyr Arg Asp Gln Ile Gly Leu Ala Ile Ala Arg
20 25 30

Glu Tyr Gly Thr Gly Thr Val Phe Phe Ala Gly Gln Ser Leu Leu Glu
35 40 45

Leu Ala Gly Tyr Val Ile Gln Gly Ala Pro Asp His Ser Arg Gly Ala
50 55 60

Phe Pro Gly Ala Leu Trp Leu Gln Val Arg Asp Ile Ala Val Thr Gln
65 70 75 80

Ala Asp Leu Glu Gly Arg Gly Val Ser Ile Thr Arg Glu Pro Arg Arg
85 90 95

Glu Pro Trp Gly Leu His Glu Met His Val Thr Asp Pro Asp Glu Ile
100 105 110

Thr Leu Ile Phe Val Glu Val Pro Ala Asn His Pro Leu Arg Arg Asp
115 120 125

Thr Arg Ser Glu Arg Pro Arg Thr Pro Asp
130 135

<210> 259

<211> 175

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2271, ML.tab 2695503:2696030 forward MW:19222

<400> 259

Val Ile Leu Ser Lys Ser Leu Leu Arg Ile Leu Ile His Gly Arg Ser
1 5 10 15

Asp Glu Pro Pro Ser Thr Arg Ala Arg Val Ile Met Arg Trp Gly Arg
20 25 30

Ile Ala Val Leu Ile Val Thr Gly Leu Ile Thr Leu Gln Ser Val Leu
35 40 45

Leu Val Ala Gly Ala Trp Arg Asn Asp Leu Thr Ile Gln His Asn Met
50 55 60

Gly Val Ala Gln Ala Glu Val Leu Ser Ala Gly Pro Arg Arg Ser Thr
65 70 75 80

Ile Glu Phe Val Thr Pro Glu Arg Val Thr Tyr Arg Pro Glu Leu Gly
85 90 95

Val Leu Tyr Leu Ser Glu Leu Ser Thr Gly Met Arg Ile Tyr Val Glu
100 105 110

Tyr Asn Lys Asn Asp Pro Asn Leu Val Arg Val Arg His Arg Asn Ala
115 120 125

Gly Leu Ala Ile Ile Pro Ala Gly Ser Ile Ala Val Val Cys Trp Leu
130 135 140

Ala Ala Thr Val Val Leu Val Ala Leu Ala Val Leu Asp Lys Arg Leu
145 150 155 160

Asp Arg His Thr Glu Ser Ser Ala Val Pro Ser Gln Pro Thr Ser
165 170 175

<210> 260

<211> 112

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2274, ML.tab 2698017:2698355 reverse MW:11815

<400> 260

Met Lys Gly Thr Gly Leu Ala Ala Asn Val Ala Met Ala Ala Ala Ala
1 5 10 15

Thr Val Leu Ala Ala Pro Ala Leu Ala Asp Asp Tyr Asp Ala Pro Phe
20 25 30

Asn Ala Gln Leu His Ser Tyr Gly Ile Tyr Gly Ala Gln Asp Tyr Asn
35 40 45

Ala Trp Leu Gly Lys Ile Ala Cys Gln Arg Leu Ala Lys Gly Val Asp
50 55 60

Gly Asp Val Asn Lys Ser Ala Thr Phe Ile Gln Arg Asn Leu Pro Leu
65 70 75 80

Tyr Thr Thr Glu Gly Gln Ser Leu Gln Phe Leu Gly Ala Ala Ile Asn

85 90 95

His Tyr Cys Pro Asn Gln Ile Gly Ile Leu Gln Arg Ala Gly Ala Arg
100 105 110

<210> 261

<211> 256

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2289, ML.tab 2713408:2714178 reverse MW:26191

<400> 261

Val Thr Ala Asp Leu Leu Ala Pro Leu Met Glu Leu Pro Gly Val Ala
1 5 10 15

Thr Ala Ser Asp Arg Ala Arg Asp Ala Leu Gly Arg Ala His Arg His
20 25 30

Arg Ala Asn Leu Arg Gly Trp Pro Val Thr Ala Ala Glu Ala Ala Leu
35 40 45

Arg Ala Ala Arg Ala Ser Ser Val Leu Asp Gly Gly Pro Val Arg Leu
50 55 60

Asp His Leu Pro Gly Ala Ser Pro Gln Ala Gly Gly Val Ser Asp Pro
65 70 75 80

Val Phe Gly Gly Ala Leu Arg Val Ala Gln Ala Leu Glu Gly Gly Ala
85 90 95

Gly Pro Leu Val Gly Val Trp Gln Arg Ala Pro Leu Gln Ala Leu Ala
100 105 110

Arg Leu His Val Leu Ala Ala Ala Asp Gln Val Gly Asp Glu Trp Leu
115 120 125

Gly Arg Pro Arg Met Asp Ala Glu Val Gly Leu Arg Leu Gly Leu Leu
130 135 140

Val Asp Val Val Ser Gly Arg Thr Phe Ala Ala Ala Pro Val Val Ala
145 150 155 160

Ala Val Val His Gly Glu Leu Leu Thr Leu Gln Pro Phe Gly Ser Ala
165 170 175

Asp Gly Val Val Ala Arg Ala Val Ser Arg Leu Val Thr Ile Ala Thr
180 185 190

Gly Leu Asp Pro His Gly Leu Gly Val Pro Glu Val Ser Trp Met Arg
195 200 205

Arg Ala Ala Val Tyr Arg Asp Ala Ala Cys Gly Phe Ala Gly Gly Thr
210 215 220

Pro Lys Gly Val Ala Ala Trp Leu Val Leu Cys Cys Arg Ala Leu His
225 230 235 240

Ala Gly Ala Gln Glu Ala Leu Ser Ile Ala Glu Ser Leu Pro Ser Arg
245 250 255

<210> 262

<211> 234

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2295, ML.tab 2720556:2721260 reverse MW:23836

<400> 262

Leu Val Leu Arg Arg Gly His Trp Cys Ile Leu Val Ala Leu Val Ala
1 5 10 15

Val Leu Leu Ala Val Val Ser Met Pro Ala Lys Thr Val Phe Ala Asp
20 25 30

Gly Arg Leu Pro Met Gly Gly Gly Ala Gly Ile Val Ile Asn Gly Asp
35 40 45

Thr Met Cys Thr Leu Thr Thr Ile Gly Thr Asp Ser Ala Ala Glu Leu
50 55 60

Ile Gly Phe Thr Ser Ala His Cys Gly Gly Pro Gly Ala Gln Val Ala
65 70 75 80

Ala Glu Gly Ala Glu Asn Arg Gly Pro Met Gly Thr Met Ile Ala Gly
85 90 95

Asn Asp Asn Leu Asp Tyr Ala Val Ile Lys Phe Asp Pro Ala Lys Val
100 105 110

Met Pro Val Ala Ala Tyr Asn Gly Phe Val Ile Ser Gly Ile Gly Gln
115 120 125

Asp Pro Ala Phe Gly Gln Ile Ala Cys Lys Gln Gly Arg Thr Thr Gly
130 135 140

Asn Ser Cys Gly Val Ala Trp Gly Met Gly Glu Thr Ser Gly Thr Leu
145 150 155 160

Val Met Gln Val Cys Gly Arg Pro Gly Asp Ser Gly Ala Pro Val Thr
165 170 175

Val Asn Asn Leu Leu Val Gly Met Ile His Gly Ala Phe Thr Asp Asn
180 185 190

Leu Pro Val Cys Ile Thr Lys Phe Ile Pro Leu His Thr Pro Ala Val
195 200 205

Val Met Ser Met Asn Ala Ile Leu Ala Asp Val Asn Lys Asn Asn Arg
210 215 220

Pro Gly Ala Gly Phe Val Pro Gln Pro Val
225 230

<210> 263

<211> 181

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2296, ML.tab 2721464:2722009 forward MW:20041

<400> 263

Met Ser Lys Gly Asp Arg Lys Asn Gly Val Pro Ser Thr Leu Thr Thr
1 5 10 15

Ile Pro Leu Val Asp Pro His Ala Glu Pro Thr Glu Pro Ser Ile Gly
20 25 30

Asp Leu Ile Lys Asp Ala Thr Thr Gln Val Ser Thr Leu Val Arg Ala
35 40 45

Glu Val Glu Leu Ala Arg Ala Glu Ile Ile Arg Asp Val Lys Lys Gly
50 55 60

Leu Thr Gly Ser Val Phe Phe Ile Ala Ala Leu Val Val Leu Phe Tyr
65 70 75 80

Ser Thr Phe Phe Phe Phe Leu Phe Leu Ala Glu Leu Leu Asp Thr Trp
85 90 95

Leu Trp Arg Trp Val Ala Leu Leu Ile Val Phe Ala Ile Met Val Met
100 105 110

Val Thr Ala Ala Leu Ala Leu Leu Gly Tyr Val Lys Ile Arg Arg Ile
115 120 125

Arg Gly Pro His Gln Thr Ile Glu Ser Val Lys Glu Thr Arg Thr Ala

130 135 140

Leu Thr Pro Gly His Asp Lys Ala Gln Ala Arg Pro Arg Lys Leu Thr
145 150 155 160

Gly Ser Gly Thr Asn Pro Glu Asn Asn Pro Asp Arg Arg Thr Pro Ala
165 170 175

Asp Pro Ser Gly Trp
180

<210> 264

<211> 381

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2306, ML.tab 2730213:2731358 forward MW:40804

<400> 264

Met Thr Ala Pro Thr Ser His Arg Pro Pro Thr Leu Asp Met Ala Ala
1 5 10 15

Ile Leu Ala Asp Thr Ser Asn Arg Val Val Val Cys Cys Gly Ala Gly
20 25 30

Gly Val Gly Lys Thr Thr Thr Ala Ala Ala Met Ala Leu Gln Ala Ala
35 40 45

Glu Tyr Gly Arg Thr Val Val Val Leu Thr Ile Asp Pro Ala Lys Arg
50 55 60

Leu Ala Gln Ala Leu Gly Val Asn Asp Leu Gly Asn Thr Pro Gln Arg
65 70 75 80

Val Pro Leu Ala Pro Glu Val Pro Gly Glu Leu His Ala Met Met Leu
85 90 95

Asp Met Arg Arg Thr Phe Asp Glu Met Val Val Gln Tyr Ser Gly Pro
100 105 110

Glu Arg Ala Gln Ala Ile Leu Asn Ser Glu Phe Tyr Gln Thr Val Ala
115 120 125

Thr Ser Leu Ala Gly Thr Gln Glu Tyr Met Ala Met Glu Lys Leu Gly
130 135 140

Gln Leu Leu Ser Gln Asp Arg Trp Asp Leu Val Val Val Asp Thr Pro
145 150 155 160

Pro Ser Arg Asn Ala Leu Asp Phe Leu Asp Ala Pro Lys Arg Leu Gly
165 170 175

Asn Phe Met Asn Ser Arg Leu Gly Arg Leu Leu Leu Thr Pro Gly Arg
180 185 190

Gly Ile Gly Arg Leu Val Thr Gly Ala Met Gly Leu Ala Met Arg Ala
195 200 205

Leu Ser Thr Val Leu Gly Ser Gln Met Leu Ala Asp Ala Ala Thr Phe
210 215 220

Val Gln Ser Leu Asp Ala Thr Phe Gly Gly Phe Arg Gly Lys Ala Asp
225 230 235 240

Arg Thr Tyr Ala Leu Leu Lys Gln Arg Gly Thr Gln Phe Val Val Val
245 250 255

Ser Ala Ala Glu Pro Asp Ala Leu Arg Glu Ala Ser Phe Phe Val Asp
260 265 270

Arg Leu Ser Gln Glu Asn Met Pro Leu Ala Gly Leu Met Leu Asn Arg
275 280 285

Thr His Pro Thr Leu Cys Ala Leu Pro Val Glu Gln Ala Ile Asp Ala
290 295 300

Ser Lys Thr Leu Gln Asp Glu Ile Thr Asn Ser Ala Ala Ala Ser Leu
305 310 315 320

Ala Thr Ala Val Leu Arg Ile His Ala Asp Arg Gly Gln Thr Ala Lys
325 330 335

Arg Glu Ala Arg Leu Leu Ser Arg Phe Thr Gly Ala Asn Pro His Val
340 345 350

Pro Val Ile Gly Ile Pro Leu Leu Pro Phe Asp Val Ser Asp Leu Glu
355 360 365

Ala Leu Arg Ala Ile Ala Asp Arg Leu Thr Ala Ser His
370 375 380

<210> 265

<211> 81

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2307, ML.tab 2731463:2731708 reverse MW:9325

<400> 265

Leu Cys Arg Ala Thr Asp Pro Asp Glu Leu Phe Val Arg Gly Ala Ala
1 5 10 15

Gln Arg Lys Ala Ala Val Ile Cys Arg His Cys Pro Val Met Gln Glu
20 25 30

Cys Arg Ala Asp Ala Leu Asp Asn Lys Val Glu Phe Gly Val Trp Gly
35 40 45

Gly Met Thr Glu Arg Gln Arg Arg Ala Leu Leu Lys Gln His Pro Glu
50 55 60

Val Val Ser Trp Ala Asp Phe Phe Asp Thr Arg Lys His Arg Asn Val
65 70 75 80

Ser

<210> 266

<211> 215

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2320, ML.tab 2747152:2747799 reverse MW:22771

<400> 266

Val Ser Trp Val Ile Arg Ile Ser Ala Val Val Met Ser Val Gly Leu
1 5 10 15

Gly Leu Gly Val Pro Val Ala Ser Ala Arg Pro Ser Glu Pro Gly Val
20 25 30

Val Ser Tyr Ala Val Leu Gly Lys Gly Ser Val Gly Asn Ile Ile Gly
35 40 45

Arg Pro Met Gly Trp Glu Ser Leu Leu Thr Glu Pro Leu Gln Ala Tyr
50 55 60

Ser Val Asp Leu Pro Met Cys Asn Asn Trp Ala Asp Ile Gly Leu Pro
65 70 75 80

Glu Val Tyr His Asp Val Asp Leu Ala Ser Phe Asn Gly Ala Ile Thr
85 90 95

Gln Thr Ser Ala Asn Asp Gln Thr His Phe Val Lys Gln Ala Val Gly
100 105 110

Val Phe Ala Thr Asn Asp Ala Ala Val Arg Ala Phe His Arg Val Val

115 120 125

Asp Arg Thr Val Gly Cys Ser Gly Gln Thr Thr Ala Met His Leu Asp
130 135 140

Asn Gly Thr Thr Gln Val Trp Ser Phe Val Gly Gly Thr Pro Thr Tyr
145 150 155 160

Ala Asp Ala Asn Trp Thr Lys Gln Glu Ala Gly Thr Asp Arg Arg Cys
165 170 175

Phe Val Gln Thr Arg Leu Arg Glu Asn Val Leu Leu Gln Thr Lys Val
180 185 190

Cys Gln Pro Gly Asn Ala Gly Pro Ala Val Asn Val Leu Ala Gly Ala
195 200 205

Met Gln Asn Ala Leu Gly Gln
210 215

<210> 267

<211> 116

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2330, ML.tab 2761253:2761603 reverse MW:11931

<400> 267

Met Gln Pro Gly Gly Asp Met Ser Ala Leu Leu Ala Gln Ala Gln Gln
1 5 10 15

Met Gln Gln Lys Leu Leu Glu Thr Gln Gln Gln Leu Ala Asn Ala Gln
20 25 30

Val His Gly Gln Gly Gly Gly Gly Leu Val Glu Val Val Val Lys Gly
35 40 45

Ser Gly Glu Val Val Ser Val Ala Ile Asp Pro Lys Val Val Asp Pro
50 55 60

Gly Asp Ile Glu Thr Leu Gln Asp Leu Ile Val Gly Ala Met Ala Asp
65 70 75 80

Ala Ser Lys Gln Val Thr Lys Leu Ala Gln Glu Arg Leu Gly Ala Leu
85 90 95

Thr Ser Ala Met Arg Pro Thr Ala Pro Pro Pro Thr Pro Pro Thr Tyr
100 105 110

Met Ala Gly Thr
115

<210> 268

<211> 145

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2332, ML.tab 2762489:2762926 reverse MW:15496

<400> 268

Met Gly Pro Val Ser Ala Val Ser Thr Ile Leu Val Asn Val Glu Pro
1 5 10 15

Val Ala Thr Leu Ala Ala Val Ala Asp Tyr Gln Lys Met Arg Pro Lys
20 25 30

Ile Leu Ser Pro Gln Tyr Asn Glu Tyr Gln Val Val Gln Gly Gly Gln
35 40 45

Gly Pro Gly Thr Val Val Lys Trp Lys Leu Gln Val Thr Arg Ser Arg
50 55 60

Val Arg Asp Val Gln Val Asn Val Asp Val Ala Gly His Thr Val Ile
65 70 75 80

Glu Lys Asp Ala Asn Ser Ser Met Val Thr Ser Trp Thr Val Ala Pro
85 90 95

Ala Gly Pro Gly Ser Ser Val Thr Met Lys Thr Ala Trp Thr Gly Ala
100 105 110

Gly Gly Val Lys Gly Phe Phe Glu Lys Thr Phe Ala Pro Leu Gly Leu
115 120 125

Lys Lys Ile Gln Ala Glu Val Leu Ala Asn Leu Lys Asn Glu Leu Glu
130 135 140

Arg
145

<210> 269

<211> 250

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2337, ML.tab 2769442:2770194 forward MW:27248

<400> 269

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Met Gly Tyr Lys Val Ala Thr Leu Trp His Ala Ser Phe Ser Ile Gly
1               5                  10                  15

Ala Gly Val Leu Tyr Phe Tyr Phe Val Leu Pro Arg Trp Pro Glu Leu
            20                  25                  30

Ile Gly Glu Thr Thr His Thr Leu Gly Thr Thr Leu Arg Ile Val Thr
        35                  40                  45

Gly Val Leu Phe Gly Leu Ala Ala Leu Pro Val Val Phe Thr Leu Leu
    50                  55                  60

Arg Ser Gln Thr Ser Glu Leu Gly Ile Pro Gln Leu Ala Leu Ser Ile
65                  70                  75                  80

Arg Thr Trp Ser Ile Val Ala His Val Leu Ser Gly Val Leu Ile Val
                85                  90                  95

Ser Thr Ala Ile Gly Glu Ile Trp Leu Ser Ser Asp Thr Ala Val Gln
            100                 105                 110

Cys Leu Phe Gly Ile Tyr Gly Ala Ala Ala Ala Ser Ala Val Leu Gly
        115                 120                 125

Phe Val Ala Phe Tyr Leu Ser Phe Val Ala Ala Leu Pro Pro Pro Ser
    130                 135                 140

Pro Lys Pro Val Lys Leu Lys Lys Ala Asn Gln Arg Arg Ile Arg Arg
145                 150                 155                 160

Arg Lys Gly Arg Lys Asp Asn Glu Ala Glu Asp Glu Glu Ala Asp Ala
                165                 170                 175

Gly Glu His Asn Glu Ala Glu Thr Pro Ala Gln Ala Glu Glu Val Thr
            180                 185                 190

Ser Glu Asn Pro Gln Pro Ala Pro Glu Ser Gly Ala Gln Lys Glu Pro
        195                 200                 205

Asp Glu Leu Leu Ala Asn Lys Thr Glu Glu Thr Asp Glu Pro Arg Arg
    210                 215                 220

Gly Leu His Asn Arg Arg Pro Thr Gly Lys Val Ser His Gln Arg Arg
225                 230                 235                 240

Arg Ala Arg Ser Gly Ile Ala Val Glu Asn
                245                 250
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<210> 270

<211> 113

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2366, ML.tab 2834617:2834958 reverse MW:11956

<400> 270

Met Ala Phe Met Thr Ser Asn Pro Ser Gly Pro Pro Ser Gln Pro Ala
1 5 10 15

Pro Ala Val Gly Leu Thr Pro Gly Glu Arg Ala Val Pro Val Thr Arg
20 25 30

Ala Gly Ala Leu Trp Ser Ala Leu Phe Ala Gly Phe Leu Ile Leu Ile
35 40 45

Leu Leu Leu Ile Phe Ile Ala Gln Asn Thr Thr Ser Thr Pro Phe Thr
50 55 60

Phe Phe Gly Trp His Trp Ser Leu Pro Leu Gly Val Ala Ile Met Leu
65 70 75 80

Ser Ala Val Gly Gly Gly Leu Leu Ala Val Ala Val Gly Thr Ala Arg
85 90 95

Ile Leu Gln Leu Arg Arg Thr Val Lys Lys Arg Tyr Val Ala Ala His
100 105 110

Arg

<210> 271

<211> 154

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2377, ML.tab 2846366:2846830 forward MW:16863

<400> 271

Met Ser Lys Arg Gln Arg Gly Lys Gly Ile Ser Ile Phe Lys Leu Leu
1 5 10 15

Ser Arg Ile Trp Ile Pro Leu Val Ile Leu Val Val Leu Val Val Gly
20 25 30

Gly Phe Val Val Tyr Arg Val His Ser Tyr Phe Ala Ser Glu Lys Arg
35 40 45

Glu Ser Tyr Ala Asp Ser Asn Leu Gly Ser Ser Lys Pro Phe Asn Pro
50 55 60

Lys Gln Ile Val Tyr Glu Val Phe Gly Pro Pro Gly Thr Val Ala Asp
65 70 75 80

Ile Ser Tyr Phe Asp Ala Asn Ser Asp Pro Gln Arg Ile Asp Gly Ala
85 90 95

Gln Leu Pro Trp Ser Leu Leu Met Thr Thr Thr Leu Ala Ala Val Met
100 105 110

Gly Asn Leu Val Ala Gln Gly Asn Thr Asp Ser Ile Gly Cys Arg Ile
115 120 125

Ile Val Asp Gly Val Val Lys Ala Glu Arg Val Ser Asn Glu Val Asn
130 135 140

Ala Tyr Thr Tyr Cys Leu Val Lys Ser Ala
145 150

<210> 272

<211> 153

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2380, ML.tab 2850483:2850944 reverse MW:17491

<400> 272

Met Ser Arg Leu Ser Thr Ser Leu Cys Lys Gly Ala Val Phe Leu Val
1 5 10 15

Phe Gly Ile Ile Pro Val Ala Phe Pro Thr Thr Ala Val Ala Asp Gly
20 25 30

Ser Thr Glu Asp Phe Pro Ile Pro Arg Arg Gln Ile Ala Thr Thr Cys

35 40 45

Asp Ala Glu Gln Tyr Leu Ala Ala Val Arg Asp Thr Ser Pro Ile Tyr
50 55 60

Tyr Gln Arg Tyr Met Ile Asp Met His Asn Lys Pro Thr Asp Ile Gln
65 70 75 80

Gln Ala Ala Val Asn Arg Ile His Trp Phe Tyr Ser Leu Ser Pro Thr
85 90 95

Asp Arg Arg Gln Tyr Ser Glu Asp Thr Ala Thr Asn Val Tyr Tyr Glu
100 105 110

Gln Met Ala Thr His Trp Gly Asn Trp Ala Lys Ile Phe Phe Asn Asn
115 120 125

Lys Gly Val Val Ala Lys Ala Thr Glu Val Cys Asn Gln Tyr Gln Ala
130 135 140

Gly Asp Met Ser Val Trp Asn Trp Pro
145 150

<210> 273

<211> 101

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2388, ML.tab 2858302:2858607 forward MW:10942

<400> 273

Val Ala Ala Gly Asp Asn Arg Leu Ile Gly Asn Asp Thr Pro Glu Ile
1 5 10 15

Ala Val Gly Ala Ile Gly Gly Val Ala Thr Gly Tyr Val Leu Trp Leu
20 25 30

Val Val Met Ser Ile Gly Tyr Asn Ile Thr Thr Val Ser Gln Trp Ser
35 40 45

Leu Ile Val Leu Ile Leu Ser Met Val Ser Val Phe Cys Ser Gly Met
50 55 60

Cys Gly Trp Trp Leu Arg Gln Arg Arg Lys His Ala Trp Gly Ala Phe
65 70 75 80

Thr Phe Gly Leu Pro Val Phe Pro Val Val Leu Thr Leu Ala Val Leu
85 90 95

Ala Lys Ile Tyr Leu
100

<210> 274

<211> 101

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2390, ML.tab 2861300:2861605 reverse MW:10840

<400> 274

Val Ser His Ile Phe Leu Thr Leu Ile Ala Asp Gly Glu Leu Gln Tyr
1 5 10 15

His Gly Pro Asp Phe Gly Lys Ala Ser Pro Met Gly Leu Leu Val Ile
20 25 30

Val Leu Leu Leu Val Ala Thr Leu Leu Leu Leu Trp Ser Met Asn Arg
35 40 45

Gln Leu Lys Lys Ile Pro Ala Ser Phe Asp Ser Glu His Pro Glu Leu
50 55 60

Asp Gln Ala Ala Asp Glu Gly Thr Glu Leu Gly Gly Tyr Leu Asp Glu
65 70 75 80

Glu Pro Ser Asp Thr Asp Arg Asn Gly Pro Ser Leu Pro Pro Glu Pro
85 90 95

Gly Ala Asp Ser Gly
100

<210> 275

<211> 144

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2392, ML.tab 2862579:2863013 forward MW:15303

<400> 275

Met Asn Gln Ala Phe Thr Pro Leu Thr Glu Thr Arg Tyr Gly Arg Ser
1 5 10 15

Arg Leu Pro Gly Arg Ser Arg His Arg Gly Val Ile Ala Leu Thr Val
20 25 30

Leu Ala Val Ala Ala Ser Thr Gly Ile Ala Val Ile Gly Tyr Gln Arg
35 40 45

Leu Gly Thr Ser Asp Val Ala Gly Ser Leu Ala Ser Tyr Arg Val Leu
50 55 60

Asp Asp Glu Thr Val Ser Val Thr Ile Ser Val Met Arg Ser Asp Pro
65 70 75 80

Ser Arg Pro Val Asp Cys Ile Val Arg Val Arg Ala Lys Asp Gly Ser
85 90 95

Glu Thr Gly Arg Arg Glu Val Leu Val Ala Pro Ala Glu Ala Thr Thr
100 105 110

Val Gln Val Val Thr Thr Val Lys Ser Ala Arg Pro Pro Val Met Ala
115 120 125

Asp Ile Tyr Gly Cys Gly Thr Asp Val Pro Gly Tyr Leu Arg Pro Ala
130 135 140

<210> 276

<211> 111

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2407, ML.tab 2878350:2878685 reverse MW:12141

<400> 276

Val Ser Lys Gly Pro Asn Ser Ile Cys Ala Ala Asp His Asn Arg Asp
1 5 10 15

His Leu Val Val Asn Val Leu Leu Tyr Ala Ala Ala Arg Leu Leu Leu
20 25 30

Val Ile Leu Leu Gly Ser Val Ile Tyr Gly Val Ala Arg Leu Leu Gly
35 40 45

Val Thr Gln Leu Pro Ile Val Val Ala Ala Leu Phe Ala Leu Ile Ile

50 55 60

Ala Met Pro Leu Gly Ile Trp Leu Phe Ser Pro Leu Arg Arg Arg Ala
65 70 75 80

Thr Ala Ala Leu Ala Val Val Gly Glu Arg Arg Arg Ser Glu Arg Glu
85 90 95

Gln Leu Arg Ala Arg Leu Arg Gly Glu Pro Leu Pro Asp Glu Glu
100 105 110

<210> 277

<211> 542

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2410, ML.tab 2881021:2882649 reverse MW:59195

<400> 277

Leu Met Gln Val Leu Met Arg Leu Leu Ala Trp Val Arg Asn Thr Trp
1 5 10 15

Arg Ala Leu Thr Ser Met Gly Thr Ala Leu Val Leu Leu Phe Leu Leu
20 25 30

Ala Leu Gly Ala Ile Pro Gly Ala Leu Leu Pro Gln Arg Asp Leu Asn
35 40 45

Val Gly Lys Val Asp Asp Tyr Val Ala Ala His Pro Val Ile Gly Ser
50 55 60

Trp Leu Asp Gln Leu Gln Ala Phe Asn Val Phe Ser Ser Val Trp Phe
65 70 75 80

Thr Ala Ile Tyr Thr Leu Leu Phe Val Ser Leu Val Gly Cys Leu Thr
85 90 95

Pro Arg Met Ile Glu His Ala Arg Ser Leu Arg Ala Met Pro Val Ile
100 105 110

Ala Pro Arg Asn Leu Ala Arg Leu Pro Lys His Ala Ser Phe Gln Val
115 120 125

Ile Gly Asp Asp Lys Thr Leu Ala Gly Thr Ile Ala Gly Arg Leu Arg
130 135 140

Gly Trp Arg Thr Val Ile Arg Thr Gln Asp Gly Val Val Pro Glu Thr
145 150 155 160

Val Val Ser Ala Glu Lys Gly Tyr Leu Arg Glu Phe Gly Asn Leu Val
165 170 175

Phe His Phe Ser Leu Leu Gly Leu Leu Val Ala Val Ala Val Asp Lys
180 185 190

Leu Phe Gly Tyr Glu Gly Asn Val Val Val Ile Ala Asp Gly Gly Pro
195 200 205

Gly Phe Cys Ser Ala Ser Pro Ala Ala Phe Asp Ala Phe Arg Ala Gly
210 215 220

Asn Thr Val Asp Gly Thr Ser Leu His Pro Ile Cys Ile Arg Val Asn
225 230 235 240

Asp Phe Ala Ala His Tyr Leu Pro Ser Gly Gln Ala Met Ser Phe Thr
245 250 255

Ala Asp Ile Asp Tyr Gln Asp Gly His Asp Leu Thr Val Asn Ser Trp
260 265 270

Arg Pro Tyr Arg Leu Glu Val Asn His Pro Leu Arg Val Ala Gly Asn
275 280 285

Arg Val Tyr Leu Gln Gly His Gly Tyr Ala Pro Thr Phe Thr Val Thr
290 295 300

Phe Pro Asp Gly Gln Thr Arg Thr Ser Thr Val Gln Trp Arg Pro Glu
305 310 315 320

Asn Gln Gln Thr Leu Leu Ser Ser Gly Val Val Arg Ile Asp Pro Pro
325 330 335

Ala Gly Ser Tyr Pro Asn Met Ser Glu Arg Arg Gln His Glu Ile Ala
340 345 350

Ile Gln Gly Leu Leu Ala Pro Thr Glu Gln Leu Asp Gly Thr Leu Leu
355 360 365

Leu Ser Arg Phe Pro Ala Leu Asn Ala Pro Ala Val Ala Ile Asp Ile
370 375 380

Tyr Arg Gly Asp Thr Gly Leu Asp Ser Gly Arg Pro Gln Ser Leu Phe
385 390 395 400

Thr Leu Asp Pro Arg Leu Ile Asn Gln Gly Arg Leu Thr Lys Glu Lys
405 410 415

Arg Val Asn Leu Gln Ala Gly Glu Gln Val Arg Leu Gly Gln Gly Pro
420 425 430

Gly Ala Gly Thr Val Val Arg Phe Asp Gly Ala Val Pro Phe Val Asn
435 440 445

Leu Gln Val Ser His Asp Pro Gly Gln Ala Trp Val Phe Val Phe Ala
450 455 460

Ile Ala Met Met Val Gly Leu Val Val Ser Leu Met Val Arg Arg Arg
465 470 475 480

Arg Val Trp Val Arg Leu Thr Pro Ala Ala Gly Thr Val Asn Val Glu

485 490 495

Leu Gly Gly Leu Ala Arg Thr Asp Asn Ser Gly Trp Gly Asp Glu Phe
500 505 510

Glu Arg Leu Thr Glu Arg Leu Leu Ala Gly Leu Val Ala Ala Asp Arg
515 520 525

Thr Leu Ala Ala Ala Arg Arg Ser Ser Gln Met Asp Val Lys
530 535 540

<210> 278

<211> 166

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2425, ML.tab 2901005:2901505 forward MW:18654

<400> 278

Met Thr Val Pro Leu Glu Ala Glu Gly Leu Ile Gly Lys His Tyr Arg
1 5 10 15

Gln Leu Asp His Phe Gln Val Gly Arg Glu Lys Ile Arg Glu Phe Ala
20 25 30

Ile Ala Val Lys Asp Asp His Pro Thr His Tyr Asn Glu Thr Ala Ala
35 40 45

Phe Glu Ala Gly Tyr Pro Ala Leu Val Ala Pro Leu Thr Phe Leu Ala
50 55 60

Ile Ala Gly Arg Arg Val Gln Leu Glu Ile Phe Thr Lys Phe Asn Ile
65 70 75 80

Pro Ile Asn Val Ala Arg Val Phe His Arg Asp Gln Lys Phe Arg Phe
85 90 95

Tyr Arg Thr Ile Leu Ala Gln Asp Lys Leu Tyr Phe Asp Thr Tyr Leu
100 105 110

Asp Ser Val Ile Glu Ser His Gly Thr Val Ile Ala Glu Val Arg Ser
115 120 125

Glu Val Thr Asp Thr Glu Gly Lys Ala Val Val Thr Ser Ile Val Thr
130 135 140

Met Leu Gly Glu Leu Ala Arg Gln Asp Ala Thr Ala Glu Glu Thr Val
145 150 155 160

Ala Ala Ile Ala Ser Ile
165

<210> 279

<211> 33

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2428A, ML.tab 2904745:2904846 reverse MW:4145

<400> 279

Met Gly Ser Val Ile Lys Lys Arg Arg Lys Arg Met Ser Lys Lys Lys
1 5 10 15

His Arg Lys Leu Leu Arg Arg Thr Arg Val Gln Arg Arg Lys Leu Gly
20 25 30

Lys

<210> 280

<211> 280

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2432, ML.tab 2907135:2907977 reverse MW:30442

<400> 280

Leu Arg Pro Val Ile Lys Val Gly Leu Ser Thr Ala Ser Val Tyr Pro
1 5 10 15

Leu Arg Ala Glu Ala Ala Phe Glu Tyr Ala Ala Lys Leu Gly Tyr Asp
20 25 30

Gly Val Glu Leu Met Val Trp Gly Glu Ser Val Ser Gln Asp Ile Asp
35 40 45

Ala Val Lys Gly Leu Ser Arg Arg Tyr Arg Val Pro Val Leu Ser Val
50 55 60

His Ala Pro Cys Leu Leu Ile Ser Gln Arg Val Trp Gly Ala Asn Pro
65 70 75 80

Val Pro Lys Leu Glu Arg Ser Val Arg Ala Ala Glu Gln Leu Gly Ala
85 90 95

Gln Thr Val Val Val His Pro Pro Phe Arg Trp Gln Arg Arg Tyr Ala
100 105 110

Glu Gly Phe Ser Asp Gln Val Ala Glu Leu Glu Ala Ala Ser Asp Val
115 120 125

Met Ile Ala Val Glu Asn Met Phe Pro Phe Arg Ala Asp Arg Phe Phe
130 135 140

Gly Ala Asp Gln Ser Arg Glu Arg Met Arg Lys Arg Gly Gly Gly Pro
145 150 155 160

Gly Pro Ala Ile Ser Val Phe Ala Pro Ser Phe Asp Pro Leu Ala Gly
165 170 175

Asn His Ala His Tyr Thr Leu Asp Leu Ser His Thr Ala Thr Ala Gly
180 185 190

Ser Asp Ser Leu Glu Met Val Arg Arg Met Gly Ser Gly Leu Val His
195 200 205

Leu His Leu Cys Asp Gly Ser Gly Leu Pro Ala Asp Glu His Leu Val
210 215 220

Pro Gly Arg Gly Thr Gln Pro Thr Ala Ala Val Cys Gln Leu Leu Ala
225 230 235 240

Gly Ala Asp Phe Ala Gly His Val Val Leu Glu Val Ser Thr Ser Ser
245 250 255

Val Arg Ser Ala Thr Glu Arg Glu Thr Met Leu Thr Glu Ser Leu Gln
260 265 270

Phe Ala Arg Thr Tyr Leu Leu Arg
275 280

<210> 281

<211> 355

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2433, ML.tab 2908008:2909075 reverse MW:37938

<400> 281

```
Met Thr Gly Pro His Asn Asp Thr Glu Ser Pro His Ala Arg Pro Ile
1               5                  10                  15

Ser Val Ala Glu Leu Leu Ala Arg Asn Gly Thr Ile Gly Ala Pro Ala
            20                  25                  30

Val Ser Arg Arg Arg Arg Arg Arg Thr Asp Ser Asp Ala Val Thr Val
        35                  40                  45

Ala Glu Leu Thr Cys Asp Ile Pro Ile Ile His Asp Asp His Ala Asp
    50                  55                  60

Glu Gln His Leu Ala Ala Thr His Ala His Arg Ala Asn Ile Gly Val
65                  70                  75                  80

Arg Val Val Glu Pro Ala Ala Gln Ser Pro Leu Glu Pro Val Cys Glu
                85                  90                  95

Gly Ile Val Ala Glu Pro Pro Val Asp Asp His Gly His Val Pro Pro
            100                 105                 110

Gly Cys Trp Ser Ala Pro Glu Pro Arg Trp Pro Lys Ser Pro Pro Leu
        115                 120                 125

Thr His Leu Arg Thr Gly Leu Gln Arg Ser Ala Cys Ser Arg Pro Leu
    130                 135                 140

Pro His Leu Gly Asp Val Arg His Pro Val Ala Pro Asp Ser Ile Ala
145                 150                 155                 160

Gln Lys Gln Ser Asp Ala Glu Gly Met Ser Pro Asp Pro Val Glu Pro
                165                 170                 175

Phe Ala Asp Ile Pro Val Asp Val Met Gly Ser Glu Val Arg Ala Ala
            180                 185                 190

Glu Leu Val Ala Glu Glu Ser Ala Tyr Ala Arg Tyr Asn Leu Gln Met
        195                 200                 205

Ser Ala Gly Ala Leu Phe Ser Gly His Thr Leu Thr Asn Glu Leu Ala
    210                 215                 220

Glu Arg Arg Gly Asp Glu His Ala Ala Gly Gly Leu Leu Ala Val Gly
225                 230                 235                 240

Ile Asp Leu Asp Glu Asp His Leu Asp Leu His Thr Asp Leu Ala Gly
                245                 250                 255

Ile Thr Ser Pro Ala Arg Gly Trp Gln Ser Arg Phe Glu Ala Leu Trp
            260                 265                 270

Arg Gly Ser Leu Ile Val Leu Gln Ser Ile Leu Ala Val Val Phe Gly
        275                 280                 285

Ala Gly Leu Phe Val Ala Phe Asp Gln Leu Trp Arg Trp Asn Ser Ile
    290                 295                 300
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Val Ala Leu Val Leu Ser Val Leu Val Ile Leu Gly Leu Val Val Gly
305 310 315 320

Val Arg Val Val Arg Arg Thr Glu Asp Ile Ala Ser Thr Leu Ile Ala
325 330 335

Val Val Val Gly Ala Leu Ile Thr Leu Gly Pro Leu Ala Leu Ser Leu
340 345 350

Gln Ser Gly
355

<210> 282

<211> 277

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2435, ML.tab 2910195:2911028 forward MW:31007

<400> 282

Val Ser Ser Cys Pro Glu Ser Gly Ser Thr Phe Glu Tyr Val Ala Asn
1 5 10 15

Ser His Leu Glu Pro Val His Pro Gly Glu Glu Val Asp Leu Asp Phe
20 25 30

Thr Arg Glu Trp Val Glu Phe Tyr Asp Pro Asp Asn Ser Glu Gln Leu
35 40 45

Ile Ala Ala Asp Leu Thr Trp Leu Leu Ser Arg Trp Thr Cys Val Phe
50 55 60

Gly Thr Pro Ala Cys Arg Gly Thr Val Ala Gly Arg Pro Asp Asp Gly
65 70 75 80

Cys Cys Ser His Gly Ala Phe Leu Ser Asp Asp Ala Asp Arg Thr Arg
85 90 95

Leu Asp Asp Ala Val Lys Lys Leu Ser His Asp Asp Trp Gln Phe Arg
100 105 110

Glu Lys Gly Leu Gly Arg Lys Gly Tyr Leu Glu Leu Asp Glu His Asp
115 120 125

Gly Gln Ser Gln Phe Arg Thr Arg Lys His Lys Asn Ala Cys Ile Phe
130 135 140

Leu Asn Arg Pro Gly Phe Pro Ile Gly Ala Gly Cys Ala Leu His Ser
145 150 155 160

Lys Ala Leu Lys Leu Gly Val Pro Pro Arg Thr Met Lys Pro Asp Ile
165 170 175

Cys Trp Gln Leu Pro Ile Arg His Ser Gln Glu Trp Val Thr Arg Pro
180 185 190

Asp Gly Thr Glu Ile Leu Lys Thr Thr Val Thr Glu Tyr Asp Arg Arg
195 200 205

Ser Trp Gly Ser Gly Gly Ala Asp Leu His Trp Tyr Cys Thr Gly Asp
210 215 220

Pro Ala Ser His Val Asp Ser Lys Gln Leu Trp Glu Ser Leu Ala Asp
225 230 235 240

Glu Leu Thr Glu Leu Leu Gly Ala Lys Ala Tyr Ala Lys Leu Ala Ala
245 250 255

Ile Cys Lys Arg Arg Asn Arg Leu Gly Ile Ile Ala Val His Pro Ala
260 265 270

Thr Gln Glu Ala Lys
275

<210> 283

<211> 184

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2442, ML.tab 2917372:2917926 reverse MW:20820

<400> 283

Met Ser Thr Ala Trp Asp Thr Val Trp His Ala Cys Ser Val Ile Glu
1 5 10 15

His Ala Leu Gln Ala Ser His Leu Thr Tyr Ser Glu Phe Ser Gly Val
20 25 30

Pro Asp Gly Leu Leu Arg Leu Val Val Glu Leu Pro Gly Glu Arg Arg
35 40 45

Leu Lys Thr Asn Ala Ile Leu Ser Ile Gly Glu His Ser Val His Val
50 55 60

Glu Ala Phe Val Cys Arg Lys Pro Asp Glu Asn His Glu Gly Val Tyr
65 70 75 80

Arg Phe Leu Leu Lys Arg Asn Arg Arg Leu Phe Cys Val Ser Tyr Thr

85 90 95

Leu Asp Asn Val Gly Asp Ile Tyr Leu Val Gly Arg Met Ser Leu Ala
100 105 110

Ser Val Asp Thr Asp Glu Ile Asp Arg Val Leu Gly Gln Val Leu Glu
115 120 125

Ala Val Glu Ser Asp Phe Asn Thr Leu Leu Glu Leu Gly Phe Arg Ser
130 135 140

Ser Ile Gln Lys Glu Trp Asp Trp Arg Ile Ser Arg Gly Glu Ser Leu
145 150 155 160

Asn Asn Leu Gln Ala Phe Ala His Leu Ile Asp Asp Glu Gly Asp Gly
165 170 175

Asp Ala Ser Ile Tyr Ala Arg Pro
180

<210> 284

<211> 441

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2446, ML.tab 2921383:2922708 reverse MW:46863

<400> 284

Val Ile Ala Ser Thr Pro Arg Gln Asn Arg Glu Ser Ile Asn Arg Arg
1 5 10 15

Val Ala Leu Thr Ala Leu Gly Val Gly Val Phe Ala Pro Ser Val Phe
20 25 30

Val Ala Cys Ala Gly Ser Ala Ile Lys Pro Ser Glu Lys Lys Thr Thr
35 40 45

Pro Ala Pro His Leu Thr Phe Gln Pro Ala Thr Ala Thr Asp Asp Val
50 55 60

Ile Pro Val Ala Pro Ile Ser Val Gln Ile Ala Asp Gly Trp Phe Gln
65 70 75 80

Arg Val Thr Leu Thr Asn Pro Val Gly Lys Val Val Ala Gly Val Phe
85 90 95

Asn Gln Asp Arg Thr Val Tyr Thr Ile Thr Glu Pro Leu Gly Tyr Asp
100 105 110

```
Thr Thr Tyr Thr Trp Asn Gly Ser Ala Val Gly His Asp Gly Lys Ala
        115                 120                 125

Val Pro Val Thr Gly Lys Phe Ser Thr Val Thr Pro Val Lys Lys Val
    130                 135                 140

Asn Gly Gly Phe Gln Leu Ala Asp Gly Gln Thr Val Gly Val Ala Ala
145                 150                 155                 160

Pro Ile Ile Ile Gln Phe Asp Ala Pro Ile Ser Asp Lys Ser Ala Val
                165                 170                 175

Glu Lys Ala Leu Thr Val Thr Thr Thr Pro Pro Val Glu Gly Ser Trp
            180                 185                 190

Ala Trp Leu Pro Asp Glu Ala Lys Gly Ala Arg Ile His Tyr Arg Pro
        195                 200                 205

Arg Glu Tyr Tyr Pro Ala Gly Thr Thr Val Asn Val Asp Ala Lys Leu
    210                 215                 220

Tyr Gly Leu Pro Phe Gly Asp Gly Ala Tyr Gly Leu Gln Asp Met Ser
225                 230                 235                 240

Leu Asn Ile Gln Ile Gly Arg Arg Gln Val Val Lys Ala Glu Val Ser
                245                 250                 255

Ser His Arg Ile Gln Val Val Thr Asp Ala Gly Val Ile Met Asp Phe
            260                 265                 270

Pro Cys Ser Tyr Gly Glu Ala Asp Gln Ala Arg Asn Val Thr Arg Asn
        275                 280                 285

Gly Ile His Val Val Thr Glu Lys Tyr Ser Asp Phe Tyr Met Ser Asn
    290                 295                 300

Pro Ala Ala Gly Tyr Ser Asn Val Tyr Glu Arg Trp Ala Val Arg Ile
305                 310                 315                 320

Ser Asn Asn Gly Glu Phe Ile His Ala Asn Pro Ala Ser Val Gly Ala
                325                 330                 335

Gln Gly Asn Thr Asn Val Thr Asn Gly Cys Ile Asn Leu Ser Thr Gly
            340                 345                 350

Asp Ala Glu Gln Phe Tyr Arg Ser Ala Ile Tyr Gly Asp Pro Val Glu
        355                 360                 365

Val Thr Gly Ser Ser Ile Gln Leu Ser Tyr Ser Asp Gly Asp Ile Trp
    370                 375                 380

Asp Trp Ala Val Asp Trp Asp Thr Trp Val Gly Met Ser Ala Leu Leu
385                 390                 395                 400

Ser Phe Pro Thr Val His Gln Pro Ala Thr Gln Ile Pro Val Thr Ala
                405                 410                 415

Pro Val Thr Pro Pro Gly Ala Pro Ile Leu Ser Gly Thr Pro Thr Ser
            420                 425                 430

Gly Ser Gly Thr Ala Arg Pro Gly Gly
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435 440

<210> 285

<211> 245

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2450, ML.tab 2925762:2926499 forward MW:26174

<400> 285

Leu Leu Arg Asp Pro Leu Ala Ile Val Leu Ile Leu Ile Ile Val Val
1 5 10 15

Ala Leu Val Ile Ser Gly Leu Ile Gly Ala Glu Leu Phe Ala Arg His
20 25 30

Thr Ala Asn Ser Lys Val Ala Arg Val Val Thr Cys Glu Ile Lys Asp
35 40 45

Gln Ala Thr Ala Lys Phe Gly Val Thr Pro Leu Leu Leu Trp Gln Phe
50 55 60

Ala Thr Gln His Phe Thr Asn Ile Ser Val Glu Thr Ala Gly Asn Gln
65 70 75 80

Ile Arg Asp Ala Lys Gly Met Lys Ile Ala Ile Asp Ile Gln Asn Val
85 90 95

Gln Ile Arg Asp Thr Pro Thr Ser Arg Gly Thr Ile Gly Val Leu Asp
100 105 110

Ala Ile Ile Thr Trp Ser Ser Asp Gly Ile Arg Gln Ser Val Gln Asn
115 120 125

Ser Ile Pro Val Leu Gly Gly Val Val Thr Thr Ser Val Thr Thr His
130 135 140

Pro Thr Asn Gly Thr Ile Glu Leu Lys Gly Met Leu Asn Asp Ile Val
145 150 155 160

Ala Lys Pro Val Val Ser Asn Gly Gly Leu Gln Leu Gln Ile Val Ser
165 170 175

Phe Asn Thr Leu Gly Phe Ser Leu Pro Lys Glu Thr Val Gln Phe Thr
180 185 190

Leu Asp Asp Phe Thr Thr Asn Leu Thr Lys Asn Tyr Pro Leu Gly Ile
195 200 205

His Ala Asp Asn Val Glu Val Thr Ser Thr Gly Val Thr Ser His Phe
210 215 220

Ser Ala Arg Asn Thr Asn Ile Pro Asn Ser Thr Gly Gly Gln Asp Pro
225 230 235 240

Cys Phe Ala Asn Leu
245

<210> 286

<211> 123

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2452, ML.tab 2927236:2927607 reverse MW:13492

<400> 286

Met Ser Ser Pro Leu Ser Pro Leu Tyr Val Leu Pro Phe Val Asp His
1 5 10 15

Thr Lys Trp Thr Arg Trp Arg Ser Leu Ile Ser Leu Gln Ala Tyr Ser
20 25 30

Asn Leu Phe Gly Arg Thr Ser Ala Met Gln Pro Asp Val Ala Ala Gly
35 40 45

Asp Glu Ala Trp Gly Asp Val Leu Thr Leu Ser Pro Asp Ala Asp Thr
50 55 60

Ala Asp Met His Ala Gln Phe Ile Cys His Gly Gln Phe Ala Glu Phe
65 70 75 80

Val Gln Pro Ser Asn Thr Ser Ser Asn Leu Glu Pro Trp Arg Pro Val
85 90 95

Val Asp Asp Ser Glu Ile Phe Ala Ala Gly Cys His Pro Gly Ile Ser
100 105 110

Glu Gly Ile Gln Gln Ala Asp Glu Gly Pro Arg
115 120

<210> 287

<211> 95

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2453, ML.tab 2927710:2927997 reverse MW:10004

<400> 287

Met Ser His Leu Val Gly Thr Val Met Leu Val Leu Gln Leu Ala Val
1 5 10 15

Leu Val Thr Ala Val Tyr Ala Phe Val His Ala Ala Leu Gln Arg Pro
20 25 30

Asp Ala Tyr Thr Ala Ala Glu Lys Leu Thr Lys Pro Val Trp Leu Val
35 40 45

Ile Leu Gly Ala Ala Val Ser Leu Thr Ser Ile Leu Gly Phe Val Phe
50 55 60

Gly Val Leu Gly Ile Val Ile Ala Ala Cys Ala Ala Gly Val Tyr Leu
65 70 75 80

Val Asp Val Arg Pro Lys Leu Leu Asp Ile Gln Gly Lys Ser Arg
85 90 95

<210> 288

<211> 188

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2454, ML.tab 2928117:2928683 reverse MW:20421

<400> 288

Met Ala Glu Asn Pro Asn Val Asp Asp Leu Arg Ala Pro Leu Leu Ala
1 5 10 15

Ala Leu Gly Ala Ala Asp Leu Ala Leu Thr Thr Val Asn Glu Leu Val
20 25 30

Gly Asn Met Arg Glu Arg Ala Glu Glu Thr Arg Ile Asp Thr Arg Ser
35 40 45

Arg Val Glu Glu Ser Arg Ala Arg Val Ala Lys Leu Gln Glu Val Leu
50 55 60

Pro Glu His Leu Ser Glu Leu Arg Glu Lys Phe Thr Ala Asp Glu Leu
65 70 75 80

Arg Lys Ala Ala Glu Gly Tyr Leu Glu Ala Ala Thr Asn Arg Tyr Asn
85 90 95

Glu Leu Val Glu Arg Gly Glu Ala Ala Leu Glu Arg Leu Arg Ser Arg
100 105 110

Pro Val Phe Glu Asp Ala Ser Ala Arg Ala Glu Gly Tyr Val Asp Gln
115 120 125

Ala Val Glu Leu Thr Gln Glu Ala Leu Gly Thr Val Ala Ser Gln Thr
130 135 140

Arg Ala Val Gly Gly Arg Ala Ala Lys Leu Val Gly Ile Glu Leu Pro
145 150 155 160

Lys Lys Ala Ala Ala Pro Ala Arg Lys Ala Pro Ala Lys Lys Ala Pro
165 170 175

Ala Lys Lys Ala Pro Ala Lys Lys Val Thr Gln Lys
180 185

<210> 289

<211> 264

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2463, ML.tab 2936751:2937545 reverse MW:30332

<400> 289

Val Ser Leu Asp Lys Ile Met Met Pro Val Pro Glu Gly His Pro Asp
1 5 10 15

Val Phe Asp Arg Glu Trp Pro Leu Arg Val Gly Asp Ile Asp Arg Thr
20 25 30

Gly Arg Leu Arg Leu Asp Ala Gly Val Arg His Ile Gln Asp Ile Gly
35 40 45

Gln Asp Gln Leu Arg Glu Met Gly Phe Glu Glu Thr His Pro Leu Trp
50 55 60

Ile Val Arg Arg Thr Met Val Asp Leu Ile Arg Pro Val Glu Phe Gln
65 70 75 80

Glu Met Leu Arg Leu Arg Arg Trp Cys Ser Gly Thr Ser Asn Arg Trp

85 90 95

Cys Glu Met Arg Val Arg Ile Asp Gly Arg Lys Gly Gly Leu Ile Glu
100 105 110

Ser Glu Ala Phe Trp Ile Asn Ile Asn Arg Glu Thr Gln Met Pro Ala
115 120 125

Arg Ile Ala Asp Asp Phe Leu Ala Gly Leu His Arg Thr Thr Ser Val
130 135 140

Asp Arg Leu Arg Trp Arg Gly Tyr Leu Gln Pro Gly Ser Arg Asp Asp
145 150 155 160

Ala Ser Glu Ile His Glu Phe Pro Val Arg Val Thr Asp Ile Asp Leu
165 170 175

Phe Asp His Met Asn Asn Ser Val Tyr Trp Ser Val Ile Glu Asp Tyr
180 185 190

Leu Val Ser His Ser Glu Leu Leu Lys Gly Pro Leu Arg Thr Thr Ile
195 200 205

Glu His Glu Ala Pro Val Ala Leu Gly Asp Lys Leu Glu Ile Val Leu
210 215 220

His Val His Pro Ala Gly Ser Thr Asp Gln Phe Gly Pro Gly Leu Val
225 230 235 240

Asp Arg Ser Val Ile Thr Leu Thr Tyr Thr Val Gly Asp Glu Thr Lys
245 250 255

Ala Ile Ala Ala Ile Phe Ala Leu
260

<210> 290

<211> 188

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2465, ML.tab 2939177:2939743 forward MW:21174

<400> 290

Met Ser Gly Gly Thr Gly Thr Gly Pro Val Gly Arg Ile Pro Pro Gly
1 5 10 15

Ser Leu Arg Gln Leu Gly Pro Ile Asn Trp Val Ile Ala Lys Leu Ala
20 25 30

Ala Ser Leu Leu Arg Thr Ser Glu Met His Leu Phe Thr Ile Leu Gly
35 40 45

Gln Arg Gln Leu Leu Phe Trp Ala Trp Leu Ile Tyr Gly Gly Arg Leu
50 55 60

Leu Arg Gly Lys Leu Pro Arg Val Asp Thr Glu Leu Val Ile Leu Arg
65 70 75 80

Val Ala His Leu Arg Thr Cys Glu Tyr Glu Leu Gln His His Arg Arg
85 90 95

Met Ala Arg Lys Arg Gly Leu Asp Thr Lys Ile Gln Ala Met Ile Phe
100 105 110

Ala Trp Pro Asp Val Pro Thr Gly Ala Gly Leu Ser Val Arg Gln Gln
115 120 125

Ala Leu Leu Ala Ala Thr Asp Glu Phe Val Lys Asp Arg Lys Ile Thr
130 135 140

Ser Ser Ser Trp Gln Gln Leu Glu Thr His Leu Asp Arg Arg Arg Leu
145 150 155 160

Ile Glu Phe Cys Met Leu Ile Ser Gln Tyr Asp Gly Leu Ala Ala Thr
165 170 175

Ile Ser Ser Leu Asp Ile Pro Leu Asp Asn Ser Cys
180 185

<210> 291

<211> 159

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2473, ML.tab 2948272:2948751 forward MW:17160

<400> 291

Met Pro Asp Gly Phe Gly Val Ala Val Val Arg Glu Glu Gly Gln Trp
1 5 10 15

Arg Cys Ser Ala Met Ala Ser Lys Ser Leu Thr Ser Leu Thr Ala Ala
20 25 30

Glu Thr Glu Leu Arg Glu Leu Arg Ser Val Gly Ala Val Phe Gly Leu
35 40 45

Leu Asp Val Asp Asp Glu Phe Phe Ile Ile Leu Arg Pro Ala Pro Ser
50 55 60

Gly Thr Arg Leu Leu Leu Ser Asp Ala Thr Ala Ala Leu Asp Tyr Asp
65 70 75 80

Ile Ala Ala Glu Ile Leu Asp Ser Leu Asp Ala Glu Ile Asp Pro Glu
85 90 95

Asp Leu Glu Asp Ala Tyr Pro Phe Glu Glu Gly Asp Leu Gly Leu Leu
100 105 110

Ser Asp Val Gly Leu Pro Glu Ala Thr Leu Gly Val Ile Leu Asp Gln
115 120 125

Thr Asp Leu Tyr Ala Asp Glu Gln Leu Gly His Ile Ala Arg Glu Met
130 135 140

Gly Phe Ala Glu Gln Leu Ser Ala Val Ile Asn Arg Leu Gly Arg
145 150 155

<210> 292

<211> 286

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2489, ML.tab 2962275:2963135 reverse MW:32001

<400> 292

Met Val Pro Leu Trp Phe Thr Leu Ser Ala Leu Cys Phe Val Gly Ala
1 5 10 15

Val Val Leu Leu Tyr Val Asp Ile Asp Arg Arg Arg Gly Arg Ser Arg
20 25 30

Arg Arg Lys Ser Trp Ala Arg Ser His Gly Phe Asp Tyr Glu Arg Glu
35 40 45

Ser Thr Glu Ile Leu Gln Arg Trp Lys Arg Gly Val Met Ser Thr Val
50 55 60

Gly Asp Ile Ser Ala His Asn Val Val Leu Gly Gln Ile Arg Gly Glu
65 70 75 80

Ala Val Tyr Ile Phe Asp Leu Glu Glu Val Ala Thr Val Ile Ala Leu
85 90 95

His Arg Lys Val Gly Thr Asn Ile Val Val Asp Leu Arg Leu Lys Gly
100 105 110

Leu Lys Glu Pro Arg Glu Ser Asp Ile Trp Leu Leu Gly Ala Ile Gly

115 120 125

Pro Arg Met Val Tyr Ser Thr Asn Leu Asp Ala Ala Arg Arg Ala Cys
130 135 140

Asp Arg Arg Met Val Thr Phe Ala His Thr Ala Pro Asp Cys Ala Glu
145 150 155 160

Val Met Trp Asn Glu Gln Asn Trp Thr Leu Val Ser Met Pro Ile Gly
165 170 175

Ser Thr Arg Val Gln Trp Asp Glu Gly Leu Arg Thr Val Arg Gln Phe
180 185 190

Asn Asp Leu Leu Arg Val Leu Pro Pro Leu Pro Ala Asp Thr Ser Gln
195 200 205

Glu Ala Gly Ala Ser Ala Arg Asn Ala Ala Pro Ser Arg Pro Leu Ala
210 215 220

Ser Val Gly Arg Ala Glu Leu Pro Pro Asp Arg Gly Val Glu Ser Asp
225 230 235 240

Val Ala Gly Leu Leu Gly Ser Gly Val Gln Ala Gly Arg Ser Ala Glu
245 250 255

Pro Ile Ser Arg Asp Glu Gly Arg Trp Asp Gly Ile Arg Arg Pro Pro
260 265 270

Ser Val Glu Arg Asn Gly His Gln Thr Thr Asn Tyr Gln Tyr
275 280 285

<210> 293

<211> 333

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2491, ML.tab 2966697:2967698 forward MW:36545

<400> 293

Val Thr Gly Pro Asn Ser Pro Asn Lys Thr Leu Gln Arg Phe Gly Ile
1 5 10 15

Ser Gly Thr Asp Leu Gly Ile Pro Trp Asp Asn Gly Asp Pro Thr Asn
20 25 30

His Gln Val Leu Met Ala Phe Gly Asp Ser Phe Gly Tyr Cys Ser Val
35 40 45

```
Lys Gly Gln Gln Arg Arg Tyr Asn Ile Leu Phe Arg Ser Ser Asn Gln
    50                  55                  60

Asp Leu Ser His Gly Ile Arg Ile Ala Asp Gly Val Pro Asn Asp Lys
65                  70                  75                  80

Tyr Ser Gly Ser Pro Val Trp Thr Thr Gly Leu Ala Lys Gln Val Val
                85                  90                  95

Asn Thr Ile His Arg Ala Pro His Glu Thr Gly Ile Ile Pro Thr Thr
            100                 105                 110

Ala Ile Ser Ile Gly Lys Thr Gln Tyr Met Asn Tyr Met Ser Ile Lys
        115                 120                 125

Lys Trp Gly Arg Asp Gly Glu Trp Thr Thr Asn Tyr Ser Ala Ile Ala
    130                 135                 140

Arg Ser Ile Asp Asn Gly Gln Ser Trp Gly Thr Tyr Pro Gly Thr Ile
145                 150                 155                 160

Arg Thr Ala Ser Pro Asp Ala Ile Pro Gly Thr His Phe Val Pro Gly
                165                 170                 175

Asn Gln Asn Phe Gln Met Gly Ala Phe Met Arg Gly Asn Asp Gly Tyr
            180                 185                 190

Leu Tyr Ser Phe Gly Thr Pro Ser Gly Arg Ser Gly Ala Ala Tyr Leu
        195                 200                 205

Ala Arg Val Pro Gln Asn Leu Val Pro Asp Leu Ser Lys Tyr Gln Tyr
    210                 215                 220

Trp Asn Gly Asn Trp Val Pro Asn Asn Pro Gly Ala Ala Thr Pro Leu
225                 230                 235                 240

Phe Ser Gly Pro Val Gly Glu Met Ser Ala Gln Tyr Asn Asp Tyr Leu
                245                 250                 255

Lys Gln Tyr Ile Ile Leu Tyr Ser Asn Gly Asp Ser Asn Asp Val Val
            260                 265                 270

Ala Arg Thr Ala Pro Ala Pro Gln Gly Pro Trp Ser Pro Glu Gln Pro
        275                 280                 285

Leu Val Ser Ser Phe Gln Met Pro Gly Gly Ile Tyr Ala Pro Met Ile
    290                 295                 300

His Pro Trp Ser Ser Gly Arg Asp Leu Tyr Phe Asn Leu Ser Leu Trp
305                 310                 315                 320

Ser Ala Tyr Asp Val Val Leu Met His Thr Val Leu Pro
                325                 330
```

<210> 294

<211> 130

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2518, ML.tab 2999816:3000208 reverse MW:14353

<400> 294

Val Gly Glu Tyr Ser Ala Phe Gly Phe Asp Pro Asp Asp Phe Asp Arg
1 5 10 15

Leu Ile Lys Glu Gly Ser Glu Gly Leu Arg Asp Ala Phe Glu Arg Ile
20 25 30

Ser Arg Phe Val Gly Gly Pro Gly Val Arg Thr Ala Trp Ser Ala Ile
35 40 45

Phe Glu Asp Leu Ser Arg Arg Ala Arg Pro Ala Gln Glu Thr Ala Asp
50 55 60

Glu Ala Gly Asp Gly Val Trp Ala Ile Tyr Thr Val Thr Gly Asp Gly
65 70 75 80

Ala Ala Arg Val Glu Gln Val Tyr Ala Thr Glu Leu Asp Ala Leu Arg
85 90 95

Ala Asn Lys Asn Asn Val Asp Pro Lys Arg Lys Val Arg Phe Leu Pro
100 105 110

Tyr Gly Ile Ala Val Ser Val Leu Asp Ser His Gln Glu Ser Thr Gln
115 120 125

Gln Leu
130

<210> 295

<211> 218

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2522, ML.tab 3004590:3005246 reverse MW:22735

<400> 295

```
Met Cys Arg Leu Ile Ala Leu Leu Ser Ala Val Val Cys Ala Ala Trp
1               5                  10                  15

Ala Thr Leu Ile Leu Ala Pro Ile Gly Ala Ala Ala Gly Ala Ala Trp
            20                  25                  30

Phe Ala Asn Lys Val Gly Asn Ala Thr Gln Val Val Ser Val Val Ser
        35                  40                  45

Thr Gly Gly Ser Asn Ala Lys Met Asp Ile Tyr Gln Arg Thr Gly Thr
    50                  55                  60

Gly Trp Gln Pro Leu Lys Thr Gly Ile Pro Thr Tyr Val Gly Ser Ala
65                  70                  75                  80

Gly Leu Val Ala Gln Ala Lys Ser Gly Tyr Pro Ala Thr Pro Met Gly
                85                  90                  95

Val Tyr Ser Leu Asp Ser Ala Phe Gly Thr Ala Pro Asn Pro Gly Ser
            100                 105                 110

Gln Leu Pro Tyr Thr Gln Val Gly Pro Asn His Trp Trp Ser Gly Asp
        115                 120                 125

Asp His Ser Pro Thr Phe Asn Thr Met Gln Val Cys Gln Lys Ser His
    130                 135                 140

Cys Arg Phe Asn Thr Ala Glu Ser Glu Asn Leu Gln Ile Pro Ser Tyr
145                 150                 155                 160

Lys His Ala Val Val Met Gly Val Asn Lys Ala Lys Val Pro Gly Ser
                165                 170                 175

Gly Ser Ala Phe Phe Leu His Thr Thr Gly Gly Gly Pro Thr Glu Gly
            180                 185                 190

Cys Val Ala Ile Asp Asp Val Thr Leu Val Gln Ile Leu Arg Trp Leu
        195                 200                 205

Arg Pro Gly Ala Val Ile Ala Ile Thr Lys
    210                 215
```

<210> 296

<211> 339

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2527, ML.tab 3009256:3010275 reverse MW:36773

<400> 296

```
Val Ser Ala His Arg Ser Arg Pro Ala Ala Met Trp Pro Gly Ser Ser
1               5                  10                  15

Arg Ile Thr Leu Ala Leu Leu Ala Val Met Pro Ala Leu Met Ala Tyr
            20                  25                  30

Pro Trp Trp Phe Thr Arg Ser Tyr Trp Leu Leu Gly Ile Val Ala Leu
        35                  40                  45

Val Val Val Val Leu Phe Gly Trp Trp Arg Gly Leu Tyr Leu Thr Thr
    50                  55                  60

Ile Leu Arg Arg Arg Leu Ala Met Met Trp Arg Arg Gly Arg Pro Val
65                  70                  75                  80

Ser Ala Ser Gly Ser Ala Thr Arg Thr Thr Val Leu Leu Arg Leu Gly
                85                  90                  95

Pro Pro Val Gly Gly Ser Asp Val Ile Pro Leu Pro Leu Ile Thr Arg
            100                 105                 110

Tyr Leu Asn Cys Tyr Gly Ile Arg Ala Asp Ser Ile Arg Ile Thr Ser
        115                 120                 125

Arg Asn Asn Glu Ser Asp Gly Ala Leu Cys Glu Thr Trp Ile Gly Leu
    130                 135                 140

Thr Val Ser Ala Ala Lys Asn Leu Ala Ala Leu Gln Ala Arg Ser Ser
145                 150                 155                 160

Arg Ile Pro Leu Gln Glu Thr Ala Gln Val Ala Ala Arg Arg Leu Ala
                165                 170                 175

Asp His Leu Arg Glu Ile Gly Trp Glu Val Ser Leu Ala Val Pro Asp
            180                 185                 190

Gly Ile Pro Arg Leu Ile Thr Ala Ala Gly Asp Glu Thr Trp Arg Gly
        195                 200                 205

Met Gln Gln Gly Ser Asp Tyr Leu Thr Ala Tyr Arg Val Asn Val Asp
    210                 215                 220

Asp Glu Leu Pro Gly Thr Leu Asp Ala Val Arg Leu Tyr Pro Ala Arg
225                 230                 235                 240

Glu Thr Trp Thr Ala Leu Glu Ile Ala Cys Pro Asp Ser Ser Ser Asn
                245                 250                 255

Arg Asn Thr Ile Ala Ala Ala Cys Ala Phe Leu Thr Asp Thr Ala Pro
            260                 265                 270

Gln Gly Ala Ala Pro Leu Ala Gly Leu Thr Pro Gln His Gly Asn His
        275                 280                 285

Arg Pro Ala Leu Ala Val Leu Asp Leu Phe Ser Ala Gln Arg Leu Asp
    290                 295                 300

Gly His Thr Asp Thr Asp Ala Asp Leu Leu Thr Arg Leu Arg Trp Pro
305                 310                 315                 320
```

Ala Pro Ala Ala Gly Val Ser Ser Cys Thr Ala Thr Arg Ser Pro Ala
325 330 335

Val Ser Ala

<210> 297

<211> 485

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2529, ML.tab 3011710:3013167 reverse MW:49866

<400> 297

Met Val Tyr Val Phe Ala Glu Glu Phe Cys Glu Gly Pro Val Thr Ser
1 5 10 15

Gly Ala Val Met Pro Ile Val Arg Val Ala Ile Leu Ala Asp Ser Arg
20 25 30

Leu Ile Glu Met Ala Leu Pro Thr Glu Leu Pro Leu Arg Glu Ile Leu
35 40 45

Pro Ala Val Lys Arg Leu Val Val Pro Ala Ala Ser Asp Asn Asp Ser
50 55 60

Pro Leu Ala Ala Asn Ala Ser Leu His Leu Ser Leu Ala Pro Ile Gly
65 70 75 80

Gly Ala Pro Phe Ser Leu Asp Ala Ser Leu Asp Thr Val Gly Val Val
85 90 95

Asp Gly Asp Leu Leu Ala Leu Gln Pro Val Pro Val Gly Pro Ala Ala
100 105 110

Pro Gly Ile Val Glu Asp Ile Ala Asp Ala Ala Met Ile Phe Ser Thr
115 120 125

Ala Arg Leu Gln Ser Trp Gly Pro Thr His Ile Arg Arg Gly Ala Leu
130 135 140

Ala Ala Thr Thr Ala Val Thr Phe Ala Ala Thr Gly Leu Gly Val Thr
145 150 155 160

Tyr Arg Ala Val Thr Gly Ala Leu Thr Gly Leu Leu Val Val Ile Val
165 170 175

Ile Ala Val Leu Ile Ala Leu Gly Gly Leu Val Leu Arg Ser Arg Ala
180 185 190

Ala Arg Thr Gly Leu Val Leu Ser Ile Ala Ala Leu Val Pro Ile Gly
195 200 205

Ala Val Phe Ala Leu Ala Val Pro Gly Ile Phe Gly Pro Ala Gln Val
210 215 220

Leu Leu Ala Ser Ala Gly Val Thr Ala Trp Ser Leu Ile Ala Leu Ile
225 230 235 240

Val Pro Gly Pro Glu Arg Val Arg Ile Val Ala Phe Phe Thr Ala Thr
245 250 255

Val Val Ile Gly Val Ala Val Met Leu Glu Ala Gly Ala Ala Leu Leu
260 265 270

Trp Gln Leu Thr Pro Leu Thr Ile Gly Cys Gly Leu Ile Leu Ala Ala
275 280 285

Leu Leu Val Thr Val Glu Ala Ala Gln Leu Ser Ala Leu Trp Ala Arg
290 295 300

Phe Pro Leu Pro Val Ile Pro Ala Pro Gly Asp Pro Thr Pro Ser Ala
305 310 315 320

Pro Ser Phe Gln Val Leu Glu Asp Leu Pro Arg Arg Val Arg Ile Ser
325 330 335

Ser Ala His Gln Ser Gly Phe Ile Ala Ala Ala Thr Leu Leu Ser Met
340 345 350

Leu Gly Ser Val Ala Ile Ala Leu Arg Pro Glu Ala Val Ser Ser Val
355 360 365

Gly Trp Tyr Leu Val Ala Ala Thr Ala Val Ala Ala Thr Leu Arg Ala
370 375 380

Arg Val Trp Asp Ser Val Ala Cys Lys Ala Trp Leu Leu Ala Gln Pro
385 390 395 400

Tyr Leu Val Ala Ser Val Leu Leu Gly Leu Tyr Thr Ala Thr Gly Arg
405 410 415

Tyr Val Ala Ala Ser Ala Ala Leu Leu Val Leu Val Val Val Val Leu
420 425 430

Ala Trp Ala Val Val Ala Leu Asn Pro Arg Ile Ala Ser Ser Asp Ser
435 440 445

Tyr Ser Leu Pro Leu Arg Arg Leu Leu Gly Met Val Ala Ser Gly Leu
450 455 460

Asp Ala Ser Leu Ile Pro Ala Met Ala Tyr Leu Val Ser Leu Phe Ser
465 470 475 480

Trp Val Leu Asn Arg
485

<210> 298

<211> 289

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2530, ML.tab 3013309:3014178 reverse MW:31518

<400> 298

```
Met Lys Val Asp Pro Asn Ala Val Glu Leu Thr Val Asp His Ala Trp
1               5                  10                  15

Phe Ile Ala Glu Val Ile Gly Ala Gly Ser Phe Pro Trp Val Leu Ala
            20                  25                  30

Ile Thr Thr Pro Tyr Arg Asp Ala Gly Glu Arg Ser Ala Phe Val Glu
        35                  40                  45

Arg Gln Val Asp Glu Leu Thr Arg Met Gly Leu Leu Val Ala Glu Asn
    50                  55                  60

Ser Val Asp Pro Thr Val Ala Asp Trp Ile Arg Val Val Cys Phe Pro
65                  70                  75                  80

Asp Arg Trp Leu Asp Leu Arg Tyr Leu Arg Ser Thr Ser Ala Val Gly
                85                  90                  95

Asp Ser Glu Leu Leu Arg Gly Met Val Ala Gln Arg Ala Gly Val Ser
            100                 105                 110

Asp Lys Thr Val Val Ala Leu Arg Ser Ala Gln Leu Ile Thr Phe Thr
        115                 120                 125

Ala Met Asp Ile Asp Asp Pro Leu Arg Leu Val Pro Ile Leu Gly Ala
    130                 135                 140

Gly Leu Ala Gln Arg Pro Pro Ala Arg Phe Asp Glu Phe Ser Met Pro
145                 150                 155                 160

Met Arg Val Gly Val Arg Ala Asp Glu Arg Leu Arg Ser Gly Thr Ser
                165                 170                 175

Leu Ala Glu Val Ala Asp Tyr Leu Gly Ile Pro Lys Ser Ala Gln Pro
            180                 185                 190

Val Val Glu Ser Val Phe Ser Gly Pro Arg Ser Tyr Val Glu Ile Val
        195                 200                 205

Ala Gly Cys Arg Arg Asp Gly Lys His Ala Thr Thr Glu Val Gly Met
    210                 215                 220

Ser Ile Val Asp Thr Thr Thr Gly Arg Val Leu Val Asn Pro Ser Arg
```

225 230 235 240

Ala Phe Asp Gly Glu Trp Val Ser Thr Phe Ser Pro Gly Thr Pro Phe
245 250 255

Ala Ile Ala Val Gly Ile Glu Gln Leu Thr Ala Thr Leu Pro Glu Gly
260 265 270

Gln Trp Phe Pro Gly Gln Arg Leu Cys Arg Asp Phe Ser Gly Gln Thr
275 280 285

Ser

<210> 299

<211> 96

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2531, ML.tab 3014189:3014479 reverse MW:10392

<400> 299

Met Thr Gln Ile Met Tyr Asn Tyr Pro Ala Met Leu Asp His Ala Gly
1 5 10 15

Asn Met Ser Ala Cys Ala Gly Ala Leu Gln Gly Val Gly Ile Asp Ile
20 25 30

Ala Ala Glu Gln Ala Ala Leu Gln Ala Cys Trp Gly Gly Asp Thr Gly
35 40 45

Ile Ser Tyr Gln Ala Trp Gln Val Gln Trp Asn Gln Ala Thr Glu Glu
50 55 60

Met Val Arg Ala Tyr His Ala Met Ala Asn Thr His Gln Asn Asn Thr
65 70 75 80

Leu Ala Met Leu Thr Arg Asp Gln Ala Glu Ala Ala Lys Trp Gly Gly
85 90 95

<210> 300

<211> 98

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2532, ML.tab 3014518:3014814 reverse MW:10191

<400> 300

Val Ser Leu Leu Asp Val His Ile Pro Gln Leu Val Ala Ser Glu Ser
1 5 10 15

Ala Phe Ala Ala Lys Ala Ala Leu Met Arg Ser Gln Ile Asn Gln Ala
20 25 30

Glu Cys Glu Ala Ile Ser Ala Gln Ala Phe His Gln Gly Glu Ser Ser
35 40 45

Ala Ala Phe Gln Ser Ala His Ala Gln Phe Val Thr Ala Ala Glu Lys
50 55 60

Ile Asn Ala Leu Leu Asp Ile Ala Gln Gln His Leu Gly Glu Ala Ala
65 70 75 80

Glu Thr Tyr Val Ala Thr Asp Ala Thr Ala Ala Ser Thr Tyr Thr Thr
85 90 95

Gly Leu

<210> 301

<211> 102

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2534, ML.tab 3016103:3016411 reverse MW:10243

<400> 301

Met Thr Leu Arg Val Val Pro Glu Lys Leu Ala Ala Thr Ser Glu Ala
1 5 10 15

Met Lys Ala Leu Thr Ala Arg Leu Glu Ala Ala His Ala Ala Ala Phe
20 25 30

Pro Cys Leu Val Ala Val Val Pro Pro Ala Ala Asp Pro Val Ser Leu
35 40 45

Gln Thr Ala Ala Gly Phe Ser Ala Arg Gly Gln Glu His Ala Leu Val
50 55 60

Ala Ala Gln Gly Val Glu Glu Leu Gly Arg Ala Gly Ile Gly Val Gly
65 70 75 80

Gln Ser Ser Thr His Tyr Ala Ile Ser Asp Ala Leu Ala Ala Ser Thr
85 90 95

Tyr Gly Ile Val Glu Ser
100

<210> 302

<211> 552

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2536, ML.tab 3020432:3022090 reverse MW:57975

<400> 302

Met Thr Ser Asn Glu Leu Pro Gly Glu Trp Ser Gly Glu Arg Arg Ser
1 5 10 15

Phe Phe Ser Arg Thr Pro Val Asn Asp Asn Pro Asp Lys Val Val Tyr
20 25 30

Arg Arg Gly Phe Val Thr Arg His Gln Val Thr Gly Trp Arg Phe Val
35 40 45

Met Arg Arg Ile Ala Ser Gly Ile Ala Leu His Asp Thr Arg Met Leu
50 55 60

Val Asp Pro Leu Arg Thr Gln Ser Arg Ser Val Leu Val Gly Ala Leu
65 70 75 80

Leu Val Ile Thr Gly Leu Ile Gly Cys Phe Val Phe Ser Phe Ile Arg
85 90 95

Pro Asn Gly Ala Ala Gly Asn Asn Ala Val Leu Ala Asp Arg Ser Thr
100 105 110

Ala Ala Leu Tyr Val Arg Val Gly Asp Glu Leu His Pro Val Leu Asn
115 120 125

Leu Thr Ser Ala Arg Leu Ile Val Gly Arg Ser Val Asn Pro Ile Thr
130 135 140

Val Lys Ser Ser Glu Leu Asp Arg Phe Pro Arg Gly Asn Leu Ile Gly

145 150 155 160

Ile Pro Gly Ala Pro Glu Arg Met Val Gln Asn Thr Thr His Asp Ala
165 170 175

Asn Trp Thr Val Cys Asp Val Val Ser Gly Glu Gly Gly His Ala Ala
180 185 190

His Ser Met Gly Val Thr Val Ile Ala Gly Pro Pro Asp Ser His Gly
195 200 205

Met Arg Ala Ala Val Leu Gly Ser Ala His Gly Val Leu Val Asp Ala
210 215 220

Pro Ser Glu Arg Gly Gly Ser Thr Trp Leu Leu Trp Asp Gly Lys Arg
225 230 235 240

Ser Glu Ile Asp Leu Ala Asp His Ala Val Thr Asp Ala Leu Gly Phe
245 250 255

Gly Val Gly Phe Ala Glu Val Pro Ala Pro Arg Pro Ile Gly Ala Gly
260 265 270

Leu Phe Asn Ala Ile Pro Glu Ala Pro Pro Leu Lys Ala Pro Val Ile
275 280 285

Pro Asn Ala Gly Ala Thr Pro Ser Phe Gly Val Arg Ala Pro Ile Gly
290 295 300

Ala Val Val Val Ser Phe Gly Leu Ala Ala Leu Gly Lys Asn Pro Tyr
305 310 315 320

Asp Ser Val Arg Tyr Tyr Ala Val Leu Pro Asp Gly Leu Gln Pro Ile
325 330 335

Ser Pro Val Leu Ala Ala Ile Leu Arg Asn Ile Asn Ser Tyr Gly Leu
340 345 350

Gln Gln Pro Pro Arg Leu Gly Ala Asp Glu Val Asp Lys Leu Pro Val
355 360 365

Ser Arg Met Leu Asp Thr Glu Arg Tyr Pro Glu Gln Gln Ile Ser Leu
370 375 380

Ile Asp Ala Gly Tyr Ala Pro Val Ser Cys Ala Tyr Trp Ser Lys Pro
385 390 395 400

Ala Gly Ala Ala Thr Ser Phe Leu Ser Leu Met Ser Gly Ala Ala Leu
405 410 415

Pro Val Pro Asp Ala Ala Arg Ala Val Glu Leu Val Ser Ala Pro Ser
420 425 430

Arg Gly Asp Ser Ser Thr Ala Ser Arg Val Val Leu Thr Pro Gly Thr
435 440 445

Gly Tyr Phe Ala Gln Thr Val Gly Val Gly Ser Ala Ala Pro Ala Thr
450 455 460

Ala Ser Leu Phe Trp Val Ser Asp Thr Gly Val Arg Tyr Gly Ile Asp
465 470 475 480

Thr Glu Ala Asp Ala Arg Ser Glu Ala Thr Ala Gly Pro Gly Lys Ile
485 490 495

Val Glu Ala Leu Gly Leu Lys Leu Pro Ala Val Pro Ile Pro Trp Ser
500 505 510

Ile Leu Ser Leu Phe Ala Val Gly Pro Thr Leu Ser Arg Ala Asp Ala
515 520 525

Leu Leu Glu His Asp Gly Leu Ala Pro Asp Thr Arg Ala Gly Arg Thr
530 535 540

Thr Thr Ala Tyr Gly Glu His Arg
545 550

<210> 303

<211> 98

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2557, ML.tab 3049294:3049590 forward MW:10997

<400> 303

Leu Tyr Ala Thr Thr Glu Leu Ala Glu Leu His Asp Leu Ile Gly Arg
1 5 10 15

Met Arg Arg Ser Val Ala Ser Phe Lys Ala Arg Tyr Gly Asp Ser Pro
20 25 30

Ala Met Arg Arg Ile Ala Ile Asp Ala Asp Arg Ile Leu Ser Asp Ile
35 40 45

Glu Leu Leu Asp Ala Asp Ile Ser Glu Leu Asp Leu Ala Arg Ala Thr
50 55 60

Val Gln Gln Ser Asn Glu Lys Ile Ala Ile Pro Asp Thr Gln Tyr Asp
65 70 75 80

Ser Asp Phe Trp Arg Asp Val Asp Asp Glu Gly Val Gly Gly His Ser
85 90 95

Arg Ser

<210> 304

<211> 300

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2566, ML.tab 3061369:3062271 forward MW:32889

<400> 304

Leu Thr Phe Gly Phe Val Leu Arg Arg Leu Arg Arg His Phe Ser Val
1 5 10 15

Lys Glu Asn Thr Val Asn Gln Pro Ser Gly Leu Lys Asn Ile Leu Arg
20 25 30

Ala Ile Val Gly Ala Leu Pro Leu Leu Pro Arg Thr Asp Gln Leu Pro
35 40 45

Ser Arg Thr Val Thr Ile Glu Glu Leu Pro Ile Asp His Thr Asn Val
50 55 60

Ser Ala Tyr Ala Ser Val Thr Gly Leu Arg Tyr Gly Asn His Val Pro
65 70 75 80

Leu Thr Tyr Pro Phe Ala Leu Thr Phe Pro Ala Met Met Ser Leu Val
85 90 95

Thr Gly Phe Asp Phe Pro Phe Ala Ala Met Gly Ser Val His Thr Glu
100 105 110

Asn His Ile Thr Gln Tyr Arg Pro Ile Ala Val Thr Asp Val Val Gly
115 120 125

Val Gln Val His Ala Glu Asn Leu Arg Glu His Arg Lys Gly Leu Leu
130 135 140

Val Asp Leu Val Thr Asp Val Ser Val Gly Asn Asp Thr Ala Trp His
145 150 155 160

Gln Val Thr Thr Phe Leu His Leu Gln Arg Thr Ser Leu Ser Asp Glu
165 170 175

Pro Lys Pro Pro Ser Gln Lys Gln Pro Lys Leu Leu Pro Pro Ser Ala
180 185 190

Val Leu Gln Ile Thr Pro Arg Gln Ile Arg Arg Tyr Ala Ala Val Gly
195 200 205

Gly Asp His Asn Pro Ile His Thr Asn Pro Ile Val Ala Lys Leu Phe
210 215 220

Gly Phe Pro Thr Thr Ile Ala His Gly Met Phe Ser Ala Ala Ala Val
225 230 235 240

Leu Ala Asn Ile Glu Ala Arg Leu Pro Asp Ala Val His Tyr Ser Ala
245 250 255

Arg Phe Val Lys Pro Val Val Leu Pro Ala Thr Thr Gly Leu Tyr Val
260 265 270

Asp Glu Ser Ala Gly Asn Trp Asp Leu Thr Leu Arg Asn Ile Ala Lys
275 280 285

Gly Tyr Pro His Leu Ala Gly Thr Val Gln Gly Val
290 295 300

<210> 305

<211> 57

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2569A, ML.tab 3065268:3065441 forward MW:5896

<400> 305

Met Ser Arg Ile Val Ala Pro Ala Ala Ala Ser Val Val Val Gly Leu
1 5 10 15

Leu Leu Gly Ala Ala Thr Ile Phe Gly Met Thr Leu Met Val Gln Gln
20 25 30

Asp Thr Lys Pro Pro Leu Pro Gly Gly Asp Pro Gln Ser Ser Val Leu
35 40 45

Asn Arg Val Glu Tyr Gly Asn Arg Thr
50 55

<210> 306

<211> 1405

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2570, ML.tab 3065557:3069774 forward MW:147681

<400> 306

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Val Ala Ala Met Ser Arg Trp Trp Leu Val Leu Val Gly Val Val Ala
1               5                  10                  15

Val Ala Leu Thr Phe Ala Gln Ser Pro Gly Gln Ile Ser Pro Asp Thr
            20                  25                  30

Lys Leu Asp Leu Thr Thr Asn Pro Leu Arg Phe Leu Ala Arg Ala Thr
        35                  40                  45

Asn Leu Trp Asn Ser Asp Leu Pro Phe Gly Gln Val Gln Asn Gln Ala
    50                  55                  60

Tyr Gly Tyr Leu Phe Pro His Gly Thr Phe Phe Leu Ile Gly Gln Leu
65                  70                  75                  80

Leu Gly Ser Pro Gly Trp Ile Thr Gln Arg Leu Trp Trp Ala Leu Leu
                85                  90                  95

Leu Thr Ala Gly Phe Trp Gly Leu Leu Arg Val Ala Glu Thr Leu Ser
            100                 105                 110

Ile Gly Ser Pro Thr Ser Arg Ala Ile Gly Ala Val Ala Phe Ala Leu
        115                 120                 125

Ser Pro Arg Val Leu Thr Thr Leu Gly Ser Ile Ser Ser Glu Thr Leu
    130                 135                 140

Pro Met Met Leu Ser Pro Trp Val Leu Leu Pro Thr Ile Leu Ala Leu
145                 150                 155                 160

Gln Gly Ala Pro Gly Arg Ser Val Arg Thr Arg Ala Ala Gln Ala Gly
                165                 170                 175

Leu Ala Val Ala Leu Met Gly Ala Val Asn Ala Ile Ala Thr Leu Ala
            180                 185                 190

Gly Cys Leu Pro Ala Val Ile Trp Trp Ala Cys His Arg Pro Asn Arg
        195                 200                 205

Leu Trp Trp Arg Tyr Thr Gly Trp Trp Leu Leu Ala Leu Cys Leu Ala
    210                 215                 220

Thr Leu Trp Trp Val Val Ala Leu Val Leu Leu His Gly Val Ser Pro
225                 230                 235                 240

Pro Phe Leu Asp Phe Ile Glu Ser Ser Gly Val Thr Thr Gln Trp Ser
                245                 250                 255

Ser Leu Val Glu Met Leu Arg Gly Thr Asp Ser Trp Thr Pro Phe Val
            260                 265                 270

Ala Gln Thr Ala Thr Ala Gly Thr Pro Leu Val Thr Glu Ser Val Ala
        275                 280                 285

Ile Leu Gly Thr Cys Leu Val Ala Ala Ala Gly Leu Ala Gly Leu Ala
    290                 295                 300
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Ser Thr Gly Met Pro Ala Arg Gly Arg Leu Val Thr Met Leu Val Ile
305                 310                 315                 320

Gly Val Val Leu Leu Ser Ala Gly Tyr Ser Gly Gly Leu Gly Ser Pro
                325                 330                 335

Leu Ala Gln Ala Val Gln Ala Phe Leu Asp Ser Ser Gly Ala Ala Leu
            340                 345                 350

Arg Asn Val His Lys Leu Glu Ser Val Ile Arg Thr Pro Phe Ala Leu
        355                 360                 365

Gly Ile Ala Gly Leu Leu Gly Arg Ile Pro Leu Pro Gly Ser Ala Pro
    370                 375                 380

Val Leu Val Trp Leu Ser Ser Phe Ala His Pro Glu Arg Asp Lys Arg
385                 390                 395                 400

Val Ala Ala Thr Val Ala Val Leu Thr Ala Leu Leu Val Ser Thr Ser
                405                 410                 415

Ser Ala Trp Thr Gly Arg Leu Thr Pro Pro Gly Thr Phe Ser Ala Ile
            420                 425                 430

Pro Gln Tyr Trp His Asp Thr Ser Asp Trp Leu Ser Glu His Asn Thr
        435                 440                 445

Gly Ile Pro Thr Pro Gly Arg Val Leu Val Val Pro Gly Ala Pro Phe
    450                 455                 460

Ala Thr Gln Val Trp Gly Thr Ser His Asp Glu Pro Leu Gln Val Leu
465                 470                 475                 480

Gly Asn Ser Pro Trp Gly Val Arg Asp Ser Ile Pro Leu Thr Pro Pro
                485                 490                 495

Gln Ala Ile Arg Ala Leu Asp Ser Val Gln Arg Leu Phe Ala Ser Gly
            500                 505                 510

Arg Pro Ser Val Gly Leu Ala Asp Thr Leu Ala Arg Gln Gly Ile Ser
        515                 520                 525

Tyr Val Val Leu Arg Asn Asp Leu Asp Pro Asp Thr Ser Arg Ser Ala
    530                 535                 540

Arg Pro Ile Leu Val His Arg Ala Ile Ala Gly Ser Pro Gln Leu Glu
545                 550                 555                 560

Lys Val Ala Gln Phe Gly Ala Pro Val Gly Thr Asn Met Leu Lys Gly
                565                 570                 575

Phe Val Ala Asp Ser Glu Leu Arg Pro Trp Tyr Pro Ala Val Glu Ile
            580                 585                 590

Tyr Arg Val Ala Val Ser Asp Gly Thr Asn Pro Gly Lys Pro Tyr Phe
        595                 600                 605

Ala Asp Thr Asp Gln Leu Pro Arg Ile Asp Gly Gly Pro Glu Val Leu
    610                 615                 620

Leu Arg Leu Asp Glu Arg Arg Arg Leu Leu Gly Gln Pro Ala Leu Gly
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625 630 635 640

Pro Ala Leu Met Thr Ala Asp Ala Gln Phe Ala Gly Leu Pro Leu Pro
645 650 655

Ser Arg Ala Glu Val Thr Ile Thr Asp Thr Pro Val Ala Arg Glu Thr
660 665 670

Asp Tyr Gly Arg Val Asp Gln His Ser Ser Ala Ile Arg Ala Val Asn
675 680 685

Asp Ala Arg His Thr Phe Asn Arg Val Pro Asp Tyr Pro Val Pro Gly
690 695 700

Ala Glu Met Val Phe Gly Gly Trp Ser Gly Gly Arg Ile Thr Ala Ser
705 710 715 720

Ser Ser Ser Ser Asp Ala Thr Ser Met Pro Asp Val Ala Pro Ala Thr
725 730 735

Ser Pro Ala Ala Ala Ile Asp Gly Asp Pro Ala Thr Ser Trp Val Ser
740 745 750

Asn Ala Leu Gln Pro Ala Val Gly Gln Trp Leu Gln Val Asp Phe Asp
755 760 765

His Pro Val Asn Asn Ala Val Ile Thr Val Thr Pro Ser Ala Thr Ala
770 775 780

Val Gly Ala Gln Val Arg Arg Ile Glu Ile Glu Thr Val Asn Gly Thr
785 790 795 800

Thr Asn Leu Arg Val Asp Glu Ala Gly Lys Pro Leu Ala Val Ala Leu
805 810 815

Pro Tyr Gly Glu Thr Pro Trp Val Arg Ile Thr Ala Ala Ala Thr Asp
820 825 830

Asp Gly Ser Ser Gly Val Gln Phe Gly Ile Thr Asp Leu Thr Ile Thr
835 840 845

Gln Tyr Asp Ala Ser Gly Phe Ala His Pro Val Asn Leu Arg His Thr
850 855 860

Ala Leu Val Pro Gly Ser Pro Pro Gly Trp Ala Val Ala Gly Trp Asp
865 870 875 880

Leu Gly Ser Glu Leu Leu Gly Arg Pro Gly Cys Ala Pro Ala Pro Asp
885 890 895

Asn Val Arg Cys Ala Ala Ser Met Thr Leu Ala Pro Glu Glu Pro Val
900 905 910

Asn Phe Ser Arg Thr Leu Thr Val Pro Tyr Pro Ile Ser Val Thr Ala
915 920 925

Met Leu Trp Val Arg Pro Arg Gln Gly Pro Lys Leu Ala Asp Leu Ile
930 935 940

Ala Glu Pro Lys Thr Thr Arg Ala Tyr Gly Glu Ala Asp Thr Val Asp
945 950 955 960

Ile Leu Gly Ser Ala Tyr Ala Ala Thr Asp Gly Asn Pro Ala Thr Ser
965 970 975

Trp Thr Ala Pro Gln Arg Val Val Gln His Lys Thr Pro Pro Thr Leu
980 985 990

Thr Leu Val Leu Pro Arg Pro Thr Glu Val Asn Gly Leu Arg Leu Ala
995 1000 1005

Pro Ser Arg Ser Ala Leu Pro Ala Arg Pro Thr Leu Val Ala Val
1010 1015 1020

Asn Leu Gly Asn Gly Pro Gln Val Arg Glu Leu Gln Ala Gly Glu
1025 1030 1035

Pro Gln Ala Leu Ser Leu Lys Pro Arg Ile Thr Asp Thr Val Thr
1040 1045 1050

Ile Ser Leu Leu Asp Trp His Asp Val Ile Asp Arg Asn Ala Leu
1055 1060 1065

Gly Phe Asp Gln Leu Lys Pro Pro Gly Leu Ala Glu Val Thr Val
1070 1075 1080

Leu Gly Thr Asp Gly Asn Pro Ile Ala Pro Ala Asn Ala Ser Arg
1085 1090 1095

Asn Arg Ile Arg Glu Val Thr Val Asp Cys Asp His Gly Pro Ile
1100 1105 1110

Ile Ala Val Ala Gly Arg Phe Val His Thr Ser Ile Arg Thr Thr
1115 1120 1125

Ala Ala Ala Leu Leu Asp Gly Glu Pro Val Ala Ala Val Pro Cys
1130 1135 1140

Glu Arg Ala Pro Ile Val Leu Pro Ala Gly Gln Gln Glu Leu Leu
1145 1150 1155

Ile Ser Pro Gly Ala Ala Phe Ile Val Asp Gly Ala Gln Leu Ser
1160 1165 1170

Thr Gln Asp Gly Thr Glu Leu Pro Ser Ala Arg Thr Ile Ser Ala
1175 1180 1185

Asp Thr Gly Lys Trp Gly Pro Ser Arg Arg Glu Val Arg Ala Pro
1190 1195 1200

Gly Ser Ala Thr Ser Gln Val Leu Val Met Pro Asp Ser Ile Asn
1205 1210 1215

Pro Gly Trp Val Ala His Thr Ser Thr Gly Val Arg Leu Met Pro
1220 1225 1230

Val Ala Val Asn Gly Trp Gln Gln Gly Trp Leu Val Pro Ala Gly
1235 1240 1245

Asn Pro Gly Thr Ile Thr Leu Thr Phe Thr Ala Asn Ser Leu Tyr
1250 1255 1260

Arg Pro Gly Leu Ala Ala Gly Leu Ala Leu Leu Pro Leu Leu Ala
1265 1270 1275

Leu Leu Ala Leu Trp Gly Arg Arg Asn Glu Arg Ala Ala Asp Ala
1280 1285 1290

Ala Ala Gln Pro Trp Thr Pro Gly Ala Trp Ser Ala Val Ala Val
1295 1300 1305

Leu Ser Ala Gly Ala Val Ile Ala Gly Ala Ala Gly Val Val Val
1310 1315 1320

Val Gly Ala Ala Leu Ser Leu Arg Tyr Ala Leu Arg His Gln Gln
1325 1330 1335

Arg Trp Arg Asn Gly Leu Thr Val Gly Leu Ser Ala Gly Gly Leu
1340 1345 1350

Val Leu Ala Gly Ala Ala Leu Ser Arg Gln Pro Trp Arg Ser Val
1355 1360 1365

Asp Gly Tyr Ser Gly His Ser Ala Asn Val Gln Leu Leu Ala Leu
1370 1375 1380

Ile Ser Leu Ala Ala Leu Ala Ala Ser Val Val Ser Pro Arg Cys
1385 1390 1395

Gly Ser Thr Gly Val Ala Thr
1400 1405

<210> 307

<211> 427

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2581, ML.tab 3081538:3082821 forward MW:46681

<400> 307

Val Asn Arg Ala Val Ile Leu Arg Phe Thr Ala Cys Gly Ile Ile Gly
1 5 10 15

Leu Gly Ala Ala Phe Leu Ile Ala Ala Leu Leu Leu Ala Thr Tyr Thr
20 25 30

Ser Ser Arg Ile Thr Lys Ile Pro Leu Asp Ile Asp Ala Thr Leu Val
35 40 45

Ser Glu Gly Asn Gly Thr Ala Leu Asp Ser Ser Ser Leu Ser Ser Glu
50 55 60

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His Ile Ile Val Asn Gln Asn Val Pro Leu Val Ser Gln Gln Gln Ile
65                  70                  75                  80

Thr Val Glu Ser Pro Ala Asn Val Asp Val Val Thr Phe Gln Val Gly
                85                  90                  95

Val Ser Ile Arg Arg Thr Asp Lys Gln Lys Asp Thr Gly Leu Leu Leu
            100                 105                 110

Ala Val Val Asp Thr Val Thr Leu Asn Arg Lys Thr Ala Met Ala Val
        115                 120                 125

Ser Asp Asp Thr His Thr Gly Gly Ser Ile Gln Lys Pro Arg Gly Phe
    130                 135                 140

Thr Asp Glu Asn Pro Pro Thr Ala Ile Pro Leu Arg His Asp Gly Leu
145                 150                 155                 160

Ser Tyr Arg Phe Pro Phe His Thr Glu Lys Lys Thr Tyr Pro Tyr Phe
                165                 170                 175

Asp Pro Val Ala Gln Lys Thr Phe Asp Val Asn Tyr Gln Asn Gln Glu
            180                 185                 190

Asp Ile Asn Gly Leu Thr Thr Tyr Arg Phe Thr Gln Asn Val Gly Tyr
        195                 200                 205

Asp Ala Asp Gly Lys Leu Val Ala Pro Ile Thr Tyr Pro Ser Leu Tyr
    210                 215                 220

Ala Ser Asp Glu Asp Gly Lys Ile Thr Thr Thr Ala Ala Ile Trp Gly
225                 230                 235                 240

Leu Ser Gly Asp Pro Ser Glu Gln Ile Thr Met Thr Arg Tyr Tyr Ala
                245                 250                 255

Ala Gln Arg Thr Phe Trp Val Asp Pro Val Ser Gly Thr Ile Val Lys
            260                 265                 270

Glu Thr Glu His Val Asn His Tyr Phe Ala Arg Asp Thr Leu Lys Pro
        275                 280                 285

Glu Val Thr Leu Ala Asp Tyr Lys Val Thr Ser Thr Glu Glu Thr Ile
    290                 295                 300

Glu Ser Gln Val Asn Ser Ala Arg Asp Glu Arg Asp Arg Leu Ala Leu
305                 310                 315                 320

Trp Ser Arg Val Leu Pro Ile Thr Phe Thr Ala Val Gly Leu Ile Thr
                325                 330                 335

Leu Leu Ser Gly Gly Phe Leu Ala Ser Phe Ser Leu Arg Thr Glu Ser
            340                 345                 350

Ala Leu Thr Glu Ser Gly Leu Asp Arg Ala Asn Arg Asp Ala Phe Gly
        355                 360                 365

His Cys Arg Thr Glu Glu Pro Val Pro Gly Ala Glu Ala Glu Thr Glu
    370                 375                 380
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Lys Leu Pro Thr Gln Arg Pro Glu Leu Arg Asp Ser Ser Ile Leu Ser
385 390 395 400

Val Ser Ala His Arg Arg Arg Ser Ser Glu Ser Ser Pro Pro Asn Ser
405 410 415

Gly Pro Ala Asp Pro Gly His Pro Glu Arg Gly
420 425

<210> 308

<211> 600

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2582, ML.tab 3082923:3084725 forward MW:61888

<400> 308

Val Ser Arg Glu Leu Tyr His Arg Ser Met Ser Trp Ser Arg Pro Ser
1 5 10 15

Tyr Ala Leu Gly Met Ala Leu Leu Val Val Gly Pro Leu Met Arg Pro
20 25 30

Gly Tyr Leu Leu Leu Arg Asp Ala Val Ser Thr Pro Arg Ser Tyr Leu
35 40 45

Ser Asp Ala Ala Leu Gly Leu Thr Ser Ala Pro Arg Ser Thr Pro Gln
50 55 60

Asp Phe Ala Val Ala Met Ala Ser His Leu Val Asp Gly Gly Ile Val
65 70 75 80

Val Lys Ser Ala Leu Val Leu Gly Leu Trp Leu Ala Gly Trp Gly Ala
85 90 95

Ala Arg Leu Val Val Thr Ala Leu Pro Ser Ala Gly Val Ala Gly Gln
100 105 110

Phe Val Ala Ser Thr Leu Ala Val Trp Asn Pro Tyr Val Ala Glu Arg
115 120 125

Leu Leu Gln Gly His Trp Ser Leu Leu Val Gly Tyr Gly Cys Leu Pro
130 135 140

Trp Val Ala Glu Ala Met Leu Met Leu Arg Ser Ser Asp Asn Ala Ser
145 150 155 160

Arg Pro Gly Leu Leu Gly Phe Phe Ala Leu Ala Cys Trp Ile Ala Leu
165 170 175

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Ala Gly Leu Thr Pro Thr Gly Leu Met Leu Ala Ala Thr Val Ala Leu
            180                 185                 190

Ile Cys Val Ala Val Pro Val Glu Gly Pro Gly Glu Pro Arg Pro Arg
        195                 200                 205

Trp Leu Cys Ala Ala Ala Thr Leu Gly Ser Ala Leu Gly Ala Ala Leu
    210                 215                 220

Pro Trp Leu Thr Ala Ser Ala Val Gly Thr Ser Leu Thr Ala His Thr
225                 230                 235                 240

Val Ala Asn Thr Leu Gly Val Thr Val Phe Ala Pro Arg Ala Glu Pro
                245                 250                 255

Gly Leu Gly Thr Leu Ala Ser Leu Ala Ser Leu Gly Gly Ile Trp Asn
            260                 265                 270

Gly Glu Ala Val Pro Thr Ser Arg Thr Thr Leu Phe Ala Val Leu Ser
        275                 280                 285

Ala Thr Val Leu Leu Gly Val Val Val Ala Gly Leu Pro Val Ala Val
    290                 295                 300

Arg Arg Pro Ala Val Val Pro Leu Leu Val Leu Ala Ala Val Ala Val
305                 310                 315                 320

Ala Thr Pro Ala Ala Leu Ala Thr Gly Pro Gly Ile Asp Met Leu Lys
                325                 330                 335

Ala Val Val Asn Ala Val Pro Gly Leu Gly Val Leu Arg Asp Gly Gln
            340                 345                 350

Lys Trp Val Ala Leu Ala Val Pro Gly Tyr Ser Leu Ala Gly Ala Gly
        355                 360                 365

Ala Val Val Thr Leu Gly Arg Trp Leu Arg Pro Ser Arg Pro Leu Ser
    370                 375                 380

Pro Val Val Thr Ala Leu Ala Cys Cys Leu Ala Leu Ile Leu Ala Leu
385                 390                 395                 400

Pro Asp Leu Ala Trp Gly Val Trp Gly Lys Val Gln Pro Val His Tyr
                405                 410                 415

Pro Ser Gly Trp Ala Ala Val Ala Ala Thr Ile Asn Asp Arg Gly Glu
            420                 425                 430

Gly Pro Gly Trp Val Ala Val Leu Pro Ala Gly Thr Met Arg Arg Phe
        435                 440                 445

Ser Trp Ser Gly Thr Ala Pro Val Leu Asp Pro Leu Pro Arg Trp Val
    450                 455                 460

Arg Asp Asp Val Leu Thr Thr Gly Asp Leu Ile Ile Ser Gly Val Met
465                 470                 475                 480

Val Ala Gly Glu Gly Asn His Ala Arg Ala Ala Gln Asp Leu Leu Leu
                485                 490                 495
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Ser Gly Pro Asn Pro Ser Ala Leu Thr Ala Ala Gly Val Ala Trp Leu
500 505 510

Val Val Glu Ser Asp Thr Ala Gly Asp Met Gly Ala Ser Ala Arg Thr
515 520 525

Leu Ala Ala Leu Gln Pro Thr Tyr Arg Asp Asp Ala Ile Gly Leu Tyr
530 535 540

Arg Ile Gly Gly Ser Asn Ala Lys Thr Ala Pro Ser Pro Tyr Arg Gly
545 550 555 560

Leu Leu Ile Ala Ala His Leu Thr Trp Leu Val Ile Leu Val Met Ala
565 570 575

Val Val Gly Met Gln Ile Thr Arg His Thr His Phe Arg Asp Val Ser
580 585 590

Ser Val Ala Leu Leu Ser Arg Arg
595 600

<210> 309

<211> 182

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2595, ML.tab 3100808:3101356 forward MW:19619

<400> 309

Leu Pro Glu Ser Gln Val Ala Ala Asp Asp Ser Gly Val Thr Leu Asn
1 5 10 15

Arg Ser Arg Leu Gly Arg Gly Trp Leu Thr Gly Ile Ala Val Ala Leu
20 25 30

Leu Leu Ala Gly Cys Gly Ile Gly Thr Gly Gly Tyr Cys Met Leu Arg
35 40 45

Tyr His Gln Asp Ser Gln Ala Met Ala Arg Asn Asp Asn Ala Ala Leu
50 55 60

Lys Thr Ala Leu Asp Cys Val Ala Ala Thr Gln Ala Pro Asp Thr Asn
65 70 75 80

Thr Met Ala Ala Ser Glu Gln Lys Ile Ile Asp Cys Gly Thr Asp Ala
85 90 95

Phe His Ala Gln Ala Leu Leu Tyr Thr Asn Met Leu Val Gln Ala Tyr
100 105 110

Gln Ala Ala Asn Val His Val Gln Val Ser Asp Met Arg Ala Ala Val
115 120 125

Glu Arg His Asn Asn Asp Gly Ser Ile Asp Val Leu Val Ala Leu Arg
130 135 140

Val Lys Leu Ser Asn Asp Arg Ala His Asn Gln Glu Thr Gly Tyr Arg
145 150 155 160

Leu Arg Val Lys Met Ala Leu Ala Glu Gly Gln Tyr Lys Ile Ser Lys
165 170 175

Leu Asp Gln Val Thr Lys
180

<210> 310

<211> 325

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2596, ML.tab 3101353:3102330 forward MW:35970

<400> 310

Val Thr Val Val Val Ala Lys Ser Gln Thr Ala Ala Val Ile Pro Glu
1 5 10 15

Pro Leu Ser Asn Arg Leu Ala Pro Trp His Leu Arg Leu Val Ala Leu
20 25 30

Ala Val Asp Val Leu Pro Gly Leu Val Ala Val Ser Thr Met Thr Leu
35 40 45

Val Val Phe Thr Val Pro Leu Arg Ser Ala Trp Trp Trp Leu Cys Met
50 55 60

Ala Val Gly Gly Ile Val Ile Leu Ser Met Leu Val Asn Arg Leu Leu
65 70 75 80

Leu Pro Thr Ile Ile Gly Trp Ser Leu Gly Arg Ala Leu Cys Gly Ile
85 90 95

Ser Val Ile Met Arg Asp Gly Val Ala Ile Gly Pro Trp Arg Leu Leu
100 105 110

Leu Arg Asp Leu Thr His Leu Leu Asp Thr Ala Ala Val Phe Ala Gly
115 120 125

Trp Leu Trp Pro Leu Trp Asp Ser Arg Arg Arg Thr Phe Ala Asp Ile

130 135 140

Leu Leu Arg Thr Glu Val Arg Cys Val Gln Ala Val Glu Arg Gln Arg
145 150 155 160

Thr Ile Arg Trp Trp Ala Ser Val Ala Leu Leu Thr Ala Ala Gly Val
165 170 175

Ser Leu Gly Gly Ala Ser Val Ser Trp Ala Val Val Tyr Ser His Asp
180 185 190

Arg Ala Ile Asp Gln Thr Arg Ser Glu Ile Ala Ile Gln Gly Pro Lys
195 200 205

Met Val Ala Gln Met Leu Thr Tyr Asn Pro Lys Ser Leu Arg Asp Asp
210 215 220

Phe Thr His Ala Gln Ser Leu Ala Ser Asp Lys Tyr Arg Arg Gln Leu
225 230 235 240

Ala Ala Gln Gln Asp Val Val Lys Lys Gly His Pro Val Ile Asn Glu
245 250 255

Tyr Trp Pro Thr Ala Gly Ala Ile Gln Ser Ala Thr Arg Asp Arg Ala
260 265 270

Thr Met Leu Leu Phe Met Gln Gly Arg Arg Gly Ala Ala Pro Gly Glu
275 280 285

Arg Tyr Ile Ser Ala Thr Val Arg Val Ser Phe Ala Lys Gly Glu His
290 295 300

Asn His Trp Leu Val Asp Asp Leu Thr Val Leu Thr Lys Pro Lys Thr
305 310 315 320

Thr Gly Asn Gly Arg
325

<210> 311

<211> 184

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2597, ML.tab 3102327:3102881 forward MW:20340

<400> 311

Met Ser Pro Arg Arg Lys Phe Gln Ala Gly Glu Gly Leu Leu Leu Val
1 5 10 15

Ser His Thr Val Ala Ser Gln Arg Arg Trp Gly Leu Pro Leu Ala Ala
20 25 30

Thr Phe Ala Ala Leu Val Met Val Ala Ala Ile Thr Ala Ser Thr Leu
35 40 45

Met Ser Ile Ser His Ala Ser Arg Glu Leu Ala Val Ala Lys Asp Gln
50 55 60

Gln Val Leu Ser Tyr Val Lys Trp Phe Met Thr Gln Phe Thr Thr Leu
65 70 75 80

Asp Pro Tyr His Ala Asn Asp Tyr Val Ala Arg Ile Leu Ala Gln Ala
85 90 95

Thr Gly Asp Phe Ala Lys Gln Tyr Asn Glu Lys Val Asn Glu Ile Leu
100 105 110

Leu Gln Val Ala Gln Ala Glu Pro Ala Thr Gly Thr Val Leu Asp Ala
115 120 125

Gly Val Glu Arg Trp Asn Asp Asp Gly Ser Ala Asn Val Leu Val Ala
130 135 140

Thr Glu Val Thr Ser Lys Tyr Pro Asp Glu Lys Gln Val Leu Glu Asn
145 150 155 160

Thr Asn Arg Trp Thr Ala Thr Ala Thr Arg Glu Gly Asn Gln Trp Lys
165 170 175

Ile Ser Asn Leu Leu Gln Val Ile
180

<210> 312

<211> 184

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2598, ML.tab 3102971:3103525 forward MW:19619

<400> 312

Val Ala Ala Ala Glu Gly Gly Gly Ser Trp Arg Asn Arg Arg Ala Gly
1 5 10 15

Gln Arg Thr Ala Ile Ala Val Val Val Ala Ala Val Leu Phe Val Gly
20 25 30

Ser Ala Ala Phe Ala Gly Ala Ala Val Gln Pro Tyr Leu Ala Asp Arg
35 40 45

Ala Thr Val Ala Val Lys Leu Glu Val Ala Arg Thr Ala Ala Asn Ala
50 55 60

Ile Thr Val Leu Trp Thr Tyr Thr Pro Glu Asn Met Asp Thr Leu Ala
65 70 75 80

Asp Arg Ala Ala Thr Tyr Leu Ser Gly Asp Phe Gly Ala Gln Tyr Arg
85 90 95

Lys Phe Val Asp Ala Ile Val Gly Pro Asn Lys Gln Ala Lys Ile Thr
100 105 110

Asn Ser Thr Glu Val Thr Gly Val Ala Val Glu Ser Leu Asp Ala Ser
115 120 125

Asn Ala Ile Ala Ile Val Tyr Thr Asn Thr Thr Ser Thr Ser Pro Leu
130 135 140

Thr Lys Asn Ile Pro Ala Leu Lys Tyr Leu Ser Tyr Arg Leu Phe Met
145 150 155 160

Lys Arg Ser Ala Val Arg Trp Leu Val Thr Arg Met Thr Thr Ile Thr
165 170 175

Ser Leu Asp Leu Thr Pro Gln Leu
180

<210> 313

<211> 249

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2604, ML.tab 3108446:3109195 forward MW:26859

<400> 313

Met Thr Asp Asn Lys Met Leu Ala Arg Ile Ala Ala Leu Leu Arg Gln
1 5 10 15

Ala Glu Gly Thr Asp Asn Ala His Glu Ala Asp Ala Phe Met Ala Thr
20 25 30

Ala Gln Arg Leu Ala Thr Ala Ala Ser Ile Asp Leu Ala Val Ala Arg
35 40 45

Ser His Val Ala Asn Arg Ser Thr Ala Gln Ala Pro Thr Gln Arg Thr
50 55 60

Ile Thr Ile Gly Thr Ala Gly Thr Arg Gly Leu Arg Thr Tyr Val Gln

65 70 75 80

Leu Phe Val Leu Ile Ala Ala Ala Asn Asp Val Arg Cys Asp Val Ala
85 90 95

Ser Asn Ser Thr Phe Leu Tyr Ala Tyr Gly Phe Ala Glu Asp Ile Asp
100 105 110

Ala Thr His Ala Leu Tyr Ala Ser Leu Val Val Gln Met Val Arg Glu
115 120 125

Ser Asp Ala Tyr Leu Ala Ser Gly Ala Tyr Arg Pro Thr Pro Thr Ile
130 135 140

Thr Ala Arg Leu Asn Phe Gln Leu Gly Phe Gly Met Arg Val Gly Gln
145 150 155 160

Arg Leu Thr Glu Ala Arg Asp His Ile Arg Ser Ala Val Thr Glu Ala
165 170 175

Trp Asp Arg Pro Thr Ala Thr Ala Ile Ala Leu Arg Asp Lys Glu Ile
180 185 190

Glu Leu Ile Asp Tyr Tyr Arg Ser Ala Ser Lys Ala Arg Gly Thr Trp
195 200 205

Gln Ala Ala Arg Ala Ser Ala Gly Tyr Ser Ser Ala Ala Arg Asn Ala
210 215 220

Gly Asp Gln Ala Gly Arg Arg Ala Trp Ile Asp Asn Ser Thr Glu Leu
225 230 235 240

Pro Gly Ala Arg Ala Ala Leu Gly Arg
245

<210> 314

<211> 168

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2605, ML.tab 3109192:3109698 forward MW:18602

<400> 314

Met Asn Leu Leu Asp Ser Val Arg Asp Ala Gln Arg Ser Lys Val Tyr
1 5 10 15

Ala Ala Glu Glu Phe Ile Arg Thr Leu Phe Asp Arg Ala Val Glu His
20 25 30

Gly Ser Pro Ala Val Glu Phe Phe Gly Ala Gln Leu Ser Leu Pro Pro
35 40 45

Glu Ala Arg Phe Gly Ser Val Ala Ala Val Gln Arg Tyr Val Asp Asp
50 55 60

Val Leu Ala Leu Gln Ala Val Arg Gln Arg Trp Pro Arg Met Leu Pro
65 70 75 80

Leu Thr Val Arg Ala Arg Arg Ala Ala Thr Ala Ala His Tyr Glu Asn
85 90 95

Leu Asp Gly Ala Gly Val Ile Ala Val Pro Gly Asn Asn Ala Asp Trp
100 105 110

Ala Met Arg Glu Leu Val Val Leu His Glu Val Ala His His Leu Cys
115 120 125

Lys Asp Pro Pro Pro His Gly Pro Glu Phe Val Ala Thr Ile Cys Ala
130 135 140

Leu Thr Glu Leu Val Met Gly Pro Glu Leu Gly Tyr Val Phe Arg Val
145 150 155 160

Val Tyr Ala Lys Glu Gly Val Arg
165

<210> 315

<211> 224

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2614, ML.tab 3120828:3121502 forward MW:24144

<400> 315

Val Asn Trp Pro Lys Thr Pro Gly Thr Leu Ala Ala Met Pro Asp Glu
1 5 10 15

Glu Gln Thr Glu Leu Pro Val His Lys Glu Phe Ala Gly Ile Ala Asp
20 25 30

Tyr Ser Asp Pro Gly Leu Ser Asp Gly Ser Val Phe Ser Gln Tyr Gly
35 40 45

Ile Ala Ser Thr Val Leu Ala Val Leu Ser Ala Ala Ala Val Val Phe
50 55 60

Gly Val Val Ile Trp Arg Ala His His Asp Asn Ser Ala Glu Arg Ala
65 70 75 80

Tyr Leu Thr His Val Met Gln Thr Ala Phe Asp Trp Thr Gly Val Leu
85 90 95

Ile Asn Met Asn Thr Ser Asn Val Asp Ala Ser Leu Gln Arg Leu His
100 105 110

Ala Gly Thr Val Gly Glu Leu Asn Thr Asp Phe Asp Ala Ala Val Gln
115 120 125

Pro Tyr Arg Lys Val Val Glu Lys Leu Gln Thr Gln Ser Arg Gly Gln
130 135 140

Ile Glu Ala Val Ala Ile Glu Ser Val His His Asp Leu Asp Thr Gln
145 150 155 160

Pro Gly Val Ala His Pro Val Val Thr Thr Lys Leu Leu Pro Pro Ala
165 170 175

Ala Arg Thr Asp Ser Val Met Leu Val Ala Thr Ser Val Ser Glu Asn
180 185 190

Val Gly Gly Lys Pro Thr Thr Val His Trp Ser Leu Arg Leu Asp Val
195 200 205

Ser Asp Val Asp Gly Lys Leu Met Ile Ser His Leu Glu Ser Ile Arg
210 215 220

<210> 316

<211> 229

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2615, ML.tab 3121499:3122188 forward MW:24416

<400> 316

Met Arg Asn Arg Trp Arg Leu Leu Ala Phe Asp Val Val Ala Pro Leu
1 5 10 15

Val Ala Ile Ala Ala Leu Val Met Ile Gly Val Val Leu Asp Trp Pro
20 25 30

Arg Trp Trp Val Ser Ala Cys Ser Val Leu Val Leu Leu Ile Val Glu
35 40 45

Gly Val Gly Val Asn Phe Trp Leu Leu Arg Arg Asp Ser Val Thr Ile
50 55 60

Gly Thr Asp Asp Asp Ala Pro Gly Leu Arg Leu Ala Val Val Ser Val

65 70 75 80

Cys Thr Ala Ala Leu Cys Ala Ala Val Leu Ile Gly Tyr Met His Trp
85 90 95

Thr Ser Pro Asp Arg Asp Phe Ser Leu Asp Ser Arg Glu Val Val Gln
100 105 110

Ile Ala Thr Gly Met Ala Glu Ala Met Ala Ser Phe Thr Pro Ser Ala
115 120 125

Pro Thr Ser Ser Ile Asp Arg Ala Ala Ala Met Ile Met Pro Asp Gln
130 135 140

Ala Gly Val Phe Lys Glu Gln Tyr Arg Lys Ser Ser Ala Asp Leu Ala
145 150 155 160

Arg Arg Asn Val Thr Ala Gln Ala Ser Val Leu Ala Ala Gly Val Glu
165 170 175

Ala Ile Gly Ser Ser Ala Ala Ser Val Ala Val Ile Leu Arg Val Thr
180 185 190

Gln Asn Thr Pro Gly Gln Pro Pro Ser Gln Ala Ala Pro Ala Val Arg
195 200 205

Val Thr Leu Ile Lys Arg Gly Ser Asp Trp Leu Val Thr Asp Val Leu
210 215 220

Ser Ile Asn Ala Arg
225

<210> 317

<211> 170

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2616, ML.tab 3122267:3122779 reverse MW:18682

<400> 317

Val Thr Leu Ala Asp Asp His Arg Arg Pro Ala Ala Pro Pro Glu Gln
1 5 10 15

Pro Ala Ala Asp Gln Gly Arg Tyr Asp Pro Asp Gln Pro Val Glu Phe
20 25 30

Trp Ser Thr Ala Ala Ile Arg Ser Ala Leu His Ala Gly Ser Ile Glu
35 40 45

Ile Trp Lys Leu Ile Thr Ala Ala Val Lys His Asp Pro Tyr Gly Arg
50 55 60

Thr Ala His Gln Val Glu Glu Val Leu Glu Gly Thr Arg Pro Tyr Gly
65 70 75 80

Ile Cys Lys Ala Leu Gly Glu Val Leu Gln Arg Ala Arg Thr His Leu
85 90 95

Glu Ile Asn Glu Arg Ala Glu Val Ala Arg His Val Arg Leu Leu Ile
100 105 110

Asp Arg Ser Gly Leu Gly His Gln Glu Phe Ala Ser Arg Ile Gly Val
115 120 125

Ala Pro Glu Gly Leu Ala Ser Tyr Leu Asp Gly Ser Thr Ser Pro Ser
130 135 140

Ala Ala Leu Met Val Arg Met Arg Arg Val Ser Asp Arg Phe Val Lys
145 150 155 160

Val Lys Ala Ala Arg Ser Ala Asn Ser Asp
165 170

<210> 318

<211> 195

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2621, ML.tab 3131780:3132367 reverse MW:21956

<400> 318

Met Leu Ile Trp Asp Ala Pro Asn Leu Asp Met Gly Leu Asp Ala Ile
1 5 10 15

Val Asp His His His Arg Asn Ala Leu Glu Arg Pro Cys Phe Asp Ala
20 25 30

Leu Gly Arg Trp Leu Phe Thr Cys Asn Thr Glu Val Ala Val Gly Tyr
35 40 45

Pro Asp Ser Thr Ile Gly Leu Lys Gly Thr Met Phe Thr Asn Ile Ala
50 55 60

Gln Ala Ser Ala Asp Val Val Arg Leu Trp Val Asp Thr Leu Arg Asn
65 70 75 80

Val Glu Phe Val Ile Phe Val Lys Pro Lys Ile Asp Glu Asp Ser His
85 90 95

Met Leu Gly Arg Ile Lys Gly Arg Tyr Asn Glu Gly Leu Ala Val Gln
100 105 110

Val Val Val Ser Ala Tyr Ser Gln Ala Leu Arg Gln Thr Leu Glu Arg
115 120 125

Thr Ala His Ala Val Ile Asp Val Gln Met Ile Gly Phe Arg Glu His
130 135 140

Thr Ser Trp Ala Leu Ala Ser Ala Ile Leu Glu Phe Ala Asp Leu Glu
145 150 155 160

Asp Ile Ala Gly Val Phe Arg Glu Ser Leu Pro Arg Ile Ser Leu Asp
165 170 175

Ser Leu Pro Ala Gln Gly Glu Trp Cys Ala Pro Phe Pro Gly Arg Trp
180 185 190

Leu Arg Tyr
195

<210> 319

<211> 339

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2627, ML.tab 3140261:3141280 forward MW:36081

<400> 319

Val Thr Ala Asn Gly His Ala Gly Arg Arg Glu Gly Gly Pro Tyr Phe
1 5 10 15

Asp Asp Leu Ser Ile Gly Gln Val Phe Asp Trp Ala Pro Ala Val Thr
20 25 30

Leu Thr Ser Gly Met Ala Ala Val His Gln Ala Ile Leu Gly Asp Arg
35 40 45

Met Arg Leu Ala Leu Asp Ala Glu Leu Ser Thr Thr Val Ile Gly Thr
50 55 60

His Ala Met Leu Ala His Pro Gly Leu Val Cys Asp Val Ala Ile Gly
65 70 75 80

Gln Ser Thr Leu Val Thr Gln Arg Val Lys Ala Asn Leu Phe Tyr Arg
85 90 95

Gly Leu Thr Phe His Arg Phe Pro Val Ile Gly Asp Thr Leu Tyr Thr

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            100                 105                 110

Ser Thr Glu Val Val Gly Leu Gln Ala Asn Ser Ala Lys Pro Gly Arg
        115                 120                 125

Pro Pro Thr Gly Met Ala Ala Leu Arg Ile Thr Thr Thr Asp Gln His
    130                 135                 140

Asp Arg Leu Val Leu Asp Phe Tyr Arg Cys Ala Met Leu Pro Ala Ser
145                 150                 155                 160

Ala Ala Trp His Pro His Asp Ala Leu Asn Arg Asn Asp Asp Leu Ala
                165                 170                 175

Asn Val Gly Ala Asp Ala Val Ala Ser Ala Ser Asp Pro Thr Gly Gln
            180                 185                 190

Trp Asp Ala Ala Ala Phe Arg Glu Arg Val Pro Gly Pro His Phe Asp
        195                 200                 205

Ala Gly Ile Thr Gly Ala Val Leu Arg Ser Thr Gly Asp Ile Val Ser
    210                 215                 220

Ser Ala Pro Asp Leu Ala Arg Leu Thr Leu Asn Ile Ala Ser Thr His
225                 230                 235                 240

His Asp Ser Arg Val Arg Gly Leu Arg Leu Val Tyr Gly Gly His Thr
                245                 250                 255

Ile Gly Leu Ala Leu Ala Gln Ala Gly Arg Met Leu Pro Asn Leu Ala
            260                 265                 270

Thr Val Leu Asn Trp Arg Ser Cys Asp His Thr Gly Pro Val His Glu
        275                 280                 285

Gly Asp Thr Leu Tyr Ser Glu Leu His Val Glu Ser Ala Glu Ala Thr
    290                 295                 300

Glu Gln Gly Gly Val Leu Gly Leu Arg Ser Leu Val Tyr Ala Val Ser
305                 310                 315                 320

Ala Ala Gly Gly Ser Asp His Leu Val Leu Asp Trp Arg Phe Thr Val
                325                 330                 335

Leu Gln Phe
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<210> 320

<211> 156

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2629, ML.tab 3144572:3145042 reverse MW:17022

<400> 320

Leu Gly Ser Val Pro Gly Tyr Ala Ser Pro Met Pro Val Met Ser Lys
1 5 10 15

Thr Val Glu Val Arg Ala Thr Ala Ala Ser Ile Met Ala Ile Val Thr
20 25 30

Asp Phe Glu Ala Tyr Pro Gln Trp Asn Asp Gly Val Lys Gly Val Trp
35 40 45

Val Leu Ala Arg Tyr Asp Asp Gly Arg Pro Ser Gln Leu Arg Leu Asp
50 55 60

Thr Glu Ile Gln Gly Thr Lys Cys Thr Tyr Ile Gln Ala Val Tyr Tyr
65 70 75 80

Pro Ala Thr Asn Gln Ile Gln Thr Ile Met Gln Gln Gly Asp Leu Phe
85 90 95

Thr Lys Gln Glu Gln Leu Phe Ser Ala Val Glu Ile Gly Ala Ala Ser
100 105 110

Leu Leu Thr Val Asp Ile Asp Val Glu Ser Ser Met Pro Val Pro Ala
115 120 125

Pro Met Val Lys Ala Leu Leu Asn Asn Val Leu Asp Asn Leu Ala Glu
130 135 140

Asn Leu Lys Leu Arg Ala Glu Gln Leu Ala Ala Asn
145 150 155

<210> 321

<211> 123

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2630, ML.tab 3145226:3145597 reverse MW:12982

<400> 321

Leu Leu Thr Asp Gly Val Leu Leu Pro Glu Leu Leu Phe Gly Tyr Leu
1 5 10 15

Asn Lys Cys Cys Leu Leu Pro Gln Leu Phe Asp Thr Ala Ile Asn Thr
20 25 30

Ser Val Gly Val Thr Ser Pro Asn Glu Ser Arg Ala Phe Asn Ala Ala
35 40 45

Asp Asp Leu Ile Gly Asp Gly Ser Val Glu Arg Ala Gly Leu His Arg
50 55 60

Ala Thr Ser Val Pro Gly Glu Ser Pro Glu Gly Leu Gln Arg Gly His
65 70 75 80

Ser Pro Glu Pro Asn Asp Ser Pro Pro Trp Gln Arg Gly Ser Ala Gln
85 90 95

Ala Ser Gln Ser Gly Tyr Arg Pro Ser Asp Pro Leu Thr Thr Thr Arg
100 105 110

Gln Ser Asn Pro Ala Pro Gly Ala Asn Val Arg
115 120

<210> 322

<211> 310

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2640, ML.tab 3159055:3159987 reverse MW:34454

<400> 322

Met Arg Thr His Asp Asp Thr Trp Asp Ile Lys Thr Ser Val Gly Thr
1 5 10 15

Thr Ala Val Met Val Ala Ala Ala Arg Ala Ala Glu Thr Asp Arg Pro
20 25 30

Asp Ala Leu Ile Arg Asp Pro Tyr Ala Lys Leu Leu Val Thr Asn Thr
35 40 45

Gly Ala Gly Ala Leu Trp Glu Ala Met Leu Asp Pro Ser Met Val Ala
50 55 60

Lys Val Glu Ala Ile Asp Ala Glu Ala Ala Ala Met Val Glu His Met
65 70 75 80

Arg Ser Tyr Gln Ala Val Arg Thr Asn Phe Phe Asp Thr Tyr Phe Asn
85 90 95

Asn Ala Val Ile Asp Gly Ile Arg Gln Phe Val Ile Leu Ala Ser Gly
100 105 110

Leu Asp Ser Arg Ala Tyr Arg Leu Asp Trp Pro Thr Gly Thr Thr Val

115 120 125

Tyr Glu Ile Asp Gln Pro Lys Val Leu Ala Tyr Lys Ser Thr Thr Leu
130 135 140

Ala Glu His Gly Val Thr Pro Thr Ala Asp Arg Arg Glu Val Pro Ile
145 150 155 160

Asp Leu Arg Gln Asp Trp Pro Pro Ala Leu Arg Ser Ala Gly Phe Asp
165 170 175

Pro Ser Ala Arg Thr Ala Trp Leu Ala Glu Gly Leu Leu Met Tyr Leu
180 185 190

Pro Ala Thr Ala Gln Asp Gly Leu Phe Thr Glu Ile Gly Gly Leu Ser
195 200 205

Ala Val Gly Ser Arg Ile Ala Val Glu Thr Ser Pro Leu His Gly Asp
210 215 220

Glu Trp Arg Glu Gln Met Gln Leu Arg Phe Arg Arg Val Ser Asp Ala
225 230 235 240

Leu Gly Phe Glu Gln Ala Val Asp Val Gln Glu Leu Ile Tyr His Asp
245 250 255

Glu Asn Arg Ala Val Val Ala Asp Trp Leu Asn Arg His Gly Trp Arg
260 265 270

Ala Thr Ala Gln Ser Ala Pro Asp Glu Met Arg Arg Val Gly Arg Trp
275 280 285

Gly Asp Gly Val Pro Met Ala Asp Asp Lys Asp Ala Phe Ala Glu Phe
290 295 300

Val Thr Ala His Arg Leu
305 310

<210> 323

<211> 251

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2664, ML.tab 3190775:3191530 forward MW:26919

<400> 323

Met Tyr Gln Ala Val Arg Tyr Leu Leu Val Met Ala Ala Ile Ile Leu
1 5 10 15

Met Ala Val Ala Glu Ser Gly Ser Pro Ser Val Ala Ala Ile Pro Ala
20 25 30

Leu Lys Pro Thr Pro Glu Val Ala Ser Val Leu Pro Thr Asn Gly Ala
35 40 45

Val Val Gly Val Ala His Leu Val Val Val Thr Phe Thr Ala Pro Val
50 55 60

Thr Asp Arg Ser Ala Ala Glu Arg Ser Ile Arg Ile Thr Ser Pro Asn
65 70 75 80

Asn Met Thr Gly His Phe Glu Trp Leu Asp Gly Asp Val Val Gln Trp
85 90 95

Ile Pro Thr Lys Tyr Trp Pro Ala Tyr Thr His Val Ser Val Glu Val
100 105 110

Gln Ala Leu Thr Thr Gly Phe Glu Thr Gly Asp Ala Leu Leu Gly Val
115 120 125

Ala Ser Leu Ser Thr His Thr Phe Thr Val Ser Arg Asn Gly Glu Val
130 135 140

Leu Arg Thr Met Pro Ala Ser Met Gly Lys Pro Thr Arg Pro Thr Pro
145 150 155 160

Ile Gly Lys Phe Thr Ala Leu Ser Lys Glu Arg Thr Val Val Met Asp
165 170 175

Ser Arg Thr Ile Gly Ile Pro Leu Asn Ser Pro Glu Gly Tyr Leu Ile
180 185 190

Thr Ala Gln Tyr Ala Val Arg Val Thr Trp Ser Gly Val Tyr Val His
195 200 205

Ser Ala Pro Trp Ser Val Asn Ser Gln Gly Tyr Thr Asn Val Ser His
210 215 220

Gly Cys Ile Asn Leu Ser Pro Asp Asp Ala Thr Trp Tyr Phe Asn Thr
225 230 235 240

Val Asn Val Gly Asp Pro Ile Glu Val Val Ala
245 250

<210> 324

<211> 564

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2687, ML.tab 3234968:3236662 reverse MW:61392

<400> 324

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Val Ile Asn Ala Gln Thr His Ser Thr Thr Ile Ser Pro Arg Pro Leu
1               5                  10                  15

Ala Ala Asp Arg Gln Ser Ala Asp Asn Arg Asp Cys Pro Ser Arg Thr
            20                  25                  30

Asp Tyr Leu Gly Ala Ala Leu Ala Asp Ala Ile Gly Gly Pro Val Gly
        35                  40                  45

Cys His Ala Leu Ile Gly Arg Ser Trp Leu Met Thr Pro Leu Arg Val
    50                  55                  60

Met Phe Leu Ile Gly Leu Val Phe Leu Ala Leu Gly Trp Ser Thr Lys
65                  70                  75                  80

Ala Ala Cys Leu Gln Thr Thr Gly Thr Gly Pro Gly Gly Gln Arg Val
                85                  90                  95

Pro Asn Trp Asp Asn Gln Arg Ala Tyr Tyr Glu Leu Cys Tyr Ser Asp
            100                 105                 110

Ile Val Pro Leu Tyr Gly Thr Glu Leu Leu Ser Gln Gly Lys Phe Pro
        115                 120                 125

Tyr Lys Ser Ser Trp Ile Glu Thr Asp Ser Ser Gly Thr Pro Arg Thr
    130                 135                 140

Arg Tyr Asp Gly Arg Leu Ala Val Arg Tyr Met Glu Tyr Pro Val Leu
145                 150                 155                 160

Thr Gly Ile Tyr Gln Tyr Val Ser Met Ala Val Ala Lys Ser Tyr Thr
                165                 170                 175

Ala Leu Ser Glu Pro Val Ser Leu Pro Ala Val Ala Glu Val Val Met
            180                 185                 190

Phe Phe Asp Val Val Ala Phe Gly Leu Ala Leu Ala Trp Leu Ala Thr
        195                 200                 205

Ile Trp Ala Thr Ala Gly Leu Ala Gly Leu Arg Ile Trp Asp Ala Ala
    210                 215                 220

Leu Val Ala Ala Ser Pro Leu Val Ile Phe Gln Val Phe Thr Asn Phe
225                 230                 235                 240

Asp Ala Leu Ala Ile Ala Phe Ala Thr Gly Gly Leu Leu Ala Trp Ser
                245                 250                 255

Arg Cys Arg Pro Ile Ser Ala Gly Val Leu Ile Gly Leu Gly Ala Ala
            260                 265                 270

Ala Lys Leu Tyr Pro Leu Leu Phe Leu Val Pro Leu Phe Val Leu Gly
        275                 280                 285

Val Arg Thr Gly Arg Leu Gly Gly Val Ala Cys Ala Ala Val Thr Ala
    290                 295                 300
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Ala Thr Thr Trp Leu Leu Val Asn Leu Pro Val Leu Leu Leu Phe Pro
305                 310                 315                 320

Arg Gly Trp Ser Glu Phe Phe Arg Phe Asn Thr Arg Arg Gly Asp Asp
                325                 330                 335

Met Asp Ser Leu Tyr Asn Val Val Lys Ser Leu Thr Gly Trp Arg Gly
            340                 345                 350

Phe Asp Thr Lys Leu Gly Phe Cys Glu Leu Pro Leu Val Leu Asn Thr
        355                 360                 365

Val Val Thr Val Leu Phe Ala Leu Cys Cys Ala Ala Val Ala Tyr Ile
    370                 375                 380

Ala Leu Thr Ala Ala Gln Arg Pro Arg Val Val Gln Leu Ala Phe Leu
385                 390                 395                 400

Leu Val Ala Val Phe Leu Leu Thr Asn Lys Val Trp Ser Pro Gln Phe
                405                 410                 415

Ser Leu Trp Leu Val Pro Leu Ala Val Leu Ala Leu Pro His Arg Arg
            420                 425                 430

Val Leu Leu Ala Trp Met Thr Ile Asp Ala Leu Val Trp Val Pro Arg
        435                 440                 445

Met Tyr Tyr Leu Tyr Gly Asn Pro Ser Arg Ser Leu Pro Glu Gln Trp
    450                 455                 460

Phe Thr Ala Thr Val Leu Leu Arg Asp Ile Ala Val Val Ala Leu Cys
465                 470                 475                 480

Ala Leu Val Ile Arg Gln Ile Tyr Arg Pro Asp Glu Asp Pro Val Arg
                485                 490                 495

Leu Gly Gly Arg Val Asp Asp Pro Ala Gly Gly Pro Phe Asp Arg Ala
            500                 505                 510

Pro Tyr Ala Pro Pro Ser Trp Leu Pro Asp Trp Leu His Pro Ala Gly
        515                 520                 525

Met Arg Arg Val Val Thr Leu Ala Ala Ser Ser Val Thr Glu Thr Glu
    530                 535                 540

Leu Ala Ala Ala Ala Thr Pro Ser Gly Pro Met His His Pro His Ala
545                 550                 555                 560

Pro Ser Ser Ile
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<210> 325

<211> 138

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2689, ML.tab 3239183:3239599 reverse MW:15278

<400> 325

Val Val Asn Tyr Ser Leu Arg Arg Arg Phe Leu Leu Ala Glu Val Tyr
1 5 10 15

Ser Gly Arg Thr Gly Val Ser Glu Val Cys Asp Ala Asn Pro Tyr Leu
20 25 30

Leu Arg Ala Ala Lys Phe His Gly Lys Pro Ser Gln Val Met Cys Pro
35 40 45

Ile Cys Arg Lys Glu Gln Leu Thr Leu Val Ser Trp Val Phe Gly Asn
50 55 60

Gln Leu Gly Ala Ile Ser Gly Ser Ala Arg Thr Ala Glu Glu Leu Val
65 70 75 80

Leu Leu Ala Thr Arg Tyr Glu Glu Phe Ala Val Tyr Val Val Glu Val
85 90 95

Cys Arg Thr Cys Ser Trp Asn Tyr Leu Val Arg Ser Tyr Val Leu Gly
100 105 110

Ala Ala Arg Ser Ala Pro Pro Pro Arg Gly Thr Pro Val Thr Arg Thr
115 120 125

Ala Cys Asn Gly Ala Arg Met Ala Ile Glu
130 135

<210> 326

<211> 797

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;ML2699, ML.tab 3250667:3253060 forward MW:84667

<400> 326

Val Thr Ala Ser Arg Leu Arg Leu Ala Gly Ser Leu Ser Ile Ala Leu
1 5 10 15

Val Val Asp Ile Val Ala Ser Phe Ala Val Leu Leu Val Ala Pro Thr

20 25 30

Ala Thr Pro His Ala Ala Ala Asp Glu Pro Arg Ala Thr Ser Phe Val
35 40 45

Arg Val Arg Ile Asp Lys Val Thr Pro Asp Val Val Thr Thr Ser Ser
50 55 60

Glu Pro Val Val Thr Val Ser Gly Val Val Thr Asn Ile Gly Asp Arg
65 70 75 80

Pro Val Arg Asp Leu Met Val Arg Leu Glu His Glu Ser Ala Val Ile
85 90 95

Ser Ser Ala Val Leu Arg Thr Tyr Leu Asp Asp Gly Ala Asp Gln Phe
100 105 110

Gln Thr Ala Ala Asp Phe Val Thr Val Ala Glu Glu Leu Gln Arg Gly
115 120 125

Gln Glu Ala Gly Phe Thr Leu Val Ala Pro Ile Arg Ser Thr Thr Lys
130 135 140

Pro Ser Met Ala Ile Asp Gln Pro Gly Ile Tyr Pro Val Leu Val Asn
145 150 155 160

Val Asn Gly Thr Pro Asp Tyr Gly Thr Pro Ala Arg Leu Asp Asn Ala
165 170 175

Arg Phe Leu Leu Pro Val Ala Gly Val Pro Pro Ala Lys Ser Asp Ala
180 185 190

Met Asp Ser Ala Val Ala Pro Asp Ile Thr Lys Pro Val Trp Ile Thr
195 200 205

Met Leu Trp Pro Leu Ala Asp Arg Pro Arg Leu Ser Pro Gly Ala Pro
210 215 220

Gly Gly Thr Ile Pro Val Arg Leu Val Asp Asp Asp Leu Ala Ser Ser
225 230 235 240

Leu Ala Pro Gly Gly Arg Leu Asp Ile Leu Leu Thr Ala Ala Glu Thr
245 250 255

Ala Thr Gly Arg Asp Val Asp Pro Asp Gly Ala Val Ser Arg Ala Leu
260 265 270

Cys Leu Ala Val Asp Pro Asp Leu Leu Val Thr Val Asn Ala Met Thr
275 280 285

Gly Gly Tyr Ile Val Ser Asn Ser Pro Asp Gly Pro Ala Gln Gln Pro
290 295 300

Gly Thr Pro Thr His Pro Gly Thr Gly Gln Asp Ala Ala Val Ile Trp
305 310 315 320

Leu Asn Arg Leu Arg Ala Leu Ala His Arg Met Cys Val Ala Ser Leu
325 330 335

Pro Tyr Ala Gln Ala Asp Leu Asp Ala Leu Gln Arg Ile Asn Asp Thr
340 345 350

```
Glu Leu Ser Thr Thr Ala Thr Thr Ser Val Gly Asp Ile Val Asp His
        355                 360                 365

Ile Leu Asp Val Thr Ser Ile Arg Gly Val Thr Met Leu Pro Asp Ser
    370                 375                 380

Pro Leu Thr Asn Arg Val Val Asp Leu Leu Asn Asp Asn Asn Ser Thr
385                 390                 395                 400

Val Ala Ile Ala Ala Ala Ala Phe Ser Ala Gln Asp Ser Thr Ser Gly
                405                 410                 415

Ser Leu Val Asp Ile Asp Thr Glu Pro Arg Arg Leu Ser Pro Arg Val
            420                 425                 430

Val Val Ala Pro Phe Asp Pro Ala Val Gly Ala Ala Leu Ala Ala Ala
        435                 440                 445

Gly Thr Asp Pro Ile Val Pro Thr Tyr Leu Asp Ser Ser Leu Asn Ile
    450                 455                 460

Arg Ile Val His Asp Ser Asp Thr Ala Arg Arg Gln Asp Ala Leu Ser
465                 470                 475                 480

Ser Ile Leu Trp Arg Ala Leu Glu Arg Asp Ala Ala Pro Arg Ser Gln
                485                 490                 495

Ile Leu Val Pro Pro Thr Ser Trp His Leu Gln Ala Asp Asp Ala Arg
            500                 505                 510

Val Met Leu Thr Thr Leu Ser Thr Val Ile Arg Ser Gly Leu Ala Val
        515                 520                 525

Ala Arg Pro Leu Pro Thr Val Ile Ala Asp Ala Leu Ala Arg Thr Lys
    530                 535                 540

Leu Ser Asp Thr Val Gly Ser Tyr Thr Ser Ala Arg Gly Arg Phe Asn
545                 550                 555                 560

Asp Asp Ile Ile Ala Asp Ile Ala Ser Gln Val Gly Arg Leu Trp Gly
                565                 570                 575

Leu Thr Ser Ala Leu Thr Ala Asp Gly Arg Thr Gly Leu Thr Gly Val
            580                 585                 590

Gln Tyr Thr Ala Pro Leu Arg Glu Asp Met Leu Arg Ala Leu Ser Gln
        595                 600                 605

Leu Glu Pro Pro Ala Thr Arg Asn Gly Leu Ala Gln Gln Arg Leu Ala
    610                 615                 620

Val Val Ser Lys Thr Ile Lys Asp Leu Ile Gly Ala Val Thr Ile Val
625                 630                 635                 640

Asn Pro Gly Gly Ser Tyr Thr Leu Ala Thr Glu His Ser Pro Leu Pro
                645                 650                 655

Leu Ala Leu His Asn Gly Leu Ala Val Pro Ile Arg Val Arg Leu Gln
            660                 665                 670
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Val Asp Ala Pro Pro Gly Met Thr Val Thr Asp Val Ser Gln Ile Glu
675 680 685

Leu Pro Pro Gly Tyr Leu Pro Leu Arg Val Pro Ile Glu Val Asn Phe
690 695 700

Thr Gln Arg Val Ala Val Asp Val Ala Leu Gln Thr Pro Glu Gly Ile
705 710 715 720

Gln Leu Gly Glu Pro Val Arg Leu Leu Val His Ser Asn Ala Tyr Gly
725 730 735

Lys Val Leu Phe Glu Ile Thr Leu Thr Ala Ala Thr Ile Leu Ile Val
740 745 750

Leu Ala Gly Arg Arg Leu Trp His Arg Phe Arg Ile Gln Thr Glu Gly
755 760 765

Ala Asp Ser Asn Arg Pro Asp Pro Leu Ile Val Asp Ala His Pro Gln
770 775 780

His Gln Tyr Asp Asp Trp Val Asp Glu Glu Asn Arg Ile
785 790 795

<210> 327

<211> 102

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;PE, ML.tab 654129:654437 forward MW:10295

<400> 327

Met Thr Leu Gly Val Ile Pro Glu Gly Leu Glu Gly Ala Ser Ala Val
1 5 10 15

Ile Glu Ala Leu Thr Ala His Leu Ala Thr Val His Ala Glu Ala Ala
20 25 30

Pro Phe Ile Met Glu Val Ile Pro Pro Gly Ser Gly Ser Val Ser Val
35 40 45

Gln Asn Gln Val Gly Phe Asn Val His Gly Cys Gln Tyr Val Ala Met
50 55 60

Thr Ala His Gly Ala Glu Glu Leu Gly Arg Trp Gly Val Gly Val Ala
65 70 75 80

Glu Ser Gly Val Ser Tyr Ala Leu Arg Asp Ala Phe Ala Val Ala Ser
85 90 95

Tyr Leu Gly Gly Gly Leu
100

<210> 328

<211> 275

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;desA2, ML.tab 2339270:2340097 reverse MW:31139

<400> 328

Met Ala Gln Lys Pro Val Pro Asn Ala Leu Ile Leu Gln Leu Glu Pro
1 5 10 15

Val Val Lys Asp Asn Met Ala Arg His Phe Ala Asn Glu Glu Leu Trp
20 25 30

Phe Ala His Asp Tyr Val Pro Phe Asp Arg Gly Glu Asn Phe Ala Phe
35 40 45

Leu Gly Gly Arg Asp Trp Asp Pro Ser Gln Ala Thr Leu Ala Lys Ala
50 55 60

Val Thr Asp Ala Cys Glu Ile Leu Leu Ile Leu Lys Asp Asn Leu Ala
65 70 75 80

Gly Tyr His Arg Glu Leu Val Glu His Phe Ile Leu Glu Gly Trp Trp
85 90 95

Gly Arg Trp Leu Gly Arg Trp Thr Ala Glu Glu His Leu His Ala Ile
100 105 110

Ala Leu Arg Glu Tyr Leu Val Val Thr Arg Glu Val Asp Pro Val Ala
115 120 125

Asn Glu Gln Val Arg Val Glu His Val Met Lys Gly Tyr Arg Val Asn
130 135 140

Ser Tyr Thr Gln Ile Glu Thr Leu Val Tyr Met Ala Phe Leu Glu Arg
145 150 155 160

Ser Tyr Ala Phe Phe Cys Gly Ser Leu Ala Ala Gln Ile Lys Glu Pro
165 170 175

Ala Leu Phe Gly Leu Ile Asn Gln Ile Val Lys Asp Glu Val Arg His
180 185 190

Glu Glu Phe Phe Ala Asn Leu Val Ala His Cys Leu Glu Cys Asn Arg

195 200 205

Asp Glu Thr Val Ala Ala Ile Ala Ala Arg Ala Ala Gly Leu Asp Val
210 215 220

Leu Gly Ala Asp Ile Asp Ala Tyr His Asp Lys Val Glu Asn Ile Ser
225 230 235 240

Ala Ala Gly Ile Phe Gly Ser Val Glu Leu Arg Gln Val Ile Ser Asp
245 250 255

Arg Ile Thr Ala Trp Gly Leu Ile Asn Glu Pro Gln Leu Ala Gln Phe
260 265 270

Val Thr Ser
275

<210> 329

<211> 1111

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;embA, ML.tab 139821:143156 reverse MW:118457

<400> 329

Val Pro His Asp Gly His Glu Pro Pro Gln Arg Ile Ile Arg Leu Ile
1 5 10 15

Ala Val Gly Ala Gly Ile Thr Gly Leu Leu Leu Cys Ala Val Val Pro
20 25 30

Leu Leu Pro Val Lys Gln Thr Thr Ala Thr Ile Arg Trp Pro Gln Ser
35 40 45

Ala Thr Arg Asp Gly Trp Val Thr Gln Ile Thr Ala Pro Leu Val Ser
50 55 60

Gly Thr Pro Arg Ala Leu Asp Ile Ser Ile Pro Cys Ser Ala Met Ala
65 70 75 80

Thr Leu Pro Asp Ser Val Gly Leu Val Val Ser Thr Leu Pro Ser Gly
85 90 95

Gly Val Asp Thr Gly Lys Ser Gly Leu Phe Val Arg Ala Asn Lys Asn
100 105 110

Ala Val Val Val Ala Phe Arg Asp Ser Val Ala Ala Val Ala Pro Arg
115 120 125

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Pro Ala Val Ala Ala Gly Asn Cys Ser Val Leu His Ile Trp Ala Asn
    130                 135                 140

Thr Arg Gly Ala Gly Ala Asn Phe Val Gly Ile Pro Gly Ala Ala Gly
145                 150                 155                 160

Ile Leu Thr Ala Glu Lys Lys Pro Gln Val Gly Gly Ile Phe Thr Asp
                165                 170                 175

Leu Lys Val Pro Val Gln Pro Gly Leu Ser Ala His Ile Asp Ile Asp
            180                 185                 190

Thr Arg Phe Ile Thr Ala Pro Thr Ala Ile Lys Lys Ile Ala Val Gly
        195                 200                 205

Val Gly Ala Ala Ala Val Leu Ile Ala Ile Leu Ala Leu Ser Ala Leu
    210                 215                 220

Asp Arg Arg Asn Arg Asn Gly His Arg Leu Ile Asn Trp Arg Val Ser
225                 230                 235                 240

Met Ala Trp Leu Ala Gln Trp Arg Val Ile Leu Ala Thr Pro Pro Arg
                245                 250                 255

Ala Gly Gly Ala Ser Arg Ile Ala Asp Gly Gly Val Leu Ala Thr Leu
            260                 265                 270

Leu Leu Trp His Ile Ile Gly Ala Thr Ser Ser Asp Asp Gly Tyr Asn
        275                 280                 285

Leu Thr Val Ala Arg Val Ser Ser Glu Ala Gly Tyr Leu Ala Asn Tyr
    290                 295                 300

Tyr Arg Tyr Phe Gly Ala Thr Glu Ala Pro Phe Asp Trp Tyr Phe Thr
305                 310                 315                 320

Val Leu Ala Lys Leu Ala Ser Val Ser Thr Ala Gly Val Trp Met Arg
                325                 330                 335

Ile Pro Ala Thr Leu Ala Gly Ile Ala Cys Trp Leu Ile Ile Asn His
            340                 345                 350

Trp Val Leu Arg Arg Leu Gly Pro Gly Thr Gly Gly Leu Ser Thr Asn
        355                 360                 365

Arg Val Ala Val Leu Thr Ala Gly Ala Met Phe Leu Ala Ala Trp Leu
    370                 375                 380

Pro Phe Asn Asn Gly Leu Arg Pro Glu Pro Leu Ile Ala Leu Gly Val
385                 390                 395                 400

Leu Phe Thr Trp Val Leu Val Glu Arg Ala Ile Ala Leu Arg Arg Leu
                405                 410                 415

Ala Ser Ala Ala Thr Ala Ala Val Val Ala Ile Leu Thr Ala Thr Leu
            420                 425                 430

Ala Pro Gln Gly Leu Ile Ala Ile Ala Ala Leu Leu Thr Gly Ala Arg
        435                 440                 445

Ala Ile Thr Gln Thr Ile Arg Arg Arg Arg Thr Thr Asp Gly Leu Leu
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    450                 455                 460

Ala Pro Leu Leu Val Leu Ala Ala Ser Leu Ser Leu Ile Thr Leu Val
465                 470                 475                 480

Val Phe His Ser Gln Thr Leu Ala Thr Val Gly Glu Ser Ala Arg Ile
                485                 490                 495

Lys Tyr Lys Val Gly Pro Thr Ile Ala Cys Tyr Gln Asp Phe Leu Arg
            500                 505                 510

Tyr Tyr Phe Leu Thr Val Glu Ser Asn Ala Asp Gly Ser Met Thr Arg
        515                 520                 525

Arg Phe Pro Val Leu Val Leu Leu Leu Cys Met Phe Gly Val Leu Val
    530                 535                 540

Val Leu Leu Arg Arg Ser Arg Val Pro Gly Leu Ala Ser Gly Pro Thr
545                 550                 555                 560

Trp Arg Leu Ile Gly Thr Thr Ala Thr Ser Leu Leu Leu Leu Thr Phe
                565                 570                 575

Thr Pro Thr Lys Trp Ala Ile Gln Phe Gly Ala Leu Ala Gly Leu Thr
            580                 585                 590

Gly Thr Phe Gly Ala Ile Ala Ala Phe Ala Phe Ala Arg Ile Ser Leu
        595                 600                 605

His Thr Arg Arg Asn Leu Thr Val Tyr Ile Thr Ala Leu Leu Phe Val
    610                 615                 620

Leu Ala Trp Ala Thr Ala Gly Ile Asn Gly Trp Phe Gly Val Ser Asn
625                 630                 635                 640

Tyr Gly Val Pro Trp Phe Asp Ile Gln Pro Val Ile Ala Gly His Pro
                645                 650                 655

Val Thr Ser Ile Phe Leu Thr Leu Ser Ile Leu Thr Gly Leu Leu Ala
            660                 665                 670

Gly Gly Gln His Phe Arg Leu Asp Tyr Ala Lys His Thr Glu Val Lys
        675                 680                 685

Asp Thr Arg Arg Asn Arg Phe Leu Ala Thr Thr Pro Leu Val Val Val
    690                 695                 700

Ala Thr Thr Met Val Leu Cys Glu Val Gly Ser Leu Ala Lys Gly Ala
705                 710                 715                 720

Val Ala Arg Tyr Pro Leu Tyr Thr Thr Ala Lys Ala Asn Leu Ala Ala
                725                 730                 735

Leu Arg Ser Gly Leu Ala Pro Ser Val Cys Ala Met Ala Asp Asp Val
            740                 745                 750

Leu Thr Glu Pro Asp Pro Asn Ala Gly Met Leu Gln Pro Val Pro Gly
        755                 760                 765

Gln Ile Phe Gly Pro Thr Gly Pro Leu Gly Gly Met Asn Pro Ile Gly
    770                 775                 780
```

```
Phe Lys Pro Glu Gly Val Asn Asp Asp Leu Lys Ser Asp Pro Val Val
785                 790                 795                 800

Ser Lys Pro Gly Leu Val Asn Ser Asp Ala Ser Pro Asn Lys Pro Asn
                805                 810                 815

Val Thr Phe Ser Asp Ser Ala Gly Thr Ala Gly Gly Lys Gly Pro Val
            820                 825                 830

Gly Val Asn Gly Ser His Val Ala Leu Pro Phe Gly Leu Asp Pro Asp
        835                 840                 845

Arg Thr Pro Val Met Gly Ser Tyr Gly Glu Asn Thr Leu Ala Ala Ser
    850                 855                 860

Ala Thr Ser Ala Trp Tyr Gln Leu Pro Leu His Trp Lys Glu Ser Ile
865                 870                 875                 880

Ala Asp Arg Pro Leu Val Val Val Ser Ala Ala Gly Ala Ile Trp Ser
                885                 890                 895

Tyr Lys Glu Asp Gly Asn Phe Ile Tyr Gly Gln Ser Leu Lys Leu Gln
            900                 905                 910

Trp Gly Val Thr Arg Pro Asp Gly Ile Ile Gln Pro Leu Ala Gln Val
        915                 920                 925

Met Pro Ile Asp Ile Gly Pro Gln Pro Ala Trp Arg Asn Leu Arg Phe
    930                 935                 940

Pro Leu Thr Trp Ala Pro Pro Glu Ala Asn Val Ala Arg Val Val Ala
945                 950                 955                 960

Tyr Asp Pro Asn Leu Ser Pro Asp Gln Trp Leu Ala Phe Thr Pro Pro
                965                 970                 975

Arg Val Pro Val Leu Gln Thr Leu Gln Gln Leu Leu Gly Ser Gln Thr
            980                 985                 990

Pro Val Leu Met Asp Ile Ala Thr  Ala Ala Asn Phe Pro  Cys Gln Arg
        995                 1000                1005

Pro Phe  Ser Glu His Leu Gly  Ile Ala Glu Leu Pro  Gln Tyr Arg
    1010                1015                1020

Ile Leu  Pro Asp His Lys Gln  Thr Ala Ala Ser Ser  Asn Leu Trp
    1025                1030                1035

Gln Ser  Ser Glu Ala Gly Gly  Pro Phe Leu Phe Leu  Gln Ala Leu
    1040                1045                1050

Leu Arg  Thr Ser Thr Ile Ser  Thr Tyr Leu Arg Asp  Asp Trp Tyr
    1055                1060                1065

Arg Asp  Trp Gly Ser Val Glu  Gln Tyr Tyr Arg Leu  Val Pro Ala
    1070                1075                1080

Asp Gln  Ala Pro Glu Ala Val  Val Lys Gln Gly Met  Ile Thr Val
    1085                1090                1095
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Pro Gly Trp Ile Arg Arg Gly Pro Ile Arg Ala Leu Pro
1100 1105 1110

<210> 330

<211> 1083

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;embB, ML.tab 136573:139824 reverse MW:117159

<400> 330

Met Ser Val Ile Tyr Arg Ala His Arg Val Ala Ile Ala Asn Arg Thr
1 5 10 15

Ala Ser Arg Asn Val Arg Val Ala Arg Trp Val Ala Ala Ile Ala Gly
20 25 30

Leu Ile Gly Phe Val Ser Ser Val Val Thr Pro Leu Leu Pro Val Val
35 40 45

Gln Thr Thr Ala Thr Leu Asn Trp Pro Gln Asn Gly Gln Leu Asn Ser
50 55 60

Val Thr Ala Pro Leu Ile Ser Leu Thr Pro Val Asp Ile Thr Ala Thr
65 70 75 80

Val Pro Cys Ala Val Val Ala Ala Leu Pro Pro Ser Gly Gly Val Val
85 90 95

Leu Gly Thr Ala Pro Lys Gln Gly Lys Asp Ala Asn Leu Asn Ala Leu
100 105 110

Phe Ile Asp Val Asn Ser Gln Arg Val Asp Val Thr Asp Arg Asn Val
115 120 125

Val Ile Leu Ser Val Pro Arg Asn Gln Val Ala Gly Asp Ala Gly Ala
130 135 140

Pro Gly Cys Ser Ser Ile Glu Val Thr Ser Thr His Ala Gly Thr Phe
145 150 155 160

Ala Thr Phe Val Gly Val Thr Asp Ser Ala Gly Asn Pro Leu Arg Gly
165 170 175

Gly Phe Pro Asp Pro Asn Leu Arg Pro Gln Ile Val Gly Val Phe Thr
180 185 190

Asp Leu Thr Gly Gly Ala Pro Ser Gly Leu Arg Leu Ser Ala Thr Ile
195 200 205

```
Asp Thr Arg Phe Ser Ser Thr Pro Thr Thr Leu Lys Arg Phe Ala Met
    210                 215                 220

Met Leu Ala Ile Ile Thr Thr Val Gly Ala Leu Val Ala Leu Trp Arg
225                 230                 235                 240

Leu Asp Gln Leu Asp Gly Arg Arg Met Arg Arg Leu Ile Pro Ala Arg
                245                 250                 255

Trp Ser Met Phe Thr Leu Val Asp Val Ala Val Ile Phe Gly Phe Leu
            260                 265                 270

Leu Trp His Val Ile Gly Ala Asn Ser Ser Asp Asp Gly Tyr Gln Met
        275                 280                 285

Gln Met Ala Arg Thr Ala Asp His Ser Gly Tyr Met Ala Asn Tyr Phe
    290                 295                 300

Arg Trp Phe Gly Ser Pro Glu Asp Pro Phe Gly Trp Tyr Tyr Asn Leu
305                 310                 315                 320

Leu Ala Leu Met Ile His Val Ser Asp Ala Ser Met Trp Ile Arg Leu
                325                 330                 335

Pro Asp Leu Ile Cys Gly Val Ala Cys Trp Leu Leu Leu Ser Arg Glu
            340                 345                 350

Val Leu Pro Arg Leu Gly Pro Ala Ile Val Gly Phe Lys Pro Ala Leu
        355                 360                 365

Trp Ala Ala Gly Leu Val Leu Leu Ala Ala Trp Met Pro Phe Asn Asn
    370                 375                 380

Gly Leu Arg Pro Glu Gly Gln Ile Ala Leu Gly Ala Leu Ile Thr Tyr
385                 390                 395                 400

Val Leu Ile Glu Arg Ala Ile Thr Tyr Gly Arg Met Thr Pro Val Ala
                405                 410                 415

Leu Ala Thr Leu Thr Ala Ala Phe Thr Ile Gly Ile Gln Pro Thr Gly
            420                 425                 430

Leu Ile Ala Val Ala Ala Leu Leu Ala Gly Gly Arg Pro Met Leu Tyr
        435                 440                 445

Ile Leu Val Arg Arg His Arg Ala Val Gly Ala Trp Pro Leu Val Ala
    450                 455                 460

Pro Leu Leu Ala Ala Gly Thr Val Val Leu Thr Val Val Phe Ala Glu
465                 470                 475                 480

Gln Thr Leu Ser Thr Val Leu Glu Ala Thr Lys Val Arg Thr Ala Ile
                485                 490                 495

Gly Pro Ala Gln Ala Trp Tyr Thr Glu Asn Leu Arg Tyr Tyr Tyr Leu
            500                 505                 510

Ile Leu Pro Thr Val Asp Gly Ser Leu Ser Arg Arg Phe Gly Phe Leu
        515                 520                 525
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Ile Thr Ala Leu Cys Leu Phe Thr Ala Val Leu Ile Thr Leu Arg Arg
530 535 540

Lys Gln Ile Pro Gly Val Ala Arg Gly Pro Ala Trp Arg Leu Ile Gly
545 550 555 560

Thr Ile Leu Gly Thr Met Phe Phe Leu Thr Phe Ala Pro Thr Lys Trp
565 570 575

Val His His Phe Gly Leu Phe Ala Ala Leu Gly Ala Ala Val Ala Ala
580 585 590

Leu Thr Thr Val Leu Val Ser His Glu Val Leu Arg Trp Ser Arg Asn
595 600 605

Arg Met Ala Phe Leu Ala Ala Leu Leu Phe Val Met Thr Leu Cys Phe
610 615 620

Ala Thr Thr Asn Gly Trp Trp Tyr Val Ser Ser Tyr Gly Val Pro Phe
625 630 635 640

Asn Ser Ala Met Pro Arg Ile Asp Gly Ile Thr Phe Ser Thr Ile Phe
645 650 655

Phe Ile Leu Phe Ala Ile Val Ala Leu Tyr Ala Tyr Tyr Leu His Phe
660 665 670

Thr Asn Thr Gly His Gly Glu Gly Arg Leu Ile Arg Thr Leu Thr Val
675 680 685

Ser Phe Trp Ala Pro Ile Pro Phe Ala Ala Gly Leu Met Thr Leu Val
690 695 700

Phe Ile Gly Ser Met Val Ala Gly Ile Val Arg Gln Tyr Pro Thr Tyr
705 710 715 720

Ser Asn Gly Trp Ala Asn Ile Arg Ala Leu Thr Gly Gly Cys Gly Leu
725 730 735

Ala Asp Asp Val Leu Val Glu Pro Asp Ser Asn Ala Gly Tyr Met Thr
740 745 750

Ala Leu Pro Ser Asn Tyr Gly Pro Leu Gly Pro Leu Gly Gly Val Asn
755 760 765

Ala Ile Gly Phe Thr Ala Asn Gly Val Pro Glu His Thr Val Ala Glu
770 775 780

Ala Ile Arg Ile Thr Pro Asn Gln Pro Gly Thr Asp Tyr Asp Trp Glu
785 790 795 800

Ala Pro Thr Lys Leu Lys Ala Pro Gly Ile Asn Gly Ser Val Val Pro
805 810 815

Leu Pro Tyr Gly Leu Asn Pro Asn Lys Val Pro Ile Ala Gly Thr Tyr
820 825 830

Thr Thr Gly Ala Gln Gln Gln Ser Arg Leu Thr Ser Ala Trp Tyr Gln
835 840 845

Leu Pro Lys Pro Asp Asp Arg His Pro Leu Val Val Val Thr Ala Ala

850 855 860

Gly Lys Ile Thr Gly Asn Ser Val Leu His Gly His Thr Tyr Gly Gln
865 870 875 880

Thr Val Val Leu Glu Tyr Gly Asp Pro Gly Pro Asn Gly Gly Leu Val
885 890 895

Pro Ala Gly Arg Leu Val Pro Asp Asp Leu Tyr Gly Glu Gln Pro Lys
900 905 910

Ala Trp Arg Asn Leu Arg Phe Ala Arg Ser Gln Met Pro Phe Asp Ala
915 920 925

Val Ala Val Arg Val Val Ala Glu Asn Leu Ser Leu Thr Pro Glu Asp
930 935 940

Trp Ile Ala Val Thr Pro Pro Arg Val Pro Glu Leu Arg Ser Leu Gln
945 950 955 960

Glu Tyr Val Gly Ser Ser Gln Pro Val Leu Leu Asp Trp Glu Val Gly
965 970 975

Leu Ala Phe Pro Cys Gln Gln Pro Met Leu His Ala Asn Gly Val Thr
980 985 990

Asp Ile Pro Lys Phe Arg Ile Thr Pro Asp Tyr Ser Ala Lys Lys Ile
995 1000 1005

Asp Thr Asp Thr Trp Glu Asp Gly Ala Asn Gly Gly Leu Leu Gly
1010 1015 1020

Ile Thr Asp Leu Leu Leu Arg Ala His Val Met Ser Thr Tyr Leu
1025 1030 1035

Ala Arg Asp Trp Gly Arg Asp Trp Gly Ser Leu Arg Lys Phe Asp
1040 1045 1050

Pro Leu Val Asp Thr His Pro Ala Gln Leu Asp Leu Asp Thr Ala
1055 1060 1065

Thr Arg Ser Gly Trp Trp Ser Pro Gly Lys Ile Arg Ile Lys Pro
1070 1075 1080

<210> 331

<211> 1070

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;embC, ML.tab 144115:147327 reverse MW:114723

<400> 331

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Val Ser Gly Ala Gly Ala Asn Tyr Trp Ile Ala Arg Leu Leu Ala Val
1               5                  10                  15

Ile Ala Gly Leu Leu Gly Ala Leu Leu Ala Met Ala Thr Pro Phe Leu
            20                  25                  30

Pro Val Asn Gln Asn Thr Ala Gln Leu Asn Trp Pro Gln Asn Ser Thr
        35                  40                  45

Phe Glu Ser Val Glu Ala Pro Leu Ile Gly Tyr Val Ala Thr Gly Leu
    50                  55                  60

Asn Val Thr Val Pro Cys Ala Ala Ala Ala Gly Leu Thr Gly Pro Gln
65                  70                  75                  80

Ser Ala Gly Gln Thr Val Leu Leu Ser Thr Val Pro Lys Gln Ala Pro
                85                  90                  95

Lys Ala Val Asp Arg Gly Leu Leu Ile Gln Arg Ala Asn Asp Asp Leu
            100                 105                 110

Val Leu Val Val Arg Asn Val Pro Val Val Ser Ala Pro Met Ser Gln
        115                 120                 125

Val Leu Ser Pro Ala Cys Gln Arg Leu Thr Phe Ala Ala Tyr Phe Asp
    130                 135                 140

Lys Ile Thr Ala Glu Phe Val Gly Leu Thr Tyr Gly Pro Asn Ala Glu
145                 150                 155                 160

His Pro Gly Val Pro Leu Arg Gly Glu Arg Ser Gly Tyr Asp Phe Arg
                165                 170                 175

Pro Gln Ile Val Gly Val Phe Thr Asp Leu Ser Gly Pro Ile Pro Thr
            180                 185                 190

Gly Leu Asn Phe Ser Ala Thr Ile Asp Thr Arg Tyr Ser Ser Ser Pro
        195                 200                 205

Thr Leu Leu Lys Thr Ile Ala Met Ile Leu Gly Val Val Leu Thr Ile
    210                 215                 220

Val Ala Leu Val Ala Leu His Leu Leu Asp Thr Ala Asp Gly Thr Gln
225                 230                 235                 240

His Arg Arg Leu Leu Pro Ser Arg Trp Trp Ser Ile Gly Cys Leu Asp
                245                 250                 255

Gly Leu Val Ile Thr Ile Leu Ala Trp Trp His Phe Val Gly Ala Asn
            260                 265                 270

Thr Ser Asp Asp Gly Tyr Ile Leu Thr Met Ala Arg Val Ser Glu His
        275                 280                 285

Ala Gly Tyr Met Ala Asn Tyr Tyr Arg Trp Phe Gly Thr Pro Glu Ala
    290                 295                 300
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Pro Phe Gly Trp Tyr Tyr Asp Leu Leu Ala Leu Trp Ala His Val Thr
305                 310                 315                 320

Thr Thr Ser Ala Trp Met Arg Val Pro Thr Leu Ala Met Ala Leu Thr
                325                 330                 335

Cys Trp Trp Leu Ile Ser Arg Glu Val Ile Pro Arg Leu Gly His Ala
            340                 345                 350

Ala Lys Ala Ser Arg Ala Ala Ala Trp Thr Ala Ala Gly Met Phe Leu
        355                 360                 365

Ala Val Trp Leu Pro Leu Asp Asn Gly Leu Arg Pro Glu Pro Ile Ile
    370                 375                 380

Ala Leu Gly Ile Leu Leu Thr Trp Cys Ser Val Glu Arg Ala Val Ala
385                 390                 395                 400

Thr Ser Arg Leu Leu Pro Val Ala Val Ala Cys Ile Val Gly Ala Leu
                405                 410                 415

Thr Leu Phe Ser Gly Pro Thr Gly Ile Ala Ser Ile Gly Ala Leu Leu
            420                 425                 430

Val Ala Val Gly Pro Leu Leu Thr Ile Leu Gln Arg Arg Ser Lys Gln
        435                 440                 445

Phe Gly Ala Val Pro Leu Val Ala Pro Ile Leu Ala Ala Ser Thr Val
    450                 455                 460

Thr Ala Ile Leu Ile Phe Arg Asp Gln Thr Phe Ala Gly Glu Ser Gln
465                 470                 475                 480

Ala Ser Leu Leu Lys Arg Ala Val Gly Pro Ser Leu Lys Trp Phe Asp
                485                 490                 495

Glu His Ile Arg Tyr Glu Arg Leu Phe Met Ala Ser Pro Asp Gly Ser
            500                 505                 510

Val Ala Arg Arg Phe Ala Val Leu Ala Leu Leu Val Ala Leu Ser Val
        515                 520                 525

Ala Val Ala Met Ser Leu Arg Lys Gly Arg Ile Pro Gly Leu Ala Ala
    530                 535                 540

Gly Pro Ser Arg Arg Ile Ile Gly Ile Thr Val Thr Ser Phe Leu Ala
545                 550                 555                 560

Met Met Phe Thr Pro Thr Lys Trp Thr His His Phe Gly Val Phe Ala
                565                 570                 575

Gly Leu Ala Gly Ser Leu Gly Ala Leu Ala Ala Val Ala Val Ala Ser
            580                 585                 590

Ala Ala Leu Arg Ser Arg Arg Asn Arg Thr Val Phe Ala Ala Val Val
        595                 600                 605

Leu Phe Val Val Ala Leu Ser Phe Ala Ser Val Asn Gly Trp Trp Tyr
    610                 615                 620

Val Ser Asn Phe Gly Val Pro Trp Ser Asn Ser Phe Pro Lys Leu Arg
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625 630 635 640

Trp Ser Leu Thr Thr Ala Leu Leu Glu Leu Thr Val Ile Val Leu Leu
645 650 655

Leu Ala Ala Trp Phe His Phe Val Ala Thr Thr Asn Gly Ser Ala Lys
660 665 670

Thr Arg Phe Gly Val Arg Ile Asp Arg Ile Val Gln Ser Pro Ile Ala
675 680 685

Ile Ala Thr Trp Ser Leu Val Ile Phe Glu Val Ala Ser Leu Thr Met
690 695 700

Ala Met Ile Gly Gln Tyr Pro Ala Trp Thr Val Gly Lys Ser Asn Leu
705 710 715 720

Gln Ala Leu Thr Gly Gln Thr Cys Gly Leu Ala Glu Glu Val Leu Val
725 730 735

Glu Gln Asp Pro Asn Ala Gly Met Leu Leu Pro Val Ser Thr Pro Val
740 745 750

Ala Asp Ala Leu Gly Ser Ser Leu Ala Glu Ala Phe Thr Ala Asn Gly
755 760 765

Ile Pro Ala Asp Val Ser Ala Asp Pro Val Met Glu Pro Pro Gly Asp
770 775 780

Arg Ser Phe Val Lys Glu Asn Gly Met Thr Thr Gly Gly Glu Ala Gly
785 790 795 800

Asn Glu Gly Gly Thr Asn Ala Thr Pro Gly Ile Asn Gly Ser Arg Ala
805 810 815

Gln Leu Pro Tyr Asn Leu Asp Pro Ala Arg Thr Pro Val Leu Gly Ser
820 825 830

Trp Gln Ser Gly Ile Gln Val Val Ala Arg Leu Arg Ser Gly Trp Tyr
835 840 845

Arg Leu Pro Ala Arg Asp Lys Ala Gly Pro Leu Leu Val Val Ser Ala
850 855 860

Ala Gly Arg Phe Asp His His Glu Val Lys Leu Gln Trp Ala Thr Asp
865 870 875 880

Ser Gly Ala Ala Ser Gly Gln Pro Gly Gly Ala Phe Gln Phe Ser Asp
885 890 895

Val Gly Ala Ser Pro Ala Trp Arg Asn Leu Arg Leu Pro Leu Ser Ala
900 905 910

Ile Pro Ser Met Ala Thr Gln Ile Arg Leu Val Ala Asp Asp Glu Asp
915 920 925

Leu Ala Pro Gln His Trp Ile Ala Leu Thr Pro Pro Arg Ile Pro Gln
930 935 940

Leu Arg Thr Leu Gln Asp Val Val Gly Tyr Gln Asp Pro Val Phe Leu
945 950 955 960

Asp Trp Leu Val Gly Leu Ala Phe Pro Cys Gln Arg Pro Phe Asp His
965 970 975

Gln Tyr Gly Val Asp Glu Thr Pro Lys Trp Arg Ile Leu Pro Asp Arg
980 985 990

Phe Gly Ala Glu Ala Asn Ser Pro Val Met Asp Asn Asn Gly Gly Gly
995 1000 1005

Pro Leu Gly Val Thr Glu Leu Leu Leu Lys Ala Thr Thr Val Ala
1010 1015 1020

Ser Tyr Leu Lys Asp Asp Trp Ser Arg Asp Trp Gly Ala Leu Gln
1025 1030 1035

Arg Leu Thr Pro Tyr Tyr Pro Asn Ala Gln Pro Ala Arg Leu Ser
1040 1045 1050

Leu Gly Thr Thr Thr Arg Ser Gly Leu Trp Asn Pro Ala Pro Leu
1055 1060 1065

Arg His
1070

<210> 332

<211> 404

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;lppS, ML.tab 524929:526143 forward MW:43242

<400> 332

Val Gly Thr Ala Thr Arg Arg Val Gln Pro Lys Ala Trp Arg Ala Leu
1 5 10 15

Leu Thr Leu Leu Val Ile Ser Val Val Met Pro Gly Val Ala Cys Asn
20 25 30

Arg Gly Gly Gly Asn Val Pro Val Asn Val Ile Gly Asp Lys Gly Thr
35 40 45

Pro Phe Ala Asp Leu Leu Val Pro Lys Leu Thr Ala Ser Val Thr Asp
50 55 60

Gly Ala Val Gly Val Asn Val Asp Met Pro Val Thr Val Thr Val Ala
65 70 75 80

Asp Gly Val Leu Ala Ala Val Thr Met Ile Asn Asp Asn Gly Arg Met

85 90 95

Ile Asn Gly Gln Phe Ser Pro Asp Gly Leu Arg Trp Ser Thr Thr Glu
100 105 110

Pro Leu Gly Phe Asn Arg Cys Tyr Thr Leu Ser Ala Lys Ala Leu Gly
115 120 125

Leu Gly Gly Val Val Asn Arg Gln Met Thr Phe Gln Thr Ser Ser Pro
130 135 140

Ala His Leu Thr Met Pro Tyr Val Asn Pro Gly Asn Gly Glu Ile Val
145 150 155 160

Gly Ile Gly Glu Pro Val Ala Ile Arg Phe Asp Glu Asn Ile Ala Asn
165 170 175

Arg Leu Ala Ala Gln Lys Ala Ile Thr Ile Thr Ala Asn Pro Pro Val
180 185 190

Glu Gly Ala Phe Tyr Trp Leu Asn Asn Arg Glu Val Arg Trp Arg Pro
195 200 205

Glu His Phe Trp Lys Ser Gly Thr Ala Val Asp Val Ala Val Asn Thr
210 215 220

Tyr Gly Val Asp Leu Gly Glu Gly Met Phe Gly Glu Asp Asn Val Lys
225 230 235 240

Thr His Phe Thr Ile Gly Asp Glu Val Phe Ala Thr Ala Asp Asp Ala
245 250 255

Thr Lys Met Leu Thr Val Arg Val Asn Gly Glu Val Val Lys Ile Met
260 265 270

Pro Thr Ser Met Gly Lys Asp Ser Thr Pro Thr Ala Asn Gly Ile Tyr
275 280 285

Ile Val Gly Ala Arg Phe Lys His Ile Ile Met Asp Ser Ser Thr Tyr
290 295 300

Gly Val Pro Val Asn Ser Pro Asn Gly Tyr Arg Ala Asp Val Asp Trp
305 310 315 320

Ala Thr Gln Leu Ser Tyr Ser Gly Val Phe Leu His Ser Ala Pro Trp
325 330 335

Ser Val Gly Ala Gln Gly His Thr Asn Thr Ser His Gly Cys Leu Asn
340 345 350

Val Ser Pro Ser Asn Ala Gln Trp Phe Tyr Asp His Val Lys Arg Gly
355 360 365

Asp Ile Val Glu Val Val Asn Thr Val Gly Asp Thr Leu Pro Gly Ala
370 375 380

Glu Gly Leu Gly Asp Trp Asn Ile Pro Trp Glu Gln Trp Lys Ala Gly
385 390 395 400

Asn Ala Asn Ile

<210> 333

<211> 233

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;lppX, ML.tab 188551:189252 forward MW:24411

<400> 333

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Met Asn Asp Arg Lys Trp Val Thr Ser Ser Val Met Leu Val Thr Leu
1               5                  10                  15

Ser Ala Cys Leu Ala Leu Gly Leu Ser Gly Cys Ser Ser Thr Lys Pro
            20                  25                  30

Asp Ala Gln Glu Gln Ser Ser Ser Ser Ser Pro Ala Ser Ser Asp Pro
        35                  40                  45

Ala Leu Thr Ala Glu Ile Lys Gln Ser Leu Glu Thr Thr Lys Ala Leu
    50                  55                  60

Ser Ser Val His Val Val Val Gln Thr Thr Gly Lys Val Asp Ala Leu
65                  70                  75                  80

Leu Gly Ile Ser Asn Ala Asp Val Asp Val Gln Ala Asn Pro Leu Ala
                85                  90                  95

Val Lys Gly Thr Cys Thr Tyr Asn Asp Gln Pro Gly Val Pro Phe Arg
            100                 105                 110

Val Leu Gly Asp Asn Ile Ser Val Lys Leu Phe Asp Asp Trp Ser Asn
        115                 120                 125

Leu Gly Ser Ile Ser Asp Leu Ser Thr Ser His Val Leu Asp Pro Asn
    130                 135                 140

Thr Gly Ile Thr Gln Val Leu Ser Gly Val Ile Asn Leu Gln Ala Gln
145                 150                 155                 160

Gly Thr Glu Val Val Asp Arg Ile Pro Thr Asn Lys Ile Thr Gly Thr
                165                 170                 175

Val Pro Thr Ser Ser Val Lys Met Leu Asp Pro Lys Ala Lys Gly Ser
            180                 185                 190

Lys Leu Ala Thr Val Trp Ile Ala Gln Asp Gly Ser His His Leu Val
        195                 200                 205

Arg Ala Ser Ile Asp Leu Gly Ser Gly Ser Ile Gln Leu Thr Gln Ser
```

210 215 220

Lys Trp Asn Glu Pro Val Asn Thr Asn
225 230

<210> 334

<211> 589

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;lpqB, ML.tab 918368:920137 forward MW:61768

<400> 334

Val Met Arg Gly Val Leu Val Ile Met Arg Leu Leu Cys Leu Gly Met
1 5 10 15

Leu Phe Thr Gly Cys Ala Gly Val Pro Asn Ser Ser Ala Pro Gln Ala
20 25 30

Ile Gly Thr Val Glu Arg Pro Val Pro Ser Asn Leu Pro Lys Pro Thr
35 40 45

Pro Gly Met Asp Pro Asp Val Leu Leu Arg Glu Phe Phe Lys Ala Thr
50 55 60

Ala Asp Pro Ala Asn Arg His Leu Ala Ala Arg Gln Phe Leu Thr Gln
65 70 75 80

Ser Ala Ser Asn Ala Trp Asp Asp Ala Gly Arg Ala Leu Leu Ile Asp
85 90 95

His Val Val Phe Val Glu Thr Arg Gly Ala Glu Arg Val Ser Ala Thr
100 105 110

Met Arg Ala Asp Ile Leu Gly Ser Leu Ser Asp Met Gly Val Phe Glu
115 120 125

Thr Ala Glu Gly Val Leu Pro Asp Pro Gly Pro Val Glu Leu Ile Lys
130 135 140

Thr Ser Gly Gly Trp Arg Ile Asp Arg Leu Pro Asn Gly Val Phe Leu
145 150 155 160

Asp Trp Gln Gln Phe Gln Ala Thr Tyr Lys Arg Asn Thr Leu Tyr Phe
165 170 175

Ala Asp Pro Thr Gly Lys Thr Val Val Pro Asp Pro Arg Tyr Val Ala
180 185 190

Val Leu Gly His Asp Gln Leu Ala Thr Glu Leu Val Ser Lys Leu Leu
195 200 205

Ala Gly Pro Arg Pro Glu Met Ala His Ala Val Arg Asn Leu Leu Ala
210 215 220

Pro Pro Leu Arg Leu Arg Gly Pro Val Thr Arg Ala Asp Gly Ser Lys
225 230 235 240

Ser Gly Ile Gly Arg Gly Tyr Gly Gly Ala Arg Ile Asp Leu Glu Lys
245 250 255

Leu Ser Thr Thr Asp Pro His Ser Arg Gln Leu Leu Ala Ala Gln Ile
260 265 270

Ile Trp Thr Leu Ala Arg Ala Asp Ile Arg Gly Pro Tyr Val Ile Asn
275 280 285

Ala Asp Gly Ala Pro Leu Asp Asp Arg Phe Ala Asp Gly Trp Thr Thr
290 295 300

Ser Asp Val Ala Ala Thr Asp Pro Gly Val Ala Asp Gly Ala Gly Ala
305 310 315 320

Gly Leu His Ala Leu Val Gly Gly Ala Leu Val Ser Leu Ile Gly Gln
325 330 335

Asn Thr Thr Thr Val Leu Gly Ala Phe Gly Arg Met Gly Tyr Gln Thr
340 345 350

Gly Ala Ala Leu Ser Arg Ser Gly Arg Gln Val Ala Ser Val Val Thr
355 360 365

Leu Arg Arg Gly Ala Pro Asp Met Ala Ala Ser Leu Trp Ile Gly Asp
370 375 380

Leu Gly Gly Glu Ala Val Gln Ser Ala Asp Gly His Ser Leu Ser Arg
385 390 395 400

Pro Ser Trp Ser Leu Asp Asp Ala Val Trp Val Val Val Asp Thr Asn
405 410 415

Asn Val Leu Arg Ala Ile Pro Glu Pro Ala Ser Gly Gln Pro Ala Arg
420 425 430

Ile Pro Val Asp Ser Ala Ala Val Ala Ser Arg Phe Pro Gly Pro Ile
435 440 445

Thr Asp Leu Gln Leu Ser Arg Asp Gly Thr Arg Ala Ala Met Val Ile
450 455 460

Gly Gly Gln Val Ile Leu Ala Gly Val Glu Gln Thr Gln Ala Gly Gln
465 470 475 480

Phe Ala Leu Thr Tyr Pro Arg Arg Leu Gly Phe Gly Leu Gly Ser Ser
485 490 495

Val Val Ser Leu Ser Trp Arg Thr Gly Asp Asp Ile Val Val Thr Arg
500 505 510

Thr Asp Ala Thr His Pro Val Ser Tyr Val Asn Leu Asp Gly Val Asn

515 520 525

Ser Asp Ala Pro Ala Arg Gly Leu Gln Val Pro Leu Ser Val Ile Ala
530 535 540

Ala Asn Pro Ser Thr Val Tyr Val Ala Gly Pro Gln Gly Val Leu Gln
545 550 555 560

Tyr Ser Ala Ser Val Ala Glu Ser Gln Gln Gly Trp Ser Glu Val Ala
565 570 575

Gly Leu Thr Val Met Gly Ala Glu Pro Val Leu Pro Gly
580 585

<210> 335

<211> 183

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;lpqE, ML.tab 409442:409993 reverse MW:19242

<400> 335

Val Ser Arg Phe Lys Ile Ser Leu Pro Ala Leu Ala Thr Arg Val Ala
1 5 10 15

Val Leu Gly Phe Leu Thr Leu Met Ala Ser Val Leu Gly Gly Cys Gly
20 25 30

Ala Gly Gln Ile Ser Gln Thr Ala Thr Gln Glu Pro Ala Val Asn Gly
35 40 45

Asn Arg Val Thr Leu Asn Asn Leu Ala Leu Arg Asp Ile Arg Ile Gln
50 55 60

Ala Ala Gln Thr Gly Asp Phe Leu Gln Ser Gly Arg Thr Val Asp Leu
65 70 75 80

Met Leu Val Ala Ile Asn Asn Ser Pro Tyr Val Thr Asp Arg Leu Val
85 90 95

Ser Ile Thr Ser Asp Ile Gly Thr Val Ala Leu Asn Gly Tyr Thr Gln
100 105 110

Leu Pro Thr Asn Gly Met Leu Phe Ile Gly Thr Ser Glu Gly Gln Arg
115 120 125

Ile Lys Pro Pro Pro Leu Gln Ser Asn Asn Ile Ala Lys Ala Ile Val
130 135 140

Thr Leu Ala Lys Pro Ile Thr Asn Gly Leu Thr Tyr Asn Phe Thr Phe
145 150 155 160

Asn Phe Glu Lys Ala Gly Gln Ala Asn Val Ala Val Pro Val Ser Ala
165 170 175

Gly Leu Ala Pro Arg Gln Thr
180

<210> 336

<211> 218

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;lpqT, ML.tab 322399:323055 reverse MW:23455

<400> 336

Met Gln Ala Ile Arg Leu Gly Leu His Thr Ala Ala Ala Val Val Thr
1 5 10 15

Leu Ser Ile Ser Ala Val Ser Cys Gly Thr Lys Thr Pro Asp Tyr Gln
20 25 30

Leu Ile Leu Ser Lys Ser Ser Thr Thr Thr Thr Thr Thr Pro Asp Lys
35 40 45

Pro Ile Pro Leu Pro Gln Tyr Leu Glu Ser Ile Gly Val Thr Gly Gln
50 55 60

Gln Val Ala Pro Ser Ser Leu Pro Gly Leu Thr Val Ser Ile Pro Thr
65 70 75 80

Pro Pro Gly Trp Ser Pro Tyr Ser Asn Pro Asn Ile Thr Pro Glu Thr
85 90 95

Leu Ile Ile Ala Lys Ser Gly Lys Tyr Pro Thr Ala Arg Leu Val Ala
100 105 110

Phe Lys Leu Arg Gly Asp Phe Asp Pro Thr Gln Val Ile Lys His Gly
115 120 125

Asn Asp Asp Ala Gln Leu Phe Glu Asn Phe Arg Gln Leu Asp Val Ser
130 135 140

Thr Ala Asn Tyr Asn Gly Phe Pro Ser Ala Met Ile Gln Gly Ser Tyr
145 150 155 160

Asp Leu Glu Gly Arg Arg Leu His Ala Trp Asn Arg Ile Val Ile Pro
165 170 175

Thr Gly Pro Pro Pro Ser Lys Gln Gln Tyr Leu Val Gln Leu Thr Ile
180 185 190

Thr Ser Leu Ala Asn Glu Ala Val Ala Gln Ser Asn Asp Ile Glu Ala
195 200 205

Ile Ile Arg Gly Phe Val Val Ala Pro Lys
210 215

<210> 337

<211> 238

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;lprG, ML.tab 674679:675395 reverse MW:24874

<400> 337

Met Gln Ala Pro Lys His His Arg Arg Leu Phe Ala Val Leu Ala Thr
1 5 10 15

Leu Asn Thr Ala Thr Ala Val Ile Ala Gly Cys Ser Ser Gly Ser Asn
20 25 30

Leu Ser Ser Gly Pro Leu Pro Asp Ala Thr Thr Trp Val Lys Gln Ala
35 40 45

Thr Asp Ile Thr Lys Asn Val Thr Ser Ala His Leu Val Leu Ser Val
50 55 60

Asn Gly Lys Ile Thr Gly Leu Pro Val Lys Thr Leu Thr Gly Asp Leu
65 70 75 80

Thr Thr His Pro Asn Thr Val Ala Ser Gly Asn Ala Thr Ile Thr Leu
85 90 95

Asp Gly Ala Asp Leu Asn Ala Asn Phe Val Val Val Asp Gly Glu Leu
100 105 110

Tyr Ala Thr Leu Thr Pro Ser Lys Trp Ser Asp Phe Gly Lys Ala Ser
115 120 125

Asp Ile Tyr Asp Val Ala Ser Ile Leu Asn Pro Asp Ala Gly Leu Ala
130 135 140

Asn Val Leu Ala Asn Phe Thr Gly Ala Lys Thr Glu Gly Arg Asp Ser
145 150 155 160

Ile Asn Gly Gln Ser Ala Val Arg Ile Ser Gly Asn Val Ser Ala Asp

165 170 175

Ala Val Asn Lys Ile Ala Pro Pro Phe Asn Ala Thr Gln Pro Met Pro
180 185 190

Ala Thr Val Trp Ile Gln Glu Thr Gly Asp His Gln Leu Ala Gln Ile
195 200 205

Arg Ile Asp Asn Lys Ser Ser Gly Asn Ser Val Gln Met Thr Leu Ser
210 215 220

Asn Trp Asp Glu Pro Val Gln Val Thr Lys Pro Gln Val Ser
225 230 235

<210> 338

<211> 112

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;lsr2, ML.tab 305368:305706 forward MW:12164

<400> 338

Met Ala Lys Lys Val Thr Val Thr Leu Val Asp Asp Phe Asp Gly Ala
1 5 10 15

Gly Ala Ala Asp Glu Thr Val Glu Phe Gly Leu Asp Gly Val Thr Tyr
20 25 30

Glu Ile Asp Leu Thr Asn Lys Asn Ala Ala Lys Leu Arg Gly Asp Leu
35 40 45

Arg Gln Trp Val Ser Ala Gly Arg Arg Val Gly Gly Arg Arg Arg Gly
50 55 60

Arg Ser Asn Ser Gly Arg Gly Arg Gly Ala Ile Asp Arg Glu Gln Ser
65 70 75 80

Ala Ala Ile Arg Glu Trp Ala Arg Arg Asn Gly His Asn Val Ser Thr
85 90 95

Arg Gly Arg Ile Pro Ala Asp Val Ile Asp Ala Phe His Ala Ala Thr
100 105 110

<210> 339

<211> 105

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;mihF, ML.tab 656895:657212 forward MW:11474

<400> 339

Val Ala Leu Pro Gln Leu Thr Asp Glu Gln Arg Ala Ala Ala Leu Glu
1 5 10 15

Lys Ala Ala Ala Ala Arg Arg Ala Arg Ala Glu Leu Lys Asp Arg Leu
20 25 30

Lys Arg Gly Gly Thr Asn Leu Thr Gln Val Leu Lys Asp Ala Glu Ser
35 40 45

Asp Glu Val Leu Gly Lys Met Lys Val Ser Ala Leu Leu Glu Ala Leu
50 55 60

Pro Lys Val Gly Lys Val Lys Ala Gln Glu Ile Met Thr Glu Leu Asp
65 70 75 80

Ile Ala Pro Thr Arg Arg Leu Arg Gly Leu Gly Glu Arg Gln Arg Lys
85 90 95

Ala Leu Leu Glu Lys Phe Gly Ser Ala
100 105

<210> 340

<211> 293

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;mmpS3, ML.tab 1041502:1042383 forward MW:30891

<400> 340

Met Ser Gly Pro Asn Pro Pro Gly Arg Glu Asn Glu Glu Ser Asp Ser
1 5 10 15

Gly Asn Glu Leu Ser Gly Glu Leu Asp Pro His Asn Gly Val Glu Ser
20 25 30

Val Asp Glu Leu Val Pro Val Pro Asp Ser Asp Leu Val Thr Ala Ser
35 40 45

Asp His Thr Ser Glu Thr Glu Val Tyr Ser Gln Ala Tyr Ser Ala Pro
50 55 60

Glu Ala Glu His Phe Thr Ala Val Pro Tyr Val Pro Ala Asp Leu Arg
65 70 75 80

Leu Tyr Asp Tyr Asp Glu Ser Ser Val Tyr Asp Glu Pro Gly Ala Ala
85 90 95

Pro Arg Trp Pro Trp Val Val Gly Val Ala Ala Ile Leu Ala Ala Ile
100 105 110

Ser Leu Val Val Ser Val Ser Leu Leu Phe Thr Arg Thr Asp Thr Ser
115 120 125

Lys Leu Ser Thr Pro Thr Thr Gly Arg Ser Thr Pro Pro Val Gln Asp
130 135 140

Glu Ile Thr Thr Val Lys Pro Pro Pro Pro Ser Thr Glu Thr Ser Thr
145 150 155 160

Ala Thr Glu Thr Gln Thr Val Thr Val Thr Pro Leu Pro Pro Pro Ser
165 170 175

Ala Thr Ser Thr Ala Val Pro Pro Ser Ser Val Val Pro Pro Pro Pro
180 185 190

Thr Thr Pro Thr Thr Thr Val Thr Thr Leu Thr Gly Pro Arg Gln Val
195 200 205

Thr Tyr Ser Val Thr Gly Thr Lys Ala Pro Gly Asp Ile Ile Ser Val
210 215 220

Thr Tyr Val Asp Ala Ser Gly Arg Arg Arg Thr Gln His Asn Val Tyr
225 230 235 240

Ile Pro Trp Ser Met Thr Val Thr Pro Ile Ser Gln Ser Asp Val Gly
245 250 255

Ser Val Glu Ala Phe Ser Leu Phe Arg Val Ser Lys Leu Asn Cys Leu
260 265 270

Ile Thr Thr Ser Asp Gly Thr Val Leu Ser Ser Asn Ser Asn Asp Ala
275 280 285

Pro Gln Thr Ser Cys
290

<210> 341

<211> 167

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;mtb12, ML.tab 753532:754035 forward MW:17130

<400> 341

Met Thr Met Lys Ser Ile Ala Thr Tyr Ala Ala Leu Ala Ile Ile Gly
1 5 10 15

Ala Ala Val Asp Gly Leu Thr Ser Met Ala Ile Pro Thr Gly Pro Ala
20 25 30

Ala Ser His Ile Gln Pro Val Ala Phe Gly Val Pro Leu Pro Gln Asp
35 40 45

Pro Ala Pro Ala Ala Asp Val Pro Thr Ala Ala Glu Leu Thr Ser Leu
50 55 60

Leu Asn Lys Ile Val Asp Pro Asp Val Ser Phe Met His Lys Ser Gln
65 70 75 80

Leu Val Glu Gly Gly Ile Gly Ser Ala Glu Ala His Ile Gly Asp Arg
85 90 95

Glu Leu Lys Asn Ala Ala Gln Lys Gly Glu Leu Pro Leu Leu Phe Ser
100 105 110

Val Thr Asn Ile Arg Pro Gly Thr Ser Gly Ser Ala Thr Ala Asp Val
115 120 125

Ser Val Ser Gly Pro Lys Leu Asn Pro Pro Val Thr Gln Asn Ile Thr
130 135 140

Phe Ile Asn Lys Gly Ser Trp Val Leu Ser Arg His Ser Ala Met Glu
145 150 155 160

Leu Leu Gln Ala Ala Gly Arg
165

<210> 342

<211> 84

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;whiB1, ML.tab 953665:953919 reverse MW:9318

<400> 342

Met Asp Trp Arg His Lys Ala Val Cys Arg Asp Glu Asp Pro Glu Leu
1 5 10 15

Phe Phe Pro Val Gly Asn Ser Gly Pro Ala Ile Ala Gln Ile Ala Asp
20 25 30

Ala Lys Leu Val Cys Asn Arg Cys Pro Val Thr Thr Glu Cys Leu Ala
35 40 45

Trp Ala Leu Asn Thr Gly Gln Asp Ser Gly Val Trp Gly Gly Met Ser
50 55 60

Glu Asp Glu Arg Arg Ala Leu Lys Arg Arg Asn Thr Arg Thr Lys Ala
65 70 75 80

Arg Ser Gly Val

<210> 343

<211> 89

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;whiB2, ML.tab 903227:903496 forward MW:10119

<400> 343

Val Val Pro Lys Ala Leu Val Ala Phe Glu Val Glu Ser Glu Pro Glu
1 5 10 15

Ser Ser Asp Gln Trp Gln Asp Arg Ala Leu Cys Ala Gln Thr Asp Pro
20 25 30

Glu Ala Phe Phe Pro Glu Lys Gly Gly Ser Thr Arg Glu Ala Lys Lys
35 40 45

Ile Cys Leu Gly Cys Glu Val Arg His Glu Cys Leu Glu Tyr Ala Leu
50 55 60

Ala His Asp Glu Arg Phe Gly Ile Trp Gly Gly Leu Ser Glu Arg Glu
65 70 75 80

Arg Arg Arg Leu Lys Arg Gly Val Ile
85

<210> 344

<211> 102

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;whiB3, ML.tab 475771:476079 reverse MW:11576

<400> 344

Met Pro Gln Pro Lys Gln Leu Pro Gly Pro Asn Ala Thr Ile Trp Asn
1 5 10 15

Trp Gln Leu Gln Gly Leu Cys Arg Gly Val Asp Ser Ser Met Phe Phe
20 25 30

His Pro Asp Gly Glu Arg Gly Arg Ala Arg Met Gln Arg Glu Gln Arg
35 40 45

Ala Lys Glu Met Cys Arg Arg Cys Pro Val Ile Glu Glu Cys Arg Ala
50 55 60

His Ala Leu Asp Val Gly Glu Pro Tyr Gly Val Trp Gly Gly Leu Ser
65 70 75 80

Glu Ser Glu Arg Asp Leu Leu Leu Lys Gly Asp Leu Ala Arg Ser Arg
85 90 95

Ser Ile Pro Arg Ser Ala
100

<210> 345

<211> 304

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0007, H37Rv2.tab 9914:10825 forward MW:31041

<400> 345

Val Thr Ala Pro Asn Glu Pro Gly Ala Leu Ser Lys Gly Asp Gly Pro
1 5 10 15

```
Asn Ala Asp Gly Leu Val Asp Arg Gly Gly Ala His Arg Ala Ala Thr
            20                  25                  30

Gly Pro Gly Arg Ile Pro Asp Ala Gly Asp Pro Pro Pro Trp Gln Arg
        35                  40                  45

Ala Ala Thr Arg Gln Ser Gln Ala Gly His Arg Gln Pro Pro Pro Val
    50                  55                  60

Ser His Pro Glu Gly Arg Pro Thr Asn Pro Pro Ala Ala Ala Asp Ala
65                  70                  75                  80

Arg Leu Asn Arg Phe Ile Ser Gly Ala Ser Ala Pro Val Thr Gly Pro
                85                  90                  95

Ala Ala Ala Val Arg Thr Pro Gln Pro Asp Pro Asp Ala Ser Leu Gly
            100                 105                 110

Cys Gly Asp Gly Ser Pro Ala Glu Ala Tyr Ala Ser Glu Leu Pro Asp
        115                 120                 125

Leu Ser Gly Pro Thr Pro Arg Ala Pro Gln Arg Asn Pro Ala Pro Ala
    130                 135                 140

Arg Pro Ala Glu Gly Gly Ala Gly Ser Arg Gly Asp Ser Ala Ala Gly
145                 150                 155                 160

Ser Ser Gly Gly Arg Ser Ile Thr Ala Glu Ser Arg Asp Ala Arg Val
                165                 170                 175

Gln Leu Ser Ala Arg Arg Ser Arg Gly Pro Val Arg Ala Ser Met Gln
            180                 185                 190

Ile Arg Arg Ile Asp Pro Trp Ser Thr Leu Lys Val Ser Leu Leu Leu
        195                 200                 205

Ser Val Ala Leu Phe Phe Val Trp Met Ile Thr Val Ala Phe Leu Tyr
    210                 215                 220

Leu Val Leu Gly Gly Met Gly Val Trp Ala Lys Leu Asn Ser Asn Val
225                 230                 235                 240

Gly Asp Leu Leu Asn Asn Ala Ser Gly Ser Ser Ala Glu Leu Val Ser
                245                 250                 255

Ser Gly Thr Ile Phe Gly Gly Ala Phe Leu Ile Gly Leu Val Asn Ile
            260                 265                 270

Val Leu Met Thr Ala Leu Ala Thr Ile Gly Ala Phe Val Tyr Asn Leu
        275                 280                 285

Ile Thr Asp Leu Ile Gly Gly Ile Glu Val Thr Leu Ala Asp Arg Asp
    290                 295                 300
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<210> 346

<211> 141

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0010c, H37Rv2.tab 13136:13558 reverse MW:15166

<400> 346

Met Gln Gln Thr Ala Trp Ala Pro Arg Thr Ser Gly Ile Ala Gly Cys
1 5 10 15

Gly Ala Gly Gly Val Val Met Ala Ile Ala Ser Val Thr Leu Val Thr
20 25 30

Asp Thr Pro Gly Arg Val Leu Thr Gly Val Ala Ala Leu Gly Leu Ile
35 40 45

Leu Phe Ala Ser Ala Thr Trp Arg Ala Arg Pro Arg Leu Ala Ile Thr
50 55 60

Pro Asp Gly Leu Ala Ile Arg Gly Trp Phe Arg Thr Gln Leu Leu Arg
65 70 75 80

His Ser Asn Ile Lys Ile Ile Arg Ile Asp Glu Phe Arg Arg Tyr Gly
85 90 95

Arg Leu Val Arg Leu Leu Glu Ile Glu Thr Val Ser Gly Gly Leu Leu
100 105 110

Ile Leu Ser Arg Trp Asp Leu Gly Thr Asp Pro Val Glu Val Leu Asp
115 120 125

Ala Leu Thr Ala Ala Gly Tyr Ala Gly Arg Gly Gln Arg
130 135 140

<210> 347

<211> 93

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0011c, H37Rv2.tab 13717:13995 reverse MW:10429

<400> 347

Met Pro Lys Ser Lys Val Arg Lys Lys Asn Asp Phe Thr Val Ser Ala
1 5 10 15

Val Ser Arg Thr Pro Met Lys Val Lys Val Gly Pro Ser Ser Val Trp
20 25 30

Phe Val Ser Leu Phe Ile Gly Leu Met Leu Ile Gly Leu Ile Trp Leu
35 40 45

Met Val Phe Gln Leu Ala Ala Ile Gly Ser Gln Ala Pro Thr Ala Leu
50 55 60

Asn Trp Met Ala Gln Leu Gly Pro Trp Asn Tyr Ala Ile Ala Phe Ala
65 70 75 80

Phe Met Ile Thr Gly Leu Leu Leu Thr Met Arg Trp His
85 90

<210> 348

<211> 527

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0020c, H37Rv2.tab 23864:25444 reverse MW:56880

<400> 348

Met Gly Ser Gln Lys Arg Leu Val Gln Arg Val Glu Arg Lys Leu Glu
1 5 10 15

Gln Thr Val Gly Asp Ala Phe Ala Arg Ile Phe Gly Gly Ser Ile Val
20 25 30

Pro Gln Glu Val Glu Ala Leu Leu Arg Arg Glu Ala Ala Asp Gly Ile
35 40 45

Gln Ser Leu Gln Gly Asn Arg Leu Leu Ala Pro Asn Glu Tyr Ile Ile
50 55 60

Thr Leu Gly Val His Asp Phe Glu Lys Leu Gly Ala Asp Pro Glu Leu
65 70 75 80

Lys Ser Thr Gly Phe Ala Arg Asp Leu Ala Asp Tyr Ile Gln Glu Gln
85 90 95

Gly Trp Gln Thr Tyr Gly Asp Val Val Arg Phe Glu Gln Ser Ser
100 105 110

Asn Leu His Thr Gly Gln Phe Arg Ala Arg Gly Thr Val Asn Pro Asp
115 120 125

```
Val Glu Thr His Pro Pro Val Ile Asp Cys Ala Arg Pro Gln Ser Asn
    130                 135                 140

His Ala Phe Gly Ala Glu Pro Gly Val Ala Pro Met Ser Asp Asn Ser
145                 150                 155                 160

Ser Tyr Arg Gly Gly Gln Gly Gln Gly Arg Pro Asp Glu Tyr Tyr Asp
                165                 170                 175

Asp Arg Tyr Ala Arg Pro Gln Glu Asp Pro Arg Gly Gly Pro Asp Pro
            180                 185                 190

Gln Gly Gly Ser Asp Pro Arg Gly Gly Tyr Pro Pro Glu Thr Gly Gly
        195                 200                 205

Tyr Pro Pro Gln Pro Gly Tyr Pro Arg Pro Arg His Pro Asp Gln Gly
    210                 215                 220

Asp Tyr Pro Glu Gln Ile Gly Tyr Pro Asp Gln Gly Gly Tyr Pro Glu
225                 230                 235                 240

Gln Arg Gly Tyr Pro Glu Gln Arg Gly Tyr Pro Asp Gln Arg Gly Tyr
                245                 250                 255

Gln Asp Gln Gly Arg Gly Tyr Pro Asp Gln Gly Gln Gly Gly Tyr Pro
            260                 265                 270

Pro Pro Tyr Glu Gln Arg Pro Pro Val Ser Pro Gly Pro Ala Ala Gly
        275                 280                 285

Tyr Gly Ala Pro Gly Tyr Asp Gln Gly Tyr Arg Gln Ser Gly Gly Tyr
    290                 295                 300

Gly Pro Ser Pro Gly Gly Gly Gln Pro Gly Tyr Gly Gly Tyr Gly Glu
305                 310                 315                 320

Tyr Gly Arg Gly Pro Ala Arg His Glu Glu Gly Ser Tyr Val Pro Ser
                325                 330                 335

Gly Pro Pro Gly Pro Pro Glu Gln Arg Pro Ala Tyr Pro Asp Gln Gly
            340                 345                 350

Gly Tyr Asp Gln Gly Tyr Gln Gln Gly Ala Thr Thr Tyr Gly Arg Gln
        355                 360                 365

Asp Tyr Gly Gly Gly Ala Asp Tyr Thr Arg Tyr Thr Glu Ser Pro Arg
    370                 375                 380

Val Pro Gly Tyr Ala Pro Gln Gly Gly Gly Tyr Ala Glu Pro Ala Gly
385                 390                 395                 400

Arg Asp Tyr Asp Tyr Gly Gln Ser Gly Ala Pro Asp Tyr Gly Gln Pro
                405                 410                 415

Ala Pro Gly Gly Tyr Ser Gly Tyr Gly Gln Gly Gly Tyr Gly Ser Ala
            420                 425                 430

Gly Thr Ser Val Thr Leu Gln Leu Asp Asp Gly Ser Gly Arg Thr Tyr
        435                 440                 445
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Gln Leu Arg Glu Gly Ser Asn Ile Ile Gly Arg Gly Gln Asp Ala Gln
450 455 460

Phe Arg Leu Pro Asp Thr Gly Val Ser Arg Arg His Leu Glu Ile Arg
465 470 475 480

Trp Asp Gly Gln Val Ala Leu Leu Ala Asp Leu Asn Ser Thr Asn Gly
485 490 495

Thr Thr Val Asn Asn Ala Pro Val Gln Glu Trp Gln Leu Ala Asp Gly
500 505 510

Asp Val Ile Arg Leu Gly His Ser Glu Ile Ile Val Arg Met His
515 520 525

<210> 349

<211> 115

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0039c, H37Rv2.tab 42007:42351 reverse MW:11292

<400> 349

Met Phe Leu Ala Gly Val Leu Cys Met Cys Ala Ala Ala Ala Ser Ala
1 5 10 15

Leu Phe Gly Ser Trp Ser Leu Cys His Thr Pro Thr Ala Asp Pro Thr
20 25 30

Ala Leu Ala Leu Arg Ala Met Ala Pro Thr Gln Leu Ala Ala Ala Val
35 40 45

Met Leu Ala Ala Gly Gly Val Val Ala Val Ala Ala Pro Gly His Thr
50 55 60

Ala Leu Met Val Val Ile Val Cys Ile Ala Gly Ala Val Gly Thr Leu
65 70 75 80

Ala Ala Gly Ser Trp Gln Ser Ala Gln Tyr Ala Leu Arg Arg Glu Thr
85 90 95

Ala Ser Pro Thr Ala Asn Cys Val Gly Ser Cys Ala Val Cys Thr Gln
100 105 110

Ala Cys His
115

<210> 350

<211> 310

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0040c, H37Rv2.tab 42434:43365 reverse MW:31923

<400> 350

Met Ile Gln Ile Ala Arg Thr Trp Arg Val Phe Ala Gly Gly Met Ala
1 5 10 15

Thr Gly Phe Ile Gly Val Val Leu Val Thr Ala Gly Lys Ala Ser Ala
20 25 30

Asp Pro Leu Leu Pro Pro Pro Pro Ile Pro Ala Pro Val Ser Ala Pro
35 40 45

Ala Thr Val Pro Pro Val Gln Asn Leu Thr Ala Leu Pro Gly Gly Ser
50 55 60

Ser Asn Arg Phe Ser Pro Ala Pro Ala Pro Ala Pro Ile Ala Ser Pro
65 70 75 80

Ile Pro Val Gly Ala Pro Gly Ser Thr Ala Val Pro Pro Leu Pro Pro
85 90 95

Pro Val Thr Pro Ala Ile Ser Gly Thr Leu Arg Asp His Leu Arg Glu
100 105 110

Lys Gly Val Lys Leu Glu Ala Gln Arg Pro His Gly Phe Lys Ala Leu
115 120 125

Asp Ile Thr Leu Pro Met Pro Pro Arg Trp Thr Gln Val Pro Asp Pro
130 135 140

Asn Val Pro Asp Ala Phe Val Val Ile Ala Asp Arg Leu Gly Asn Ser
145 150 155 160

Val Tyr Thr Ser Asn Ala Gln Leu Val Val Tyr Arg Leu Ile Gly Asp
165 170 175

Phe Asp Pro Ala Glu Ala Ile Thr His Gly Tyr Ile Asp Ser Gln Lys
180 185 190

Leu Leu Ala Trp Gln Thr Thr Asn Ala Ser Met Ala Asn Phe Asp Gly
195 200 205

Phe Pro Ser Ser Ile Ile Glu Gly Thr Tyr Arg Glu Asn Asp Met Thr
210 215 220

Leu Asn Thr Ser Arg Arg His Val Ile Ala Thr Ser Gly Ala Asp Lys

225 230 235 240

Tyr Leu Val Ser Leu Ser Val Thr Thr Ala Leu Ser Gln Ala Val Thr
245 250 255

Asp Gly Pro Ala Thr Asp Ala Ile Val Asn Gly Phe Gln Val Val Ala
260 265 270

His Ala Ala Pro Ala Gln Ala Pro Ala Pro Ala Pro Gly Ser Ala Pro
275 280 285

Val Gly Leu Pro Gly Gln Ala Pro Gly Tyr Pro Pro Ala Gly Thr Leu
290 295 300

Thr Pro Val Pro Pro Arg
305 310

<210> 351

<211> 137

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0049, H37Rv2.tab 52831:53241 forward MW:15000

<400> 351

Val Asp Tyr Thr Leu Arg Arg Arg Ser Leu Leu Ala Glu Val Tyr Ser
1 5 10 15

Gly Arg Thr Gly Val Ser Glu Val Cys Asp Ala Asn Pro Tyr Leu Leu
20 25 30

Arg Ala Ala Lys Phe His Gly Lys Pro Ser Arg Val Ile Cys Pro Ile
35 40 45

Cys Arg Lys Glu Gln Leu Thr Leu Val Ser Trp Val Phe Gly Glu His
50 55 60

Leu Gly Ala Val Ser Gly Ser Ala Arg Thr Ala Glu Glu Leu Ile Leu
65 70 75 80

Leu Ala Thr Arg Phe Ser Glu Phe Ala Val His Val Val Glu Val Cys
85 90 95

Arg Thr Cys Ser Trp Asn His Leu Val Lys Ser Tyr Val Leu Gly Ala
100 105 110

Ala Arg Pro Ala Arg Pro Pro Arg Gly Ser Gly Gly Thr Arg Thr Ala
115 120 125

Arg Asn Gly Ala Arg Thr Ala Ser Glu
130 135

<210> 352

<211> 560

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0051, H37Rv2.tab 55696:57375 forward MW:61209

<400> 352

Val Thr Gly Ala Leu Ser Gln Ser Ser Asn Ile Ser Pro Leu Pro Leu
1 5 10 15

Ala Ala Asp Leu Arg Ser Ala Asp Asn Arg Asp Cys Pro Ser Arg Thr
20 25 30

Asp Val Leu Gly Ala Ala Leu Ala Asn Val Val Gly Gly Pro Val Gly
35 40 45

Arg His Ala Leu Ile Gly Arg Thr Arg Leu Met Thr Pro Leu Arg Val
50 55 60

Met Phe Ala Ile Ala Leu Val Phe Leu Ala Leu Gly Trp Ser Thr Lys
65 70 75 80

Ala Ala Cys Leu Gln Ser Thr Gly Thr Gly Pro Gly Asp Gln Arg Val
85 90 95

Ala Asn Trp Asp Asn Gln Arg Ala Tyr Tyr Gln Leu Cys Tyr Ser Asp
100 105 110

Thr Val Pro Leu Tyr Gly Ala Glu Leu Leu Ser Gln Gly Lys Phe Pro
115 120 125

Tyr Lys Ser Ser Trp Ile Glu Thr Asp Ser Asn Gly Thr Pro Gln Leu
130 135 140

Arg Tyr Asp Gly Gln Ile Ala Val Arg Tyr Met Glu Tyr Pro Val Leu
145 150 155 160

Thr Gly Ile Tyr Gln Tyr Leu Ser Met Ala Ile Ala Lys Thr Tyr Thr
165 170 175

Ala Leu Ser Lys Val Ala Pro Leu Pro Val Val Ala Glu Val Val Met
180 185 190

Phe Phe Asn Val Ala Ala Phe Gly Leu Ala Leu Ala Trp Leu Thr Thr
195 200 205

Val Trp Ala Thr Ser Gly Leu Ala Gly Arg Arg Ile Trp Asp Ala Ala
210 215 220

Leu Val Ala Ala Ser Pro Leu Val Ile Phe Gln Ile Phe Thr Asn Phe
225 230 235 240

Asp Ala Leu Ala Thr Gly Leu Ala Thr Ser Gly Leu Leu Ala Trp Ala
245 250 255

Arg Arg Arg Pro Val Leu Ala Gly Val Leu Ile Gly Leu Gly Ser Ala
260 265 270

Ala Lys Leu Tyr Pro Leu Leu Phe Leu Tyr Pro Leu Leu Leu Leu Gly
275 280 285

Ile Arg Ala Gly Arg Leu Asn Ala Leu Ala Arg Thr Met Ala Ala Ala
290 295 300

Ala Ala Thr Trp Leu Leu Val Asn Leu Pro Val Met Leu Leu Phe Pro
305 310 315 320

Arg Gly Trp Ser Glu Phe Phe Arg Leu Asn Thr Arg Arg Gly Asp Asp
325 330 335

Met Asp Ser Leu Tyr Asn Val Val Lys Ser Phe Thr Gly Trp Arg Gly
340 345 350

Phe Asp Pro Thr Leu Gly Phe Trp Glu Pro Pro Leu Val Leu Asn Thr
355 360 365

Val Val Thr Leu Leu Phe Val Leu Cys Cys Ala Ala Ile Ala Tyr Ile
370 375 380

Ala Leu Thr Ala Pro His Arg Pro Arg Val Ala Gln Leu Thr Phe Leu
385 390 395 400

Thr Val Ala Ser Phe Leu Leu Val Asn Lys Val Trp Ser Pro Gln Phe
405 410 415

Ser Leu Trp Leu Val Pro Leu Ala Val Leu Ala Leu Pro His Arg Arg
420 425 430

Ile Leu Leu Ala Trp Met Thr Ile Asp Ala Leu Val Trp Val Pro Arg
435 440 445

Met Tyr Tyr Leu Tyr Gly Asn Pro Ser Arg Ser Leu Pro Glu Gln Trp
450 455 460

Phe Thr Thr Thr Val Leu Leu Arg Asp Ile Ala Val Met Val Leu Cys
465 470 475 480

Gly Leu Val Val Trp Gln Ile Tyr Arg Pro Gly Arg Asp Leu Val Arg
485 490 495

Thr Gly Gly Pro Gly Ala Leu Pro Ala Cys Gly Gly Val Asp Asp Pro
500 505 510

Val Gly Gly Val Phe Ala Asn Ala Ala Asp Ala Pro Pro Gly Arg Leu
515 520 525

Pro Ser Trp Leu Arg Pro Arg Leu Gly Asp Glu His Ala Arg Glu Arg
530 535 540

Thr Pro Asp Ala Gly Arg Asp Arg Thr Phe Ser Gly Gln His Arg Ala
545 550 555 560

<210> 353

<211> 282

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0093c, H37Rv2.tab 102818:103663 reverse MW:29599

<400> 353

Val Leu Ala Gln Ala Thr Thr Ala Gly Ser Phe Asn His His Ala Ser
1 5 10 15

Thr Val Leu Gln Gly Cys Arg Gly Val Pro Ala Ala Met Trp Ser Glu
20 25 30

Pro Ala Gly Ala Ile Arg Arg His Cys Ala Thr Ile Asp Gly Met Asp
35 40 45

Cys Glu Val Ala Arg Glu Ala Leu Ser Ala Arg Leu Asp Gly Glu Arg
50 55 60

Ala Pro Val Pro Ser Ala Arg Val Asp Glu His Leu Gly Glu Cys Ser
65 70 75 80

Ala Cys Arg Ala Trp Phe Thr Gln Val Ala Ser Gln Ala Gly Asp Leu
85 90 95

Arg Arg Leu Ala Glu Ser Arg Pro Val Val Pro Pro Val Gly Arg Leu
100 105 110

Gly Ile Arg Arg Ala Pro Arg Arg Gln His Ser Pro Met Thr Trp Arg
115 120 125

Arg Trp Ala Leu Leu Cys Val Gly Ile Ala Gln Ile Ala Leu Gly Thr
130 135 140

Val Gln Gly Phe Gly Leu Asp Val Gly Leu Thr His Gln His Pro Thr
145 150 155 160

Gly Ala Gly Thr His Leu Leu Asn Glu Ser Thr Ser Trp Ser Ile Ala
165 170 175

Leu Gly Val Ile Met Val Gly Ala Ala Leu Trp Pro Ser Ala Ala Ala
180 185 190

Gly Leu Ala Gly Val Leu Thr Ala Phe Val Ala Ile Leu Thr Gly Tyr
195 200 205

Val Ile Val Asp Ala Leu Ser Gly Ala Val Ser Thr Thr Arg Ile Leu
210 215 220

Thr His Leu Pro Val Val Ile Gly Ala Val Leu Ala Ile Met Val Trp
225 230 235 240

Arg Ser Ala Ser Gly Pro Arg Pro Arg Pro Asp Ala Val Ala Ala Glu
245 250 255

Pro Asp Ile Val Leu Pro Asp Asn Ala Ser Arg Gly Arg Arg Arg Gly
260 265 270

His Leu Trp Pro Thr Asp Gly Ser Ala Ala
275 280

<210> 354

<211> 183

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0098, H37Rv2.tab 107600:108148 forward MW:20528

<400> 354

Met Ser His Thr Asp Leu Thr Pro Cys Thr Arg Val Leu Ala Ser Ser
1 5 10 15

Gly Thr Val Pro Ile Ala Glu Glu Leu Leu Ala Arg Val Leu Glu Pro
20 25 30

Tyr Ser Cys Lys Gly Cys Arg Tyr Leu Ile Asp Ala Gln Tyr Ser Ala
35 40 45

Thr Glu Asp Ser Val Leu Ala Tyr Gly Asn Phe Thr Ile Gly Glu Ser
50 55 60

Ala Tyr Ile Arg Ser Thr Gly His Phe Asn Ala Val Glu Leu Ile Leu
65 70 75 80

Cys Phe Asn Gln Leu Ala Tyr Ser Ala Phe Ala Pro Ala Val Leu Asn
85 90 95

Glu Glu Ile Arg Val Leu Arg Gly Trp Ser Ile Asp Asp Tyr Cys Gln
100 105 110

His Gln Leu Ser Ser Met Leu Ile Arg Lys Ala Ser Ser Arg Phe Arg

115 120 125

Lys Pro Leu Asn Pro Gln Lys Phe Ser Ala Arg Leu Leu Cys Arg Asp
130 135 140

Leu Gln Val Ile Glu Arg Thr Trp Arg Tyr Leu Lys Val Pro Cys Val
145 150 155 160

Ile Glu Phe Trp Asp Glu Asn Gly Gly Ala Ala Ser Gly Glu Ile Glu
165 170 175

Leu Ala Ala Leu Asn Ile Pro
180

<210> 355

<211> 78

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0100, H37Rv2.tab 109783:110016 forward MW:8660

<400> 355

Val Arg Asp Arg Ile Leu Ala Ala Val Cys Asp Val Leu Tyr Ile Asp
1 5 10 15

Glu Ala Asp Leu Ile Asp Gly Asp Glu Thr Asp Leu Arg Asp Leu Gly
20 25 30

Leu Asp Ser Val Arg Phe Val Leu Leu Met Lys Gln Leu Gly Val Asn
35 40 45

Arg Gln Ser Glu Leu Pro Ser Arg Leu Ala Ala Asn Pro Ser Ile Ala
50 55 60

Gly Trp Leu Arg Glu Leu Glu Ala Val Cys Thr Glu Phe Gly
65 70 75

<210> 356

<211> 251

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0116c, H37Rv2.tab 140270:141022 reverse MW:26915

<400> 356

Met Arg Arg Val Val Arg Tyr Leu Ser Val Val Val Ala Ile Thr Leu
1 5 10 15

Met Leu Thr Ala Glu Ser Val Ser Ile Ala Thr Ala Ala Val Pro Pro
20 25 30

Leu Gln Pro Ile Pro Gly Val Ala Ser Val Ser Pro Ala Asn Gly Ala
35 40 45

Val Val Gly Val Ala His Pro Val Val Val Thr Phe Thr Thr Pro Val
50 55 60

Thr Asp Arg Arg Ala Val Glu Arg Ser Ile Arg Ile Ser Thr Pro His
65 70 75 80

Asn Thr Thr Gly His Phe Glu Trp Val Ala Ser Asn Val Val Arg Trp
85 90 95

Val Pro His Arg Tyr Trp Pro Pro His Thr Arg Val Ser Val Gly Val
100 105 110

Gln Glu Leu Thr Glu Gly Phe Glu Thr Gly Asp Ala Leu Ile Gly Val
115 120 125

Ala Ser Ile Ser Ala His Thr Phe Thr Val Ser Arg Asn Gly Glu Val
130 135 140

Leu Arg Thr Met Pro Ala Ser Leu Gly Lys Pro Ser Arg Pro Thr Pro
145 150 155 160

Ile Gly Ser Phe His Ala Met Ser Lys Glu Arg Thr Val Val Met Asp
165 170 175

Ser Arg Thr Ile Gly Ile Pro Leu Asn Ser Ser Asp Gly Tyr Leu Leu
180 185 190

Thr Ala His Tyr Ala Val Arg Val Thr Trp Ser Gly Val Tyr Val His
195 200 205

Ser Ala Pro Trp Ser Val Asn Ser Gln Gly Tyr Ala Asn Val Ser His
210 215 220

Gly Cys Ile Asn Leu Ser Pro Asp Asn Ala Ala Trp Tyr Phe Asp Ala
225 230 235 240

Val Thr Val Gly Asp Pro Ile Glu Val Val Gly
245 250

<210> 357

<211> 310

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0146, H37Rv2.tab 172211:173140 forward MW:34016

<400> 357

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Met Arg Thr His Asp Asp Thr Trp Asp Ile Lys Thr Ser Val Gly Ala
1               5                  10                  15

Thr Ala Val Met Val Ala Ala Ala Arg Ala Val Glu Thr Asp Arg Pro
            20                  25                  30

Asp Pro Leu Ile Arg Asp Pro Tyr Ala Arg Leu Leu Val Thr Asn Ala
        35                  40                  45

Gly Ala Gly Ala Ile Trp Glu Ala Met Leu Asp Pro Thr Leu Val Ala
    50                  55                  60

Lys Ala Ala Ala Ile Asp Ala Glu Thr Ala Ala Ile Val Ala Tyr Leu
65                  70                  75                  80

Arg Ser Tyr Gln Ala Val Arg Thr Asn Phe Phe Asp Thr Tyr Phe Ala
                85                  90                  95

Ser Ala Val Ala Ala Gly Ile Arg Gln Val Val Ile Leu Ala Ser Gly
            100                 105                 110

Leu Asp Ser Arg Ala Tyr Arg Leu Asp Trp Pro Ala Gly Thr Ile Val
        115                 120                 125

Tyr Glu Ile Asp Gln Pro Lys Val Leu Ser Tyr Lys Ser Thr Thr Leu
    130                 135                 140

Ala Glu Asn Gly Val Thr Pro Ser Ala Gly Arg Arg Glu Val Pro Ala
145                 150                 155                 160

Asp Leu Arg Gln Asp Trp Pro Ala Ala Leu Arg Asp Ala Gly Phe Asp
                165                 170                 175

Pro Thr Ala Arg Thr Ala Trp Leu Ala Glu Gly Leu Leu Met Tyr Leu
            180                 185                 190

Pro Ala Glu Ala Gln Asp Arg Leu Phe Thr Gln Val Gly Ala Val Ser
        195                 200                 205

Val Ala Gly Ser Arg Ile Ala Ala Glu Thr Ala Pro Val His Gly Glu
    210                 215                 220

Glu Arg Arg Ala Glu Met Arg Ala Arg Phe Lys Lys Val Ala Asp Val
225                 230                 235                 240
```

Leu Gly Ile Glu Gln Thr Ile Asp Val Gln Glu Leu Val Tyr His Asp
245 250 255

Gln Asp Arg Ala Ser Val Ala Asp Trp Leu Thr Asp His Gly Trp Arg
260 265 270

Ala Arg Ser Gln Arg Ala Pro Asp Glu Met Arg Arg Val Gly Arg Trp
275 280 285

Val Glu Gly Val Pro Met Ala Asp Asp Pro Thr Ala Phe Ala Glu Phe
290 295 300

Val Thr Ala Glu Arg Leu
305 310

<210> 358

<211> 184

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0164, H37Rv2.tab 193626:194180 forward MW:20165

<400> 358

Met Thr Ala Ile Ser Cys Ser Pro Arg Pro Arg Tyr Ala Ser Arg Met
1 5 10 15

Pro Val Leu Ser Lys Thr Val Glu Val Thr Ala Asp Ala Ala Ser Ile
20 25 30

Met Ala Ile Val Ala Asp Ile Glu Arg Tyr Pro Glu Trp Asn Glu Gly
35 40 45

Val Lys Gly Ala Trp Val Leu Ala Arg Tyr Asp Asp Gly Arg Pro Ser
50 55 60

Gln Val Arg Leu Asp Thr Ala Val Gln Gly Ile Glu Gly Thr Tyr Ile
65 70 75 80

His Ala Val Tyr Tyr Pro Gly Glu Asn Gln Ile Gln Thr Val Met Gln
85 90 95

Gln Gly Glu Leu Phe Ala Lys Gln Glu Gln Leu Phe Ser Val Val Ala
100 105 110

Thr Gly Ala Ala Ser Leu Leu Thr Val Asp Met Asp Val Gln Val Thr
115 120 125

Met Pro Val Pro Glu Pro Met Val Lys Met Leu Leu Asn Asn Val Leu
130 135 140

Glu His Leu Ala Glu Asn Leu Lys Gln Arg Ala Glu Gln Leu Ala Ala
145 150 155 160

Ser Gly Met Cys Gly Leu Ser Arg Arg Leu Arg Ser Gln Pro Gly Pro
165 170 175

Pro Ser Ala Cys Val Pro His Arg
180

<210> 359

<211> 213

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0175, H37Rv2.tab 206814:207452 forward MW:22324

<400> 359

Val Lys Ala Ala Asp Ser Ala Glu Ser Asp Ala Gly Ala Asp Gln Thr
1 5 10 15

Gly Pro Gln Val Lys Ala Ala Asp Ser Ala Glu Ser Asp Ala Gly Glu
20 25 30

Leu Gly Glu Asp Ala Cys Pro Glu Gln Ala Leu Val Glu Arg Arg Pro
35 40 45

Ser Arg Leu Arg Arg Gly Trp Leu Val Gly Ile Ala Ala Thr Leu Leu
50 55 60

Ala Leu Ala Gly Gly Leu Gly Ala Ala Gly Tyr Phe Ala Leu Arg Ser
65 70 75 80

His Gln Glu Ser Gln Ser Ile Ala Arg Glu Asp Leu Ala Ala Ile Glu
85 90 95

Ala Ala Lys Asp Cys Val Ala Ala Thr Gln Ala Pro Asp Ala Gly Ala
100 105 110

Met Ser Ala Ser Met Gln Lys Ile Ile Glu Cys Gly Thr Gly Asp Phe
115 120 125

Gly Ala Gln Ala Ser Leu Tyr Thr Ser Met Leu Val Glu Ala Tyr Gln
130 135 140

Ala Ala Ser Val His Val Gln Val Thr Asp Met Arg Ala Ala Val Glu
145 150 155 160

Arg Asn Asn Asn Asp Gly Ser Val Asp Val Leu Val Ala Leu Arg Val

165 170 175

Lys Val Ser Asn Thr Asp Ser Asp Ala His Glu Val Gly Tyr Arg Leu
180 185 190

Arg Val Arg Met Ala Leu Asp Glu Gly Arg Tyr Lys Ile Ala Lys Leu
195 200 205

Asp Gln Val Thr Lys
210

<210> 360

<211> 322

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0176, H37Rv2.tab 207452:208417 forward MW:35405

<400> 360

Val Thr Val Val Val Glu Lys Thr Pro Thr Thr Leu Pro Gln Ala Thr
1 5 10 15

Pro Asn Gly Ala Ala Pro Trp His Val Arg Ala Gly Ala Phe Ala Ile
20 25 30

Asp Val Leu Pro Gly Leu Ala Val Ala Ala Thr Met Ala Leu Thr Ala
35 40 45

Leu Thr Val Pro Pro Gly Ser Ala Trp Arg Trp Leu Cys Ala Cys Leu
50 55 60

Leu Gly Leu Thr Ile Leu Leu Leu Ala Val Asn Arg Leu Leu Leu Pro
65 70 75 80

Thr Ile Thr Gly Trp Ser Leu Gly Arg Ala Leu Thr Gly Ile Arg Val
85 90 95

Val Arg Arg Asp Gly Ser Ala Ile Gly Pro Trp Arg Leu Leu Val Arg
100 105 110

Asp Leu Ala His Leu Val Asp Thr Leu Ser Leu Phe Val Gly Trp Leu
115 120 125

Trp Pro Leu Trp Asp Ser Arg Arg Arg Thr Phe Ala Asp Leu Leu Leu
130 135 140

Arg Thr Glu Val Arg Arg Val Glu Pro Val Gln Arg Pro Ala Val Ile
145 150 155 160

Arg Arg Leu Thr Ala Ala Val Ala Leu Ala Ala Ala Gly Ala Cys Ala
165 170 175

Ser Ala Thr Ala Val Gly Ala Ala Val Val Tyr Val Asn Glu Trp Gln
180 185 190

Thr Asp His Thr Arg Ala Gln Leu Ala Thr Arg Gly Pro Lys Leu Val
195 200 205

Val Asp Val Leu Ser Tyr Asp Pro Glu Thr Val Gln Arg Asp Phe Glu
210 215 220

Arg Ala Arg Ser Leu Ala Thr Asp Arg Tyr Arg Pro Gln Leu Ser Ile
225 230 235 240

Gln Gln Asp Ser Val Arg Glu Ser Gly Pro Val Arg Asn Gln Tyr Trp
245 250 255

Val Thr Asp Ser Ala Val Leu Ser Ala Thr Pro Ala Gln Ala Thr Met
260 265 270

Leu Leu Phe Met Gln Gly Glu Arg Gly Thr Pro Pro Asn Gln Arg Tyr
275 280 285

Ile Gln Ser Thr Val Arg Ala Ile Phe Gln Lys Ser Arg Gly Gln Trp
290 295 300

Arg Leu Asp Asp Leu Ala Val Val Met Lys Pro Arg Gln Pro Thr Gly
305 310 315 320

Glu Lys

<210> 361

<211> 184

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0177, H37Rv2.tab 208417:208968 forward MW:20164

<400> 361

Met Ser Pro Arg Arg Lys Phe Glu Pro Gly Glu Gly Ala Leu Leu Ala
1 5 10 15

Pro Gln Ser Ile Glu Pro Ser Arg Arg Trp Gly Leu Pro Leu Ala Leu
20 25 30

Thr Ala Ser Ala Val Val Met Ala Ala Ala Ile Ser Ala Cys Ala Leu
35 40 45

Met Arg Ile Ser His Glu Ser His Gln Arg Ala Ala His Lys Asp Ile
50 55 60

Val Met Leu Ser Asp Val Arg Ser Phe Met Thr Met Phe Thr Ser Pro
65 70 75 80

Asp Pro Phe His Ala Asn Glu Tyr Ala Glu Arg Val Leu Ser His Ala
85 90 95

Thr Gly Asp Phe Ala Lys Gln Tyr His Glu Arg Ala Asn Asp Ile Leu
100 105 110

Ile Arg Ile Ser Gly Val Glu Pro Thr Thr Gly Thr Val Leu Asp Ala
115 120 125

Gly Val Gln Arg Trp Asn Glu Asp Gly Ser Ala Asn Val Leu Val Val
130 135 140

Thr Gln Ile Thr Ser Lys Ser Ala Asp Gly Lys Arg Val Val Ser Asn
145 150 155 160

Ala Asn Arg Trp Leu Val Thr Ala Lys Gln Glu Gly Asn Glu Trp Lys
165 170 175

Ile Ser Ser Leu Leu Pro Val Ile
180

<210> 362

<211> 244

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0178, H37Rv2.tab 208938:209669 forward MW:25879

<400> 362

Val Glu Asp Gln Gln Ser Ala Ser Gly Asp Leu Thr Gln Lys Ser Val
1 5 10 15

Ala Asn Gly Glu Ser Thr Asp Thr Ala Ser Ala Ala Thr Glu Gly His
20 25 30

Arg Gly Glu Ile Asp Ala Ala Gly Glu Pro Asp Glu Arg Gly Ala Ala
35 40 45

Val Ala Asp Ser Gln Ala Asp Glu Asp Asp Ser Ala Ala Thr Ala Ala
50 55 60

Arg Gly Gly Lys Thr Arg Ala Arg Arg Ser Arg Gly Arg Arg Leu Ala

65 70 75 80

Ile Thr Val Gly Val Ala Ala Ala Leu Phe Val Gly Ser Ala Ala Phe
85 90 95

Ala Gly Ala Thr Val Glu Pro Tyr Leu Ser Glu Arg Ala Val Val Ala
100 105 110

Thr Lys Leu Met Val Ala Arg Thr Ala Ala Asn Ala Ile Thr Thr Leu
115 120 125

Trp Thr Tyr Thr Pro Glu Asn Met Asp Thr Leu Ala Asp Arg Ala Ala
130 135 140

Asn Tyr Leu Ser Gly Asp Phe Ala Ala Gln Tyr Arg Arg Phe Val Asp
145 150 155 160

Gln Ile Ala Ala Ala Asn Lys Gln Ala Lys Ile Thr Asn Asp Thr Glu
165 170 175

Val Thr Gly Ala Ala Val Glu Ser Leu Ser Gly Arg Asp Ala Val Ala
180 185 190

Ile Val Tyr Thr Asn Thr Thr Thr Thr Ser Pro Val Thr Lys Asn Ile
195 200 205

Pro Ala Leu Lys Tyr Leu Ser Tyr Arg Leu Phe Met Lys Arg Tyr Asp
210 215 220

Ala Arg Trp Leu Val Thr Arg Met Thr Thr Ile Thr Ser Leu Asp Leu
225 230 235 240

Thr Pro Gln Val

<210> 363

<211> 249

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0184, H37Rv2.tab 214969:215715 forward MW:26826

<400> 363

Met Thr Asn Asp Lys Met Leu Ala Arg Ile Ala Ala Leu Leu Arg Gln
1 5 10 15

Ala Glu Gly Thr Asp Asn Pro His Glu Ala Asp Ala Phe Met Ser Thr
20 25 30

Ala Gln Arg Leu Ala Thr Ala Ala Ser Ile Asp Leu Ala Val Ala Arg
35 40 45

Ser His Ala Gly Asn Arg Ser Pro Ala Gln Ala Pro Thr Gln Arg Thr
50 55 60

Ile Thr Ile Gly Ala Ala Gly Thr Arg Gly Leu Arg Thr Tyr Val Gln
65 70 75 80

Leu Phe Val Leu Ile Ala Ala Ala Asn Asp Val Arg Cys Asp Val Ala
85 90 95

Ser Asn Ser Thr Phe Val Tyr Ala Tyr Gly Phe Ala Glu Asp Ile Asp
100 105 110

Thr Ser His Ala Leu Tyr Ala Ser Leu Val Val Gln Met Val Arg Ala
115 120 125

Ser Asp Ala Tyr Leu Ala Ser Gly Ala His Arg Pro Thr Pro Thr Ile
130 135 140

Thr Ala Arg Leu Asn Phe Gln Leu Ala Phe Gly Ala Arg Val Gly Gln
145 150 155 160

Arg Leu Ala Asp Ala Arg Glu Gln Thr Arg Gln Glu Ala Thr Lys Asp
165 170 175

Arg Asp Arg Pro Pro Gly Thr Ala Ile Ala Leu Arg Asp Lys Asp Ile
180 185 190

Glu Leu His Glu Tyr Tyr Arg Arg Ser Ser Lys Ala Arg Gly Ala Trp
195 200 205

Arg Ala Ser Arg Ala Thr Ala Gly Tyr Ser Ser Ala Ala Arg Arg Ala
210 215 220

Gly Asp Arg Ala Gly Arg Gln Ala Arg Leu Gly Asn Asn Pro Glu Leu
225 230 235 240

Pro Gly Ala Arg Ala Ala Leu Gly Arg
245

<210> 364

<211> 169

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0185, H37Rv2.tab 215715:216221 forward MW:18365

<400> 364

Val Ile Gly Ala Asp Val Pro Arg Asp Ser Gln Arg Ala Arg Val Tyr
1 5 10 15

Ala Ala Glu Ala Phe Val Arg Thr Leu Phe Asp Arg Val Thr Ala His
20 25 30

Gly Ser Pro Thr Val Glu Phe Phe Gly Thr Gln Leu Thr Leu Pro Pro
35 40 45

Glu Gly Arg Phe Gly Ser Val Ala Ser Val Gln Arg Tyr Val Asp Asp
50 55 60

Val Leu Ala Leu Pro Ala Val Gly Gln Asn Trp Pro Thr Val Ser Pro
65 70 75 80

Val Arg Val Arg Ala Arg Arg Ala Ala Thr Ala Ala His Tyr Glu Asn
85 90 95

His Gly Gly Thr Gly Thr Ile Ala Val Pro Asp Arg His Thr Ala Gly
100 105 110

Trp Ala Met Arg Glu Leu Val Val Leu His Glu Val Ala His His Leu
115 120 125

Cys Gln Val Pro Pro Pro His Gly Pro Glu Phe Val Ala Thr Val Cys
130 135 140

Thr Leu Thr Glu Leu Val Met Gly Pro Glu Val Gly His Val Phe Arg
145 150 155 160

Val Val Tyr Ala Gln Glu Gly Val Arg
165

<210> 365

<211> 219

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0199, H37Rv2.tab 236550:237206 forward MW:23520

<400> 365

Met Pro Asp Gly Glu Gln Ser Gln Pro Pro Ala Gln Glu Asp Ala Glu
1 5 10 15

Asp Asp Ser Arg Pro Asp Ala Ala Glu Ala Ala Ala Ala Glu Pro Lys
20 25 30

Ser Ser Ala Gly Pro Met Phe Ser Thr Tyr Gly Ile Ala Ser Thr Leu

35 40 45

Leu Gly Val Leu Ser Val Ala Ala Val Val Leu Gly Ala Met Ile Trp
50 55 60

Ser Ala His Arg Asp Asp Ser Gly Glu Arg Thr Tyr Leu Thr Arg Val
65 70 75 80

Met Leu Thr Ala Ala Glu Trp Thr Ala Val Leu Ile Asn Met Asn Ala
85 90 95

Asp Asn Ile Asp Ala Ser Leu Gln Arg Leu His Asp Gly Thr Val Gly
100 105 110

Gln Leu Asn Thr Asp Phe Asp Ala Val Val Gln Pro Tyr Arg Gln Val
115 120 125

Val Glu Lys Leu Arg Thr His Ser Ser Gly Arg Ile Glu Ala Val Ala
130 135 140

Ile Asp Thr Val His Arg Glu Leu Asp Thr Gln Ser Gly Ala Ala Arg
145 150 155 160

Pro Val Val Thr Thr Lys Leu Pro Pro Phe Ala Thr Arg Thr Asp Ser
165 170 175

Val Leu Leu Val Ala Thr Ser Val Ser Glu Asn Ala Gly Ala Lys Pro
180 185 190

Gln Thr Val His Trp Asn Leu Arg Leu Asp Val Ser Asp Val Asp Gly
195 200 205

Lys Leu Met Ile Ser Arg Leu Glu Ser Ile Arg
210 215

<210> 366

<211> 229

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0200, H37Rv2.tab 237206:237892 forward MW:24029

<400> 366

Met Arg Asn Ala Trp Arg Leu Val Val Phe Asp Val Leu Ala Pro Leu
1 5 10 15

Ala Thr Ile Ala Ala Leu Ala Ala Ile Gly Val Leu Leu Gly Trp Pro
20 25 30

Leu Trp Trp Val Ser Thr Cys Ser Val Leu Val Leu Leu Val Val Glu
35 40 45

Gly Val Ala Ile Asn Phe Trp Leu Leu Arg Arg Asp Ser Val Thr Val
50 55 60

Gly Thr Asp Asp Asp Ala Pro Gly Leu Arg Leu Ala Val Val Phe Leu
65 70 75 80

Cys Ala Ala Ala Ile Ser Ala Ala Val Val Thr Gly Tyr Leu Arg Trp
85 90 95

Thr Thr Pro Asp Arg Asp Phe Asn Arg Asp Ser Arg Glu Val Val His
100 105 110

Leu Ala Thr Gly Met Ala Glu Thr Val Ala Ser Phe Ser Pro Ser Ala
115 120 125

Pro Ala Ala Ala Val Asp Arg Ala Ala Ala Met Met Val Pro Glu His
130 135 140

Ala Gly Gly Phe Lys Glu Gln Tyr Ala Lys Ser Ser Ala Asp Leu Ala
145 150 155 160

Arg Arg Gly Val Thr Ala Gln Ala Ala Thr Leu Ala Ala Gly Val Glu
165 170 175

Ala Ile Gly Pro Ser Ala Ala Ser Val Ala Val Ile Leu Arg Val Ser
180 185 190

Gln Ser Ile Pro Gly Gln Pro Thr Ser Gln Ala Ala Arg Ala Leu Arg
195 200 205

Val Thr Leu Thr Lys Arg Gly Ser Gly Trp Leu Val Leu Asp Val Thr
210 215 220

Pro Ile Asn Ala Arg
225

<210> 367

<211> 167

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0201c, H37Rv2.tab 237895:238395 reverse MW:18484

<400> 367

Val Thr Leu Ala Ala Glu Pro His Pro Ala Pro Pro Gln Gln Pro Thr
1 5 10 15

Val Ala Trp Ser Glu Pro Asp Val Asp Arg Arg Val Glu Phe Trp Pro
20 25 30

Thr Val Ala Ile Arg Ser Ala Leu Glu Ser Gly Asp Ile Ala Thr Trp
35 40 45

Gln Arg Ile Ala Ala Ala Leu Lys Arg Asp Pro Tyr Gly Arg Thr Ala
50 55 60

Arg Gln Val Glu Glu Val Leu Glu Gly Ile Pro Ala Thr Gly Ile Ala
65 70 75 80

Asn Ala Phe Trp Glu Val Leu Asp Arg Ala Arg Thr His Leu Asp Ala
85 90 95

Asn Glu Arg Ala Glu Val Ala Arg Gln Val Gly Leu Leu Leu Asp Arg
100 105 110

Ser Gly Leu Gln Arg Gln Glu Phe Ala Ser Arg Ile Gly Val Thr Ala
115 120 125

Gln Asp Leu Thr Ala Tyr Leu Asp Gly Ile Val Ser Pro Ser Ala Ser
130 135 140

Leu Met Ile Arg Met Arg Arg Leu Ser Asp Arg Phe Val Arg Ala Lys
145 150 155 160

Ser Val Arg Ala Ala Asp Ser
165

<210> 368

<211> 242

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0207c, H37Rv2.tab 247387:248112 reverse MW:26175

<400> 368

Met Ser Leu Thr Glu Asp Val Thr Ser Gln Thr Ser Glu Ser Leu Ala
1 5 10 15

Arg His Ser Val Leu Ala Glu Asp Leu Ser Gln Asp Gly Leu Thr Ser
20 25 30

Leu Gly Ala Pro Gly Ala Arg Val Leu Leu Val Trp Asp Ala Pro Asn
35 40 45

Leu Asp Met Gly Leu Gly Ser Ile Leu Gly Arg Arg Pro Thr Ala Leu

50 55 60

Glu Arg Pro Arg Phe Asp Ala Leu Gly Arg Trp Leu Leu Ala Arg Thr
65 70 75 80

Ala Glu Ile Val Ala Gly Arg Pro Gly Ile Ser Thr Glu Pro Glu Ala
85 90 95

Thr Val Phe Thr Asn Ile Ala Pro Gly Ser Ala Glu Val Val Arg Pro
100 105 110

Trp Val Asp Ala Leu Arg Asn Val Gly Phe Ala Val Phe Ala Lys Pro
115 120 125

Lys Val Asp Glu Asp Ser Asp Val Asp Arg Asp Met Leu Ala His Ile
130 135 140

Asp Glu Arg Tyr Arg Glu Gly Leu Ala Ala Leu Val Val Ala Ser Ala
145 150 155 160

Asp Gly Gln Ala Phe Arg Gln Pro Leu Glu Ala Val Ala Arg Ser Gly
165 170 175

Thr Pro Val Gln Val Leu Gly Phe Arg Glu His Ala Ser Trp Ala Leu
180 185 190

Ala Ser Asp Thr Leu Glu Phe Val Asp Leu Glu Asp Ile Ala Gly Val
195 200 205

Phe Arg Glu Pro Leu Pro Arg Ile Gly Leu Asp Ser Leu Pro Glu Gln
210 215 220

Gly Ala Trp Leu Gln Pro Phe Arg Pro Leu Ser Ser Leu Leu Thr Ser
225 230 235 240

Arg Val

<210> 369

<211> 337

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0216, H37Rv2.tab 258913:259923 forward MW:35756

<400> 369

Val Ala Ser Gly Tyr Gly Gly Ile Arg Val Gly Gly Pro Tyr Phe Asp
1 5 10 15

Asp Leu Ser Lys Gly Gln Val Phe Asp Trp Ala Pro Gly Val Thr Leu
20 25 30

Ser Leu Gly Leu Ala Ala Ala His Gln Ser Ile Val Gly Asn Arg Leu
35 40 45

Arg Leu Ala Leu Asp Ser Asp Leu Cys Ala Ala Val Thr Gly Met Pro
50 55 60

Gly Pro Leu Ala His Pro Gly Leu Val Cys Asp Val Ala Ile Gly Gln
65 70 75 80

Ser Thr Leu Ala Thr Gln Arg Val Lys Ala Asn Leu Phe Tyr Arg Gly
85 90 95

Leu Arg Phe His Arg Phe Pro Ala Val Gly Asp Thr Leu Tyr Thr Arg
100 105 110

Thr Glu Val Val Gly Leu Arg Ala Asn Ser Pro Lys Pro Gly Arg Ala
115 120 125

Pro Thr Gly Leu Ala Gly Leu Arg Met Thr Thr Ile Asp Arg Thr Asp
130 135 140

Arg Leu Val Leu Asp Phe Tyr Arg Cys Ala Met Leu Pro Ala Ser Pro
145 150 155 160

Asp Trp Lys Pro Gly Ala Val Pro Gly Asp Asp Leu Ser Arg Ile Gly
165 170 175

Ala Asp Ala Pro Ala Pro Ala Ala Asp Pro Thr Ala His Trp Asp Gly
180 185 190

Ala Val Phe Arg Lys Arg Val Pro Gly Pro His Phe Asp Ala Gly Ile
195 200 205

Ala Gly Ala Val Leu His Ser Thr Ala Asp Leu Val Ser Gly Ala Pro
210 215 220

Glu Leu Ala Arg Leu Thr Leu Asn Ile Ala Ala Thr His His Asp Trp
225 230 235 240

Arg Val Ser Gly Arg Arg Leu Val Tyr Gly Gly His Thr Ile Gly Leu
245 250 255

Ala Leu Ala Gln Ala Thr Arg Leu Leu Pro Asn Leu Ala Thr Val Leu
260 265 270

Asp Trp Glu Ser Cys Asp His Thr Ala Pro Val His Glu Gly Asp Thr
275 280 285

Leu Tyr Ser Glu Leu His Ile Glu Ser Ala Gln Ala His Ala Asp Gly
290 295 300

Gly Val Leu Gly Leu Arg Ser Leu Val Tyr Ala Val Ser Asp Ser Ala
305 310 315 320

Ser Glu Pro Asp Arg Gln Val Leu Asp Trp Arg Phe Ser Ala Leu Gln
325 330 335

Phe

<210> 370

<211> 576

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0226c, H37Rv2.tab 269837:271564 reverse MW:59107

<400> 370

```
Val Arg Trp Phe Arg Pro Gly Tyr Ala Leu Val Leu Val Leu Leu Leu
1               5                  10                  15

Ala Ala Pro Leu Leu Arg Pro Gly Tyr Leu Leu Leu Arg Asp Ala Val
            20                  25                  30

Ser Thr Pro Arg Ser Tyr Val Ser Ala Asn Ala Leu Gly Leu Thr Ser
        35                  40                  45

Ala Pro Arg Ala Thr Pro Gln Asp Phe Ala Val Ala Leu Ala Ser His
    50                  55                  60

Leu Val Asp Gly Gly Val Val Val Lys Ala Leu Leu Leu Leu Gly Leu
65                  70                  75                  80

Trp Leu Ala Gly Trp Gly Ala Ala Arg Leu Val Ala Thr Ala Leu Pro
                85                  90                  95

Ala Ala Gly Ala Ala Gly Gln Phe Val Ala Ile Thr Leu Ala Ile Trp
            100                 105                 110

Asn Pro Tyr Val Ala Glu Arg Leu Leu Gln Gly His Trp Ser Leu Leu
        115                 120                 125

Val Gly Tyr Gly Cys Leu Pro Trp Val Ala Thr Ala Met Leu Thr Met
    130                 135                 140

Arg Thr Thr Val Gly Ala Gly Trp Phe Gly Leu Phe Gly Leu Ala Phe
145                 150                 155                 160

Trp Val Ala Leu Ala Gly Leu Thr Pro Ser Gly Leu Leu Leu Ala Ala
                165                 170                 175

Thr Val Ala Val Val Cys Val Ala Met Pro Gly Ala Gly Arg Pro Arg
            180                 185                 190

Trp Gln Cys Gly Val Ala Ala Leu Gly Ser Ala Leu Val Gly Ala Leu
        195                 200                 205
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Pro Trp Leu Thr Ala Ser Ala Leu Gly Ser Ser Leu Thr Ser His Thr
    210                 215                 220

Ala Ala Asn Gln Leu Gly Val Thr Ala Phe Ala Pro Arg Ala Glu Pro
225                 230                 235                 240

Gly Leu Gly Thr Leu Gly Ser Leu Ala Ser Leu Gly Gly Ile Trp Asn
                245                 250                 255

Gly Glu Ala Val Pro Ser Ser Arg Thr Thr Leu Phe Ala Val Ala Ser
            260                 265                 270

Ala Val Val Leu Leu Ala Met Val Ala Ile Gly Leu Pro Thr Val Ala
        275                 280                 285

Arg Arg Pro Val Ala Val Pro Leu Leu Thr Leu Ala Ala Val Ser Val
    290                 295                 300

Met Val Pro Ala Val Leu Ala Thr Gly Pro Gly Leu His Ala Leu Arg
305                 310                 315                 320

Val Val Val Asp Ala Ala Pro Gly Leu Gly Val Leu Arg Asp Gly Gln
                325                 330                 335

Lys Trp Val Ala Leu Ala Val Pro Gly Tyr Thr Leu Ser Gly Ala Gly
            340                 345                 350

Thr Val Leu Thr Leu Arg Arg Trp Leu Arg Pro Ala Thr Ala Ala Val
        355                 360                 365

Val Cys Cys Leu Ala Leu Val Leu Thr Leu Pro Asp Leu Ala Trp Gly
    370                 375                 380

Val Trp Gly Lys Val Ala Pro Val His Tyr Pro Ser Gly Trp Ala Ala
385                 390                 395                 400

Val Ala Ala Ala Ile Asn Ala Asp Pro Arg Thr Val Ala Val Leu Pro
                405                 410                 415

Ala Gly Thr Met Arg Arg Phe Ser Trp Ser Gly Ser Ala Pro Val Leu
            420                 425                 430

Asp Pro Leu Pro Arg Trp Val Arg Ala Asp Val Leu Thr Thr Gly Asp
        435                 440                 445

Leu Val Ile Ser Gly Val Thr Val Pro Gly Glu Asp Ala His Ala Arg
    450                 455                 460

Ala Val Gln Glu Leu Leu Leu Thr Gly Pro His Pro Ser Thr Leu Ala
465                 470                 475                 480

Ala Ala Gly Val Gly Trp Leu Val Val Glu Ser Asp Ser Ala Gly Asp
                485                 490                 495

Met Gly Ala Ala Ala Arg Thr Leu Gly Arg Leu Ala Ala Ala His Arg
            500                 505                 510

Asp Asp Glu Leu Ala Leu Tyr Arg Val Gly Gly Gln Thr Ser Gly Ala
        515                 520                 525

Ser Ser Ala Arg Leu Lys Ala Thr Met Leu Ala His Trp Ala Trp Leu
```

530 535 540

Ser Met Leu Leu Val Gly Gly Ala Gly Ala Ala Gly Tyr Trp Val Arg
545 550 555 560

Arg His Leu His His Cys Glu Asp Thr Pro Ala Ser Arg Ala Gln Asp
565 570 575

<210> 371

<211> 421

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0227c, H37Rv2.tab 271577:272839 reverse MW:45528

<400> 371

Met Leu Arg Phe Ala Ala Cys Gly Ala Ile Gly Leu Gly Ala Ala Leu
1 5 10 15

Leu Ile Ala Ala Leu Leu Leu Ser Thr Tyr Thr Thr Ser Arg Ile Ala
20 25 30

Glu Ile Pro Leu Asp Ile Asp Ala Thr Leu Ile Ser Asp Gly Thr Gly
35 40 45

Thr Ala Leu Asp Ser Ala Ser Leu Ala Thr Glu His Ile Val Val Asn
50 55 60

Gln Asp Val Pro Leu Val Ser Gln Gln Gln Val Thr Val Glu Ser Pro
65 70 75 80

Ala Asn Ala Asp Val Val Thr Leu Gln Val Gly Ser Ser Leu Arg Arg
85 90 95

Thr Asp Lys Gln Lys Asp Ser Gly Leu Leu Leu Ala Ile Val Asp Thr
100 105 110

Val Thr Leu Asn Arg Lys Thr Ala Met Ala Val Ser Asp Asp Thr His
115 120 125

Thr Gly Gly Ala Val Gln Lys Pro Arg Gly Leu Asn Asp Glu Asn Pro
130 135 140

Pro Thr Ala Ile Pro Leu Arg His Asp Gly Leu Ser Tyr Arg Phe Pro
145 150 155 160

Phe His Thr Glu Lys Lys Thr Tyr Pro Tyr Phe Asp Pro Ile Ala Gln
165 170 175

```
Lys Ala Phe Asp Ala Asn Tyr Glu Gly Glu Glu Asp Val Asn Gly Leu
            180                 185                 190

Thr Thr Tyr Arg Phe Thr Gln Asn Val Gly Tyr Thr Pro Glu Gly Lys
        195                 200                 205

Leu Val Ala Pro Leu Lys Tyr Pro Ser Leu Tyr Ala Gly Asp Glu Asp
    210                 215                 220

Gly Lys Val Thr Thr Ser Ala Ala Met Trp Gly Leu Pro Gly Asp Pro
225                 230                 235                 240

Asn Glu Gln Ile Thr Met Thr Arg Tyr Tyr Ala Ala Gln Arg Thr Phe
                245                 250                 255

Trp Val Asp Pro Val Ser Gly Thr Ile Val Lys Glu Thr Glu Arg Ala
            260                 265                 270

Asn His Tyr Phe Ala Arg Asp Pro Leu Lys Pro Glu Val Thr Phe Ala
        275                 280                 285

Asp Tyr Gln Val Thr Ser Thr Glu Glu Thr Val Glu Ser Gln Val Asn
    290                 295                 300

Ala Ala Arg Asp Glu Arg Asp Arg Leu Ala Leu Trp Ser Arg Val Leu
305                 310                 315                 320

Pro Ile Thr Phe Thr Ala Ala Gly Leu Val Ala Leu Val Gly Gly Gly
                325                 330                 335

Leu Phe Ala Ser Phe Ser Leu Arg Thr Glu Gly Ala Leu Met Ala Ala
            340                 345                 350

Ser Gly Asp Arg Asp Asp His Asp Tyr Arg Arg Gly Gly Phe Glu Glu
        355                 360                 365

Pro Val Pro Gly Ala Glu Ala Glu Thr Glu Lys Leu Pro Thr Gln Arg
    370                 375                 380

Pro Asp Phe Pro Arg Glu Pro Ser Gly Ser Asp Pro Pro Arg Leu Gly
385                 390                 395                 400

Ser Ala Gln Pro Pro Pro Pro Pro Asp Ala Gly His Pro Asp Pro Gly
                405                 410                 415

Pro Pro Glu Arg Arg
            420
```

<210> 372

<211> 57

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0236A, H37Rv2.tab 286898:287071 reverse MW:5833

<400> 372

Met Asn Arg Ile Val Ala Pro Ala Ala Ala Ser Val Val Val Gly Leu
1 5 10 15

Leu Leu Gly Ala Ala Ala Ile Phe Gly Val Thr Leu Met Val Gln Gln
20 25 30

Asp Lys Lys Pro Pro Leu Pro Gly Gly Asp Pro Ser Ser Ser Val Leu
35 40 45

Asn Arg Val Glu Tyr Gly Asn Arg Ser
50 55

<210> 373

<211> 1400

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0236c, H37Rv2.tab 282652:286851 reverse MW:146250

<400> 373

Val Ala Pro Leu Ser Arg Lys Trp Leu Pro Val Val Gly Ala Val Ala
1 5 10 15

Leu Ala Leu Thr Phe Ala Gln Ser Pro Gly Gln Val Ser Pro Asp Thr
20 25 30

Lys Leu Asp Leu Thr Ala Asn Pro Leu Arg Phe Leu Ala Arg Ala Thr
35 40 45

Asn Leu Trp Asn Ser Asp Leu Pro Phe Gly Gln Ala Gln Asn Gln Ala
50 55 60

Tyr Gly Tyr Leu Phe Pro His Gly Thr Phe Phe Val Ile Gly His Leu
65 70 75 80

Leu Gly Val Pro Gly Trp Val Thr Gln Arg Leu Trp Trp Ala Val Leu
85 90 95

Leu Thr Val Gly Phe Trp Gly Leu Leu Arg Val Ala Glu Ala Leu Gly
100 105 110

```
Val Gly Gly Pro Ser Ser Arg Val Val Gly Ala Val Ala Phe Ala Leu
        115                 120                 125

Ser Pro Arg Val Leu Thr Thr Leu Gly Ser Ile Ser Ser Glu Thr Leu
    130                 135                 140

Pro Met Met Leu Ala Pro Trp Val Leu Leu Pro Thr Ile Leu Ala Leu
145                 150                 155                 160

Arg Gly Thr Ser Gly Arg Ser Val Arg Ala Leu Ala Ala Gln Ala Gly
                165                 170                 175

Leu Ala Val Ala Leu Met Gly Ala Val Asn Ala Ile Ala Thr Leu Ala
            180                 185                 190

Gly Cys Leu Pro Ala Val Ile Trp Trp Ala Cys His Arg Pro Asn Arg
        195                 200                 205

Leu Trp Trp Arg Tyr Thr Ala Trp Trp Leu Leu Ala Met Ala Leu Ala
    210                 215                 220

Thr Leu Trp Trp Val Met Ala Leu Thr Gln Leu His Gly Val Ser Pro
225                 230                 235                 240

Pro Phe Leu Asp Phe Ile Glu Ser Ser Gly Val Thr Thr Gln Trp Ser
                245                 250                 255

Ser Leu Val Glu Val Leu Arg Gly Thr Asp Ser Trp Thr Pro Phe Val
            260                 265                 270

Ala Pro Asn Ala Thr Ala Gly Ala Pro Leu Val Thr Gly Ser Ala Ala
        275                 280                 285

Ile Leu Gly Thr Cys Leu Val Ala Ala Ala Gly Leu Ala Gly Leu Thr
    290                 295                 300

Ser Pro Ala Met Pro Ala Arg Gly Arg Leu Val Thr Met Leu Leu Val
305                 310                 315                 320

Gly Val Val Leu Leu Ala Val Gly His Arg Gly Gly Leu Ala Ser Pro
                325                 330                 335

Val Ala His Pro Val Gln Ala Phe Leu Asp Ala Ala Gly Thr Pro Leu
            340                 345                 350

Arg Asn Val His Lys Val Gly Pro Val Ile Arg Leu Pro Leu Val Leu
        355                 360                 365

Gly Leu Ala Gln Leu Leu Ser Arg Val Pro Leu Pro Gly Ser Ala Pro
    370                 375                 380

Arg Pro Ala Trp Leu Arg Ala Phe Ala His Pro Glu Arg Asp Lys Arg
385                 390                 395                 400

Val Ala Val Ala Val Val Ala Leu Thr Ala Leu Met Val Ser Thr Ser
                405                 410                 415

Leu Ala Trp Thr Gly Arg Val Ala Pro Pro Gly Thr Phe Gly Ala Leu
            420                 425                 430

Pro Gln Tyr Trp Gln Glu Ala Ala Asp Trp Leu Arg Thr His His Ala
```

435 440 445

Ala Thr Pro Thr Pro Gly Arg Val Leu Val Val Pro Gly Ala Pro Phe
450 455 460

Ala Thr Gln Val Trp Gly Thr Ser His Asp Glu Pro Leu Gln Val Leu
465 470 475 480

Gly Asp Gly Pro Trp Gly Val Arg Asp Ser Ile Pro Leu Thr Pro Pro
485 490 495

Gln Thr Ile Arg Ala Leu Asp Ser Val Gln Arg Leu Phe Ala Ala Gly
500 505 510

Arg Pro Ser Ala Gly Leu Ala Asp Thr Leu Ala Arg Gln Gly Ile Ser
515 520 525

Tyr Val Leu Val Arg Asn Asp Leu Asp Pro Glu Thr Ser Arg Ser Ala
530 535 540

Arg Pro Ile Leu Leu His Arg Ser Ile Ala Gly Ser Pro Gly Leu Ala
545 550 555 560

Lys Leu Ala Glu Phe Gly Ala Pro Val Gly Pro Asp Pro Leu Ala Gly
565 570 575

Phe Val Asn Asp Ser Gly Leu Arg Pro Arg Tyr Pro Ala Ile Glu Ile
580 585 590

Tyr Arg Val Ser Ala Pro Ala Asn Pro Gly Ala Pro Tyr Phe Ala Ala
595 600 605

Thr Asp Gln Leu Ala Arg Val Asp Gly Gly Pro Glu Val Leu Leu Arg
610 615 620

Leu Asp Glu Arg Arg Arg Leu Gln Gly Gln Pro Pro Leu Gly Pro Val
625 630 635 640

Leu Met Thr Ala Asp Ala Arg Ala Ala Gly Leu Pro Val Pro Gln Val
645 650 655

Ala Val Thr Asp Thr Pro Val Ala Arg Glu Thr Asp Tyr Gly Arg Val
660 665 670

Asp His His Ser Ser Ala Ile Arg Ala Pro Gly Asp Ala Arg His Thr
675 680 685

Tyr Asn Arg Val Pro Asp Tyr Pro Val Pro Gly Ala Glu Pro Val Val
690 695 700

Gly Gly Trp Thr Gly Gly Arg Ile Thr Val Ser Ser Ser Ser Ala Asp
705 710 715 720

Ala Thr Ala Met Pro Asp Val Ala Pro Ala Ser Ala Pro Ala Ala Ala
725 730 735

Val Asp Gly Asp Pro Ala Thr Ala Trp Val Ser Asn Ala Leu Gln Ala
740 745 750

Ala Val Gly Gln Trp Leu Gln Val Asp Phe Asp Arg Pro Val Thr Asn
755 760 765

```
Ala Val Val Thr Leu Thr Pro Ser Ala Thr Ala Val Gly Ala Gln Val
     770                 775                 780

Arg Arg Ile Leu Ile Glu Thr Val Asn Gly Ser Thr Thr Leu Arg Phe
785                 790                 795                 800

Asp Glu Ala Gly Lys Pro Leu Thr Ala Ala Leu Pro Tyr Gly Glu Thr
                805                 810                 815

Pro Trp Val Arg Phe Thr Ala Ala Ala Thr Asp Asp Gly Ser Ala Gly
            820                 825                 830

Val Gln Phe Gly Ile Thr Asp Leu Ala Ile Thr Gln Tyr Asp Ala Ser
        835                 840                 845

Gly Phe Ala His Pro Val Gln Leu Arg His Thr Val Leu Val Pro Gly
    850                 855                 860

Pro Pro Pro Gly Ser Ala Ile Ala Gly Trp Asp Leu Gly Ser Glu Leu
865                 870                 875                 880

Leu Gly Arg Pro Gly Cys Ala Pro Gly Pro Asp Gly Val Arg Cys Ala
                885                 890                 895

Ala Ser Met Ala Leu Ala Pro Glu Glu Pro Ala Asn Leu Ser Arg Thr
            900                 905                 910

Leu Thr Val Pro Arg Pro Val Ser Val Thr Pro Met Val Trp Val Arg
        915                 920                 925

Pro Arg Gln Gly Pro Lys Leu Ala Asp Leu Ile Ala Ala Pro Ser Thr
    930                 935                 940

Thr Arg Ala Ser Gly Asp Ser Asp Leu Val Asp Ile Leu Gly Ser Ala
945                 950                 955                 960

Tyr Ala Ala Ala Asp Gly Asp Pro Ala Thr Ala Trp Thr Ala Pro Gln
                965                 970                 975

Arg Val Val Gln His Lys Thr Pro Pro Thr Leu Thr Leu Thr Leu Pro
            980                 985                 990

Arg Pro Thr Val Val Thr Gly Leu  Arg Leu Ala Ala Ser  Arg Ser Met
        995                 1000                1005

Leu Pro  Ala His Pro Thr Val  Val Ala Ile Asn Leu  Gly Asp Gly
    1010                1015                1020

Pro Gln  Val Arg Gln Leu Gln  Val Gly Glu Leu Thr  Thr Leu Trp
    1025                1030                1035

Leu His  Pro Arg Val Thr Asp  Thr Val Ser Val Ser  Leu Leu Asp
    1040                1045                1050

Trp Asp  Asp Val Ile Asp Arg  Asn Ala Leu Gly Phe  Asp Gln Leu
    1055                1060                1065

Lys Pro  Pro Gly Leu Ala Glu  Val Val Val Leu Ser  Ala Gly Gly
    1070                1075                1080
```

```
Ala Pro  Ile Ala Pro Ala Asp  Ala Ala Arg Asn Arg  Ala Arg Ala
     1085                 1090                 1095

Leu Thr  Val Asp Cys Asp His  Gly Pro Val Val Ala  Val Ala Gly
     1100                 1105                 1110

Arg Phe  Val His Thr Ser Ile  Arg Thr Thr Val Gly  Ala Leu Leu
     1115                 1120                 1125

Asp Gly  Glu Pro Val Ala Ala  Leu Pro Cys Glu Arg  Glu Pro Ile
     1130                 1135                 1140

Ala Leu  Pro Ala Gly Gln Gln  Glu Leu Leu Ile Ser  Pro Gly Ala
     1145                 1150                 1155

Ala Phe  Val Val Asp Gly Ala  Gln Leu Ser Thr Pro  Gly Ala Gly
     1160                 1165                 1170

Leu Ser  Ser Ala Thr Val Thr  Ser Ala Glu Thr Gly  Ala Trp Gly
     1175                 1180                 1185

Pro Thr  His Arg Glu Val Arg  Val Pro Glu Ser Ala  Thr Ser Arg
     1190                 1195                 1200

Val Leu  Val Val Pro Glu Ser  Ile Asn Ser Gly Trp  Val Ala Arg
     1205                 1210                 1215

Thr Ser  Thr Gly Ala Arg Leu  Thr Pro Ilè Ala Val  Asn Gly Trp
     1220                 1225                 1230

Gln Gln  Ala Trp Val Val Pro  Ala Gly Asn Pro Gly  Thr Ile Thr
     1235                 1240                 1245

Leu Thr  Phe Ala Pro Asn Ser  Leu Tyr Arg Ala Ser  Leu Ala Ile
     1250                 1255                 1260

Gly Leu  Ala Leu Leu Pro Leu  Leu Ala Leu Leu Ala  Phe Trp Arg
     1265                 1270                 1275

Thr Gly  Arg Arg Gln Leu Ala  Asp Arg Pro Thr Pro  Pro Trp Arg
     1280                 1285                 1290

Pro Gly  Ala Trp Ala Ala Ala  Gly Val Leu Ala Ala  Gly Ala Val
     1295                 1300                 1305

Ile Ala  Ser Ile Ala Gly Val  Met Val Met Gly Thr  Ala Leu Gly
     1310                 1315                 1320

Val Arg  Tyr Ala Leu Arg Arg  Arg Glu Arg Leu Arg  Asp Arg Val
     1325                 1330                 1335

Thr Val  Gly Leu Ala Ala Gly  Gly Leu Ile Leu Ala  Gly Ala Ala
     1340                 1345                 1350

Leu Ser  Arg His Pro Trp Arg  Ser Val Asp Gly Tyr  Ala Gly Asn
     1355                 1360                 1365

Trp Ala  Ser Val Gln Leu Leu  Ala Leu Ile Ser Val  Ser Val Val
     1370                 1375                 1380

Ala Ala  Ser Val Val Ala Thr  Ser Glu Ser Arg Gly  Gln Asp Arg
```

1385 1390 1395

Met Gln
1400

<210> 374

<211> 280

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0241c, H37Rv2.tab 289815:290654 reverse MW:30163

<400> 374

Val Thr Gln Pro Ser Gly Leu Lys Asn Leu Leu Arg Ala Ala Ala Gly
1 5 10 15

Ala Leu Pro Val Val Pro Arg Thr Asp Gln Leu Pro Asn Arg Thr Val
20 25 30

Thr Val Glu Glu Leu Pro Ile Asp Pro Ala Asn Val Ala Ala Tyr Ala
35 40 45

Ala Val Thr Gly Leu Arg Tyr Gly Asn Gln Val Pro Leu Thr Tyr Pro
50 55 60

Phe Ala Leu Thr Phe Pro Ser Val Met Ser Leu Val Thr Gly Phe Asp
65 70 75 80

Phe Pro Phe Ala Ala Met Gly Ala Ile His Thr Glu Asn His Ile Thr
85 90 95

Gln Tyr Arg Pro Ile Ala Val Thr Asp Ala Val Gly Val Arg Val Arg
100 105 110

Ala Glu Asn Leu Arg Glu His Arg Arg Gly Leu Leu Val Asp Leu Val
115 120 125

Thr Asn Val Ser Val Gly Asn Asp Val Ala Trp His Gln Val Thr Thr
130 135 140

Phe Leu His Gln Gln Arg Thr Ser Leu Ser Gly Glu Pro Lys Pro Pro
145 150 155 160

Pro Gln Lys Lys Pro Lys Leu Pro Pro Pro Ala Ala Val Leu Arg Ile
165 170 175

Thr Pro Ala Lys Ile Arg Arg Tyr Ala Ala Val Gly Gly Asp His Asn
180 185 190

Pro Ile His Thr Asn Pro Ile Ala Ala Lys Leu Phe Gly Phe Pro Thr
195 200 205

Val Ile Ala His Gly Met Phe Thr Ala Ala Ala Val Leu Ala Asn Ile
210 215 220

Glu Ala Arg Phe Pro Asp Ala Val Arg Tyr Ser Val Arg Phe Ala Lys
225 230 235 240

Pro Val Leu Leu Pro Ala Thr Ala Gly Leu Tyr Val Ala Glu Gly Asp
245 250 255

Gly Gly Trp Asp Leu Thr Leu Arg Asn Met Ala Lys Gly Tyr Pro His
260 265 270

Leu Thr Ala Thr Val Arg Gly Leu
275 280

<210> 375

<211> 97

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0250c, H37Rv2.tab 301738:302028 reverse MW:10878

<400> 375

Leu Ser Thr Thr Ala Glu Leu Ala Glu Leu His Asp Leu Val Gly Gly
1 5 10 15

Leu Arg Arg Cys Val Thr Ala Leu Lys Ala Arg Phe Gly Asp Asn Pro
20 25 30

Ala Thr Arg Arg Ile Val Ile Asp Ala Asp Arg Ile Leu Thr Asp Ile
35 40 45

Glu Leu Leu Asp Thr Asp Val Ser Glu Leu Asp Leu Glu Arg Ala Ala
50 55 60

Val Pro Gln Pro Ser Glu Lys Ile Ala Ile Pro Asp Thr Glu Tyr Asp
65 70 75 80

Arg Glu Phe Trp Arg Asp Val Asp Asp Glu Gly Val Gly Gly His Arg
85 90 95

Tyr

<210> 376

<211> 124

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0257, H37Rv2.tab 309699:310071 forward MW:13053

<400> 376

Met Thr Arg Val Ser Trp Leu Pro Asp Arg Cys Leu Pro Arg Leu Pro
1 5 10 15

Ala Cys Gly Arg Gly Leu Arg Gly Ser Leu Pro Gly Asp Ser Gly Gly
20 25 30

Thr Ala Pro Asp Ser His Arg Leu Pro Ala Ser Ser Ser Pro Asp Gly
35 40 45

Lys Asn Ile Gly Met Gln Ser Val Asp Leu His Val Glu Arg His Leu
50 55 60

Pro Ser Arg Gly Arg Ser His Arg Thr Val Ala Thr Val Thr Cys Val
65 70 75 80

Thr Ala Leu Gly Asp Ile Arg Ser Ala Gln Leu Ser Ala Thr Gly Ala
85 90 95

Trp Pro Ala Val Leu Phe Pro Ser Trp Ser Trp Leu Cys Gly Ile Gly
100 105 110

Gly Gly Val Asp Leu Gln Lys Pro Ser Cys Arg Ala
115 120

<210> 377

<211> 538

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0283, H37Rv2.tab 344022:345635 forward MW:55943

<400> 377

```
Met Thr Asn Gln Gln His Asp His Asp Phe Asp His Asp Arg Arg Ser
1               5                  10                  15

Phe Ala Ser Arg Thr Pro Val Asn Asn Asn Pro Asp Lys Val Val Tyr
            20                  25                  30

Arg Arg Gly Phe Val Thr Arg His Gln Val Thr Gly Trp Arg Phe Val
        35                  40                  45

Met Arg Arg Ile Ala Ala Gly Ile Ala Leu His Asp Thr Arg Met Leu
    50                  55                  60

Val Asp Pro Leu Arg Thr Gln Ser Arg Ala Val Leu Met Gly Val Leu
65                  70                  75                  80

Ile Val Ile Thr Gly Leu Ile Gly Ser Phe Val Phe Ser Leu Ile Arg
                85                  90                  95

Pro Asn Gly Gln Ala Gly Ser Asn Ala Val Leu Ala Asp Arg Ser Thr
            100                 105                 110

Ala Ala Leu Tyr Val Arg Val Gly Glu Gln Leu His Pro Val Leu Asn
        115                 120                 125

Leu Thr Ser Ala Arg Leu Ile Val Gly Arg Pro Val Ser Pro Thr Thr
    130                 135                 140

Val Lys Ser Thr Glu Leu Asp Gln Phe Pro Arg Gly Asn Leu Ile Gly
145                 150                 155                 160

Ile Pro Gly Ala Pro Glu Arg Met Val Gln Asn Thr Ser Thr Asp Ala
                165                 170                 175

Asn Trp Thr Val Cys Asp Gly Leu Asn Ala Pro Ser Arg Gly Gly Ala
            180                 185                 190

Asp Gly Val Gly Val Thr Val Ile Ala Gly Pro Leu Glu Asp Thr Gly
        195                 200                 205

Ala Arg Ala Ala Ala Leu Gly Pro Gly Gln Ala Val Leu Val Asp Ser
    210                 215                 220

Gly Ala Gly Thr Trp Leu Leu Trp Asp Gly Lys Arg Ser Pro Ile Asp
225                 230                 235                 240

Leu Ala Asp His Ala Val Thr Ser Gly Leu Gly Leu Gly Ala Asp Val
                245                 250                 255

Pro Ala Pro Arg Ile Ile Ala Ser Gly Leu Phe Asn Ala Ile Pro Glu
            260                 265                 270

Ala Pro Pro Leu Thr Ala Pro Ile Ile Pro Asp Ala Gly Asn Pro Ala
        275                 280                 285

Ser Phe Gly Val Pro Ala Pro Ile Gly Ala Val Val Ser Ser Tyr Ala
    290                 295                 300

Leu Lys Asp Ser Gly Lys Thr Ile Ser Asp Thr Val Gln Tyr Tyr Ala
305                 310                 315                 320
```

Val Leu Pro Asp Gly Leu Gln Gln Ile Ser Pro Val Leu Ala Ala Ile
325 330 335

Leu Arg Asn Asn Asn Ser Tyr Gly Leu Gln Gln Pro Pro Arg Leu Gly
340 345 350

Ala Asp Glu Val Ala Lys Leu Pro Val Ser Arg Val Leu Asp Thr Arg
355 360 365

Arg Tyr Pro Ser Glu Pro Val Ser Leu Val Asp Val Thr Arg Asp Pro
370 375 380

Val Thr Cys Ala Tyr Trp Ser Lys Pro Val Gly Ala Ala Thr Ser Ser
385 390 395 400

Leu Thr Leu Leu Ala Gly Ser Ala Leu Pro Val Pro Asp Ala Val His
405 410 415

Thr Val Glu Leu Val Gly Ala Gly Asn Gly Gly Val Ala Thr Arg Val
420 425 430

Ala Leu Ala Ala Gly Thr Gly Tyr Phe Thr Gln Thr Val Gly Gly Gly
435 440 445

Pro Asp Ala Pro Gly Ala Gly Ser Leu Phe Trp Val Ser Asp Thr Gly
450 455 460

Val Arg Tyr Gly Ile Asp Asn Glu Pro Gln Gly Val Ala Gly Gly Gly
465 470 475 480

Lys Ala Val Glu Ala Leu Gly Leu Asn Pro Pro Pro Val Pro Ile Pro
485 490 495

Trp Ser Val Leu Ser Leu Phe Val Pro Gly Pro Thr Leu Ser Arg Ala
500 505 510

Asp Ala Leu Leu Ala His Asp Thr Leu Val Pro Asp Ser Arg Pro Ala
515 520 525

Arg Pro Val Ser Ala Glu Gly Gly Tyr Arg
530 535

<210> 378

<211> 96

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0288, H37Rv2.tab 351848:352135 forward MW:10390

<400> 378

```
Met Ser Gln Ile Met Tyr Asn Tyr Pro Ala Met Leu Gly His Ala Gly
1               5                   10                  15

Asp Met Ala Gly Tyr Ala Gly Thr Leu Gln Ser Leu Gly Ala Glu Ile
            20                  25                  30

Ala Val Glu Gln Ala Ala Leu Gln Ser Ala Trp Gln Gly Asp Thr Gly
        35                  40                  45

Ile Thr Tyr Gln Ala Trp Gln Ala Gln Trp Asn Gln Ala Met Glu Asp
    50                  55                  60

Leu Val Arg Ala Tyr His Ala Met Ser Ser Thr His Glu Ala Asn Thr
65                  70                  75                  80

Met Ala Met Met Ala Arg Asp Thr Ala Glu Ala Ala Lys Trp Gly Gly
                85                  90                  95
```

<210> 379

<211> 295

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0289, H37Rv2.tab 352149:353033 forward MW:31559

<400> 379

```
Met Asp Ala Thr Pro Asn Ala Val Glu Leu Thr Val Asp Asn Ala Trp
1               5                   10                  15

Phe Ile Ala Glu Thr Ile Gly Ala Gly Thr Phe Pro Trp Val Leu Ala
            20                  25                  30

Ile Thr Met Pro Tyr Ser Asp Ala Ala Gln Arg Gly Ala Phe Val Asp
        35                  40                  45

Arg Gln Arg Asp Glu Leu Thr Arg Met Gly Leu Leu Ser Pro Gln Gly
    50                  55                  60

Val Ile Asn Pro Ala Val Ala Asp Trp Ile Lys Val Val Cys Phe Pro
65                  70                  75                  80

Asp Arg Trp Leu Asp Leu Arg Tyr Val Gly Pro Ala Ser Ala Asp Gly
                85                  90                  95

Ala Cys Glu Leu Leu Arg Gly Ile Val Ala Leu Arg Thr Gly Thr Gly
            100                 105                 110

Lys Thr Ser Asn Lys Thr Gly Asn Gly Val Val Ala Leu Arg Asn Ala
```

115 120 125

Gln Leu Val Thr Phe Thr Ala Met Asp Ile Asp Asp Pro Arg Ala Leu
130 135 140

Val Pro Ile Leu Gly Val Gly Leu Ala His Arg Pro Pro Ala Arg Phe
145 150 155 160

Asp Glu Phe Ser Leu Pro Thr Arg Val Gly Ala Arg Ala Asp Glu Arg
165 170 175

Leu Arg Ser Gly Val Pro Leu Gly Glu Val Val Asp Tyr Leu Gly Ile
180 185 190

Pro Ala Ser Ala Arg Pro Val Val Glu Ser Val Phe Ser Gly Pro Arg
195 200 205

Ser Tyr Val Glu Ile Val Ala Gly Cys Asn Arg Asp Gly Arg His Thr
210 215 220

Thr Thr Glu Val Gly Leu Ser Ile Val Asp Thr Ser Ala Gly Arg Val
225 230 235 240

Leu Val Ser Pro Ser Arg Ala Phe Asp Gly Glu Trp Val Ser Thr Phe
245 250 255

Ser Pro Gly Thr Pro Phe Ala Ile Ala Val Ala Ile Gln Thr Leu Thr
260 265 270

Ala Cys Leu Pro Asp Gly Gln Trp Phe Pro Gly Gln Arg Val Ser Arg
275 280 285

Asp Phe Ser Thr Gln Ser Ser
290 295

<210> 380

<211> 472

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0290, H37Rv2.tab 353083:354498 forward MW:47944

<400> 380

Met Ser Gly Thr Val Met Gln Ile Val Arg Val Ala Ile Leu Ala Asp
1 5 10 15

Ser Arg Leu Thr Glu Met Ala Leu Pro Ala Glu Leu Pro Leu Arg Glu
20 25 30

```
Ile Leu Pro Ala Val Gln Arg Leu Val Val Pro Ser Ala Gln Asn Gly
        35                  40                  45

Asp Gly Gly Gln Ala Asp Ser Gly Ala Ala Val Gln Leu Ser Leu Ala
    50                  55                  60

Pro Val Gly Gly Gln Pro Phe Ser Leu Asp Ala Ser Leu Asp Thr Val
65                  70                  75                  80

Gly Val Val Asp Gly Asp Leu Leu Val Leu Gln Pro Val Pro Ala Gly
                85                  90                  95

Pro Ala Ala Pro Gly Ile Val Glu Asp Ile Ala Asp Ala Ala Met Ile
            100                 105                 110

Phe Ser Thr Ser Arg Leu Lys Pro Trp Gly Ile Ala His Ile Gln Arg
        115                 120                 125

Gly Ala Leu Ala Ala Val Ile Ala Val Ala Leu Leu Ala Thr Gly Leu
    130                 135                 140

Thr Val Thr Tyr Arg Val Ala Thr Gly Val Leu Ala Gly Leu Leu Ala
145                 150                 155                 160

Val Ala Gly Ile Ala Val Ala Ser Ala Leu Ala Gly Leu Leu Ile Thr
                165                 170                 175

Ile Arg Ser Pro Arg Ser Gly Ile Ala Leu Ser Ile Ala Ala Leu Val
            180                 185                 190

Pro Ile Gly Ala Ala Leu Ala Leu Ala Val Pro Gly Lys Phe Gly Pro
        195                 200                 205

Ala Gln Val Leu Leu Gly Ala Ala Gly Val Ala Ala Trp Ser Leu Ile
    210                 215                 220

Ala Leu Met Ile Pro Ser Ala Glu Arg Glu Arg Val Val Ala Phe Phe
225                 230                 235                 240

Thr Ala Ala Ala Val Val Gly Ala Ser Val Ala Leu Ala Ala Gly Ala
                245                 250                 255

Gln Leu Leu Trp Gln Leu Pro Leu Leu Ser Ile Gly Cys Gly Leu Ile
            260                 265                 270

Val Ala Ala Leu Leu Val Thr Ile Gln Ala Ala Gln Leu Ser Ala Leu
        275                 280                 285

Trp Ala Arg Phe Pro Leu Pro Val Ile Pro Ala Pro Gly Asp Pro Thr
    290                 295                 300

Pro Ser Ala Pro Pro Leu Arg Leu Leu Glu Asp Leu Pro Arg Arg Val
305                 310                 315                 320

Arg Val Ser Asp Ala His Gln Ser Gly Phe Ile Ala Ala Ala Val Leu
                325                 330                 335

Leu Ser Val Leu Gly Ser Val Ala Ile Ala Val Arg Pro Glu Ala Leu
            340                 345                 350

Ser Val Val Gly Trp Tyr Leu Val Ala Ala Thr Ala Ala Ala Ala Thr
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355 360 365

Leu Arg Ala Arg Val Trp Asp Ser Ala Ala Cys Lys Ala Trp Leu Leu
370 375 380

Ala Gln Pro Tyr Leu Val Ala Gly Val Leu Leu Val Phe Tyr Thr Ala
385 390 395 400

Thr Gly Arg Tyr Val Ala Ala Phe Gly Ala Val Leu Val Leu Ala Val
405 410 415

Leu Met Leu Ala Trp Val Val Val Ala Leu Asn Pro Gly Ile Ala Ser
420 425 430

Pro Glu Ser Tyr Ser Leu Pro Leu Arg Arg Leu Leu Gly Leu Val Ala
435 440 445

Ala Gly Leu Asp Val Ser Leu Ile Pro Val Met Ala Tyr Leu Val Gly
450 455 460

Leu Phe Ala Trp Val Leu Asn Arg
465 470

<210> 381

<211> 331

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0292, H37Rv2.tab 355880:356872 forward MW:35932

<400> 381

Met Asn Pro Ile Pro Ser Trp Pro Gly Arg Gly Arg Val Thr Leu Val
1 5 10 15

Leu Leu Ala Val Val Pro Val Ala Leu Ala Tyr Pro Trp Gln Ser Thr
20 25 30

Arg Asp Tyr Val Leu Leu Gly Val Ala Ala Ala Val Val Ile Gly Leu
35 40 45

Phe Gly Phe Trp Arg Gly Leu Tyr Phe Thr Thr Ile Ala Arg Arg Gly
50 55 60

Leu Ala Ile Leu Arg Arg Arg Arg Arg Ile Ala Glu Pro Ala Thr Cys
65 70 75 80

Thr Arg Thr Thr Val Leu Val Trp Val Gly Pro Pro Ala Ser Asp Thr
85 90 95

Asn Val Leu Pro Leu Thr Leu Ile Ala Arg Tyr Leu Asp Arg Tyr Gly
100 105 110

Ile Arg Ala Asp Thr Ile Arg Ile Thr Ser Arg Val Thr Ala Ser Gly
115 120 125

Asp Cys Arg Thr Trp Val Gly Leu Thr Val Val Ala Asp Asp Asn Leu
130 135 140

Ala Ala Leu Gln Ala Arg Ser Ala Arg Ile Pro Leu Gln Glu Thr Ala
145 150 155 160

Gln Val Ala Ala Arg Arg Leu Ala Asp His Leu Arg Glu Ile Gly Trp
165 170 175

Glu Ala Gly Thr Ala Ala Pro Asp Glu Ile Pro Ala Leu Val Ala Ala
180 185 190

Asp Ser Arg Glu Thr Trp Arg Gly Met Arg His Thr Asp Ser Asp Tyr
195 200 205

Val Ala Ala Tyr Arg Val Ser Ala Asn Ala Glu Leu Pro Asp Thr Leu
210 215 220

Pro Ala Ile Arg Ser Arg Pro Ala Gln Glu Thr Trp Ile Ala Leu Glu
225 230 235 240

Ile Ala Tyr Ala Ala Gly Ser Ser Thr Arg Tyr Thr Val Ala Ala Ala
245 250 255

Cys Ala Leu Arg Thr Asp Trp Arg Pro Gly Gly Thr Ala Pro Val Ala
260 265 270

Gly Leu Leu Pro Gln His Gly Asn His Val Pro Ala Leu Thr Ala Leu
275 280 285

Asp Pro Arg Ser Thr Arg Arg Leu Asp Gly His Thr Asp Ala Pro Ala
290 295 300

Asp Leu Leu Thr Arg Leu His Trp Pro Thr Pro Thr Ala Gly Ala His
305 310 315 320

Arg Ala Pro Leu Thr Asn Ala Val Ser Arg Thr
325 330

<210> 382

<211> 218

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0309, H37Rv2.tab 377931:378584 forward MW:22528

<400> 382

Met Ser Arg Leu Leu Ala Leu Leu Cys Ala Ala Val Cys Thr Gly Cys
1 5 10 15

Val Ala Val Val Leu Ala Pro Val Ser Leu Ala Val Val Asn Pro Trp
20 25 30

Phe Ala Asn Ser Val Gly Asn Ala Thr Gln Val Val Ser Val Val Gly
35 40 45

Thr Gly Gly Ser Thr Ala Lys Met Asp Val Tyr Gln Arg Thr Ala Ala
50 55 60

Gly Trp Gln Pro Leu Lys Thr Gly Ile Thr Thr His Ile Gly Ser Ala
65 70 75 80

Gly Met Ala Pro Glu Ala Lys Ser Gly Tyr Pro Ala Thr Pro Met Gly
85 90 95

Val Tyr Ser Leu Asp Ser Ala Phe Gly Thr Ala Pro Asn Pro Gly Gly
100 105 110

Gly Leu Pro Tyr Thr Gln Val Gly Pro Asn His Trp Trp Ser Gly Asp
115 120 125

Asp Asn Ser Pro Thr Phe Asn Ser Met Gln Val Cys Gln Lys Ser Gln
130 135 140

Cys Pro Phe Ser Thr Ala Asp Ser Glu Asn Leu Gln Ile Pro Gln Tyr
145 150 155 160

Lys His Ser Val Val Met Gly Val Asn Lys Ala Lys Val Pro Gly Lys
165 170 175

Gly Ser Ala Phe Phe Phe His Thr Thr Asp Gly Gly Pro Thr Ala Gly
180 185 190

Cys Val Ala Ile Asp Asp Ala Thr Leu Val Gln Ile Ile Arg Trp Leu
195 200 205

Arg Pro Gly Ala Val Ile Ala Ile Ala Lys
210 215

<210> 383

<211> 128

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0313, H37Rv2.tab 382490:382873 forward MW:13916

<400> 383

Val Gly Asp Tyr Gly Pro Phe Gly Phe Asp Pro Asp Glu Phe Asp Arg
1 5 10 15

Val Ile Arg Glu Gly Ser Glu Gly Leu Arg Asp Ala Phe Glu Arg Ile
20 25 30

Gly Arg Phe Leu Ser Ser Ser Gly Ala Gly Thr Gly Trp Ser Ala Ile
35 40 45

Phe Glu Asp Leu Ser Arg Arg Ser Arg Pro Ala Pro Glu Thr Ala Gly
50 55 60

Glu Ala Gly Asp Gly Val Trp Ala Ile Tyr Thr Val Asp Ala Asp Gly
65 70 75 80

Gly Ala Arg Val Glu Gln Val Tyr Ala Thr Glu Leu Asp Ala Leu Arg
85 90 95

Ala Asn Lys Asp Asn Thr Asp Pro Lys Arg Lys Val Arg Phe Leu Pro
100 105 110

Tyr Gly Ile Ala Val Ser Val Leu Asp Asp Pro Val Asp Glu Ala Gln
115 120 125

<210> 384

<211> 214

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0356c, H37Rv2.tab 434833:435474 reverse MW:22879

<400> 384

Val Thr Asp Ala Ser Val His Pro Asp Glu Leu Asp Pro Glu Tyr His
1 5 10 15

His His Gly Gly Phe Pro Glu Tyr Gly Pro Ala Ser Pro Gly Ala Gly
20 25 30

Phe Gly Gln Phe Val Ala Thr Met Arg Arg Leu Gln Asp Leu Ala Val
35 40 45

Ala Ala Asp Pro Gly Asp Ala Val Trp Asp Glu Ala Ala Glu Arg Ala
50 55 60

Ala Ala Leu Val Glu Leu Leu Ser Pro Phe Glu Ala Asp Glu Gly Lys
65 70 75 80

Ala Pro Ala Gly Arg Thr Pro Gly Leu Pro Gly Met Gly Ser Leu Leu
85 90 95

Leu Pro Pro Trp Thr Val Thr Arg Tyr Gly Thr Asp Gly Val Glu Met
100 105 110

Arg Gly Ser Phe Ser Arg Phe His Val Gly Gly Asn Ser Ala Val His
115 120 125

Gly Gly Val Leu Pro Leu Leu Phe Asp His Met Phe Gly Met Ile Ser
130 135 140

His Ala Ala Gly Arg Pro Ile Ser Arg Thr Ala Phe Leu His Val Asp
145 150 155 160

Tyr Arg Arg Ile Thr Pro Ile Asp Val Pro Leu Ile Val Arg Gly Arg
165 170 175

Val Thr Asn Thr Glu Gly Arg Lys Ala Phe Val Cys Ala Glu Leu Phe
180 185 190

Asp Ser Asp Glu Thr Leu Leu Ala Glu Gly Asn Gly Leu Met Val Arg
195 200 205

Leu Leu Pro Gly Gln Pro
210

<210> 385

<211> 215

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0358, H37Rv2.tab 436860:437504 forward MW:23102

<400> 385

Met Tyr Thr Ala Glu Asn Ala Pro Gly Val Ala Val Leu Leu Ser Gly
1 5 10 15

Asp Ala Asp Val Pro Gly Pro Leu Thr Gly Leu Pro Thr His Gln Asp
20 25 30

Asn Leu Asp Thr Val Ile Gly Arg Tyr Ser Arg Leu Ile Val Val Gly
35 40 45

Ala Asp Ala Asp Leu Gly Ala Val Leu Thr Arg Leu Leu Arg Thr Asp
50 55 60

Arg Leu Asp Val Glu Val Gly Tyr Val Pro Arg Arg Arg Ser Pro Ala
65 70 75 80

Thr Arg Ala Tyr Arg Leu Pro Ala Gly Arg Arg Ala Ala Arg Arg Ala
85 90 95

Arg Cys Gly Val Ala Arg Arg Val Pro Leu Ile Arg Asp Glu Thr Gly
100 105 110

Ser Val Ile Val Gly Arg Ala Gln Trp Leu Pro Ala Glu Glu Gln Ala
115 120 125

Leu Ile His Gly Glu Ala Val Val Asp Asp Thr Val Leu Phe Asp Gly
130 135 140

Asp Val Ala Gly Val Cys Ile Glu Pro Thr Leu Thr Leu Pro Gly Leu
145 150 155 160

Arg Ala Ala Val Asp Gly Ala Gly Lys Trp Arg Arg Trp Ile Gly Gly
165 170 175

Arg Ala Ala Gln Leu Gly Thr Thr Gly Ala Ala Val Leu Arg Asp Gly
180 185 190

Val Ala Ala Pro Arg Pro Val Arg Arg Ser Thr Phe Tyr Arg Asn Val
195 200 205

Glu Gly Trp Leu Leu Val Arg
210 215

<210> 386

<211> 145

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0360c, H37Rv2.tab 438305:438739 reverse MW:15297

<400> 386

Val Thr Lys Arg Thr Ile Thr Pro Met Thr Ser Met Gly Asp Leu Leu
1 5 10 15

Gly Pro Glu Pro Ile Leu Leu Pro Gly Asp Ser Asp Ala Glu Ala Glu
20 25 30

Leu Leu Ala Asn Glu Ser Pro Ser Ile Val Ala Ala Ala His Pro Ser
35 40 45

Ala Ser Val Ala Trp Ala Val Leu Ala Glu Gly Ala Leu Ala Asp Asp

50 55 60

Lys Thr Val Thr Ala Tyr Ala Tyr Ala Arg Thr Gly Tyr His Arg Gly
65 70 75 80

Leu Asp Gln Leu Arg Arg His Gly Trp Lys Gly Phe Gly Pro Val Pro
85 90 95

Tyr Ser His Gln Pro Asn Arg Gly Phe Leu Arg Cys Val Ala Ala Leu
100 105 110

Ala Arg Ala Ala Ala Ala Ile Gly Glu Thr Asp Glu Tyr Gly Arg Cys
115 120 125

Leu Asp Leu Leu Asp Asp Cys Asp Pro Ala Ala Arg Pro Ala Leu Gly
130 135 140

Leu
145

<210> 387

<211> 275

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0361, H37Rv2.tab 438822:439646 forward MW:29982

<400> 387

Met Ser Asn Ala Pro Glu Pro Asp Arg Ser Ala Gly Glu Ser Gly Ser
1 5 10 15

Glu Pro Ala Gly Glu Arg Ser Ala Asp Pro Gly Glu Glu Arg Thr Glu
20 25 30

Ser Tyr Pro Leu Val Pro His Asp Ala Glu Thr Glu Thr Val Val Ile
35 40 45

Thr Thr Ser Asp Asn Asp Ala Ala Val Thr Gln Pro Glu Ala Gln Arg
50 55 60

Glu Arg Arg Phe Thr Ala Pro Gly Phe Asp Ala Lys Glu Thr Gln Val
65 70 75 80

Ile Val Thr Ala His Glu Ala Ala Thr Glu Val Phe Gln Thr Asn Gln
85 90 95

Ala Pro Thr Thr Pro Pro Arg Met Pro Thr Gly Met Pro Pro Lys Thr
100 105 110

Ala Val Pro Gln Ser Ile Pro Pro Arg Thr Glu Ala Thr Ser Val Arg
115 120 125

Gln Arg Thr Trp Gly Trp Ala Leu Ala Val Val Val Ile Val Leu Ala
130 135 140

Leu Ala Ala Ile Ala Ile Leu Gly Thr Val Leu Leu Thr Arg Gly Lys
145 150 155 160

His Ser Lys Met Ser Gln Glu Asp Gln Val Arg Gln Ala Ile Gln Ser
165 170 175

Leu Asp Ile Ala Ile Gln Thr Gly Asp Leu Thr Ala Leu Arg Ser Leu
180 185 190

Thr Cys Gly Ser Thr Arg Asp Gly Tyr Val Asp Tyr Asp Glu Arg Asp
195 200 205

Trp Ala Glu Thr Tyr Arg Arg Val Ser Ala Ala Lys Gln Tyr Pro Val
210 215 220

Ile Ala Ser Ile Asp Gln Val Val Val Asn Gly Ala His Ala Glu Ala
225 230 235 240

Asn Val Thr Thr Phe Met Ala Phe Asp Pro Gln Val Arg Ser Thr Arg
245 250 255

Ser Leu Asp Leu Gln Phe Arg Asp Asp Gln Trp Lys Ile Cys Gln Ser
260 265 270

Ser Ser Asn
275

<210> 388

<211> 284

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0383c, H37Rv2.tab 458464:459315 reverse MW:31801

<400> 388

Met Val Pro Leu Trp Phe Thr Leu Ser Ala Leu Cys Phe Val Gly Ala
1 5 10 15

Val Val Leu Leu Tyr Val Asp Ile Asp Arg Arg Arg Gly Arg Ser Arg
20 25 30

Arg Arg Lys Ser Trp Ala Arg Ser His Gly Phe Asp Tyr Glu Arg Glu
35 40 45

Ser Thr Glu Ile Leu Lys Arg Trp Thr Arg Gly Val Met Ser Thr Val
50 55 60

Gly Asp Val Ala Ala His Asn Val Val Leu Gly Gln Ile Arg Gly Glu
65 70 75 80

Ala Val Tyr Ile Phe Asp Leu Glu Glu Val Ala Thr Val Ile Ala Leu
85 90 95

His Arg Lys Val Gly Thr Asn Val Val Val Asp Leu Arg Leu Lys Gly
100 105 110

Leu Lys Glu Pro Arg Glu Ser Asp Ile Trp Leu Leu Gly Ala Ile Gly
115 120 125

Pro Arg Met Val Tyr Ser Thr Asn Leu Asp Ala Ala Arg Arg Ala Cys
130 135 140

Asp Arg Arg Met Val Thr Phe Ala His Thr Ala Pro Asp Cys Ala Glu
145 150 155 160

Ile Met Trp Asn Glu Gln Asn Trp Thr Leu Val Ser Met Pro Ile Ala
165 170 175

Ser Thr Arg Ala Gln Trp Asp Glu Gly Leu Arg Thr Val Arg Gln Phe
180 185 190

Asn Asp Leu Leu Arg Val Leu Pro Pro Leu Pro Gln Glu Met Pro Gln
195 200 205

Gln Thr Gly Val Gly Pro Arg Gly Ala Ala Pro Gly Arg Pro Val Ala
210 215 220

Pro Gly Gly Pro Ala Glu Leu Pro Pro Arg Arg Ala Gln Pro Asp Pro
225 230 235 240

Ala Thr Thr Val Leu Pro Asp Pro Ala Arg Arg Ala Pro Glu Pro Ile
245 250 255

Arg Arg Asp Glu Gly Arg Ser Glu Gly Val Arg Arg Pro Pro Pro Ala
260 265 270

Gly Arg Asn Gly Gln Gln Ala Thr Asn Tyr Gln His
275 280

<210> 389

<211> 123

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0401, H37Rv2.tab 479789:480157 forward MW:12641

<400> 389

Met Arg Pro Arg Arg Ala Leu Ala Gly Leu Ala Ala Asp Val Val Ala
1 5 10 15

Val Leu Val Phe Cys Ala Val Gly Arg Arg Ser His Ala Glu Gly Leu
20 25 30

Ser Val Thr Gly Leu Ala Ala Thr Ala Trp Pro Phe Leu Thr Gly Thr
35 40 45

Gly Ile Gly Trp Val Leu Ala Arg Gly Trp Arg Arg Pro Thr Ala Leu
50 55 60

Ala Pro Thr Gly Val Ile Val Trp Leu Cys Thr Ile Val Val Gly Met
65 70 75 80

Val Leu Arg Lys Val Ser Ser Ala Gly Val Ala Ala Ser Phe Val Val
85 90 95

Val Ala Ser Ala Val Thr Ala Val Leu Leu Leu Gly Trp Arg Ala Ala
100 105 110

Val Ala Leu Met Ala Pro His Arg Ala Asp Gly
115 120

<210> 390

<211> 68

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0416, H37Rv2.tab 502167:502370 forward MW:7367

<400> 390

Met Ile Val Val Val Asn Glu Gln Gln Val Glu Val Asp Glu Gln Thr
1 5 10 15

Thr Ile Ala Ala Leu Leu Asp Ser Leu Gly Phe Gly Asp Arg Gly Ile
20 25 30

Ala Val Ala Leu Asn Phe Ser Val Leu Pro Arg Ser Asp Trp Ala Thr
35 40 45

Lys Ile Cys Glu Leu Arg Lys Pro Val Arg Leu Glu Val Val Thr Ala
50 55 60

Val Gln Gly Gly
65

<210> 391

<211> 102

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0430, H37Rv2.tab 518733:519038 forward MW:11723

<400> 391

Met Asp Ser Ala Met Ala Arg Ala Ile Arg Ser Gly Asp Asp Ala Glu
1 5 10 15

Val Ala Asp Gly Leu Thr Arg Arg Glu His Asp Ile Leu Ala Phe Glu
20 25 30

Arg Gln Trp Trp Lys Phe Ala Gly Val Lys Glu Glu Ala Ile Lys Glu
35 40 45

Leu Phe Ser Met Ser Ala Thr Arg Tyr Tyr Gln Val Leu Asn Ala Leu
50 55 60

Val Asp Arg Pro Glu Ala Leu Ala Ala Asp Pro Met Leu Val Lys Arg
65 70 75 80

Leu Arg Arg Leu Arg Ala Ser Arg Gln Lys Ala Arg Ala Ala Arg Arg
85 90 95

Leu Gly Phe Glu Val Thr
100

<210> 392

<211> 164

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0431, H37Rv2.tab 519073:519564 forward MW:16905

<400> 392

Val Leu Val Thr Val Gly Ser Met Asn Glu Arg Val Pro Asp Ser Ser
1 5 10 15

Gly Leu Pro Leu Arg Ala Met Val Met Val Leu Leu Phe Leu Gly Val
20 25 30

Val Phe Leu Leu Leu Val Trp Gln Ala Leu Gly Ser Ser Pro Asn Ser
35 40 45

Glu Asp Asp Ser Ser Ala Ile Ser Thr Met Thr Thr Thr Thr Ala Ala
50 55 60

Pro Thr Ser Thr Ser Val Lys Pro Ala Ala Pro Arg Ala Glu Val Arg
65 70 75 80

Val Tyr Asn Ile Ser Gly Thr Glu Gly Ala Ala Ala Arg Thr Ala Asp
85 90 95

Arg Leu Lys Ala Ala Gly Phe Thr Val Thr Asp Val Gly Asn Leu Ser
100 105 110

Leu Pro Asp Val Ala Ala Thr Thr Val Tyr Tyr Thr Glu Val Glu Gly
115 120 125

Glu Arg Ala Thr Ala Asp Ala Val Gly Arg Thr Leu Gly Ala Ala Val
130 135 140

Glu Leu Arg Leu Pro Glu Leu Ser Asp Gln Pro Pro Gly Val Ile Val
145 150 155 160

Val Val Thr Gly

<210> 393

<211> 148

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0455c, H37Rv2.tab 545378:545821 reverse MW:16639

<400> 393

Met Ser Arg Leu Ser Ser Ile Leu Arg Ala Gly Ala Ala Phe Leu Val
1 5 10 15

Leu Gly Ile Ala Ala Ala Thr Phe Pro Gln Ser Ala Ala Ala Asp Ser

20 25 30

Thr Glu Asp Phe Pro Ile Pro Arg Arg Met Ile Ala Thr Thr Cys Asp
35 40 45

Ala Glu Gln Tyr Leu Ala Ala Val Arg Asp Thr Ser Pro Val Tyr Tyr
50 55 60

Gln Arg Tyr Met Ile Asp Phe Asn Asn His Ala Asn Leu Gln Gln Ala
65 70 75 80

Thr Ile Asn Lys Ala His Trp Phe Phe Ser Leu Ser Pro Ala Glu Arg
85 90 95

Arg Asp Tyr Ser Glu His Phe Tyr Asn Gly Asp Pro Leu Thr Phe Ala
100 105 110

Trp Val Asn His Met Lys Ile Phe Phe Asn Asn Lys Gly Val Val Ala
115 120 125

Lys Gly Thr Glu Val Cys Asn Gly Tyr Pro Ala Gly Asp Met Ser Val
130 135 140

Trp Asn Trp Ala
145

<210> 394

<211> 97

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0463, H37Rv2.tab 554016:554306 forward MW:10111

<400> 394

Met Thr Arg Arg Ala Ser Thr Asp Thr Pro Gln Ile Ile Met Gly Ala
1 5 10 15

Ile Gly Gly Val Val Thr Gly Tyr Ile Leu Trp Leu Ala Ala Ile Ser
20 25 30

Val Gly Asp Gly Leu Thr Thr Val Ser Gln Trp Ser Arg Val Val Leu
35 40 45

Leu Leu Ser Val Leu Val Ala Val Cys Gly Ala Ala Gly Gly Leu Arg
50 55 60

Leu Arg Ser Arg Gly Lys Leu Ala Trp Ser Ala Phe Ala Phe Ser Leu
65 70 75 80

Pro Ile Pro Pro Val Val Leu Thr Val Ala Val Leu Ala Asp Ile Tyr
85 90 95

Leu

<210> 395

<211> 190

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0464c, H37Rv2.tab 554316:554885 reverse MW:21304

<400> 395

Met Thr Gly Gln Asn Gly Gln Val Ala Arg Ile Ser Pro Gly Lys Phe
1 5 10 15

Arg Gln Leu Gly Pro Val Asn Trp Leu Val Ala Lys Leu Ala Ala Arg
20 25 30

Ala Val Gly Ala Pro Gln Met His Leu Phe Thr Thr Leu Gly Tyr Arg
35 40 45

Gln Tyr Leu Phe Trp Thr Phe Ala Ile Tyr Thr Gly Arg Leu Leu His
50 55 60

Gly Arg Leu Pro Gly Val Asp Thr Glu Leu Val Ile Leu Arg Val Ala
65 70 75 80

His Leu Arg Ser Cys Glu Tyr Glu Leu Gln His His Arg Arg Met Ala
85 90 95

Arg Arg Arg Gly Leu Asp Ala Asn Thr Gln Ala Thr Ile Phe Ala Trp
100 105 110

Pro Asp Val Pro Asp Gly Asp Gly Pro Arg Lys Val Leu Ser Ala Arg
115 120 125

Gln Gln Ala Leu Leu Gln Ala Thr Asp Glu Leu Ile Lys Asp Arg Thr
130 135 140

Ile Thr Ala Gly Thr Trp Glu Arg Leu Ala Thr His Leu Asp Pro Arg
145 150 155 160

Leu Leu Ile Glu Phe Cys Leu Leu Ala Thr Gln Tyr Asp Ala Ile Ala
165 170 175

Ala Thr Ile Thr Ala Leu Ala Ile Pro Pro Asp Asn Pro Gln
180 185 190

<210> 396

<211> 264

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0466, H37Rv2.tab 556458:557249 forward MW:30153

<400> 396

```
Val Ser Leu Asp Lys Lys Leu Met Pro Val Pro Asp Gly His Pro Asp
1               5                  10                  15

Val Phe Asp Arg Glu Trp Pro Leu Arg Val Gly Asp Ile Asp Arg Ala
            20                  25                  30

Gly Arg Leu Arg Leu Asp Ala Ala Cys Arg His Ile Gln Asp Ile Gly
        35                  40                  45

Gln Asp Gln Leu Arg Glu Met Gly Phe Glu Glu Thr His Pro Leu Trp
    50                  55                  60

Ile Val Arg Arg Thr Met Val Asp Leu Ile Arg Pro Ile Glu Phe Gly
65                  70                  75                  80

Asp Met Leu Arg Cys Arg Arg Trp Cys Ser Gly Thr Ser Asn Arg Trp
                85                  90                  95

Cys Glu Met Arg Val Arg Val Asp Gly Arg Lys Gly Gly Leu Ile Glu
            100                 105                 110

Ser Glu Ala Phe Trp Ile His Val Asn Arg Glu Thr Glu Met Pro Ala
        115                 120                 125

Arg Ile Ala Asp Asp Phe Leu Ala Gly Leu His Arg Thr Thr Ser Val
    130                 135                 140

Asp Arg Leu Arg Trp Lys Gly Tyr Leu Lys Pro Gly Ser Arg Asp Asp
145                 150                 155                 160

Ala Ser Glu Ile His Glu Phe Pro Val Arg Val Thr Asp Ile Asp Leu
                165                 170                 175

Phe Asp His Met Asn Asn Ala Val Tyr Trp Ser Val Ile Glu Asp Tyr
            180                 185                 190

Leu Ala Ser His Ala Glu Leu Leu Arg Gly Pro Leu Arg Val Thr Ile
        195                 200                 205

Glu His Glu Ala Pro Val Ala Leu Gly Asp Lys Leu Glu Ile Ile Ser
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210 215 220

His Val His Pro Ala Gly Ser Thr Glu Ile Phe Gly Pro Gly Leu Val
225 230 235 240

Asp Arg Ala Val Thr Thr Leu Thr Tyr Val Val Gly Asp Glu Pro Lys
245 250 255

Ala Val Ala Ser Leu Phe Asn Leu
260

<210> 397

<211> 87

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0476, H37Rv2.tab 566508:566768 forward MW:9166

<400> 397

Met Leu Val Leu Leu Val Ala Val Leu Val Thr Ala Val Tyr Ala Phe
1 5 10 15

Val His Ala Ala Leu Gln Arg Pro Asp Ala Tyr Thr Ala Ala Asp Lys
20 25 30

Leu Thr Lys Pro Val Trp Leu Val Ile Leu Gly Ala Ala Val Ala Leu
35 40 45

Ala Ser Ile Leu Tyr Pro Val Leu Gly Val Leu Gly Met Ala Met Ser
50 55 60

Ala Cys Ala Ser Gly Val Tyr Leu Val Asp Val Arg Pro Lys Leu Leu
65 70 75 80

Glu Ile Gln Gly Lys Ser Arg
85

<210> 398

<211> 148

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0477, H37Rv2.tab 566776:567219 forward MW:15658

<400> 398

Met Lys Ala Leu Val Ala Val Ser Ala Val Ala Val Val Ala Leu Leu
1 5 10 15

Gly Val Ser Ser Ala Gln Ala Asp Pro Glu Ala Asp Pro Gly Ala Gly
20 25 30

Glu Ala Asn Tyr Gly Gly Pro Pro Ser Ser Pro Arg Leu Val Asp His
35 40 45

Thr Glu Trp Ala Gln Trp Gly Ser Leu Pro Ser Leu Arg Val Tyr Pro
50 55 60

Ser Gln Val Gly Arg Thr Ala Ser Arg Arg Leu Gly Met Ala Ala Ala
65 70 75 80

Asp Ala Ala Trp Ala Glu Val Leu Ala Leu Ser Pro Glu Ala Asp Thr
85 90 95

Ala Gly Met Arg Ala Gln Phe Ile Cys His Trp Gln Tyr Ala Glu Ile
100 105 110

Arg Gln Pro Gly Lys Pro Ser Trp Asn Leu Glu Pro Trp Arg Pro Val
115 120 125

Val Asp Asp Ser Glu Met Leu Ala Ser Gly Cys Asn Pro Gly Ser Pro
130 135 140

Glu Glu Ser Phe
145

<210> 399

<211> 348

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0479c, H37Rv2.tab 567924:568967 reverse MW:37016

<400> 399

Val Thr Asn Pro Gln Gly Pro Pro Asn Asp Pro Ser Pro Trp Ala Arg
1 5 10 15

```
Pro Gly Asp Gln Gly Pro Leu Ala Arg Pro Pro Ala Ser Ser Glu Ala
            20                  25                  30

Ser Thr Gly Arg Leu Arg Pro Gly Glu Pro Ala Gly His Ile Gln Glu
        35                  40                  45

Pro Val Ser Pro Pro Thr Gln Pro Glu Gln Gln Pro Gln Thr Glu His
    50                  55                  60

Leu Ala Ala Ser His Ala His Thr Arg Arg Ser Gly Arg Gln Ala Ala
65                  70                  75                  80

His Gln Ala Trp Asp Pro Thr Gly Leu Leu Ala Ala Gln Glu Glu Glu
                85                  90                  95

Pro Ala Ala Val Lys Thr Lys Arg Arg Ala Arg Arg Asp Pro Leu Thr
            100                 105                 110

Val Phe Leu Val Leu Ile Ile Val Phe Ser Leu Val Leu Ala Gly Leu
        115                 120                 125

Ile Gly Gly Glu Leu Tyr Ala Arg His Val Ala Asn Ser Lys Val Ala
    130                 135                 140

Gln Ala Val Ala Cys Val Val Lys Asp Gln Ala Thr Ala Ser Phe Gly
145                 150                 155                 160

Val Ala Pro Leu Leu Leu Trp Gln Val Ala Thr Arg His Phe Thr Asn
                165                 170                 175

Ile Ser Val Glu Thr Ala Gly Asn Gln Ile Arg Asp Ala Lys Gly Met
            180                 185                 190

Gln Ile Lys Leu Thr Ile Gln Asn Val Arg Leu Lys Asn Thr Pro Asn
        195                 200                 205

Ser Arg Gly Thr Ile Gly Ala Leu Asp Ala Thr Ile Thr Trp Ser Ser
    210                 215                 220

Glu Gly Ile Lys Glu Ser Val Gln Asn Ala Ile Pro Ile Leu Gly Ala
225                 230                 235                 240

Phe Val Thr Ser Ser Val Val Thr His Pro Ala Asp Gly Thr Val Glu
                245                 250                 255

Leu Lys Gly Leu Leu Asn Asn Ile Thr Ala Lys Pro Ile Val Ala Gly
            260                 265                 270

Lys Gly Leu Glu Leu Gln Ile Ile Asn Phe Asn Thr Leu Gly Phe Ser
        275                 280                 285

Leu Pro Lys Glu Thr Val Gln Ser Thr Leu Asn Glu Phe Thr Ser Ser
    290                 295                 300

Leu Thr Lys Asn Tyr Pro Leu Gly Ile His Ala Asp Ser Val Gln Val
305                 310                 315                 320

Thr Ser Thr Gly Val Val Ser Arg Phe Ser Thr Arg Asp Ala Ala Ile
                325                 330                 335

Pro Thr Gly Ile Gln Asn Pro Cys Phe Ser His Ile
```

340 345

<210> 400

<211> 451

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0483, H37Rv2.tab 571710:573062 forward MW:47858

<400> 400

Val Val Ile Arg Val Leu Phe Arg Pro Val Ser Leu Ile Pro Val Asn
1 5 10 15

Asn Ser Ser Thr Pro Gln Ser Gln Gly Pro Ile Ser Arg Arg Leu Ala
20 25 30

Leu Thr Ala Leu Gly Phe Gly Val Leu Ala Pro Asn Val Leu Val Ala
35 40 45

Cys Ala Gly Lys Val Thr Lys Leu Ala Glu Lys Arg Pro Pro Pro Ala
50 55 60

Pro Arg Leu Thr Phe Arg Pro Ala Asp Ser Ala Ala Asp Val Val Pro
65 70 75 80

Ile Ala Pro Ile Ser Val Glu Val Gly Asp Gly Trp Phe Gln Arg Val
85 90 95

Ala Leu Thr Asn Ser Ala Gly Lys Val Val Ala Gly Ala Tyr Ser Arg
100 105 110

Asp Arg Thr Ile Tyr Thr Ile Thr Glu Pro Leu Gly Tyr Asp Thr Thr
115 120 125

Tyr Thr Trp Ser Gly Ser Ala Val Gly His Asp Gly Lys Ala Val Pro
130 135 140

Val Ala Gly Lys Phe Thr Thr Val Ala Pro Val Lys Thr Ile Asn Ala
145 150 155 160

Gly Phe Gln Leu Ala Asp Gly Gln Thr Val Gly Ile Ala Ala Pro Val
165 170 175

Ile Ile Gln Phe Asp Ser Pro Ile Ser Asp Lys Ala Ala Val Glu Arg
180 185 190

Ala Leu Thr Val Thr Thr Asp Pro Pro Val Glu Gly Gly Trp Ala Trp
195 200 205

Leu Pro Asp Glu Ala Gln Gly Ala Arg Val His Trp Arg Pro Arg Glu
210 215 220

Tyr Tyr Pro Ala Gly Thr Thr Val Asp Val Asp Ala Lys Leu Tyr Gly
225 230 235 240

Leu Pro Phe Gly Asp Gly Ala Tyr Gly Ala Gln Asp Met Ser Leu His
245 250 255

Phe Gln Ile Gly Arg Arg Gln Val Val Lys Ala Glu Val Ser Ser His
260 265 270

Arg Ile Gln Val Val Thr Asp Ala Gly Val Ile Met Asp Phe Pro Cys
275 280 285

Ser Tyr Gly Glu Ala Asp Leu Ala Arg Asn Val Thr Arg Asn Gly Ile
290 295 300

His Val Val Thr Glu Lys Tyr Ser Asp Phe Tyr Met Ser Asn Pro Ala
305 310 315 320

Ala Gly Tyr Ser His Ile His Glu Arg Trp Ala Val Arg Ile Ser Asn
325 330 335

Asn Gly Glu Phe Ile His Ala Asn Pro Met Ser Ala Gly Ala Gln Gly
340 345 350

Asn Ser Asn Val Thr Asn Gly Cys Ile Asn Leu Ser Thr Glu Asn Ala
355 360 365

Glu Gln Tyr Tyr Arg Ser Ala Val Tyr Gly Asp Pro Val Glu Val Thr
370 375 380

Gly Ser Ser Ile Gln Leu Ser Tyr Ala Asp Gly Asp Ile Trp Asp Trp
385 390 395 400

Ala Val Asp Trp Asp Thr Trp Val Ser Met Ser Ala Leu Pro Pro Pro
405 410 415

Ala Ala Lys Pro Ala Ala Thr Gln Ile Pro Val Thr Ala Pro Val Thr
420 425 430

Pro Ser Asp Ala Pro Thr Pro Ser Gly Thr Pro Thr Thr Thr Asn Gly
435 440 445

Pro Gly Gly
450

<210> 401

<211> 183

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0487, H37Rv2.tab 576787:577335 forward MW:20684

<400> 401

Val Thr Ser Ser Leu Pro Thr Val Gln Arg Val Ile Gln Asn Ala Leu
1 5 10 15

Glu Val Ser Gln Leu Lys Tyr Ser Gln His Pro Arg Pro Gly Gly Ala
20 25 30

Pro Pro Ala Leu Ile Val Glu Leu Pro Gly Glu Arg Lys Leu Lys Ile
35 40 45

Asn Thr Ile Leu Ser Val Gly Glu His Ser Val Arg Val Glu Ala Phe
50 55 60

Val Cys Arg Lys Pro Asp Glu Asn Arg Glu Asp Val Tyr Arg Phe Leu
65 70 75 80

Leu Arg Arg Asn Arg Arg Leu Tyr Gly Val Ala Tyr Thr Leu Asp Asn
85 90 95

Val Gly Asp Ile Tyr Leu Val Gly Gln Met Ala Leu Ser Ala Val Asp
100 105 110

Ala Asp Glu Val Asp Arg Val Leu Gly Gln Val Leu Glu Val Val Asp
115 120 125

Ser Asp Phe Asn Ala Leu Leu Glu Leu Gly Phe Arg Ser Ser Ile Gln
130 135 140

Arg Glu Trp Gln Trp Arg Leu Ser Arg Gly Glu Ser Leu Gln Asn Leu
145 150 155 160

Gln Ala Phe Ala His Leu Arg Pro Thr Thr Met Gln Ser Ala Gln Arg
165 170 175

Asp Glu Lys Glu Leu Gly Gly
180

<210> 402

<211> 296

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0495c, H37Rv2.tab 585427:586314 reverse MW:32960

<400> 402

```
Val Trp Arg Pro Ala Gln Gly Ala Arg Trp His Val Pro Ala Val Leu
1               5                  10                  15

Gly Tyr Gly Gly Ile Pro Arg Arg Ala Ser Trp Ser Asn Val Glu Ser
            20                  25                  30

Val Ala Asn Ser Arg Arg Arg Pro Val His Pro Gly Gln Glu Val Glu
        35                  40                  45

Leu Asp Phe Ala Arg Glu Trp Val Glu Phe Tyr Asp Pro Asp Asn Pro
    50                  55                  60

Glu His Leu Ile Ala Ala Asp Leu Thr Trp Leu Leu Ser Arg Trp Ala
65                  70                  75                  80

Cys Val Phe Gly Thr Pro Ala Cys Gln Gly Thr Val Ala Gly Arg Pro
                85                  90                  95

Asn Asp Gly Cys Cys Ser His Gly Ala Phe Leu Ser Asp Asp Asp Asp
            100                 105                 110

Arg Thr Arg Leu Ala Asp Ala Val His Lys Leu Thr Asp Asp Asp Trp
        115                 120                 125

Gln Phe Arg Ala Lys Gly Leu Arg Arg Lys Gly Tyr Leu Glu Leu Asp
    130                 135                 140

Glu His Asp Gly Gln Pro Gln His Arg Thr Arg Lys His Lys Gly Ala
145                 150                 155                 160

Cys Ile Phe Leu Asn Arg Pro Gly Phe Ala Gly Gly Ala Gly Cys Ala
                165                 170                 175

Leu His Ser Lys Ala Leu Lys Leu Gly Val Pro Pro Leu Thr Met Lys
            180                 185                 190

Pro Asp Val Cys Trp Gln Leu Pro Ile Arg Arg Ser Gln Glu Trp Val
        195                 200                 205

Thr Arg Pro Asp Gly Thr Glu Ile Leu Lys Thr Thr Leu Thr Glu Tyr
    210                 215                 220

Asp Arg Arg Gly Trp Gly Ser Gly Gly Ala Asp Leu His Trp Tyr Cys
225                 230                 235                 240

Thr Gly Asp Pro Ala Ala His Val Gly Thr Lys Gln Val Trp Gln Ser
                245                 250                 255

Leu Ala Asp Glu Leu Thr Glu Leu Leu Gly Glu Lys Ala Tyr Gly Glu
            260                 265                 270

Leu Ala Ala Met Cys Lys Arg Arg Ser Gln Leu Gly Leu Ile Ala Val
        275                 280                 285

His Pro Ala Thr Arg Ala Ala Gln
    290                 295
```

<210> 403

<211> 310

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0497, H37Rv2.tab 587377:588306 forward MW:33092

<400> 403

Met Thr Gly Pro His Pro Glu Thr Glu Ser Ser Gly Asn Arg Gln Ile
1 5 10 15

Ser Val Ala Glu Leu Leu Ala Arg Gln Gly Val Thr Gly Ala Pro Ala
20 25 30

Arg Arg Arg Arg Arg Arg Arg Gly Asp Ser Asp Ala Ile Thr Val Ala
35 40 45

Glu Leu Thr Gly Glu Ile Pro Ile Ile Arg Asp Asp His His His Ala
50 55 60

Gly Pro Asp Ala His Ala Ser Gln Ser Pro Ala Ala Asn Gly Arg Val
65 70 75 80

Gln Val Gly Glu Ala Ala Pro Gln Ser Pro Ala Glu Pro Val Ala Glu
85 90 95

Gln Val Ala Glu Glu Pro Thr Arg Thr Val Tyr Trp Ser Gln Pro Glu
100 105 110

Pro Arg Trp Pro Lys Ser Pro Pro Gln Asp Arg Arg Glu Ser Gly Pro
115 120 125

Glu Leu Ser Glu Tyr Pro Arg Pro Leu Arg His Thr His Ser Asp Arg
130 135 140

Ala Pro Ala Gly Pro Pro Ser Gly Ala Glu His Met Ser Pro Asp Pro
145 150 155 160

Val Glu His Tyr Pro Asp Leu Trp Val Asp Val Leu Asp Thr Glu Val
165 170 175

Gly Glu Ala Glu Ala Glu Thr Glu Val Arg Glu Ala Gln Pro Gly Arg
180 185 190

Gly Glu Arg His Ala Ala Ala Ala Ala Ala Gly Thr Asp Val Glu Gly
195 200 205

Asp Gly Ala Ala Glu Ala Arg Val Ala Arg Arg Ala Leu Asp Val Val
210 215 220

Pro Thr Leu Trp Arg Gly Ala Leu Val Val Leu Gln Ser Ile Leu Ala
225 230 235 240

Val Ala Phe Gly Ala Gly Leu Phe Ile Ala Phe Asp Gln Leu Trp Arg
245 250 255

Trp Asn Ser Ile Val Ala Leu Val Leu Ser Val Met Val Ile Leu Gly
260 265 270

Leu Val Val Ser Val Arg Ala Val Arg Lys Thr Glu Asp Ile Ala Ser
275 280 285

Thr Leu Ile Ala Val Ala Val Gly Ala Leu Ile Thr Leu Gly Pro Leu
290 295 300

Ala Leu Leu Gln Ser Gly
305 310

<210> 404

<211> 280

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0498, H37Rv2.tab 588325:589164 forward MW:30433

<400> 404

Val Arg Pro Ala Ile Lys Val Gly Leu Ser Thr Ala Ser Val Tyr Pro
1 5 10 15

Leu Arg Ala Glu Ala Ala Phe Glu Tyr Ala Asp Arg Leu Gly Tyr Asp
20 25 30

Gly Val Glu Leu Met Val Trp Gly Glu Ser Val Ser Gln Asp Ile Asp
35 40 45

Ala Val Arg Lys Leu Ser Arg Arg Tyr Arg Val Pro Val Leu Ser Val
50 55 60

His Ala Pro Cys Leu Leu Ile Ser Gln Arg Val Trp Gly Ala Asn Pro
65 70 75 80

Ile Leu Lys Leu Asp Arg Ser Val Arg Ala Ala Glu Gln Leu Gly Ala
85 90 95

Gln Thr Val Val Val His Pro Pro Phe Arg Trp Gln Arg Arg Tyr Ala
100 105 110

Glu Gly Phe Ser Asp Gln Val Ala Ala Leu Glu Ala Ala Ser Thr Val

115 120 125

Met Val Ala Val Glu Asn Met Phe Pro Phe Arg Ala Asp Arg Phe Phe
130 135 140

Gly Ala Gly Gln Ser Arg Glu Arg Met Arg Lys Arg Gly Gly Gly Pro
145 150 155 160

Gly Pro Ala Ile Ser Ala Phe Ala Pro Ser Tyr Asp Pro Leu Asp Gly
165 170 175

Asn His Ala His Tyr Thr Leu Asp Leu Ser His Thr Ala Thr Ala Gly
180 185 190

Thr Asp Ser Leu Asp Met Ala Arg Arg Met Gly Pro Gly Leu Val His
195 200 205

Leu His Leu Cys Asp Gly Ser Gly Leu Pro Ala Asp Glu His Leu Val
210 215 220

Pro Gly Arg Gly Thr Gln Pro Thr Ala Glu Val Cys Gln Met Leu Ala
225 230 235 240

Gly Ser Gly Phe Val Gly His Val Val Leu Glu Val Ser Thr Ser Ser
245 250 255

Ala Arg Ser Ala Asn Glu Arg Glu Ser Met Leu Ala Glu Ser Leu Gln
260 265 270

Phe Ala Arg Thr His Leu Leu Arg
275 280

<210> 405

<211> 33

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0500B, H37Rv2.tab 591475:591573 forward MW:4145

<400> 405

Met Gly Ser Val Ile Lys Lys Arg Arg Lys Arg Met Ser Lys Lys Lys
1 5 10 15

His Arg Lys Leu Leu Arg Arg Thr Arg Val Gln Arg Arg Lys Leu Gly
20 25 30

Lys

<210> 406

<211> 166

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0504c, H37Rv2.tab 594805:595302 reverse MW:18360

<400> 406

```
Met Thr Val Pro Glu Glu Ala Gln Thr Leu Ile Gly Lys His Tyr Arg
1               5                  10                  15

Ala Pro Asp His Phe Leu Val Gly Arg Glu Lys Ile Arg Glu Phe Ala
            20                  25                  30

Val Ala Val Lys Asp Asp His Pro Thr His Tyr Ser Glu Pro Asp Ala
        35                  40                  45

Ala Ala Ala Gly Tyr Pro Ala Leu Val Ala Pro Leu Thr Phe Leu Ala
    50                  55                  60

Ile Ala Gly Arg Arg Val Gln Leu Glu Ile Phe Thr Lys Phe Asn Ile
65                  70                  75                  80

Pro Ile Asn Ile Ala Arg Val Phe His Arg Asp Gln Lys Phe Arg Phe
                85                  90                  95

His Arg Pro Ile Leu Ala Asn Asp Lys Leu Tyr Phe Asp Thr Tyr Leu
            100                 105                 110

Asp Ser Val Ile Glu Ser His Gly Thr Val Leu Ala Glu Ile Arg Ser
        115                 120                 125

Glu Val Thr Asp Ala Glu Gly Lys Pro Val Val Thr Ser Val Val Thr
    130                 135                 140

Met Leu Gly Glu Ala Ala His His Glu Ala Asp Ala Asp Ala Thr Val
145                 150                 155                 160

Ala Ala Ile Ala Ser Ile
                165
```

<210> 407

<211> 529

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0528, H37Rv2.tab 618305:619891 forward MW:57131

<400> 407

```
Met Trp Arg Ser Leu Thr Ser Met Gly Thr Ala Leu Val Leu Leu Phe
1               5                  10                  15

Leu Leu Ala Leu Ala Ala Ile Pro Gly Ala Leu Leu Pro Gln Arg Gly
            20                  25                  30

Leu Asn Ala Ala Lys Val Asp Asp Tyr Leu Ala Ala His Pro Leu Ile
        35                  40                  45

Gly Pro Trp Leu Asp Glu Leu Gln Ala Phe Asp Val Phe Ser Ser Phe
    50                  55                  60

Trp Phe Thr Ala Ile Tyr Val Leu Leu Phe Val Ser Leu Val Gly Cys
65                  70                  75                  80

Leu Ala Pro Arg Thr Ile Glu His Ala Arg Ser Leu Arg Ala Thr Pro
                85                  90                  95

Val Ala Ala Pro Arg Asn Leu Ala Arg Leu Pro Lys His Ala His Ala
            100                 105                 110

Arg Leu Ala Gly Glu Pro Ala Ala Leu Ala Ala Thr Ile Thr Gly Arg
        115                 120                 125

Leu Arg Gly Trp Arg Ser Ile Thr Arg Gln Gln Gly Asp Ser Val Glu
    130                 135                 140

Val Ser Ala Glu Lys Gly Tyr Leu Arg Glu Phe Gly Asn Leu Val Phe
145                 150                 155                 160

His Phe Ala Leu Leu Gly Leu Leu Val Ala Val Ala Val Gly Lys Leu
                165                 170                 175

Phe Gly Tyr Glu Gly Asn Val Ile Val Ile Ala Asp Gly Gly Pro Gly
            180                 185                 190

Phe Cys Ser Ala Ser Pro Ala Ala Phe Asp Ser Phe Arg Ala Gly Asn
        195                 200                 205

Thr Val Asp Gly Thr Ser Leu His Pro Ile Cys Val Arg Val Asn Asn
    210                 215                 220

Phe Gln Ala His Tyr Leu Pro Ser Gly Gln Ala Thr Ser Phe Ala Ala
225                 230                 235                 240

Asp Ile Asp Tyr Gln Ala Asp Pro Ala Thr Ala Asp Leu Ile Ala Asn
                245                 250                 255

Ser Trp Arg Pro Tyr Arg Leu Gln Val Asn His Pro Leu Arg Val Gly
```

260 265 270

Gly Asp Arg Val Tyr Leu Gln Gly His Gly Tyr Ala Pro Thr Phe Thr
275 280 285

Val Thr Phe Pro Asp Gly Gln Thr Arg Thr Ser Thr Val Gln Trp Arg
290 295 300

Pro Asp Asn Pro Gln Thr Leu Leu Ser Ala Gly Val Val Arg Ile Asp
305 310 315 320

Pro Pro Ala Gly Ser Tyr Pro Asn Pro Asp Glu Arg Arg Lys His Gln
325 330 335

Ile Ala Ile Gln Gly Leu Leu Ala Pro Thr Glu Gln Leu Asp Gly Thr
340 345 350

Leu Leu Ser Ser Arg Phe Pro Ala Leu Asn Ala Pro Ala Val Ala Ile
355 360 365

Asp Ile Tyr Arg Gly Asp Thr Gly Leu Asp Ser Gly Arg Pro Gln Ser
370 375 380

Leu Phe Thr Leu Asp His Arg Leu Ile Glu Gln Gly Arg Leu Val Lys
385 390 395 400

Glu Lys Arg Val Asn Leu Arg Ala Gly Gln Gln Val Arg Ile Asp Gln
405 410 415

Gly Pro Ala Ala Gly Thr Val Val Arg Phe Asp Gly Ala Val Pro Phe
420 425 430

Val Asn Leu Gln Val Ser His Asp Pro Gly Gln Ser Trp Val Leu Val
435 440 445

Phe Ala Ile Thr Met Met Ala Gly Leu Leu Val Ser Leu Leu Val Arg
450 455 460

Arg Arg Arg Val Trp Ala Arg Ile Thr Pro Thr Thr Ala Gly Thr Val
465 470 475 480

Asn Val Glu Leu Gly Gly Leu Thr Arg Thr Asp Asn Ser Gly Trp Gly
485 490 495

Ala Glu Phe Glu Arg Leu Thr Gly Arg Leu Leu Ala Gly Phe Glu Ala
500 505 510

Arg Ser Pro Asp Met Ala Glu Ala Ala Ala Gly Thr Gly Arg Asp Val
515 520 525

Asp

<210> 408

<211> 105

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0531, H37Rv2.tab 622329:622643 forward MW:11436

<400> 408

Val Ser Glu Ala Pro Asn Asp Lys Thr Thr Arg Gly Val Val Asp Ile
1 5 10 15

Leu Val Tyr Ala Thr Ala Arg Leu Leu Leu Val Val Ala Val Ser Ala
20 25 30

Ala Ile Phe Gly Val Ala Arg Leu Ile Gly Leu Thr Glu Phe Pro Val
35 40 45

Val Val Ala Thr Leu Phe Gly Leu Ile Ile Ala Met Pro Leu Gly Ile
50 55 60

Trp Val Phe Ser Pro Leu Arg Arg Arg Ala Thr Ala Ala Leu Ala Val
65 70 75 80

Ala Gly Glu Arg Arg Arg Ala Glu Arg Glu Arg Leu Arg Ala Arg Leu
85 90 95

Arg Gly Glu Ser Leu Pro Glu Glu Gln
100 105

<210> 409

<211> 100

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0543c, H37Rv2.tab 635576:635875 reverse MW:11279

<400> 409

Val Asn Arg Phe Leu Thr Ser Ile Val Ala Trp Leu Arg Ala Gly Tyr
1 5 10 15

Pro Glu Gly Ile Pro Pro Thr Asp Ser Phe Ala Val Leu Ala Leu Leu
20 25 30

Cys Arg Arg Leu Ser His Asp Glu Val Lys Ala Val Ala Asn Glu Leu
35 40 45

Met Arg Leu Gly Asp Phe Asp Gln Ile Asp Ile Gly Val Val Ile Thr
50 55 60

His Phe Thr Asp Glu Leu Pro Ser Pro Glu Asp Val Glu Arg Val Arg
65 70 75 80

Ala Arg Leu Ala Ala Gln Gly Trp Pro Leu Asp Asp Val Arg Asp Arg
85 90 95

Glu Glu His Ala
100

<210> 410

<211> 92

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0544c, H37Rv2.tab 635938:636213 reverse MW:9747

<400> 410

Val Ser Ala Trp Phe Asn Tyr Thr Ala Thr Leu Lys Ile Leu Ile Phe
1 5 10 15

Ser Leu Leu Ala Gly Ala Leu Leu Pro Gly Leu Phe Ala Val Gly Val
20 25 30

Arg Leu Gln Ala Ala Gly Asp Gly Ala Asp Ala Thr Ala Arg Arg Arg
35 40 45

Pro Leu Leu Val Ala Val Ser Trp Ala Ile Phe Ala Leu Val Leu Ala
50 55 60

Val Val Ile Ile Gly Val Leu Tyr Ile Ala Arg Asp Phe Ile Ala His
65 70 75 80

His Thr Gly Trp Ala Phe Leu Gly Ala Thr Pro Lys
85 90

<210> 411

<211> 128

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0546c, H37Rv2.tab 637586:637969 reverse MW:14346

<400> 411

Met Glu Ile Leu Ala Ser Arg Met Leu Leu Arg Pro Ala Asp Tyr Gln
1 5 10 15

Arg Ser Leu Ser Phe Tyr Arg Asp Gln Ile Gly Leu Ala Ile Ala Arg
20 25 30

Glu Tyr Gly Ala Gly Thr Val Phe Phe Ala Gly Gln Ser Leu Leu Glu
35 40 45

Leu Ala Gly Tyr Gly Glu Pro Asp His Ser Arg Gly Pro Phe Pro Gly
50 55 60

Ala Leu Trp Leu Gln Val Arg Asp Leu Glu Ala Thr Gln Thr Glu Leu
65 70 75 80

Val Ser Arg Gly Val Ser Ile Ala Arg Glu Pro Arg Arg Glu Pro Trp
85 90 95

Gly Leu His Glu Met His Val Thr Asp Pro Asp Gly Ile Thr Leu Ile
100 105 110

Phe Val Glu Val Pro Glu Gly His Pro Leu Arg Thr Asp Thr Arg Ala
115 120 125

<210> 412

<211> 171

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0556, H37Rv2.tab 647959:648471 forward MW:18725

<400> 412

Val Ile Ser Pro Lys Pro Leu Leu His Ile Leu Ile His Gly Leu Ser
1 5 10 15

Asp Glu Leu Pro Asp Thr Arg Gly Arg Ile Val Leu Arg Trp Leu Arg
20 25 30

Ile Ala Val Leu Ile Val Thr Gly Leu Val Thr Leu Gln Ser Val Leu

35 40 45

Leu Val Ala Gly Ala Trp Arg Asn Asp Ile Ala Ile Gln Arg Asn Met
50 55 60

Gly Val Ala Gln Ala Glu Val Leu Ser Ala Gly Pro Arg Arg Ser Thr
65 70 75 80

Ile Glu Phe Val Thr Pro Asp Arg Ile Thr Tyr Arg Pro Gln Leu Gly
85 90 95

Val Leu Tyr Pro Ser Glu Leu Ser Thr Gly Met Arg Ile Tyr Val Glu
100 105 110

Tyr Asn Lys Arg Asp Pro Asn Leu Val Arg Val Gln His Arg Asn Ala
115 120 125

Gly Leu Ala Ile Ile Pro Ala Gly Ser Ile Ala Val Val Ala Trp Leu
130 135 140

Ile Ala Ala Ala Ala Leu Val Val Leu Ala Val Leu Asp Lys Arg Leu
145 150 155 160

Glu Arg Arg Glu Asn Ser Ala Ser Ala Thr Gly
165 170

<210> 413

<211> 112

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0559c, H37Rv2.tab 650410:650745 reverse MW:12116

<400> 413

Met Lys Gly Thr Lys Leu Ala Val Val Val Gly Met Thr Val Ala Ala
1 5 10 15

Val Ser Leu Ala Ala Pro Ala Gln Ala Asp Asp Tyr Asp Ala Pro Phe
20 25 30

Asn Asn Thr Ile His Arg Phe Gly Ile Tyr Gly Pro Gln Asp Tyr Asn
35 40 45

Ala Trp Leu Ala Lys Ile Ser Cys Glu Arg Leu Ser Arg Gly Val Asp
50 55 60

Gly Asp Ala Tyr Lys Ser Ala Thr Phe Leu Gln Arg Asn Leu Pro Arg
65 70 75 80

Gly Thr Thr Gln Gly Gln Ala Phe Gln Phe Leu Gly Ala Ala Ile Asp
85 90 95

His Tyr Cys Pro Glu His Val Gly Val Leu Gln Arg Ala Gly Thr Arg
100 105 110

<210> 414

<211> 83

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0634A, H37Rv2.tab 731113:731364 forward MW:9408

<400> 414

Leu Gly Ser Asp Cys Gly Cys Gly Gly Tyr Leu Trp Ser Met Leu Lys
1 5 10 15

Arg Val Glu Ile Glu Val Asp Asp Asp Leu Ile Gln Lys Val Ile Arg
20 25 30

Arg Tyr Arg Val Lys Gly Ala Arg Glu Ala Val Asn Leu Ala Leu Arg
35 40 45

Thr Leu Leu Gly Glu Ala Asp Thr Ala Glu His Gly His Asp Asp Glu
50 55 60

Tyr Asp Glu Phe Ser Asp Pro Asn Ala Trp Val Pro Arg Arg Ser Arg
65 70 75 80

Asp Thr Gly

<210> 415

<211> 158

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0635, H37Rv2.tab 731930:732403 forward MW:17448

<400> 415

Val Ala Leu Ser Ala Asp Ile Val Gly Met His Tyr Arg Tyr Pro Asp
1 5 10 15

His Tyr Glu Val Glu Arg Glu Lys Ile Arg Glu Tyr Ala Val Ala Val
20 25 30

Gln Asn Asp Asp Ala Trp Tyr Phe Glu Glu Asp Gly Ala Ala Glu Leu
35 40 45

Gly Tyr Lys Gly Leu Leu Ala Pro Leu Thr Phe Ile Cys Val Phe Gly
50 55 60

Tyr Lys Ala Gln Ala Ala Phe Phe Lys His Ala Asn Ile Ala Thr Ala
65 70 75 80

Glu Ala Gln Ile Val Gln Val Asp Gln Val Leu Lys Phe Glu Lys Pro
85 90 95

Ile Val Ala Gly Asp Lys Leu Tyr Cys Asp Val Tyr Val Asp Ser Val
100 105 110

Arg Glu Ala His Gly Thr Gln Ile Ile Val Thr Lys Asn Ile Val Thr
115 120 125

Asn Glu Glu Gly Asp Leu Val Gln Glu Thr Tyr Thr Thr Leu Ala Gly
130 135 140

Arg Ala Gly Glu Asp Gly Glu Gly Phe Ser Asp Gly Ala Ala
145 150 155

<210> 416

<211> 142

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0636, H37Rv2.tab 732393:732818 forward MW:14934

<400> 416

Met Ala Leu Arg Glu Phe Ser Ser Val Lys Val Gly Asp Gln Leu Pro
1 5 10 15

Glu Lys Thr Tyr Pro Leu Thr Arg Gln Asp Leu Val Asn Tyr Ala Gly
20 25 30

Val Ser Gly Asp Leu Asn Pro Ile His Trp Asp Asp Glu Ile Ala Lys

35 40 45

Val Val Gly Leu Asp Thr Ala Ile Ala His Gly Met Leu Thr Met Gly
50 55 60

Ile Gly Gly Gly Tyr Val Thr Ser Trp Val Gly Asp Pro Gly Ala Val
65 70 75 80

Thr Glu Tyr Asn Val Arg Phe Thr Ala Val Val Pro Val Pro Asn Asp
85 90 95

Gly Lys Gly Ala Glu Leu Val Phe Asn Gly Arg Val Lys Ser Val Asp
100 105 110

Pro Glu Ser Lys Ser Val Thr Ile Ala Leu Thr Ala Thr Thr Gly Gly
115 120 125

Lys Lys Ile Phe Gly Arg Ala Ile Ala Ser Ala Lys Leu Ala
130 135 140

<210> 417

<211> 166

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0637, H37Rv2.tab 732825:733322 forward MW:18929

<400> 417

Met Ala Leu Lys Thr Asp Ile Arg Gly Met Ile Trp Arg Tyr Pro Asp
1 5 10 15

Tyr Phe Ile Val Gly Arg Glu Gln Cys Arg Glu Phe Ala Arg Ala Val
20 25 30

Lys Cys Asp His Pro Ala Phe Phe Ser Glu Glu Ala Ala Ala Asp Leu
35 40 45

Gly Tyr Asp Ala Leu Val Ala Pro Leu Thr Phe Val Thr Ile Leu Ala
50 55 60

Lys Tyr Val Gln Leu Asp Phe Phe Arg His Val Asp Val Gly Met Glu
65 70 75 80

Thr Met Gln Ile Val Gln Val Asp Gln Arg Phe Val Phe His Lys Pro
85 90 95

Val Leu Ala Gly Asp Lys Leu Trp Ala Arg Met Asp Ile His Ser Val
100 105 110

Asp Glu Arg Phe Gly Ala Asp Ile Val Val Thr Arg Asn Leu Cys Thr
115 120 125

Asn Asp Asp Gly Glu Leu Val Met Glu Ala Tyr Thr Thr Leu Met Gly
130 135 140

Gln Gln Gly Asp Gly Ser Ala Arg Leu Lys Trp Asp Lys Glu Ser Gly
145 150 155 160

Gln Val Ile Arg Thr Ala
165

<210> 418

<211> 206

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0779c, H37Rv2.tab 872675:873292 reverse MW:21572

<400> 418

Met Arg Ser Arg Phe Leu Pro Tyr Ala Thr Thr Pro Gly Arg Leu Leu
1 5 10 15

Ala Gln Leu Ile Ser Asp Ile Thr Val Ala Val Trp Thr Thr Leu Trp
20 25 30

Met Leu Val Gly Leu Ala Val His Asp Ala Ile Ser Ile Ile Gly Glu
35 40 45

Ala Gly Arg Gln Ile Glu Ile Gly Ser His Gly Ile Ala Gly Asn Leu
50 55 60

Ala Ala Ala Gly Gln Asp Ala Gln Arg Ile Pro Val Val Gly Asp Ala
65 70 75 80

Leu Ser Asn Pro Ile Thr Ala Ala Ser Gln Ala Ala Leu Asp Ile Ala
85 90 95

Gly Ala Gly His Asn Leu Asp Thr Thr Ala Gly Trp Leu Ala Val Val
100 105 110

Leu Ala Leu Ala Val Ala Ala Thr Pro Ile Leu Ala Val Ala Met Pro
115 120 125

Trp Leu Phe Leu Arg Leu Arg Phe Cys Arg Arg Lys Trp Thr Val Thr
130 135 140

Thr Leu Ala Ala Thr Pro Ala Gly Arg Gln Leu Leu Ala Leu Arg Ala
145 150 155 160

Leu Ala Asn Arg Pro Pro Gly Lys Leu Ala Ala Val Ser Thr Asp Pro
165 170 175

Val Gly Ala Trp Arg Arg Glu Asp Pro Ala Thr Met Arg Ala Leu Ala
180 185 190

Ala Leu Glu Leu Arg Ala Ala Gly Ile Pro Leu Arg Gly Asp
195 200 205

<210> 419

<211> 129

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0807, H37Rv2.tab 901635:902021 forward MW:13480

<400> 419

Met Ser Ala Arg Asp Arg Val Asp Pro Ala Lys Thr Arg Gln Val Val
1 5 10 15

Leu Ala Leu Ala Asp Trp Leu Arg Asp Glu Thr Leu Pro Ala Pro Asp
20 25 30

Thr Asp Val Leu Ala Ala Ala Val Arg Leu Thr Ala Arg Thr Leu Ala
35 40 45

Ala Leu Ala Pro Gly Ala Ser Val Glu Val Arg Ile Pro Pro Phe Ala
50 55 60

Ala Val Gln Cys Ile Ser Gly Pro Arg His Thr Arg Gly Thr Pro Pro
65 70 75 80

Asn Val Val Gln Thr Asp Pro Arg Thr Trp Leu Leu Val Ala Thr Gly
85 90 95

Leu Ser Gly Val Ala Gln Ala Arg Gly Ser Gly Ala Leu Gln Leu Ser
100 105 110

Gly Ser Arg Ala Gly Glu Ile Glu Ala Trp Leu Pro Leu Val Asp Leu
115 120 125

Gly

<210> 420

<211> 60

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0810c, H37Rv2.tab 904908:905087 reverse MW:6900

<400> 420

Met Gly Arg Gly Arg Ala Lys Ala Lys Gln Thr Lys Val Ala Arg Glu
1 5 10 15

Leu Lys Tyr Ser Ser Pro Gln Thr Asp Phe Gln Arg Leu Gln Arg Glu
20 25 30

Leu Ser Gly Thr Gly Thr Asp Arg Leu Asp Gly Asp Gly Pro Ser Asp
35 40 45

Asp Asp Ser Trp Asn Asp Glu Asp Asp Trp Arg Arg
50 55 60

<210> 421

<211> 226

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0813c, H37Rv2.tab 907341:908018 reverse MW:23868

<400> 421

Val Ser Ser Gly Ala Gly Ser Asp Ala Thr Gly Ala Gly Gly Val His
1 5 10 15

Ala Ala Gly Ser Gly Asp Arg Ala Val Ala Ala Ala Val Glu Arg Ala
20 25 30

Lys Ala Thr Ala Ala Arg Asn Ile Pro Ala Phe Asp Asp Leu Pro Val
35 40 45

Pro Ala Asp Thr Ala Asn Leu Arg Glu Gly Ala Asp Leu Asn Asn Ala
50 55 60

Leu Leu Ala Leu Leu Pro Leu Val Gly Val Trp Arg Gly Glu Gly Glu

65 70 75 80

Gly Arg Gly Pro Asp Gly Asp Tyr Arg Phe Gly Gln Gln Ile Val Val
85 90 95

Ser His Asp Gly Gly Asp Tyr Leu Asn Trp Glu Ser Arg Ser Trp Arg
100 105 110

Leu Thr Ala Thr Gly Asp Tyr Gln Glu Pro Gly Leu Arg Glu Ala Gly
115 120 125

Phe Trp Arg Phe Val Ala Asp Pro Tyr Asp Pro Ser Glu Ser Gln Ala
130 135 140

Ile Glu Leu Leu Leu Ala His Ser Ala Gly Tyr Val Glu Leu Phe Tyr
145 150 155 160

Gly Arg Pro Arg Thr Gln Ser Ser Trp Glu Leu Val Thr Asp Ala Leu
165 170 175

Ala Arg Ser Arg Ser Gly Val Leu Val Gly Gly Ala Lys Arg Leu Tyr
180 185 190

Gly Ile Val Glu Gly Gly Asp Leu Ala Tyr Val Glu Glu Arg Val Asp
195 200 205

Ala Asp Gly Gly Leu Val Pro His Leu Ser Ala Arg Leu Ser Arg Phe
210 215 220

Val Gly
225

<210> 422

<211> 270

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0817c, H37Rv2.tab 910033:910842 reverse MW:28567

<400> 422

Met Pro Met Arg Lys Val Leu Val Gly Val Thr Gly Ala Ala Ile Val
1 5 10 15

Val Ala Val Leu Ile Val Gly Ala Val Gly Ala Asp Phe Gly Ala Ser
20 25 30

Ile Tyr Ala Glu Tyr Arg Leu Ser Thr Thr Val Arg Lys Ala Ala Asn
35 40 45

Leu Arg Ser Asp Pro Phe Val Ala Ile Leu Arg Phe Pro Phe Ile Pro
50 55 60

Gln Ala Met Arg Glu His Tyr Ala Glu Leu Glu Ile Lys Ala Phe Ala
65 70 75 80

Val Glu His Ala Gly Ser Gly Thr Ala Thr Leu Glu Ala Thr Met His
85 90 95

Ser Ile Asp Leu Ser Tyr Ala Ser Trp Leu Ile Arg Pro Asp Ala Lys
100 105 110

Leu Pro Val Gly Glu Leu Glu Ser Arg Ile Ile Ile Asp Ser Met His
115 120 125

Leu Gly Arg Tyr Leu Gly Ile Ser Asp Leu Met Val Ala Ala Pro Arg
130 135 140

Gln Glu Ser Asn Asp Ala Thr Gly Gly Thr Thr Glu Ser Gly Ile Ser
145 150 155 160

Gly Ser Arg Gly Leu Val Phe Ser Gly Thr Pro Ile Ser Ala Asn Phe
165 170 175

Ala His Arg Val Ser Val Leu Val Asp Leu Ser Val Ala Ser Asp Asp
180 185 190

Arg Ala Thr Leu Val Ile Thr Pro Thr Ala Val Val Thr Gly Pro Asp
195 200 205

Thr Ala Asp Gln Pro Val Pro Asp Asp Lys Arg Asp Ala Val Leu His
210 215 220

Ala Phe Ala Ser Lys Leu Pro Asn Gln Lys Leu Pro Phe Gly Val Val
225 230 235 240

Pro Asn Thr Val Gly Ala Arg Gly Ser Asp Val Ile Ile Glu Gly Ile
245 250 255

Thr Arg Gly Val Thr Ile Ser Leu Asp Glu Phe Lys Gln Ser
260 265 270

<210> 423

<211> 315

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0819, H37Rv2.tab 911736:912680 forward MW:33567

<400> 423

```
Val Thr Ala Leu Asp Trp Arg Ser Ala Leu Thr Ala Asp Glu Gln Arg
1               5                  10                  15

Ser Val Arg Ala Leu Val Thr Ala Thr Thr Ala Val Asp Gly Val Ala
            20                  25                  30

Pro Val Gly Glu Gln Val Leu Arg Glu Leu Gly Gln Gln Arg Thr Glu
        35                  40                  45

His Leu Leu Val Ala Gly Ser Arg Pro Gly Gly Pro Ile Ile Gly Tyr
    50                  55                  60

Leu Asn Leu Ser Pro Pro Arg Gly Ala Gly Gly Ala Met Ala Glu Leu
65                  70                  75                  80

Val Val His Pro Gln Ser Arg Arg Arg Gly Ile Gly Thr Ala Met Ala
                85                  90                  95

Arg Ala Ala Leu Ala Lys Thr Ala Gly Arg Asn Gln Phe Trp Ala His
            100                 105                 110

Gly Thr Leu Asp Pro Ala Arg Ala Thr Ala Ser Ala Leu Gly Leu Val
        115                 120                 125

Gly Val Arg Glu Leu Ile Gln Met Arg Arg Pro Leu Arg Asp Ile Pro
    130                 135                 140

Glu Pro Thr Ile Pro Asp Gly Val Val Ile Arg Thr Tyr Ala Gly Thr
145                 150                 155                 160

Ser Asp Asp Ala Glu Leu Leu Arg Val Asn Asn Ala Ala Phe Ala Gly
                165                 170                 175

His Pro Glu Gln Gly Gly Trp Thr Ala Val Gln Leu Ala Glu Arg Arg
            180                 185                 190

Gly Glu Ala Trp Phe Asp Pro Asp Gly Leu Ile Leu Ala Phe Gly Asp
        195                 200                 205

Ser Pro Arg Glu Arg Pro Gly Arg Leu Leu Gly Phe His Trp Thr Lys
    210                 215                 220

Val His Pro Asp His Pro Gly Leu Gly Glu Val Tyr Val Leu Gly Val
225                 230                 235                 240

Asp Pro Ala Ala Gln Arg Arg Gly Leu Gly Gln Met Leu Thr Ser Ile
                245                 250                 255

Gly Ile Val Ser Leu Ala Arg Arg Leu Gly Gly Arg Lys Thr Leu Asp
            260                 265                 270

Pro Ala Val Glu Pro Ala Val Leu Leu Tyr Val Glu Ser Asp Asn Val
        275                 280                 285

Ala Ala Val Arg Thr Tyr Gln Ser Leu Gly Phe Thr Thr Tyr Ser Val
    290                 295                 300

Asp Thr Ala Tyr Ala Leu Ala Gly Thr Asp Asn
305                 310                 315
```

<210> 424

<211> 756

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0862c, H37Rv2.tab 960345:962612 reverse MW:79667

<400> 424

```
Met Thr Glu His Thr Pro Asp Ile Pro Leu Gly Ser Trp Leu Ala Ala
1               5                  10                  15

Leu Pro Asp Glu Arg Leu Thr Gln Leu Leu Glu Leu Arg Pro Asp Leu
            20                  25                  30

Ala Gln Pro Pro Pro Gly Ser Ile Ala Ala Leu Ala Ala Arg Ala Gln
        35                  40                  45

Ala Arg Gln Ser Val Lys Ala Ala Thr Asp Glu Leu Asp Phe Leu Arg
    50                  55                  60

Leu Ala Val Phe Asp Ala Leu Leu Val Leu Gln Ala Asp Thr Ala Pro
65                  70                  75                  80

Val Pro Ile Val Arg Leu Leu Ala Val Ile Gly Asp Arg Ala Ala Gln
                85                  90                  95

Ala Asp Val Leu Gly Ala Leu Ala Asp Leu Lys Gln Arg Ala Leu Ala
            100                 105                 110

Trp Gly Glu Thr Ala Val Arg Val Ala Thr Asp Ala Gly Thr Ala Leu
        115                 120                 125

Pro Trp His Pro Gly Gln Val Thr Leu Glu Gly Ser Ser Arg Ser Gly
    130                 135                 140

Asp Gln Leu Ala Asp Leu Ile Ala Gly Leu Asp Pro Ala Gln Arg Asp
145                 150                 155                 160

Val Leu Asp Lys Leu Leu Gln Gly Ser Pro Val Gly Arg Thr Arg Asp
                165                 170                 175

Ala Ala Pro Gly Ala Pro Ser Asp Arg Pro Val Pro Arg Leu Leu Ala
            180                 185                 190

Met Gly Leu Leu Arg Arg Ile Asp Ala Glu Thr Val Ile Leu Pro Arg
        195                 200                 205

His Val Gly Gln Val Leu Arg Gly Glu Gln Pro Gly Pro Met Glu Leu
    210                 215                 220
```

```
Thr Ala Pro Asp Pro Val Val Ser Thr Thr Thr Pro Asp Asp Ala Asp
225                 230                 235                 240

Ala Ala Ala Ala Gly Ala Val Ile Asp Leu Leu Arg Glu Val Asp Val
                245                 250                 255

Leu Leu Glu Asn Leu Gly Ala Thr Pro Val Ala Glu Leu Arg Ser Gly
            260                 265                 270

Gly Leu Gly Val Arg Glu Phe Lys Arg Leu Ala Lys Ala Thr Gly Ile
        275                 280                 285

Asp Glu Pro Arg Leu Gly Leu Ile Leu Glu Ile Ala Ala Ala Ala Gly
    290                 295                 300

Leu Ile Ala Ser Gly Met Pro Asp Pro Glu Pro Pro His Ser Asp Gly
305                 310                 315                 320

Pro Phe Trp Ala Pro Thr Val Ala Ala Asp Arg Phe Ala Thr Met Ser
                325                 330                 335

Pro Ala Glu Arg Trp His Leu Leu Ala Ser Ala Trp Leu Asp Leu Pro
            340                 345                 350

Gly Arg Pro Ala Leu Ile Gly Thr Arg Gly Pro Asp Ala Lys Pro Tyr
        355                 360                 365

Gly Ala Leu Ser Asp Ser Leu Phe Ser Thr Ala Ala Pro Leu Asp Arg
    370                 375                 380

Arg Leu Leu Leu Gly Met Leu Ala Glu Leu Pro Ala Gly Ala Gly Val
385                 390                 395                 400

Asp Ala Ser Arg Ala Ser Ala Thr Leu Ile Trp Arg Arg Pro Arg Trp
                405                 410                 415

Ala Arg Arg Leu Gln Pro Ala Pro Ile Ala Asp Leu Leu Thr Glu Gly
            420                 425                 430

His Ala Leu Gly Leu Val Gly Arg Gly Ala Ile Ser Thr Pro Ala Arg
        435                 440                 445

Ala Leu Leu Asp Glu Ala Leu Glu Pro Ala Thr Ala Pro Ala Ala Ala
    450                 455                 460

Val Gly Val Met Ala Arg Ala Leu Pro Lys Pro Ile Asp His Phe Leu
465                 470                 475                 480

Val Gln Ala Asp Leu Thr Val Val Val Pro Gly Pro Leu Gln Arg Glu
                485                 490                 495

Leu Ala Asp Asp Leu Thr Thr Val Ala Thr Val Glu Ser Ala Gly Thr
            500                 505                 510

Ala Met Val Tyr Arg Val Ser Glu Gln Ser Ile Arg His Ala Leu Asp
        515                 520                 525

Val Gly Lys Ser Arg Asp Trp Leu Gln Glu Phe Phe Ala Asn Arg Ser
    530                 535                 540
```

```
Lys Thr Pro Val Pro Gln Gly Leu Thr Tyr Leu Ile Asp Asp Val Ala
545                 550                 555                 560

Arg Arg His Gly Gln Leu Arg Ile Gly Met Ala Ala Ser Phe Val Arg
                565                 570                 575

Cys Glu Asp Pro Thr Leu Leu Ala Gln Val Val Ala Ala Pro Glu Ala
            580                 585                 590

Asp Gly Leu Ala Leu Arg Ala Leu Ala Pro Thr Val Ala Val Ser Pro
        595                 600                 605

Ala Pro Ile Ser Glu Val Leu Val Thr Leu Arg Gly Ala Gly Phe Ala
    610                 615                 620

Pro Ala Ala Glu Asp Ser Thr Gly Ala Val Val Asp Val Arg Thr Arg
625                 630                 635                 640

Gly Ala Arg Val Pro Thr Pro Gln Arg Arg Arg Pro Tyr Arg Pro Pro
                645                 650                 655

Pro Arg Pro Asn Ser Glu Ala Leu Lys Ala Val Val Ala Val Leu Arg
            660                 665                 670

Glu Val Thr Ala Ala Pro Phe Ala Asn Val Arg Val Asp Pro Ala Val
        675                 680                 685

Thr Met Ser Leu Leu Gln Arg Ala Ala Lys Asp Gln Ala Thr Leu Val
    690                 695                 700

Ile Ser Tyr Leu Asp Ala Ala Gly Val Ala Thr Gln Arg Val Val Ala
705                 710                 715                 720

Pro Ile Thr Leu Arg Gly Gly Gln Leu Val Ala Phe Asp Ser Ser Ser
                725                 730                 735

Gly Arg Leu Arg Asp Phe Ala Ile His Arg Ile Thr Leu Val Val Ser
            740                 745                 750

Ala His Asp Arg
        755
```

<210> 425

<211> 93

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0863, H37Rv2.tab 962599:962877 forward MW:10079

<400> 425

```
Val Cys Ser Val Ile Ala Asp Gln Arg Arg Pro Asp Gln Pro Cys Gly
1               5                  10                  15

Val Gly Gly Cys Lys Thr Cys Gln Asn Gly Phe Val Ala Asp Ile Ala
            20                  25                  30

Glu Gly Lys Ala Arg Lys Thr Arg Tyr Val Asp His Gly Trp Pro Thr
        35                  40                  45

Thr Asp Pro Asp Asp His Ala Val Ser Glu Leu Val Thr Asp Arg Thr
    50                  55                  60

Gly Ala Leu Ser Pro Phe Gly Glu Leu Thr Phe Pro Val Pro Ser Asp
65                  70                  75                  80

Asp Leu Pro Tyr Ile His Pro Val Thr Val Ile Asn Arg
                85                  90
```

<210> 426

<211> 162

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0875c, H37Rv2.tab 973809:974294 reverse MW:17800

<400> 426

```
Val Lys Arg Gly Val Ala Thr Leu Pro Val Ile Leu Val Ile Leu Leu
1               5                  10                  15

Ser Val Ala Ala Gly Ala Gly Ala Trp Leu Leu Val Arg Gly His Gly
            20                  25                  30

Pro Gln Gln Pro Glu Ile Ser Ala Tyr Ser His Gly His Leu Thr Arg
        35                  40                  45

Val Gly Pro Tyr Leu Tyr Cys Asn Val Val Asp Leu Asp Asp Cys Gln
    50                  55                  60

Thr Pro Gln Ala Gln Gly Glu Leu Pro Val Ser Glu Arg Tyr Pro Val
65                  70                  75                  80

Gln Leu Ser Val Pro Glu Val Ile Ser Arg Ala Pro Trp Arg Leu Leu
                85                  90                  95

Gln Val Tyr Gln Asp Pro Ala Asn Thr Thr Ser Thr Leu Phe Arg Pro
            100                 105                 110

Asp Thr Arg Leu Ala Val Thr Ile Pro Thr Val Asp Pro Gln Arg Gly
```

115 120 125

Arg Leu Thr Gly Ile Val Val Gln Leu Leu Thr Leu Val Val Asp His
130 135 140

Ser Gly Glu Leu Arg Asp Val Pro His Ala Glu Trp Ser Val Arg Leu
145 150 155 160

Ile Phe

<210> 427

<211> 548

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0876c, H37Rv2.tab 974294:975937 reverse MW:57938

<400> 427

Met Ala Pro Thr Pro Gly Arg Arg Thr Arg Asn Gly Ser Val Asn Gly
1 5 10 15

His Pro Gly Met Ala Asn Tyr Pro Pro Asp Asp Ala Asn Tyr Arg Arg
20 25 30

Ser Arg Arg Pro Pro Pro Met Pro Ser Ala Asn Arg Tyr Leu Pro Pro
35 40 45

Leu Gly Glu Gln Pro Glu Pro Glu Arg Ser Arg Val Pro Pro Arg Thr
50 55 60

Thr Arg Ala Gly Glu Arg Ile Thr Val Thr Arg Ala Ala Ala Met Arg
65 70 75 80

Ser Arg Glu Met Gly Ser Arg Met Tyr Leu Leu Val His Arg Ala Ala
85 90 95

Thr Ala Asp Gly Ala Asp Lys Ser Gly Leu Thr Ala Leu Thr Trp Pro
100 105 110

Val Met Ala Asn Phe Ala Val Asp Ser Ala Met Ala Val Ala Leu Ala
115 120 125

Asn Thr Leu Phe Phe Ala Ala Ala Ser Gly Glu Ser Lys Ser Arg Val
130 135 140

Ala Leu Tyr Leu Leu Ile Thr Ile Ala Pro Phe Ala Val Ile Ala Pro
145 150 155 160

```
Leu Ile Gly Pro Ala Leu Asp Arg Leu Gln His Gly Arg Arg Val Ala
                165                 170                 175

Leu Ala Leu Ser Phe Gly Leu Arg Thr Ala Leu Ala Val Val Leu Ile
            180                 185                 190

Met Asn Tyr Asp Gly Ala Thr Gly Ser Phe Pro Ser Trp Val Leu Tyr
        195                 200                 205

Pro Cys Ala Leu Ala Met Met Val Phe Ser Lys Ser Phe Ser Val Leu
    210                 215                 220

Arg Ser Ala Val Thr Pro Arg Val Met Pro Pro Thr Ile Asp Leu Val
225                 230                 235                 240

Arg Val Asn Ser Arg Leu Thr Val Phe Gly Leu Leu Gly Gly Thr Ile
                245                 250                 255

Ala Gly Gly Ala Ile Ala Ala Gly Val Glu Phe Val Cys Thr His Leu
            260                 265                 270

Phe Gln Leu Pro Gly Ala Leu Phe Val Val Val Ala Ile Thr Ile Ala
        275                 280                 285

Gly Ala Ser Leu Ser Met Arg Ile Pro Arg Trp Val Glu Val Thr Ser
    290                 295                 300

Gly Glu Val Pro Ala Thr Leu Ser Tyr His Arg Asp Arg Gly Arg Leu
305                 310                 315                 320

Arg Arg Arg Trp Pro Glu Glu Val Lys Asn Leu Gly Gly Thr Leu Arg
                325                 330                 335

Gln Pro Leu Gly Arg Asn Ile Ile Thr Ser Leu Trp Gly Asn Cys Thr
            340                 345                 350

Ile Lys Val Met Val Gly Phe Leu Phe Leu Tyr Pro Ala Phe Val Ala
        355                 360                 365

Lys Ala His Glu Ala Asn Gly Trp Val Gln Leu Gly Met Leu Gly Leu
    370                 375                 380

Ile Gly Ala Ala Ala Ala Val Gly Asn Phe Ala Gly Asn Phe Thr Ser
385                 390                 395                 400

Ala Arg Leu Gln Leu Gly Arg Pro Ala Val Leu Val Val Arg Cys Thr
                405                 410                 415

Val Leu Val Thr Val Leu Ala Ile Ala Ala Ala Val Ala Gly Ser Leu
            420                 425                 430

Ala Ala Thr Ala Ile Ala Thr Leu Ile Thr Ala Gly Ser Ser Ala Ile
        435                 440                 445

Ala Lys Ala Ser Leu Asp Ala Ser Leu Gln His Asp Leu Pro Glu Glu
    450                 455                 460

Ser Arg Ala Ser Gly Phe Gly Arg Ser Glu Ser Thr Leu Gln Leu Ala
465                 470                 475                 480

Trp Val Leu Gly Gly Ala Val Gly Val Leu Val Tyr Thr Glu Leu Trp
```

485 490 495

Val Gly Phe Thr Ala Val Ser Ala Leu Leu Ile Leu Gly Leu Ala Gln
500 505 510

Thr Ile Val Ser Phe Arg Gly Asp Ser Leu Ile Pro Gly Leu Gly Gly
515 520 525

Asn Arg Pro Val Met Ala Glu Gln Glu Thr Thr Arg Arg Gly Ala Ala
530 535 540

Val Ala Pro Gln
545

<210> 428

<211> 262

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0877, H37Rv2.tab 976075:976860 forward MW:27437)

<400> 428

Val Thr Gly Pro Thr Glu-Glu Ser Ala Val Ala Thr Val Ala Asp Trp
1 5 10 15

Pro Glu Gly Leu Ala Ala Val Leu Arg Gly Ala Ala Asp Gln Ala Arg
20 25 30

Ala Ala Val Val Glu Phe Ser Gly Pro Glu Ala Val Gly Asp Tyr Leu
35 40 45

Gly Val Ser Tyr Glu Asp Gly Asn Ala Ala Thr His Arg Phe Ile Ala
50 55 60

His Leu Pro Gly Tyr Gln Gly Trp Gln Trp Ala Val Val Val Ala Ser
65 70 75 80

Tyr Ser Gly Ala Asp His Ala Thr Ile Ser Glu Val Val Leu Val Pro
85 90 95

Gly Pro Thr Ala Leu Leu Ala Pro Asp Trp Val Pro Trp Glu Gln Arg
100 105 110

Val Arg Pro Gly Asp Leu Ser Pro Gly Asp Leu Leu Ala Pro Ala Lys
115 120 125

Asp Asp Pro Arg Leu Val Pro Gly Tyr Thr Ala Ser Gly Asp Ala Gln
130 135 140

Val Asp Glu Thr Ala Ala Glu Ile Gly Leu Gly Arg Arg Trp Val Met
145 150 155 160

Ser Ala Trp Gly Arg Ala Gln Ser Ala Gln Arg Trp His Asp Gly Asp
165 170 175

Tyr Gly Pro Gly Ser Ala Met Ala Arg Ser Thr Lys Arg Val Cys Arg
180 185 190

Asp Cys Gly Phe Phe Leu Pro Leu Ala Gly Ser Leu Gly Ala Met Phe
195 200 205

Gly Val Cys Gly Asn Glu Leu Ser Ala Asp Gly His Val Val Asp Arg
210 215 220

Gln Tyr Gly Cys Gly Ala His Ser Asp Thr Thr Ala Pro Ala Gly Gly
225 230 235 240

Ser Thr Pro Ile Tyr Glu Pro Tyr Asp Asp Gly Val Leu Asp Ile Ile
245 250 255

Glu Lys Pro Ala Glu Ser
260

<210> 429

<211> 91

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0879c, H37Rv2.tab 978484:978756 reverse MW:9512

<400> 429

Met Ser Val Glu Asn Ser Gln Ile Arg Glu Pro Pro Pro Leu Pro Pro
1 5 10 15

Val Leu Leu Glu Val Trp Pro Val Ile Ala Val Gly Ala Leu Ala Trp
20 25 30

Leu Val Ala Ala Val Ala Ala Phe Val Val Pro Gly Leu Ala Ser Trp
35 40 45

Arg Pro Val Thr Val Ala Gly Leu Ala Thr Gly Leu Leu Gly Thr Thr
50 55 60

Ile Phe Val Trp Gln Leu Ala Ala Ala Arg Arg Gly Ala Arg Gly Ala
65 70 75 80

Gln Ala Gly Leu Glu Thr Tyr Leu Asp Pro Lys
85 90

<210> 430

<211> 253

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0883c, H37Rv2.tab 980509:981267 reverse MW:27373

<400> 430

Met Arg Glu Leu Lys Val Val Gly Leu Asp Ala Asp Gly Lys Asn Ile
1 5 10 15

Ile Cys Gln Gly Ala Ile Pro Ser Glu Gln Phe Lys Leu Pro Val Asp
20 25 30

Asp Arg Leu Arg Ala Ala Leu Arg Asp Asp Ser Val Gln Pro Glu Gln
35 40 45

Ala Gln Leu Asp Ile Glu Val Thr Asn Val Leu Ser Pro Lys Glu Ile
50 55 60

Gln Ala Arg Ile Arg Ala Gly Ala Ser Val Glu Gln Val Ala Ala Ala
65 70 75 80

Ser Gly Ser Asp Ile Ala Arg Ile Arg Arg Phe Ala His Pro Val Leu
85 90 95

Leu Glu Arg Ser Arg Ala Ala Glu Leu Ala Thr Ala Ala His Pro Val
100 105 110

Leu Ala Asp Gly Pro Ala Val Leu Thr Met Gln Glu Thr Val Ala Ala
115 120 125

Ala Leu Val Ala Arg Gly Leu Asn Pro Asp Ser Leu Thr Trp Asp Ala
130 135 140

Trp Arg Asn Glu Asp Ser Arg Trp Thr Val Gln Leu Ala Trp Lys Ala
145 150 155 160

Gly Arg Ser Asp Asn Leu Ala His Phe Arg Phe Thr Pro Gly Ala His
165 170 175

Gly Gly Thr Ala Thr Ala Ile Asp Asp Thr Ala His Glu Leu Ile Asn
180 185 190

Pro Thr Phe Asn Arg Pro Leu Arg Pro Leu Ala Pro Val Ala His Leu
195 200 205

Asp Phe Asp Glu Pro Glu Pro Ala Gln Pro Thr Leu Thr Val Pro Ser

210 215 220

Ala Gln Pro Val Ser Asn Arg Arg Gly Lys Pro Ala Ile Pro Ala Trp
225 230 235 240

Glu Asp Val Leu Leu Gly Val Arg Ser Gly Gly Arg Arg
245 250

<210> 431

<211> 340

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0885, H37Rv2.tab 982762:983781 forward MW:39798

<400> 431

Met Asp Arg Thr Arg Ile Val Arg Arg Trp Arg Arg Asn Met Asp Val
1 5 10 15

Ala Asp Asp Ala Glu Tyr Val Glu Met Leu Ala Thr Leu Ser Glu Gly
20 25 30

Ser Val Arg Arg Asn Phe Asn Pro Tyr Thr Asp Ile Asp Trp Glu Ser
35 40 45

Pro Glu Phe Ala Val Thr Asp Asn Asp Pro Arg Trp Ile Leu Pro Ala
50 55 60

Thr Asp Pro Leu Gly Arg His Pro Trp Tyr Gln Ala Gln Ser Arg Glu
65 70 75 80

Arg Gln Ile Glu Ile Gly Met Trp Arg Gln Ala Asn Val Ala Lys Val
85 90 95

Gly Leu His Phe Glu Ser Ile Leu Ile Arg Gly Leu Met Asn Tyr Thr
100 105 110

Phe Trp Met Pro Asn Gly Ser Pro Glu Tyr Arg Tyr Cys Leu His Glu
115 120 125

Ser Val Glu Glu Cys Asn His Thr Met Met Phe Gln Glu Met Val Asn
130 135 140

Arg Val Gly Ala Asp Val Pro Gly Leu Pro Arg Arg Leu Arg Trp Val
145 150 155 160

Ser Pro Leu Val Pro Leu Val Ala Gly Pro Leu Pro Val Ala Phe Phe
165 170 175

Ile Gly Val Leu Ala Gly Glu Glu Pro Ile Asp His Thr Gln Lys Asn
180 185 190

Val Leu Arg Glu Gly Lys Ser Leu His Pro Ile Met Glu Arg Val Met
195 200 205

Ser Ile His Val Ala Glu Glu Ala Arg His Ile Ser Phe Ala His Glu
210 215 220

Tyr Leu Arg Lys Arg Leu Pro Arg Leu Thr Arg Met Gln Arg Phe Trp
225 230 235 240

Ile Ser Leu Tyr Phe Pro Leu Thr Met Arg Ser Leu Cys Asn Ala Ile
245 250 255

Val Val Pro Pro Lys Ala Phe Trp Glu Glu Phe Asp Ile Pro Arg Glu
260 265 270

Val Lys Lys Glu Leu Phe Phe Gly Ser Pro Glu Ser Arg Lys Trp Leu
275 280 285

Cys Asp Met Phe Ala Asp Ala Arg Met Leu Ala His Asp Thr Gly Leu
290 295 300

Met Asn Pro Ile Ala Arg Leu Val Trp Arg Leu Cys Lys Ile Asp Gly
305 310 315 320

Lys Pro Ser Arg Tyr Arg Ser Glu Pro Gln Arg Gln His Leu Ala Ala
325 330 335

Ala Pro Ala Ala
340

<210> 432

<211> 59

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0909, H37Rv2.tab 1014681:1014857 forward MW:6403

<400> 432

Met Gly Ile Leu Asp Lys Val Lys Asn Leu Leu Ser Gln Asn Ala Asp
1 5 10 15

Lys Val Glu Thr Val Ile Asn Lys Ala Gly Glu Phe Val Asp Glu Gln
20 25 30

Thr Gln Gly Asn Tyr Ser Asp Ala Ile His Lys Leu His Asp Ala Ala
35 40 45

Ser Asn Val Val Gly Met Ser Asp Gln Gln Ser
50 55

<210> 433

<211> 144

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0910, H37Rv2.tab 1014866:1015297 forward MW:15754

<400> 433

Met Ala Lys Leu Ser Gly Ser Ile Asp Val Pro Leu Pro Pro Glu Glu
1 5 10 15

Ala Trp Met His Ala Ser Asp Leu Thr Arg Tyr Arg Glu Trp Leu Thr
20 25 30

Ile His Lys Val Trp Arg Ser Lys Leu Pro Glu Val Leu Glu Lys Gly
35 40 45

Thr Val Val Glu Ser Tyr Val Glu Val Lys Gly Met Pro Asn Arg Ile
50 55 60

Lys Trp Thr Ile Val Arg Tyr Lys Pro Pro Glu Gly Met Thr Leu Asn
65 70 75 80

Gly Asp Gly Val Gly Gly Val Lys Val Lys Leu Ile Ala Lys Val Ala
85 90 95

Pro Lys Glu His Gly Ser Val Val Ser Phe Asp Val His Leu Gly Gly
100 105 110

Pro Ala Leu Leu Gly Pro Ile Gly Met Ile Val Ala Ala Ala Leu Arg
115 120 125

Ala Asp Ile Arg Glu Ser Leu Gln Asn Phe Val Thr Val Phe Ala Gly
130 135 140

<210> 434

<211> 149

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0912, H37Rv2.tab 1016236:1016682 forward MW:15438

<400> 434

Met Thr Arg Arg Leu Arg Pro Gly Trp Leu Val Ala Leu Ser Ala Ala
1 5 10 15

Val Ile Ala Ala Ser Thr Trp Met Pro Trp Leu Thr Thr Thr Val Gly
20 25 30

Gly Gly Gly Trp Val Asn Ala Ile Gly Gly Thr His Gly Ser Leu Glu
35 40 45

Leu Pro His Gly Phe Gly Pro Gly Gln Leu Ile Val Leu Leu Ser Ser
50 55 60

Thr Leu Leu Val Val Gly Ala Met Ala Gly Arg Gly Leu Ser Val Lys
65 70 75 80

Leu Ser Ser Ile Ala Ala Leu Val Val Ser Leu Leu Ile Val Ala Leu
85 90 95

Thr Val Trp Tyr Tyr Lys Leu Asn Val Asn Pro Pro Val Ser Ala Glu
100 105 110

Tyr Gly Leu Tyr Phe Gly Ala Ala Gly Gly Val Cys Ala Val Gly Cys
115 120 125

Ser Leu Trp Ala Ala Val Ser Ala Ala Ser Pro Gly Arg Arg Arg His
130 135 140

Arg Glu Val Val Arg
145

<210> 435

<211> 105

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0948c, H37Rv2.tab 1057649:1057963 reverse MW:11770

<400> 435

Met Arg Pro Glu Pro Pro His His Glu Asn Ala Glu Leu Ala Ala Met

1 5 10 15

Asn Leu Glu Met Leu Glu Ser Gln Pro Val Pro Glu Ile Asp Thr Leu
20 25 30

Arg Glu Glu Ile Asp Arg Leu Asp Ala Glu Ile Leu Ala Leu Val Lys
35 40 45

Arg Arg Ala Glu Val Ser Lys Ala Ile Gly Lys Ala Arg Met Ala Ser
50 55 60

Gly Gly Thr Arg Leu Val His Ser Arg Glu Met Lys Val Ile Glu Arg
65 70 75 80

Tyr Ser Glu Leu Gly Pro Asp Gly Lys Asp Leu Ala Ile Leu Leu Leu
85 90 95

Arg Leu Gly Arg Gly Arg Leu Gly His
100 105

<210> 436

<211> 303

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0954, H37Rv2.tab 1065127:1066035 forward MW:30203

<400> 436

Met Thr Tyr Ser Pro Gly Asn Pro Gly Tyr Pro Gln Ala Gln Pro Ala
1 5 10 15

Gly Ser Tyr Gly Gly Val Thr Pro Ser Phe Ala His Ala Asp Glu Gly
20 25 30

Ala Ser Lys Leu Pro Met Tyr Leu Asn Ile Ala Val Ala Val Leu Gly
35 40 45

Leu Ala Ala Tyr Phe Ala Ser Phe Gly Pro Met Phe Thr Leu Ser Thr
50 55 60

Glu Leu Gly Gly Gly Asp Gly Ala Val Ser Gly Asp Thr Gly Leu Pro
65 70 75 80

Val Gly Val Ala Leu Leu Ala Ala Leu Leu Ala Gly Val Ala Leu Val
85 90 95

Pro Lys Ala Lys Ser His Val Thr Val Val Ala Val Leu Gly Val Leu
100 105 110

Gly Val Phe Leu Met Val Ser Ala Thr Phe Asn Lys Pro Ser Ala Tyr
115 120 125

Ser Thr Gly Trp Ala Leu Trp Val Val Leu Ala Phe Ile Val Phe Gln
130 135 140

Ala Val Ala Ala Val Leu Ala Leu Leu Val Glu Thr Gly Ala Ile Thr
145 150 155 160

Ala Pro Ala Pro Arg Pro Lys Phe Asp Pro Tyr Gly Gln Tyr Gly Arg
165 170 175

Tyr Gly Gln Tyr Gly Gln Tyr Gly Val Gln Pro Gly Gly Tyr Tyr Gly
180 185 190

Gln Gln Gly Ala Gln Gln Ala Ala Gly Leu Gln Ser Pro Gly Pro Gln
195 200 205

Gln Ser Pro Gln Pro Pro Gly Tyr Gly Ser Gln Tyr Gly Gly Tyr Ser
210 215 220

Ser Ser Pro Ser Gln Ser Gly Ser Gly Tyr Thr Ala Gln Pro Pro Ala
225 230 235 240

Gln Pro Pro Ala Gln Ser Gly Ser Gln Gln Ser His Gln Gly Pro Ser
245 250 255

Thr Pro Pro Thr Gly Phe Pro Ser Phe Ser Pro Pro Pro Pro Val Ser
260 265 270

Ala Gly Thr Gly Ser Gln Ala Gly Ser Ala Pro Val Asn Tyr Ser Asn
275 280 285

Pro Ser Gly Gly Glu Gln Ser Ser Ser Pro Gly Gly Ala Pro Val
290 295 300

<210> 437

<211> 455

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0955, H37Rv2.tab 1066078:1067442 forward MW:46056

<400> 437

Val Asn Arg Val Ser Ala Ser Ala Asp Asp Arg Ala Ala Gly Ala Arg
1 5 10 15

Pro Ala Arg Asp Leu Val Arg Val Ala Phe Gly Pro Gly Val Val Ala
20 25 30

```
Leu Gly Ile Ile Ala Ala Val Thr Leu Leu Gln Leu Leu Ile Ala Asn
        35                  40                  45

Ser Asp Met Thr Gly Ala Trp Gly Ala Ile Ala Ser Met Trp Leu Gly
    50                  55                  60

Val His Leu Val Pro Ile Ser Ile Gly Gly Arg Ala Leu Gly Val Met
65                  70                  75                  80

Pro Leu Leu Pro Val Leu Leu Met Val Trp Ala Thr Ala Arg Ser Thr
                85                  90                  95

Ala Arg Ala Thr Ser Pro Gln Ser Ser Gly Leu Val Val Arg Trp Val
            100                 105                 110

Val Ala Ser Ala Leu Gly Gly Pro Leu Leu Met Ala Ala Ile Ala Leu
        115                 120                 125

Ala Val Ile His Asp Ala Ser Ser Val Val Thr Glu Leu Gln Thr Pro
    130                 135                 140

Ser Ala Leu Arg Ala Phe Thr Ser Val Leu Val Val His Ser Val Gly
145                 150                 155                 160

Ala Ala Thr Gly Val Trp Ser Arg Val Gly Arg Arg Ala Leu Ala Ala
                165                 170                 175

Thr Ala Leu Pro Asp Trp Leu His Asp Ser Met Arg Ala Ala Ala Ala
            180                 185                 190

Gly Val Leu Ala Leu Leu Gly Leu Ser Gly Val Val Thr Ala Gly Ser
        195                 200                 205

Leu Val Val His Trp Ala Thr Met Gln Glu Leu Tyr Gly Ile Thr Asp
    210                 215                 220

Ser Ile Phe Gly Gln Phe Ser Leu Thr Val Leu Ser Val Leu Tyr Ala
225                 230                 235                 240

Pro Asn Val Ile Val Gly Thr Ser Ala Ile Ala Val Gly Ser Ser Ala
                245                 250                 255

His Ile Gly Phe Ala Thr Phe Ser Ser Phe Ala Val Leu Gly Gly Asp
            260                 265                 270

Ile Pro Ala Leu Pro Ile Leu Ala Ala Ala Pro Thr Pro Pro Leu Gly
        275                 280                 285

Pro Ala Trp Val Ala Leu Leu Ile Val Gly Ala Ser Ser Gly Val Ala
    290                 295                 300

Val Gly Gln Gln Cys Ala Arg Arg Ala Leu Pro Phe Val Ala Ala Met
305                 310                 315                 320

Ala Lys Leu Leu Val Ala Ala Val Ala Gly Ala Leu Val Met Ala Val
                325                 330                 335

Leu Gly Tyr Gly Gly Gly Gly Arg Leu Gly Asn Phe Gly Asp Val Gly
            340                 345                 350
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Val Asp Glu Gly Ala Leu Val Leu Gly Val Leu Phe Trp Phe Thr Phe
355 360 365

Val Gly Trp Val Thr Val Val Ile Ala Gly Gly Ile Ser Arg Arg Pro
370 375 380

Lys Arg Leu Arg Pro Ala Pro Pro Val Glu Leu Asp Ala Asp Glu Ser
385 390 395 400

Ser Pro Pro Val Asp Met Phe Asp Gly Ala Ala Ser Glu Gln Pro Pro
405 410 415

Ala Ser Val Ala Glu Asp Val Pro Pro Ser His Asp Asp Ile Ala Asn
420 425 430

Gly Leu Lys Ala Pro Thr Ala Asp Asp Glu Ala Leu Pro Leu Ser Asp
435 440 445

Glu Pro Pro Pro Arg Ala Asp
450 455

<210> 438

<211> 200

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0966c, H37Rv2.tab 1077236:1077835 reverse MW:22210

<400> 438

Met Ser Asn Ser Ala Gln Arg Asp Ala Arg Asn Ser Arg Asp Glu Ser
1 5 10 15

Ala Arg Ala Ser Asp Thr Asp Arg Ile Gln Ile Ala Gln Leu Leu Ala
20 25 30

Tyr Ala Ala Glu Gln Gly Arg Leu Gln Leu Thr Asp Tyr Glu Asp Arg
35 40 45

Leu Ala Arg Ala Tyr Ala Ala Thr Thr Tyr Gln Glu Leu Asp Arg Leu
50 55 60

Arg Ala Asp Leu Pro Gly Ala Ala Ile Gly Pro Arg Arg Gly Gly Glu
65 70 75 80

Cys Asn Pro Ala Pro Ser Thr Leu Leu Leu Ala Leu Leu Gly Gly Phe
85 90 95

Glu Arg Arg Gly Arg Trp Asn Val Pro Lys Lys Leu Thr Thr Phe Thr
100 105 110

Leu Trp Gly Ser Gly Val Leu Asp Leu Arg Tyr Ala Asp Phe Thr Ser
115 120 125

Thr Glu Val Asp Ile Arg Ala Tyr Ser Ile Met Gly Ala Gln Thr Ile
130 135 140

Leu Leu Pro Pro Glu Val Asn Val Glu Ile His Gly His Arg Val Met
145 150 155 160

Gly Gly Phe Asp Arg Lys Val Val Gly Glu Gly Thr Arg Gly Val Pro
165 170 175

Thr Val Arg Ile Arg Gly Phe Ser Leu Trp Gly Asp Val Gly Ile Lys
180 185 190

Arg Lys Pro Arg Lys Pro Arg Lys
195 200

<210> 439

<211> 210

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0970, H37Rv2.tab 1081052:1081681 forward MW:22887

<400> 439

Met Ile His Asp Leu Met Leu Arg Trp Val Val Thr Gly Leu Phe Val
1 5 10 15

Leu Thr Ala Ala Glu Cys Gly Leu Ala Ile Ile Ala Lys Arg Arg Pro
20 25 30

Trp Thr Leu Ile Val Asn His Gly Leu His Phe Ala Met Ala Val Ala
35 40 45

Met Ala Val Met Ala Trp Pro Trp Gly Ala Arg Val Pro Thr Thr Gly
50 55 60

Pro Ala Val Phe Phe Leu Leu Ala Ala Val Trp Phe Gly Ala Thr Ala
65 70 75 80

Val Val Ala Val Arg Gly Thr Ala Thr Arg Gly Leu Tyr Gly Tyr His
85 90 95

Gly Leu Met Met Leu Ala Thr Ala Trp Met Tyr Ala Ala Met Asn Pro
100 105 110

Arg Leu Leu Pro Val Arg Ser Cys Thr Glu Tyr Ala Thr Glu Pro Asp

115 120 125

Gly Ser Met Pro Ala Met Asp Met Thr Ala Met Asn Met Pro Pro Asn
130 135 140

Ser Gly Ser Pro Ile Trp Phe Ser Ala Val Asn Trp Ile Gly Thr Val
145 150 155 160

Gly Phe Ala Val Ala Ala Val Phe Trp Ala Cys Arg Phe Val Met Glu
165 170 175

Arg Arg Gln Glu Ala Thr Gln Ser Arg Leu Pro Gly Ser Ile Gly Gln
180 185 190

Ala Met Met Ala Ala Gly Met Ala Met Leu Phe Phe Ala Met Leu Phe
195 200 205

Pro Val
210

<210> 440

<211> 358

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0996, H37Rv2.tab 1112384:1113457 forward MW:39519

<400> 440

Met Pro Ser Ile Pro Gln Ser Leu Leu Trp Ile Ser Leu Val Val Leu
1 5 10 15

Trp Leu Phe Val Leu Val Pro Met Leu Ile Ser Lys Arg Asp Ala Val
20 25 30

Arg Arg Thr Ser Asp Val Ala Leu Ala Thr Arg Val Leu Asn Gly Gly
35 40 45

Ala Gly Ala Arg Leu Leu Lys Arg Gly Gly Pro Ala Ala Gly His Arg
50 55 60

Trp Gly Tyr Leu Pro Pro Glu Gly Gln Gly Asp Asp Pro Asp Trp Lys
65 70 75 80

Pro Glu Glu Asp Trp Arg Asp Asp Pro Val Glu Asp Gly Phe Ala Asp
85 90 95

Val Glu His Asp Ile Asp Glu Asp Gln Glu Ala Asp Asp Ala Arg Arg
100 105 110

Arg Gly Ala Val Val Met Lys Val Ala Ala Pro Gln Thr Ala Gly Ala
115 120 125

Asp Glu Pro Asp Tyr Leu Asp Val Asp Val Val Glu Glu Asp Ser Glu
130 135 140

Ala Leu Pro Val Gly Ala Gly Ala Ala Val Gly Glu Ser Ala Asp Glu
145 150 155 160

Ala Asp Ala Glu Ala Ala Asp Gly Val Ala Gly His Ala Asp Pro Glu
165 170 175

Ala Asp Pro Val Glu Tyr Glu Tyr Glu Tyr Glu Tyr Val Glu Asp Thr
180 185 190

Cys Gly Leu Glu Leu Glu Glu Asp Asp Gln Glu Ala Pro Pro Thr Val
195 200 205

Ala Ser Gly Thr Ser Arg Arg Arg Arg Phe Asp Thr Lys Thr Ala Ala
210 215 220

Ala Val Ser Ala Arg Lys Tyr Thr Phe Arg Lys Arg Ala Leu Ile Val
225 230 235 240

Met Ala Val Ile Leu Val Gly Ser Ala Ala Ala Ala Phe Glu Leu Thr
245 250 255

Pro Val Ala Trp Trp Ile Cys Gly Ser Ala Thr Gly Val Thr Val Leu
260 265 270

Tyr Leu Ala Tyr Leu Arg Arg Gln Thr Arg Ile Glu Glu Lys Val Arg
275 280 285

Arg Arg Arg Met Gln Arg Ile Ala Arg Ala Arg Leu Gly Val Glu Asn
290 295 300

Thr Arg Asp Arg Glu Tyr Asp Val Val Pro Ser Arg Leu Arg Arg Pro
305 310 315 320

Gly Ala Val Val Leu Glu Ile Asp Asp Glu Asp Pro Ile Phe Thr His
325 330 335

Leu Glu Ser Ala Ala Pro Ile Arg Asn Tyr Gly Trp Pro Arg Asp Leu
340 345 350

Pro Arg Ala Val Gly Gln
355

<210> 441

<211> 333

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv0998, H37Rv2.tab 1114748:1115746 forward MW:35608

<400> 441

Leu Asp Gly Ile Ala Glu Leu Thr Gly Ala Arg Val Glu Asp Leu Ala
1 5 10 15

Gly Met Asp Val Phe Gln Gly Cys Pro Ala Glu Gly Leu Val Ser Leu
20 25 30

Ala Ala Ser Val Gln Pro Leu Arg Ala Ala Ala Gly Gln Val Leu Leu
35 40 45

Arg Gln Gly Glu Pro Ala Val Ser Phe Leu Leu Ile Ser Ser Gly Ser
50 55 60

Ala Glu Val Ser His Val Gly Asp Asp Gly Val Ala Ile Ile Ala Arg
65 70 75 80

Ala Leu Pro Gly Met Ile Val Gly Glu Ile Ala Leu Leu Arg Asp Ser
85 90 95

Pro Arg Ser Ala Thr Val Thr Thr Ile Glu Pro Leu Thr Gly Trp Thr
100 105 110

Gly Gly Arg Gly Ala Phe Ala Thr Met Val His Ile Pro Gly Val Gly
115 120 125

Glu Arg Leu Leu Arg Thr Ala Arg Gln Arg Leu Ala Ala Phe Val Ser
130 135 140

Pro Ile Pro Val Arg Leu Ala Asp Gly Thr Gln Leu Met Leu Arg Pro
145 150 155 160

Val Leu Pro Gly Asp Arg Glu Arg Thr Val His Gly His Ile Gln Phe
165 170 175

Ser Gly Glu Thr Leu Tyr Arg Arg Phe Met Ser Ala Arg Val Pro Ser
180 185 190

Pro Ala Leu Met His Tyr Leu Ser Glu Val Asp Tyr Val Asp His Phe
195 200 205

Val Trp Val Val Thr Asp Gly Ser Asp Pro Val Ala Asp Ala Arg Phe
210 215 220

Val Arg Asp Glu Thr Asp Pro Thr Val Ala Glu Ile Ala Phe Thr Val
225 230 235 240

Ala Asp Ala Tyr Gln Gly Arg Gly Ile Gly Ser Phe Leu Ile Gly Ala
245 250 255

Leu Ser Val Ala Ala Arg Val Asp Gly Val Glu Arg Phe Ala Ala Arg
260 265 270

Met Leu Ser Asp Asn Val Pro Met Arg Thr Ile Met Asp Arg Tyr Gly
275 280 285

Ala Val Trp Gln Arg Glu Asp Val Gly Val Ile Thr Thr Met Ile Asp
290 295 300

Val Pro Gly Pro Gly Glu Leu Ser Leu Gly Arg Glu Met Val Asp Gln
305 310 315 320

Ile Asn Arg Val Ala Arg Gln Val Ile Glu Ala Val Gly
325 330

<210> 442

<211> 205

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1000, H37Rv2.tab 1116531:1117148 reverse MW:22648

<400> 442

Met Cys Asp Lys Leu Gly Gly Val Ala Ile Ala Val Gln Gly Ala Leu
1 5 10 15

Phe Glu His Asn Glu Arg Arg Gln Leu Gly Asp Gly Ala Phe Ile Asp
20 25 30

Ile Arg Ser Gly Trp Leu Thr Gly Gly Glu Glu Leu Leu Asp Ala Leu
35 40 45

Leu Ser Thr Val Pro Trp Arg Ala Glu Arg Arg Gln Met Tyr Asp Arg
50 55 60

Val Val Asp Val Pro Arg Leu Val Ser Phe His Asp Leu Thr Ile Glu
65 70 75 80

Asp Pro Pro His Pro Gln Leu Ala Arg Met Arg Arg Arg Leu Asn Asp
85 90 95

Ile Tyr Gly Gly Glu Leu Gly Glu Pro Phe Thr Thr Ala Gly Leu Cys
100 105 110

Tyr Tyr Arg Asp Gly Ser Asp Ser Val Ala Trp His Gly Asp Thr Ile
115 120 125

Gly Arg Gly Ser Thr Glu Asp Thr Met Val Ala Ile Val Ser Leu Gly
130 135 140

Ala Thr Arg Val Phe Ala Leu Arg Pro Arg Gly Arg Gly Pro Ser Leu
145 150 155 160

Arg Leu Pro Leu Ala His Gly Asp Leu Leu Val Met Gly Gly Ser Cys

165 170 175

Gln Arg Thr Phe Glu His Ala Val Pro Lys Thr Ser Ala Pro Thr Gly
180 185 190

Pro Arg Val Ser Ile Gln Phe Arg Pro Arg Asp Val Arg
195 200 205

<210> 443

<211> 228

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1024, H37Rv2.tab 1145858:1146541 forward MW:24570

<400> 443

Met Pro Glu Ala Lys Arg Pro Glu Ser Lys Arg Arg Ser Pro Ala Ser
1 5 10 15

Arg Pro Gly Lys Ala Gly Asp Ser Val Arg Gly Gly Arg Ala Thr Lys
20 25 30

Pro Ser Ala Lys Pro Ser Thr Pro Ala Pro His Ala Ser Arg Lys Thr
35 40 45

Thr Arg Thr Pro His Glu His Ile Val Glu Pro Ile Lys Arg Ala Ile
50 55 60

Thr Glu Ser Val Glu Lys Arg Ser Glu Gln Arg Leu Gly Phe Thr Ala
65 70 75 80

Arg Arg Ala Ala Ile Leu Ala Ala Val Val Cys Val Leu Thr Leu Thr
85 90 95

Ile Ala Arg Pro Val Arg Thr Tyr Phe Ala Gln Arg Ala Glu Met Glu
100 105 110

Gln Leu Ala Ala Thr Glu Ala Met Leu Arg Arg Gln Ile Ala Asp Leu
115 120 125

Glu Glu Gln Gln Val Lys Leu Ala Asp Pro Ala Tyr Ile Ala Ala Gln
130 135 140

Ala Arg Glu Arg Leu Gly Phe Val Met Pro Gly Asp Ile Pro Phe Gln
145 150 155 160

Val Gln Leu Pro Ser Thr Pro Leu Ala Pro Pro Gln Pro Gly Ser Asp
165 170 175

Ala Ala Thr Ala Thr Asn Asn Glu Pro Trp Tyr Thr Ala Leu Trp His
180 185 190

Thr Ile Ala Asp Asp Pro His Leu Pro Pro Ala Ala Pro Pro Ala Pro
195 200 205

Glu Pro Gly Arg Pro Gly Pro Leu Pro Pro Ala Ser Pro Asn Pro Glu
210 215 220

Gln Pro Gly Gly
225

<210> 444

<211> 155

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1025, H37Rv2.tab 1146561:1147025 forward MW:16593

<400> 444

Val Val Thr Arg Gln Leu Gly Arg Ala Pro Arg Gly Val Leu Ala Ile
1 5 10 15

Ala Tyr Arg Cys Pro Asn Gly Glu Pro Gly Val Val Lys Thr Ala Pro
20 25 30

Arg Leu Pro Asp Gly Thr Pro Phe Pro Thr Leu Tyr Tyr Leu Thr His
35 40 45

Pro Val Leu Thr Ala Ala Ala Ser Arg Leu Glu Thr Thr Gly Leu Met
50 55 60

Arg Glu Met Asn Arg Arg Leu Gly Gln Asp Ala Glu Leu Ala Ala Ala
65 70 75 80

Tyr Arg Arg Ala His Glu Ser Tyr Leu Ser Glu Arg Asp Ala Leu Glu
85 90 95

Pro Leu Gly Thr Thr Val Ser Ala Gly Gly Met Pro Asp Arg Val Lys
100 105 110

Cys Leu His Val Leu Ile Ala His Ser Leu Ala Lys Gly Pro Gly Leu
115 120 125

Asn Pro Phe Gly Asp Glu Ala Leu Ala Leu Leu Ala Ala Glu Pro Arg
130 135 140

Thr Ala Ala Thr Leu Val Ala Gly Gln Trp Arg
145 150 155

<210> 445

<211> 144

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1081c, H37Rv2.tab 1205987:1206418 reverse MW:15384

<400> 445

Met Thr His Thr Pro Ile Pro Arg Pro Asp Ala Arg Tyr Gly Arg Pro
1 5 10 15

Arg Leu Ser Arg Arg Ala Arg Arg Arg Val Ala Ile Ala Leu Gly Val
20 25 30

Leu Val Ala Ala Ala Gly Ile Val Ile Ala Val Ile Gly Tyr Gln Arg
35 40 45

Ile Ser Thr Ser Ala Val Thr Gly Ser Leu Val Gly Tyr Arg Leu Val
50 55 60

Asp Asp Glu Thr Ala Ser Val Thr Ile Ser Val Thr Arg Ser Asp Pro
65 70 75 80

Ser Arg Pro Val Ala Cys Ile Val Arg Val Arg Ala Thr Asn Gly Ser
85 90 95

Glu Thr Gly Arg Arg Glu Leu Leu Val Pro Pro Ser Glu Ala Thr Thr
100 105 110

Val Gln Val Thr Thr Thr Val Lys Ser Ser Gln Pro Pro Val Met Ala
115 120 125

Asp Val Tyr Gly Cys Gly Thr Glu Val Pro Ser Tyr Leu Arg Leu Pro
130 135 140

<210> 446

<211> 88

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1083, H37Rv2.tab 1207383:1207646 forward MW:9263

<400> 446

Val Asn Gln Ile Leu Leu Ser Val Ile Ala Glu Gly Gly Pro Gly Asn
1 5 10 15

Thr Gly Pro Asp Phe Gly Lys Ala Ser Pro Val Gly Leu Leu Val Ile
20 25 30

Val Leu Leu Val Ile Ala Thr Leu Phe Leu Val Arg Ser Met Asn Gln
35 40 45

Gln Leu Lys Lys Val Pro Lys Ser Phe Asp Arg Asp His Pro Glu Leu
50 55 60

Asp Gln Ala Ala Asp Glu Gly Thr Asp Arg Asp Gly Pro Ala Arg Pro
65 70 75 80

Pro Gly Pro Pro His Glu Ser Gly
85

<210> 447

<211> 233

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1100, H37Rv2.tab 1228683:1229381 forward MW:24562

<400> 447

Met Val Gly Asp Cys Pro Arg Ser Arg Thr Val Arg Trp Ser Trp Asp
1 5 10 15

Thr Gly His Val Thr Ala Glu Pro Gln Pro Thr Pro Arg Pro Ala Lys
20 25 30

Pro Arg Leu Leu Gln Asp Gly Arg Asp Met Phe Trp Ser Leu Ala Pro
35 40 45

Leu Val Val Gly Cys Ile Leu Leu Ala Gly Leu Val Gly Met Cys Ser
50 55 60

Phe Gln Leu Gly Gly Thr Lys Arg Gly Pro Ile Pro Ser Tyr Asp Ala
65 70 75 80

Ala Gln Ala Leu Arg Ala Asp Ala Lys Thr Leu Gly Phe Pro Ile Arg
85 90 95

Leu Pro Gln Leu Pro Gly Gly Trp Thr Pro Asn Ser Gly Gly Arg Gly
100 105 110

Gly Ile Glu Asn Gly Arg Ala Asp Pro Ala Thr Gly Gln Arg Arg Asn
115 120 125

Ala Ala Thr Ser Ile Val Gly Phe Ile Ser Pro Thr Gly Arg Tyr Leu
130 135 140

Ser Leu Thr Gln Ser Asn Ala Asp Glu Asp Lys Leu Val Gly Ser Ile
145 150 155 160

His Pro Ser Met Tyr Pro Thr Gly Thr Val Asp Val Gly Gly Thr Arg
165 170 175

Trp Val Val Tyr Glu Gly Ser Asp Glu Asn Gly Ala Val Glu Pro Val
180 185 190

Trp Thr Thr Arg Leu Thr Gly Pro Gly Gly Ala Thr Gln Leu Ala Ile
195 200 205

Thr Gly Ala Gly Ser Ile Asp Gln Phe Arg Thr Leu Ala Ser Ala Thr
210 215 220

Gln Ser Gln Pro Pro Leu Pro Ala Arg
225 230

<210> 448

<211> 212

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1109c, H37Rv2.tab 1235460:1236095 reverse MW:22957

<400> 448

Met Ala Thr Ala Pro Tyr Gly Val Arg Leu Leu Val Gly Ala Ala Thr
1 5 10 15

Val Ala Val Glu Glu Thr Met Lys Leu Pro Arg Thr Ile Leu Met Tyr
20 25 30

Pro Met Thr Leu Ala Ser Gln Ala Ala His Val Val Met Arg Phe Gln
35 40 45

Gln Gly Leu Ala Glu Leu Val Ile Lys Gly Asp Asn Thr Leu Glu Thr
50 55 60

Leu Phe Pro Pro Lys Asp Glu Lys Pro Glu Trp Ala Thr Phe Asp Glu
65 70 75 80

Asp Leu Pro Asp Ala Leu Glu Gly Thr Ser Ile Pro Leu Leu Gly Leu
85 90 95

Ser Asp Ala Ser Glu Ala Lys Asn Asp Asp Arg Arg Ser Asp Gly Arg
100 105 110

Phe Ala Leu Tyr Ser Val Ser Asp Thr Pro Glu Thr Thr Thr Ala Ser
115 120 125

Arg Ser Ala Asp Arg Ser Thr Asn Pro Lys Thr Ala Lys His Pro Lys
130 135 140

Ser Ala Ala Lys Pro Thr Val Pro Thr Pro Ala Val Ala Ala Glu Leu
145 150 155 160

Asp Tyr Pro Ala Leu Thr Leu Ala Gln Leu Arg Ala Arg Leu His Thr
165 170 175

Leu Asp Val Pro Glu Leu Glu Ala Leu Leu Ala Tyr Glu Gln Ala Thr
180 185 190

Lys Ala Arg Ala Pro Phe Gln Thr Leu Leu Ala Asn Arg Ile Thr Arg
195 200 205

Ala Thr Ala Lys
210

<210> 449

<211> 327

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1111c, H37Rv2.tab 1237212:1238192 reverse MW:36985

<400> 449

Val Ser Ala Gln Arg Ala Arg Ser Ala Val Gln Ala Ser His Arg Ser
1 5 10 15

Ile His Pro His Ile Pro Gly Val Pro Trp Trp Ala Ala Ile Leu Ile
20 25 30

Ala Val Thr Ala Thr Ala Ile Gly Tyr Ala Ile Asp Ala Gly Ser Gly
35 40 45

His Lys Ala Leu Thr Leu Val Phe Thr Gly Cys Tyr Ile Ala Gly Cys

50 55 60

Val Gly Ala Val Leu Ala Val Arg Gln Ser Asp Leu Phe Thr Ala Leu
65 70 75 80

Val Gln Pro Pro Leu Ile Leu Phe Cys Ala Val Pro Gly Ala Tyr Trp
85 90 95

Leu Phe His Gly Gly Thr Ile Gly Lys Phe Lys Asp Leu Leu Ile Asn
100 105 110

Cys Gly Tyr Ser Leu Ile Glu Arg Phe Pro Leu Met Leu Gly Thr Ala
115 120 125

Ala Gly Val Leu Leu Ile Gly Leu Val Arg Trp Tyr Leu Gly Thr Ala
130 135 140

Leu Phe Asp Ser Ile Ala Arg Lys Leu Ser Ser Leu Met Thr Gly Asp
145 150 155 160

Ser Asp Asp Asp Gly Gly Arg Arg Ser Ala Gln Arg Pro Ala Arg Thr
165 170 175

Arg Ser Arg His Ala Arg Pro Pro Ser Glu Asp Asn Arg Glu Pro Ile
180 185 190

Ala Glu Arg Arg Ser Arg Arg Arg Pro Arg Pro Gln Asn Asp Pro His
195 200 205

Pro Arg Arg Asn Ala His Glu Arg Pro Ala Pro Arg Ser Ser Arg Phe
210 215 220

Asp Ser Tyr Arg Ser Tyr Gln Pro Ser Glu Pro Ser Gly Pro Ala Glu
225 230 235 240

Pro Val Asn Arg Tyr Glu Arg Arg Gly Ala Arg Tyr Gln Pro Tyr Ala
245 250 255

Arg Tyr Glu Pro Thr Tyr Glu Pro Gln Arg Arg Arg Ala Arg Pro Ser
260 265 270

Glu Pro Thr Asn Pro Thr His His Pro Ile Ser Gln Val Arg Tyr Arg
275 280 285

Gly Ser Ala Thr Arg Asp Ala Arg Arg Asp Asn Tyr Arg Glu Glu Gln
290 295 300

Arg Phe Asp Arg Arg Asp Arg Ser Arg Ala Pro Arg Arg Pro Pro Ala
305 310 315 320

Glu Ser Trp Glu Tyr Asp Val
325

<210> 450

<211> 147

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1155, H37Rv2.tab 1281429:1281869 forward MW:16300

<400> 450

Met Ala Arg Gln Val Phe Asp Asp Lys Leu Leu Ala Val Ile Ser Gly
1 5 10 15

Asn Ser Ile Gly Val Leu Ala Thr Ile Lys His Asp Gly Arg Pro Gln
20 25 30

Leu Ser Asn Val Gln Tyr His Phe Asp Pro Arg Lys Leu Leu Ile Gln
35 40 45

Val Ser Ile Ala Glu Pro Arg Ala Lys Thr Arg Asn Leu Arg Arg Asp
50 55 60

Pro Arg Ala Ser Ile Leu Val Asp Ala Asp Asp Gly Trp Ser Tyr Ala
65 70 75 80

Val Ala Glu Gly Thr Ala Gln Leu Thr Pro Pro Ala Ala Ala Pro Asp
85 90 95

Asp Asp Thr Val Glu Ala Leu Ile Ala Leu Tyr Arg Asn Ile Ala Gly
100 105 110

Glu His Ser Asp Trp Asp Asp Tyr Arg Gln Ala Met Val Thr Asp Arg
115 120 125

Arg Val Leu Leu Thr Leu Pro Ile Ser His Val Tyr Gly Leu Pro Pro
130 135 140

Gly Met Arg
145

<210> 451

<211> 371

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1157c, H37Rv2.tab 1283059:1284171 reverse MW:36448

<400> 451

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Val Arg Arg Leu Thr Asn Thr Glu His Arg Glu Asn Thr Thr Val Ala
1               5                  10                  15

Ser Thr Trp Ser Val Cys Lys Gly Leu Ala Ala Val Val Ile Thr Ser
            20                  25                  30

Ala Ala Ala Phe Ala Leu Cys Pro Asn Ala Ala Ala Asp Pro Ala Thr
        35                  40                  45

Pro Gln Pro Asn Pro Thr Gln Gln Leu Pro Gly Leu Pro Ala Leu Ala
    50                  55                  60

Gln Leu Ser Pro Ile Ile Gln Gln Ala Ala Met Asn Pro Ala Gln Ala
65                  70                  75                  80

Thr Gln Leu Leu Met Ala Ala Ala Ser Ala Phe Ala Gly Asn Pro Ala
                85                  90                  95

Val Pro Thr Glu Ser Lys Asn Val Ala Ser Ser Val Asn Gln Phe Val
            100                 105                 110

Ala Glu Pro Thr Asn Pro Asp Ser Ala Ala Leu Gly Val Pro Ala Pro
        115                 120                 125

His Gly Val Ala Leu Pro Glu Ala Ile Pro Val Pro His Val Pro Pro
    130                 135                 140

Leu Gly Ala Glu Pro Gly Val Gln Ala His Leu Pro Thr Gly Ile Asp
145                 150                 155                 160

Pro Ser His Ala Ala Gly Pro Ala Pro Ala Val Ala Pro Thr Val Thr
                165                 170                 175

Pro Pro Val Ala Ala Pro Pro Ala Ser Ala Pro Ala Pro Ala Pro Asp
            180                 185                 190

Ala Ala Gln Pro Val Ala Val Pro Gly Pro Pro Pro Ala Pro Pro Ala
        195                 200                 205

Pro Arg Ala Ala Ala Pro Ala Pro Ala Ser Ala Ala Pro Ala Pro Ala
    210                 215                 220

Ala Ala Pro Ala Pro Ala Ser Gly Phe Gly Ala Asp Ala Pro Pro Thr
225                 230                 235                 240

Gln Asp Phe Met Tyr Pro Ser Ile Gly Pro Asn Cys Val Ala Asp Gly
                245                 250                 255

Ser Asn Ser Ile Ala Thr Ala Leu Ser Val Ala Gly Pro Ala Lys Ile
            260                 265                 270

Pro Leu Pro Gly Pro Gly Pro Gly Gln Thr Ala Tyr Val Phe Thr Ala
        275                 280                 285

Val Gly Thr Pro Gly Pro Ala Asp Val Gln Arg Leu Pro Leu Asn Val
    290                 295                 300

Thr Trp Val Asn Leu Thr Thr Gly Lys Ser Gly Ser Ala Thr Leu Arg
305                 310                 315                 320
```

Pro Arg Ser Asp Ile Asn Pro Asp Gly Pro Thr Thr Leu Thr Val Ile
325 330 335

Ala Asp Thr Gly Ser Gly Ser Ile Met Ser Thr Ile Phe Gly Gln Val
340 345 350

Thr Thr Lys Asp Arg Gln Cys Gln Phe Met Pro Thr Ile Gly Ser Thr
355 360 365

Val Val Pro
370

<210> 452

<211> 227

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1158c, H37Rv2.tab 1284182:1284862 reverse MW:21401

<400> 452

Met Pro Thr Ile Trp Thr Phe Val Arg Ala Ala Ala Val Leu Val Gly
1 5 10 15

Ser Ser Ala Ala Leu Leu Thr Gly Gly Ile Ala His Ala Asp Pro Ala
20 25 30

Pro Ala Pro Ala Pro Ala Pro Asn Ile Pro Gln Gln Leu Ile Ser Ser
35 40 45

Ala Ala Asn Ala Pro Gln Ile Leu Gln Asn Leu Ala Thr Ala Leu Gly
50 55 60

Ala Thr Pro Pro Leu Ser Ala Pro Lys Val Ala Glu Pro Ala Pro Ala
65 70 75 80

Ala Pro Gly Ile Thr Ala Thr Phe Pro Gly Leu Thr Pro Ala Ala Pro
85 90 95

Ala Ala Ala Ala Ala Pro Ala Leu Thr Pro Ser Ile Pro Gly Val Asn
100 105 110

Ala Pro Ile Pro Gly Ile Thr Pro Ala Ala Pro Ala Leu Pro Val Thr
115 120 125

Ala Pro Ala Ala Ala Pro Thr Ile Pro Gly Val Asn Ala Pro Ile Pro
130 135 140

Gly Ile Thr Ala Pro Ala Pro Ala Ala Ala Ala Val Pro Ala Ser Val
145 150 155 160

Pro Gly Val Pro Ser Ala Lys Val Asp Leu Pro Gln Leu Pro Tyr Leu
165 170 175

Pro Leu Gln Val Pro Gln Gln Leu Ser Leu Pro Ala Asp Leu Pro Ala
180 185 190

Leu Ala Ser Gly Val Ile Pro Ala Ala Pro Ile Ala Pro Thr Pro Pro
195 200 205

Ala Pro Gly Ala Pro Ala Leu Pro Pro Gly Pro Pro Ser Leu Leu Ala
210 215 220

Ala Leu Pro
225

<210> 453

<211> 94

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1159A, H37Rv2.tab 1286284:1286568 reverse MW:10379

<400> 453

Met Ala Val Leu Thr Asp Glu Gln Val Asp Ala Ala Leu His Asp Leu
1 5 10 15

Asn Gly Trp Gln Arg Ala Gly Gly Val Leu Arg Arg Ser Ile Lys Phe
20 25 30

Pro Thr Phe Met Ala Gly Ile Asp Ala Val Arg Arg Val Ala Glu Arg
35 40 45

Ala Glu Glu Val Asn His His Pro Asp Ile Asp Ile Arg Trp Arg Thr
50 55 60

Val Thr Phe Ala Leu Val Thr His Ala Val Gly Gly Ile Thr Glu Asn
65 70 75 80

Asp Ile Ala Met Ala His Asp Ile Asp Ala Met Phe Gly Ala
85 90

<210> 454

<211> 146

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1171, H37Rv2.tab 1301307:1301744 forward MW:15185

<400> 454

Val Gly His Arg Val Asp Thr Leu Ser Asp Arg Gln Arg Ala Asn Leu
1 5 10 15

Thr Thr Gly Ala Thr Asp Arg Ala Ile Arg Leu Val Val Leu Ala Leu
20 25 30

Leu Thr Val Asp Gly Val Val Ser Ala Leu Ala Gly Ala Leu Leu Met
35 40 45

Pro Trp Tyr Ile Gly Ser Ala Pro Phe Pro Ile Ser Ala Leu Ile Ser
50 55 60

Gly Leu Val Asn Ala Ala Leu Val Trp Ala Ala Ala Arg Trp Thr Thr
65 70 75 80

Ser Ser Arg Val Ala Ala Leu Pro Leu Trp Ala Trp Leu Leu Thr Val
85 90 95

Ala Ala Met Ser Phe Gly Gly Pro Gly Asp Asp Val Ile Leu Gly Gly
100 105 110

Gln Gly Leu Leu Val Tyr Gly Ala Leu Val Phe Val Val Ala Gly Ala
115 120 125

Val Pro Pro Ala Trp Val Leu Trp Arg Arg Arg Val Gln Ala Asp Gly
130 135 140

Ser Gly
145

<210> 455

<211> 359

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1184c, H37Rv2.tab 1324535:1325611 reverse MW:37818

<400> 455

Met Lys Arg Val Ile Ala Gly Ala Phe Ala Val Trp Leu Val Gly Trp
1 5 10 15

Ala Gly Gly Phe Gly Thr Ala Ile Ala Ala Ser Glu Pro Ala Tyr Pro
20 25 30

Trp Ala Pro Gly Pro Pro Pro Ser Pro Ser Pro Val Gly Asp Ala Ser
35 40 45

Thr Ala Lys Val Val Tyr Ala Leu Gly Gly Ala Arg Met Pro Gly Ile
50 55 60

Pro Trp Tyr Glu Tyr Thr Asn Gln Ala Gly Ser Gln Tyr Phe Pro Asn
65 70 75 80

Ala Lys His Asp Leu Ile Asp Tyr Pro Ala Gly Ala Ala Phe Ser Trp
85 90 95

Trp Pro Thr Met Leu Leu Pro Pro Gly Ser His Gln Asp Asn Met Thr
100 105 110

Val Gly Val Ala Val Lys Asp Gly Thr Asn Ser Leu Asp Asn Ala Ile
115 120 125

His His Gly Thr Asp Pro Ala Ala Ala Val Gly Leu Ser Gln Gly Ser
130 135 140

Leu Val Leu Asp Gln Glu Gln Ala Arg Leu Ala Asn Asp Pro Thr Ala
145 150 155 160

Pro Ala Pro Asp Lys Leu Gln Phe Thr Thr Phe Gly Asp Pro Thr Gly
165 170 175

Arg His Ala Phe Gly Ala Ser Phe Leu Ala Arg Ile Phe Pro Pro Gly
180 185 190

Ser His Ile Pro Ile Pro Phe Ile Glu Tyr Thr Met Pro Gln Gln Val
195 200 205

Asp Ser Gln Tyr Asp Thr Asn His Val Val Thr Ala Tyr Asp Gly Phe
210 215 220

Ser Asp Phe Pro Asp Arg Pro Asp Asn Leu Leu Ala Val Ala Asn Ala
225 230 235 240

Ala Ile Gly Ala Ala Ile Ala His Thr Pro Ile Gly Phe Thr Gly Pro
245 250 255

Gly Asp Val Pro Pro Gln Asn Ile Arg Thr Thr Val Asn Ser Arg Gly
260 265 270

Ala Thr Thr Thr Thr Tyr Leu Val Pro Val Asn His Leu Pro Leu Thr
275 280 285

Leu Pro Leu Arg Tyr Leu Gly Met Ser Asp Ala Glu Val Asp Gln Ile
290 295 300

Asp Ser Val Leu Gln Pro Gln Ile Asp Ala Ala Tyr Ala Arg Asn Asp
305 310 315 320

Asn Trp Phe Thr Arg Pro Val Ser Val Asp Pro Val Arg Gly Leu Asp
325 330 335

Pro Leu Thr Ala Pro Gly Ser Ile Val Glu Gly Ala Arg Gly Leu Leu
340 345 350

Gly Ser Pro Ala Phe Gly Gly
355

<210> 456

<211> 122

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1209, H37Rv2.tab 1353157:1353522 forward MW:13089

<400> 456

Val Ala Leu Val Leu Val Tyr Leu Val Val Leu Val Leu Val Ala Ile
1 5 10 15

Val Leu Phe Ala Ala Ala Ser Leu Leu Phe Gly Arg Gly Glu Gln Leu
20 25 30

Pro Pro Leu Pro Arg Ala Thr Thr Ala Thr Thr Leu Pro Ala Phe Gly
35 40 45

Val Thr Arg Ala Asp Val Asp Ala Val Lys Phe Thr Gln Val Leu Arg
50 55 60

Gly Tyr Lys Thr Ser Glu Val Asp Trp Val Leu Glu Arg Leu Gly Arg
65 70 75 80

Glu Leu Glu Ala Leu Arg Ser Gln Leu Gly Ala Ile His Ala Ser Ser
85 90 95

Glu Asp Ala Glu Ala Glu Ser Asp Ala Ser Asn Pro Ser Arg Gly Glu
100 105 110

Thr Val Val His Tyr Arg Ser Asp Pro Ala
115 120

<210> 457

<211> 75

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1211, H37Rv2.tab 1354243:1354467 forward MW:7810

<400> 457

Met Leu Gly Ala Asp Gln Ala Arg Ala Gly Gly Pro Ala Arg Ile Trp
1 5 10 15

Arg Glu His Ser Met Ala Ala Met Lys Pro Arg Thr Gly Asp Gly Pro
20 25 30

Leu Glu Ala Thr Lys Glu Gly Arg Gly Ile Val Met Arg Val Pro Leu
35 40 45

Glu Gly Gly Gly Arg Leu Val Val Glu Leu Thr Pro Asp Glu Ala Ala
50 55 60

Ala Leu Gly Asp Glu Leu Lys Gly Val Thr Ser
65 70 75

<210> 458

<211> 154

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1222, H37Rv2.tab 1365344:1365805 forward MW:16250

<400> 458

Met Ala Asp Pro Gly Ser Val Gly His Val Phe Arg Arg Ala Phe Ser
1 5 10 15

Trp Leu Pro Ala Gln Phe Ala Ser Gln Ser Asp Ala Pro Val Gly Ala
20 25 30

Pro Arg Gln Phe Arg Ser Thr Glu His Leu Ser Ile Glu Ala Ile Ala
35 40 45

Ala Phe Val Asp Gly Glu Leu Arg Met Asn Ala His Leu Arg Ala Ala

50 55 60

His His Leu Ser Leu Cys Ala Gln Cys Ala Ala Glu Val Asp Asp Gln
65 70 75 80

Ser Arg Ala Arg Ala Ala Leu Arg Asp Ser His Pro Ile Arg Ile Pro
85 90 95

Ser Thr Leu Leu Gly Leu Leu Ser Glu Ile Pro Arg Cys Pro Pro Glu
100 105 110

Gly Pro Ser Lys Gly Ser Ser Gly Gly Ser Ser Gln Gly Pro Pro Asp
115 120 125

Gly Ala Ala Ala Gly Phe Gly Asp Arg Phe Ala Asp Gly Asp Gly Gly
130 135 140

Asn Arg Gly Arg Gln Ser Arg Val Arg Arg
145 150

<210> 459

<211> 262

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1249c, H37Rv2.tab 1393197:1393982 reverse MW:27571

<400> 459

Met Ser Ala Arg Arg Ile Arg Ser Trp Lys Arg Phe Asp Asn Arg Ser
1 5 10 15

Ala Asn Ala Ala Glu Pro Asp Pro Gln Leu Ala Gly Thr Gly Gly Arg
20 25 30

Pro Lys Val Ser Thr Arg Ala Leu Ala Gln Val Ile Glu Arg Ser Ser
35 40 45

Arg Ile Gln Gly Pro Ala Ala Gln Ala Tyr Val Ala Arg Leu Arg Arg
50 55 60

Ala His Pro Gly Ala Ser Pro Ala Lys Ile Val Ala Lys Leu Glu Lys
65 70 75 80

Arg Phe Leu Ser Val Val Thr Ala Ser Gly Ala Ala Val Gly Ala Ala
85 90 95

Ala Thr Leu Pro Gly Ile Gly Thr Leu Ala Ala Trp Phe Ala Ala Ala
100 105 110

Gly Glu Val Val Val Phe Leu Glu Ala Thr Ala Leu Phe Val Leu Ala
115 120 125

Leu Ala Ser Val His Ala Ile Pro Leu Asp His Arg Glu Arg Arg Arg
130 135 140

Ala Leu Val Leu Ala Val Leu Val Gly Asp Asn Thr Thr Ala Val Ala
145 150 155 160

Asp Leu Leu Gly Pro Gly Arg Thr Ser Gly Gly Trp Val Ser Glu Thr
165 170 175

Met Ala Ser Leu Pro Leu Pro Ala Ile Ser Ser Leu Asn Ser Arg Met
180 185 190

Leu Lys Tyr Val Val Lys Arg Phe Ala Leu Lys Arg Gly Ala Leu Met
195 200 205

Phe Gly Lys Leu Val Pro Met Gly Ile Gly Ala Ile Ile Gly Ala Ile
210 215 220

Gly Asn Arg Leu Val Gly Lys Lys Leu Val Arg Asn Ala Arg Ser Ala
225 230 235 240

Phe Gly Thr Pro Pro Ala Arg Trp Pro Val Thr Leu His Val Leu Pro
245 250 255

Thr Val Arg Asp Ala Ser
260

<210> 460

<211> 1139

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1251c, H37Rv2.tab 1395824:1399240 reverse MW:123118

<400> 460

Val Phe Val Thr Gly Asp Ser Ile Val Tyr Ser Ala Ser Asp Leu Ala
1 5 10 15

Ala Ala Ala Arg Cys Gln Tyr Ala Leu Leu Arg Glu Phe Asp Ala Lys
20 25 30

Leu Gly Arg Gly Pro Ala Val Ala Val Asp Asp Glu Leu Met Ala Arg
35 40 45

Ala Ala Val Leu Gly Ser Ala His Glu Gly Arg Arg Leu Asp Gln Leu
50 55 60

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Arg His Glu Phe Gly Asp Ala Val Ala Ile Ile Gly Arg Pro Ala Tyr
65                  70                  75                  80

Thr Pro Ala Gly Leu Ala Ala Ala Ala Asp Ala Thr Arg Arg Ala Ile
                85                  90                  95

Ala Asn His Ala Pro Val Val Tyr Gln Ala Ala Met Phe Asp Gly Arg
            100                 105                 110

Phe Val Gly Phe Ala Asp Phe Leu Ile Arg Asp Gly His Arg Tyr Arg
        115                 120                 125

Val Ala Asp Thr Lys Leu Ala Arg Ser Pro Thr Val Thr Ala Leu Leu
    130                 135                 140

Gln Leu Ala Ala Tyr Ala Asp Ala Leu Val His Ser Gly Val Pro Val
145                 150                 155                 160

Ala Ala Asp Ala Glu Leu Glu Leu Gly Asp Gly Thr Ile Val Arg Tyr
                165                 170                 175

Arg Val Gly Glu Leu Ile Pro Val Tyr Arg Ser Gln Arg Ala Leu Leu
            180                 185                 190

Gln Arg Leu Leu Asp Gly His Tyr Thr Ala Gly Thr Ala Val Arg Trp
        195                 200                 205

Asp Asp Glu Arg Val Gln Ala Cys Phe Arg Cys Pro Gln Cys Thr Glu
    210                 215                 220

Arg Leu Arg Ala Ser Asp Asp Leu Leu Leu Val Gly Gly Met Arg Val
225                 230                 235                 240

Arg Gln Arg Asp Lys Leu Leu Glu Ala Gly Ile Thr Thr Ile Ala Glu
                245                 250                 255

Leu Ala Asp His Thr Ala Pro Val Pro Gly Leu Thr Thr Asn Ala Leu
            260                 265                 270

Gly Lys Leu Thr Ala Gln Ala Lys Leu Gln Ile Arg Gln Arg Asp Thr
        275                 280                 285

Gly Ala Pro Gln Phe Glu Ile Val Asp Pro Arg Pro Leu Thr Leu Leu
    290                 295                 300

Pro Glu Pro Asn Pro Gly Asp Leu Phe Phe Asp Phe Glu Gly Asp Pro
305                 310                 315                 320

Leu Trp Thr Ala Asp Gly Lys Gln Trp Gly Leu Glu Tyr Leu Phe Gly
                325                 330                 335

Val Leu Glu Ala Gly Arg Ala Gly Val Phe Arg Pro Leu Trp Ala His
            340                 345                 350

Asp Arg Thr Ala Glu Arg Gln Ala Leu Thr Asp Phe Leu Ala Ile Val
        355                 360                 365

Ala Arg Arg Arg Arg Arg His Pro Asn Met His Ile Tyr His Tyr Ala
    370                 375                 380
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Pro Tyr Glu Lys Thr Ala Leu Leu Arg Leu Val Gly Arg Tyr Gly Ile
385                 390                 395                 400

Gly Glu Asp Asp Val Asp Asp Leu Leu Arg Asn Gly Val Leu Val Asp
                405                 410                 415

Leu Tyr Pro Leu Val Arg Lys Ser Ile Arg Val Gly Thr Asp Ser Phe
            420                 425                 430

Ser Leu Lys Ala Leu Glu Pro Leu Tyr Leu Gly Thr Gln Pro Arg Ser
        435                 440                 445

Gly Asp Val Thr Thr Ala Ala Asp Ser Ile Asn Ser Tyr Ala Arg Tyr
    450                 455                 460

Cys Glu Leu Arg Ala Ala Gly Arg Ile Asp Glu Ala Ala Thr Val Leu
465                 470                 475                 480

Lys Glu Ile Glu Gly Tyr Asn His Tyr Asp Cys Arg Ser Thr Arg Ala
                485                 490                 495

Leu Arg Asp Trp Leu Leu Met Arg Ala Trp Glu Ala Gly Val Thr Pro
            500                 505                 510

Ile Gly Ala Gln Pro Val Pro Asp Ala Asp Pro Ile Asp Asp Gly Asp
        515                 520                 525

Ser Leu Ala Ser Val Leu Ser Lys Phe Thr Gly Asp Ala Ala Ala Gly
    530                 535                 540

Glu Arg Thr Pro Glu Gln Thr Ala Val Ala Leu Leu Ala Ala Ala Arg
545                 550                 555                 560

Gly Tyr His Arg Arg Glu Asp Lys Pro Phe Trp Trp Ala His Phe Asp
                565                 570                 575

Arg Leu Asn Tyr Pro Val Asp Glu Trp Ser Asp Ser Thr Asp Val Phe
            580                 585                 590

Leu Ala Ser Glu Ala Ser Val Thr Val Asp Trp His Met Pro Pro Arg
        595                 600                 605

Ala Arg Lys Pro Gln Arg Arg Val Arg Leu Thr Gly Glu Leu Ala Arg
    610                 615                 620

Gly Asp Leu Asn Gly Asn Val Phe Ala Leu Tyr Glu Pro Pro Ala Pro
625                 630                 635                 640

Pro Gly Met Thr Asp Asn Pro Asp Arg Arg Ala Ala Gly Pro Ala Ala
                645                 650                 655

Val Val Glu Thr Asp Asp Pro Thr Val Pro Thr Glu Val Val Ile Val
            660                 665                 670

Glu Arg Thr Gly Ser Asp Gly Asn Thr Phe Gln Gln Leu Pro Phe Ala
        675                 680                 685

Leu Ala Pro Gly Pro Pro Val Pro Thr Thr Ala Leu Arg Glu Ser Ile
    690                 695                 700

Glu Ser Thr Ala Ala Ala Val Ala Ser Gly Ser Pro Gln Leu Pro Ser
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705 710 715 720

Thr Ala Leu Met Asp Val Leu Leu Arg Arg Pro Pro Arg Thr Arg Ser
725 730 735

Gly Ala Ala Leu Pro Arg Ser Ser Asp Pro Val Thr Asp Ile Ala Ala
740 745 750

Ala Ala Leu Asp Leu Asp Ser Ser Tyr Leu Ala Val His Gly Pro Pro
755 760 765

Gly Thr Gly Lys Thr Tyr Thr Ala Ala Arg Val Ile Ala Glu Leu Val
770 775 780

Thr Glu His Ala Trp Arg Ile Gly Val Val Ala Gln Ser His Ala Thr
785 790 795 800

Val Glu Asn Leu Leu Glu Gly Val Ile Ser Ala Gly Leu Asp Pro Gly
805 810 815

Gln Val Ala Lys Lys Pro His Asp His Thr Ala Gly Arg Trp Gln Ser
820 825 830

Ile Asp Gly Ser Gln Tyr Thr Glu Phe Ile Arg Asp Thr Ala Gly Cys
835 840 845

Val Ile Gly Gly Thr Ala Trp Asp Phe Ala Asn Gly Asn Arg Val Pro
850 855 860

Lys Ala Ser Leu Asp Leu Leu Val Ile Asp Glu Ala Gly Gln Phe Cys
865 870 875 880

Leu Ala Asn Thr Ile Ala Val Ala Pro Ala Ala Thr Asn Leu Leu Leu
885 890 895

Leu Gly Asp Pro Gln Gln Leu Pro Gln Val Ser Gln Gly Thr His Pro
900 905 910

Glu Pro Val Asp Thr Ser Ala Leu Ser Trp Leu Val Asp Gly Gln His
915 920 925

Thr Leu Pro Asp Glu Arg Gly Tyr Phe Leu Asp Arg Ser Tyr Arg Met
930 935 940

His Pro Ala Val Cys Ala Ala Val Ser Ala Leu Ser Tyr Glu Gly Arg
945 950 955 960

Leu Cys Ser His Thr Glu Arg Thr Ala Val Arg Arg Leu Asp Gly Tyr
965 970 975

Pro Pro Gly Val His Thr Arg Gly Val His His Lys Gly Asn Ser Ile
980 985 990

Glu Ser Pro Glu Glu Ala Glu Ala Ile Leu Ala Glu Leu Arg Gln Leu
995 1000 1005

Leu Gly Ser Pro Trp Thr Asp Glu His Gly Thr Arg Pro Leu Ala
1010 1015 1020

Ala Ser Asp Val Leu Val Leu Ala Pro Tyr Asn Ala Gln Val Ala
1025 1030 1035

Leu Val Arg Arg Arg Leu Ala Ser Ala Gly Leu Gly Gly Ala Asp
1040 1045 1050

Gly Val Arg Val Gly Thr Val Asp Lys Phe Gln Gly Gly Gln Ala
1055 1060 1065

Pro Val Val Phe Ile Ser Met Thr Ala Ser Ser Ala Asp Asp Val
1070 1075 1080

Pro Arg Gly Ile Ser Phe Leu Leu Asn Arg Asn Arg Leu Asn Val
1085 1090 1095

Ala Val Ser Arg Ala Gln Tyr Ala Ala Val Ile Val Arg Ser Glu
1100 1105 1110

Leu Leu Thr Gln Tyr Leu Pro Ala Thr Pro Asp Gly Leu Val Asp
1115 1120 1125

Leu Gly Ala Phe Leu Gly Leu Thr Ser Thr Ser
1130 1135

<210> 461

<211> 299

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1259, H37Rv2.tab 1407339:1408235 forward MW:31783

<400> 461

Met Asn Ile Ala Ala Glu Ser Ser Ala Lys Pro Val Trp Gly Pro Pro
1 5 10 15

Asn Phe Cys Ala Ala Ala Ala Arg Met Gln Asp Val Arg Val Leu Met
20 25 30

His Pro Lys Thr Gly Arg Ala Phe Arg Ser Pro Val Glu Pro Gly Ser
35 40 45

Gly Trp Pro Gly Asp Pro Ala Thr Pro Gln Thr Pro Val Ala Ala Asp
50 55 60

Ala Ala Gln Val Ser Ala Leu Ala Gly Gly Ala Gly Ser Ile Cys Glu
65 70 75 80

Leu Asn Ala Leu Ile Ser Val Cys Arg Ala Cys Pro Arg Leu Val Ser
85 90 95

Trp Arg Glu Glu Val Ala Val Val Lys Arg Arg Ala Phe Ala Asp Gln

100 105 110

Pro Tyr Trp Gly Arg Pro Val Pro Gly Trp Gly Ser Lys Arg Pro Arg
115 120 125

Leu Leu Ile Leu Gly Leu Ala Pro Ala Ala His Gly Ala Asn Arg Thr
130 135 140

Gly Arg Met Phe Thr Gly Asp Arg Ser Gly Asp Gln Leu Tyr Ala Ala
145 150 155 160

Leu His Arg Ala Gly Leu Val Asn Ser Pro Val Ser Val Asp Ala Ala
165 170 175

Asp Gly Leu Arg Ala Asn Arg Ile Arg Ile Thr Ala Pro Val Arg Cys
180 185 190

Ala Pro Pro Gly Asn Ser Pro Thr Pro Ala Glu Arg Leu Thr Cys Ser
195 200 205

Pro Trp Leu Asn Ala Glu Trp Arg Leu Val Ser Asp His Ile Arg Ala
210 215 220

Ile Val Ala Leu Gly Gly Phe Ala Trp Gln Val Ala Leu Arg Leu Ala
225 230 235 240

Gly Ala Ser Gly Thr Pro Lys Pro Arg Phe Gly His Gly Val Val Thr
245 250 255

Glu Leu Gly Ala Gly Val Arg Leu Leu Gly Cys Tyr His Pro Ser Gln
260 265 270

Gln Asn Met Phe Thr Gly Arg Leu Thr Pro Thr Met Leu Asp Asp Ile
275 280 285

Phe Arg Glu Ala Lys Lys Leu Ala Gly Ile Glu
290 295

<210> 462

<211> 158

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1276c, H37Rv2.tab 1425441:1425914 reverse MW:16461

<400> 462

Met Arg His Ala Lys Ser Ala Tyr Pro Asp Gly Ile Ala Asp His Asp
1 5 10 15

Arg Pro Leu Ala Pro Arg Gly Ile Arg Glu Ala Gly Leu Ala Gly Gly
20 25 30

Trp Leu Arg Ala Asn Leu Pro Ala Val Asp Ala Val Leu Cys Ser Thr
35 40 45

Ala Thr Arg Ala Arg Gln Thr Leu Ala His Thr Gly Ile Asp Ala Pro
50 55 60

Ala Arg Tyr Ala Glu Arg Leu Tyr Gly Ala Ala Pro Gly Thr Val Ile
65 70 75 80

Glu Glu Ile Asn Arg Val Gly Asp Asn Val Thr Thr Leu Leu Val Val
85 90 95

Gly His Glu Pro Thr Thr Ser Ala Leu Ala Ile Val Leu Ala Ser Ile
100 105 110

Ser Gly Thr Asp Ala Ala Val Ala Glu Arg Ile Ser Glu Lys Phe Pro
115 120 125

Thr Ser Gly Ile Ala Val Leu Arg Val Ala Gly His Trp Ala Asp Val
130 135 140

Glu Pro Gly Cys Ala Ala Leu Val Gly Phe His Val Pro Arg
145 150 155

<210> 463

<211> 417

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1277, H37Rv2.tab 1426164:1427414 forward MW:44758

<400> 463

Val Ser Pro Arg Pro Gly Pro Ala Gly Arg Gly Pro Ala Pro Cys Arg
1 5 10 15

Cys Ala Asp Leu His Ser Leu Cys Val Asp Ser His Ala Leu Arg Arg
20 25 30

Asp Gly Met Arg Phe Leu His Thr Ala Asp Trp Gln Leu Gly Met Thr
35 40 45

Arg His Phe Leu Ala Gly Asp Ala Gln Pro Arg Tyr Ser Ala Ala Arg
50 55 60

Arg Asp Ala Val Ala Gly Leu Lys Ala Leu Ala Ala Asp Val Gly Ala
65 70 75 80

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Glu Phe Val Val Val Ala Gly Asp Val Phe Glu His Asn Gln Leu Ala
                85                  90                  95

Pro Gln Ile Val Gly Gln Ser Leu Glu Ala Met Arg Val Ile Gly Leu
            100                 105                 110

Pro Val Tyr Leu Leu Pro Gly Asn His Asp Pro Leu Asp Ala Ser Ser
        115                 120                 125

Val Tyr Thr Ser Thr Leu Phe Arg Ala Glu Arg Pro Asp Asn Val Val
    130                 135                 140

Val Leu Asp Arg Ala Gly Val His Glu Val Arg Pro Gly Val Gln Ile
145                 150                 155                 160

Val Ala Ala Pro Trp Arg Ser Lys Ala Pro Thr Thr Asp Pro Val Ala
                165                 170                 175

Glu Val Leu Ala Gly Leu Pro Thr Asp Ala Ala Ile Arg Leu Leu Val
            180                 185                 190

Ala His Gly Gly Val Asp Ala Leu Asp Pro Asp His Asp Lys Pro Ser
        195                 200                 205

Leu Ile Arg Leu Ala Ala Leu Asp Asp Ala Leu Thr Arg Gln Ala Ile
    210                 215                 220

His Tyr Val Ala Leu Gly Asp Lys His Ser Leu Thr Gln Val Gly Ser
225                 230                 235                 240

Ser Gly Arg Val Trp Tyr Ser Gly Ala Pro Glu Val Thr Asn Phe Asp
                245                 250                 255

Asp Val Glu Pro Asp Pro Gly His Val Leu Val Val Asp Ile Asp Glu
            260                 265                 270

Ser Asp Pro Arg His Pro Val Thr Val Asp Ala Arg Arg Ile Gly Arg
        275                 280                 285

Trp Arg Phe Val Thr Leu His His Gln Val Asp Thr Ser Arg Asp Ile
    290                 295                 300

Ala Asp Leu Asp Leu Asn Leu Asp Leu Met Thr Asp Lys Asp Arg Thr
305                 310                 315                 320

Val Val Arg Leu Ala Leu Thr Gly Ser Leu Thr Val Thr Asp Arg Ala
                325                 330                 335

Ala Leu Asp Thr Cys Leu Asp Lys Tyr Ala Arg Leu Phe Ala Trp Leu
            340                 345                 350

Gly Leu Trp Glu Arg His Thr Asp Leu Ala Val Ile Pro Val Asp Ala
        355                 360                 365

Glu Phe Thr Asp Leu Gly Ile Gly Gly Phe Ala Ala Ala Ala Val Asp
    370                 375                 380

Glu Leu Val Ala Thr Ala Arg Gly Gly Asp Asp Glu Ser Ala Val Asp
385                 390                 395                 400
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Ala Gln Ala Ala Leu Ala Leu Leu Leu Arg Leu Ala Asp Arg Gly Ala
405 410 415

Ala

<210> 464

<211> 875

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1278, H37Rv2.tab 1427414:1430038 forward MW:93319

<400> 464

Val Lys Leu His Arg Leu Ala Leu Thr Asn Tyr Arg Gly Ile Ala His
1 5 10 15

Arg Asp Val Glu Phe Pro Asp His Gly Val Val Val Val Cys Gly Ala
20 25 30

Asn Glu Ile Gly Lys Ser Ser Met Val Glu Ala Leu Asp Leu Leu Leu
35 40 45

Glu Tyr Lys Asp Arg Ser Thr Lys Lys Glu Val Lys Gln Val Lys Pro
50 55 60

Thr Asn Ala Asp Val Gly Ser Glu Val Ile Ala Glu Ile Ser Ser Gly
65 70 75 80

Pro Tyr Arg Phe Val Tyr Arg Lys Arg Phe His Lys Arg Cys Glu Thr
85 90 95

Glu Leu Thr Val Leu Ala Pro Arg Arg Glu Gln Leu Thr Gly Asp Glu
100 105 110

Ala His Glu Arg Val Arg Thr Met Leu Ala Glu Thr Val Asp Thr Glu
115 120 125

Leu Trp His Ala Gln Arg Val Leu Gln Ala Ala Ser Thr Ala Ala Val
130 135 140

Asp Leu Ser Gly Cys Asp Ala Leu Ser Arg Ala Leu Asp Leu Ala Ala
145 150 155 160

Gly Asp Asp Ala Ala Leu Ser Gly Thr Glu Ser Leu Leu Ile Glu Arg
165 170 175

Ile Glu Ala Glu Tyr Ala Arg Tyr Phe Thr Pro Thr Gly Arg Pro Thr
180 185 190

Gly Glu Trp Ser Ala Ala Val Ser Arg Leu Ala Ala Ala Glu Ala Ala
195 200 205

Val Ala Asp Cys Ala Ala Ala Val Ala Glu Val Asp Asp Gly Val Arg
210 215 220

Arg His Thr Glu Leu Thr Glu Gln Val Ala Glu Leu Ser Gln Gln Leu
225 230 235 240

Leu Ala His Gln Leu Arg Leu Glu Ala Ala Arg Val Ala Ala Glu Lys
245 250 255

Ile Ala Ala Ile Thr Asp Asp Ala Arg Glu Ala Lys Leu Ile Ala Thr
260 265 270

Ala Ala Ala Ala Thr Ser Gly Ala Ser Thr Ala Ala His Ala Gly Arg
275 280 285

Leu Gly Leu Leu Thr Glu Ile Asp Thr Arg Thr Ala Ala Val Val Ala
290 295 300

Ala Glu Ala Lys Ala Arg Gln Ala Ala Asp Glu Gln Ala Thr Ala Arg
305 310 315 320

Ala Glu Ala Glu Ala Cys Asp Ala Ala Leu Thr Glu Ala Thr Gln Val
325 330 335

Leu Thr Ala Val Arg Leu Arg Ala Glu Ser Ala Arg Arg Thr Leu Asp
340 345 350

Gln Leu Ala Asp Cys Glu Glu Ala Asp Arg Leu Ala Ala Arg Leu Ala
355 360 365

Arg Ile Asp Asp Ile Glu Gly Asp Arg Asp Arg Val Cys Ala Glu Leu
370 375 380

Ser Ala Val Thr Leu Thr Glu Glu Leu Leu Ser Arg Ile Glu Arg Ala
385 390 395 400

Ala Ala Ala Val Asp Arg Gly Gly Ala Gln Leu Ala Ser Ile Ser Ala
405 410 415

Ala Val Glu Phe Thr Ala Ala Val Asp Ile Glu Leu Gly Val Gly Asp
420 425 430

Gln Arg Val Ser Leu Ser Ala Gly Gln Ser Trp Ser Val Thr Ala Thr
435 440 445

Gly Pro Thr Glu Val Lys Val Pro Gly Val Leu Thr Ala Arg Ile Val
450 455 460

Pro Gly Ala Thr Ala Leu Asp Phe Gln Ala Lys Tyr Ala Ala Ala Gln
465 470 475 480

Gln Glu Leu Ala Asp Ala Leu Ala Ala Gly Glu Val Ala Asp Leu Ala
485 490 495

Ala Ala Arg Ser Ala Asp Leu Cys Arg Arg Glu Leu Leu Ser Arg Arg
500 505 510

Asp Gln Leu Thr Ala Thr Leu Ala Gly Leu Cys Gly Asp Glu Gln Val
515 520 525

Asp Gln Leu Arg Ser Arg Leu Glu Gln Leu Cys Ala Gly Gln Pro Ala
530 535 540

Glu Leu Asp Leu Val Ser Thr Asp Thr Ala Thr Ala Arg Ala Glu Leu
545 550 555 560

Asp Ala Val Glu Ala Ala Arg Ile Ala Ala Glu Lys Asp Cys Glu Thr
565 570 575

Arg Arg Gln Ile Ala Ala Gly Ala Ala Arg Arg Leu Ala Glu Thr Ser
580 585 590

Thr Arg Ala Thr Val Leu Gln Asn Ala Ala Ala Ala Glu Ser Ala Glu
595 600 605

Leu Gly Ala Ala Met Thr Arg Leu Ala Cys Glu Arg Ala Ser Val Gly
610 615 620

Asp Asp Glu Leu Ala Ala Lys Ala Glu Ala Asp Leu Arg Val Leu Gln
625 630 635 640

Thr Ala Glu Gln Arg Val Ile Asp Leu Ala Asp Glu Leu Ala Ala Thr
645 650 655

Ala Pro Asp Ala Val Ala Ala Glu Leu Ala Glu Ala Ala Asp Ala Val
660 665 670

Glu Leu Leu Arg Glu Arg His Asp Glu Ala Ile Arg Ala Leu His Glu
675 680 685

Val Gly Val Glu Leu Ser Val Phe Gly Thr Gln Gly Arg Lys Gly Lys
690 695 700

Leu Asp Ala Ala Glu Thr Glu Arg Glu His Ala Ala Ser His His Ala
705 710 715 720

Arg Val Gly Arg Arg Ala Arg Ala Ala Arg Leu Leu Arg Ser Val Met
725 730 735

Ala Arg His Arg Asp Thr Thr Arg Leu Arg Tyr Val Glu Pro Tyr Arg
740 745 750

Ala Glu Leu His Arg Leu Gly Arg Pro Val Phe Gly Pro Ser Phe Glu
755 760 765

Val Glu Val Asp Thr Asp Leu Arg Ile Arg Ser Arg Thr Leu Asp Asp
770 775 780

Arg Thr Val Pro Tyr Glu Cys Leu Ser Gly Gly Ala Lys Glu Gln Leu
785 790 795 800

Gly Ile Leu Ala Arg Leu Ala Gly Ala Ala Leu Val Ala Lys Glu Asp
805 810 815

Ala Val Pro Val Leu Ile Asp Asp Ala Leu Gly Phe Thr Asp Pro Glu
820 825 830

Arg Leu Ala Lys Met Gly Glu Val Phe Asp Thr Ile Gly Ala Asp Gly

835 840 845

Gln Val Ile Val Leu Thr Cys Ser Pro Thr Arg Tyr Gly Gly Val Lys
850 855 860

Gly Ala His Arg Ile Asp Leu Asp Ala Ile Gln
865 870 875

<210> 465

<211> 161

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1303, H37Rv2.tab 1459766:1460248 forward MW:16863

<400> 465

Val Thr Thr Pro Ala Gln Asp Ala Pro Leu Val Phe Pro Ser Val Ala
1 5 10 15

Phe Arg Pro Val Arg Leu Phe Phe Ile Asn Val Gly Leu Ala Ala Val
20 25 30

Ala Met Leu Val Ala Gly Val Phe Gly His Leu Thr Val Gly Met Phe
35 40 45

Leu Gly Leu Gly Leu Leu Leu Gly Leu Leu Asn Ala Leu Leu Val Arg
50 55 60

Arg Ser Ala Glu Ser Ile Thr Ala Lys Glu His Pro Leu Lys Arg Ser
65 70 75 80

Met Ala Leu Asn Ser Ala Ser Arg Leu Ala Ile Ile Thr Ile Leu Gly
85 90 95

Leu Ile Ile Ala Tyr Ile Phe Arg Pro Ala Gly Leu Gly Val Val Phe
100 105 110

Gly Leu Ala Phe Phe Gln Val Leu Leu Val Ala Thr Thr Ala Leu Pro
115 120 125

Val Leu Lys Lys Leu Arg Thr Ala Thr Glu Glu Pro Val Ala Thr Tyr
130 135 140

Ser Ser Asn Gly Gln Thr Gly Gly Ser Glu Gly Arg Ser Ala Ser Asp
145 150 155 160

Asp

<210> 466

<211> 147

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1312, H37Rv2.tab 1467688:1468128 forward MW:16594

<400> 466

Met Ser Ala Pro Met Ile Gly Met Val Val Leu Val Val Val Leu Gly
1 5 10 15

Leu Ala Val Leu Ala Leu Ser Tyr Arg Leu Trp Lys Leu Arg Gln Gly
20 25 30

Gly Thr Ala Gly Ile Met Arg Asp Ile Pro Ala Val Gly Gly His Gly
35 40 45

Trp Arg His Gly Val Ile Arg Tyr Arg Gly Gly Glu Ala Ala Phe Tyr
50 55 60

Arg Leu Ser Ser Leu Arg Leu Trp Pro Asp Arg Arg Leu Ser Arg Arg
65 70 75 80

Gly Val Glu Ile Ile Ser Arg Arg Ala Pro Arg Gly Asp Glu Phe Asp
85 90 95

Ile Met Thr Asp Glu Ile Val Val Val Glu Leu Cys Asp Ser Thr Gln
100 105 110

Asp Arg Arg Val Gly Tyr Glu Ile Ala Leu Asp Arg Gly Ala Leu Thr
115 120 125

Ala Phe Leu Ser Trp Leu Glu Ser Arg Pro Ser Pro Arg Ala Arg Arg
130 135 140

Arg Ser Met
145

<210> 467

<211> 304

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1324, H37Rv2.tab 1487161:1488072 forward MW:32138

<400> 467

Val Thr Arg Pro Arg Pro Pro Leu Gly Pro Ala Met Ala Gly Ala Val
1 5 10 15

Asp Leu Ser Gly Ile Lys Gln Arg Ala Gln Gln Asn Ala Ala Ala Ser
20 25 30

Thr Asp Ala Asp Arg Ala Leu Ser Thr Pro Ser Gly Val Thr Glu Ile
35 40 45

Thr Glu Ala Asn Phe Glu Asp Glu Val Ile Val Arg Ser Asp Glu Val
50 55 60

Pro Val Val Val Leu Leu Trp Ser Pro Arg Ser Glu Val Cys Val Asp
65 70 75 80

Leu Leu Asp Thr Leu Ser Gly Leu Ala Ala Ala Ala Lys Gly Lys Trp
85 90 95

Ser Leu Ala Ser Val Asn Val Asp Val Ala Pro Arg Val Ala Gln Ile
100 105 110

Phe Gly Val Gln Ala Val Pro Thr Val Val Ala Leu Ala Ala Gly Gln
115 120 125

Pro Ile Ser Ser Phe Gln Gly Leu Gln Pro Ala Asp Gln Leu Ser Arg
130 135 140

Trp Val Asp Ser Leu Leu Ser Ala Thr Ala Gly Lys Leu Lys Gly Ala
145 150 155 160

Ala Ser Ser Glu Glu Ser Thr Glu Val Asp Pro Ala Val Ala Gln Ala
165 170 175

Arg Gln Gln Leu Glu Asp Gly Asp Phe Val Ala Ala Arg Lys Ser Tyr
180 185 190

Gln Ala Ile Leu Asp Ala Asn Pro Gly Ser Val Glu Ala Lys Ala Ala
195 200 205

Ile Arg Gln Ile Glu Phe Leu Ile Arg Ala Thr Ala Gln Arg Pro Asp
210 215 220

Ala Val Ser Val Ala Asp Ser Leu Ser Asp Asp Ile Asp Ala Ala Phe
225 230 235 240

Ala Ala Ala Asp Val Gln Val Leu Asn Gln Asp Val Ser Ala Ala Phe
245 250 255

Glu Arg Leu Ile Ala Leu Val Arg Arg Thr Ser Gly Glu Glu Arg Thr
260 265 270

Arg Val Arg Thr Arg Leu Ile Glu Leu Phe Glu Leu Phe Asp Pro Ala
275 280 285

Asp Pro Glu Val Val Ala Gly Arg Arg Asn Leu Ala Asn Ala Leu Tyr
290 295 300

<210> 468

<211> 218

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1332, H37Rv2.tab 1500926:1501579 forward MW:24054

<400> 468

Met Pro Pro Val Cys Gly Arg Arg Cys Ser Arg Thr Gly Glu Ile Arg
1 5 10 15

Gly Tyr Ser Gly Ser Ile Val Arg Arg Trp Lys Arg Val Glu Thr Arg
20 25 30

Asp Gly Pro Arg Phe Arg Ser Ser Leu Ala Pro His Glu Ala Ala Leu
35 40 45

Leu Lys Asn Leu Ala Gly Ala Met Ile Gly Leu Leu Asp Asp Arg Asp
50 55 60

Ser Ser Ser Pro Ser Asp Glu Leu Glu Glu Ile Thr Gly Ile Lys Thr
65 70 75 80

Gly His Ala Gln Arg Pro Gly Asp Pro Thr Leu Arg Arg Leu Leu Pro
85 90 95

Asp Phe Tyr Arg Pro Asp Asp Leu Asp Asp Asp Asp Pro Thr Ala Val
100 105 110

Asp Gly Ser Glu Ser Phe Asn Ala Ala Leu Arg Ser Leu His Glu Pro
115 120 125

Glu Ile Ile Asp Ala Lys Arg Val Ala Ala Gln Gln Leu Leu Asp Thr
130 135 140

Val Pro Asp Asn Gly Gly Arg Leu Glu Leu Thr Glu Ser Asp Ala Asn
145 150 155 160

Ala Trp Ile Ala Ala Val Asn Asp Leu Arg Leu Ala Leu Gly Val Met
165 170 175

Leu Glu Ile Gly Pro Arg Gly Pro Glu Arg Leu Pro Gly Asn His Pro
180 185 190

Leu Ala Ala His Phe Asn Val Tyr Gln Trp Leu Thr Val Leu Gln Glu
195 200 205

Tyr Leu Val Leu Val Leu Met Gly Ser Arg
210 215

<210> 469

<211> 120

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1342c, H37Rv2.tab 1508187:1508546 reverse MW:13382

<400> 469

Met Thr Ala Pro Glu Thr Pro Ala Ala Gln His Ala Glu Pro Ala Ile
1 5 10 15

Ala Val Glu Arg Ile Arg Thr Ala Leu Leu Gly Tyr Arg Ile Met Ala
20 25 30

Trp Thr Thr Gly Leu Trp Leu Ile Ala Leu Cys Tyr Glu Ile Val Val
35 40 45

Arg Tyr Val Val Lys Val Asp Asn Pro Pro Thr Trp Ile Gly Val Val
50 55 60

His Gly Trp Val Tyr Phe Thr Tyr Leu Leu Leu Thr Leu Asn Leu Ala
65 70 75 80

Val Lys Val Arg Trp Pro Leu Gly Lys Thr Ala Gly Val Leu Leu Ala
85 90 95

Gly Thr Ile Pro Leu Leu Gly Ile Val Val Glu His Phe Gln Thr Lys
100 105 110

Glu Ile Lys Ala Arg Phe Gly Leu
115 120

<210> 470

<211> 126

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1343c, H37Rv2.tab 1508546:1508923 reverse MW:14241

<400> 470

Val Ser Thr Thr Arg Arg Arg Arg Pro Ala Leu Ile Ala Leu Val Ile
1 5 10 15

Ile Ala Thr Cys Gly Cys Leu Ala Leu Gly Trp Trp Gln Trp Thr Arg
20 25 30

Phe Gln Ser Thr Ser Gly Thr Phe Gln Asn Leu Gly Tyr Ala Leu Gln
35 40 45

Trp Pro Leu Phe Ala Trp Phe Cys Val Tyr Ala Tyr Arg Asn Phe Val
50 55 60

Arg Tyr Glu Glu Thr Pro Pro Gln Pro Pro Thr Gly Gly Ala Ala Ala
65 70 75 80

Glu Ile Pro Ala Gly Leu Leu Pro Glu Arg Pro Lys Pro Ala Gln Gln
85 90 95

Pro Pro Asp Asp Pro Val Leu Arg Glu Tyr Asn Ala Tyr Leu Ala Glu
100 105 110

Leu Ala Lys Asp Asp Ala Arg Lys Gln Asn Arg Thr Thr Ala
115 120 125

<210> 471

<211> 110

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1390, H37Rv2.tab 1565093:1565422 forward MW:11810

<400> 471

Val Ser Ile Ser Gln Ser Asp Ala Ser Leu Ala Ala Val Pro Ala Val
1 5 10 15

Asp Gln Phe Asp Pro Ser Ser Gly Ala Ser Gly Gly Tyr Asp Thr Pro
20 25 30

Leu Gly Ile Thr Asn Pro Pro Ile Asp Glu Leu Leu Asp Arg Val Ser

35 40 45

Ser Lys Tyr Ala Leu Val Ile Tyr Ala Ala Lys Arg Ala Arg Gln Ile
50 55 60

Asn Asp Tyr Tyr Asn Gln Leu Gly Glu Gly Ile Leu Glu Tyr Val Gly
65 70 75 80

Pro Leu Val Glu Pro Gly Leu Gln Glu Lys Pro Leu Ser Ile Ala Leu
85 90 95

Arg Glu Ile His Ala Asp Leu Leu Glu His Thr Glu Gly Glu
100 105 110

<210> 472

<211> 154

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1417, H37Rv2.tab 1592150:1592611 forward MW:16351

<400> 472

Val Thr Ala Ala Pro Asn Asp Trp Asp Val Val Leu Arg Pro His Trp
1 5 10 15

Thr Pro Leu Phe Ala Tyr Ala Ala Ala Phe Leu Ile Ala Val Ala His
20 25 30

Val Ala Gly Gly Leu Leu Leu Lys Val Gly Ser Ser Gly Val Val Phe
35 40 45

Gln Thr Ala Asp Gln Val Ala Met Gly Ala Leu Gly Leu Val Leu Ala
50 55 60

Gly Ala Val Leu Leu Phe Ala Arg Pro Arg Leu Arg Val Gly Ser Ala
65 70 75 80

Gly Leu Ser Val Arg Asn Leu Leu Gly Asp Arg Ile Val Gly Trp Ser
85 90 95

Glu Val Ile Gly Val Ser Phe Pro Gly Gly Ser Arg Trp Ala Arg Ile
100 105 110

Asp Leu Ala Asp Asp Glu Tyr Ile Pro Val Met Ala Ile Gln Ala Val
115 120 125

Asp Lys Asp Arg Ala Val Ala Ala Met Asp Thr Val Arg Ser Leu Leu
130 135 140

Ala Arg Tyr Arg Pro Asp Leu Cys Ala Arg
145 150

<210> 473

<211> 186

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1476, H37Rv2.tab 1666204:1666761 forward MW:19601

<400> 473

Met Thr Gly Pro Tyr Phe Pro Gln Thr Ile Pro Phe Leu Pro Ser Tyr
1 5 10 15

Ile Pro Gln Asp Val Asp Met Thr Ala Val Lys Ala Glu Val Ala Ala
20 25 30

Leu Gly Val Ser Ala Pro Pro Ala Ala Thr Pro Gly Leu Leu Glu Val
35 40 45

Val Gln His Ala Arg Asp Glu Gly Ile Asp Leu Lys Ile Val Leu Leu
50 55 60

Asp His Asn Pro Pro Asn Asp Thr Pro Leu Arg Asp Ile Ala Thr Val
65 70 75 80

Val Gly Ala Asp Tyr Ser Asp Ala Thr Val Leu Val Leu Ser Pro Asn
85 90 95

Tyr Val Gly Ser Tyr Ser Thr Gln Tyr Pro Arg Val Thr Leu Glu Ala
100 105 110

Gly Glu Asp His Ser Lys Thr Gly Asn Pro Val Gln Ser Ala Gln Asn
115 120 125

Phe Val His Glu Leu Ser Thr Pro Glu Phe Pro Trp Ser Ala Leu Thr
130 135 140

Ile Val Leu Leu Ile Gly Val Leu Ala Ala Ala Val Gly Ala Arg Leu
145 150 155 160

Met Gln Leu Arg Gly Arg Arg Ser Ala Thr Ser Thr Asp Ala Ala Pro
165 170 175

Gly Ala Gly Asp Asp Leu Asn Gln Gly Val
180 185

<210> 474

<211> 79

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1590, H37Rv2.tab 1791334:1791570 forward MW:8602

<400> 474

Met Val Glu Ile Val Ala Gly Lys Gln Arg Ala Pro Val Ala Ala Gly
1 5 10 15

Val Tyr Asn Val Tyr Thr Gly Glu Leu Ala Asp Thr Ala Thr Pro Thr
20 25 30

Ala Ala Arg Met Gly Leu Glu Pro Pro Arg Phe Cys Ala Gln Cys Gly
35 40 45

Arg Arg Met Val Val Gln Val Arg Pro Asp Gly Trp Trp Ala Arg Cys
50 55 60

Ser Arg His Gly Gln Val Asp Ser Ala Asp Leu Ala Thr Gln Arg
65 70 75

<210> 475

<211> 221

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1591, H37Rv2.tab 1791570:1792232 forward MW:23151

<400> 475

Val Thr Glu Pro Pro Gly Phe Gly Gly Pro Ser Glu Pro Ser Gly Ala
1 5 10 15

Pro Arg Thr Ser Arg Thr Arg Ala Val Leu Phe Val Met Leu Gly Leu
20 25 30

Ser Ala Thr Gly Val Leu Val Gly Gly Leu Trp Ala Trp Ile Ala Pro
35 40 45

Pro Ile His Ala Val Val Ala Ile Thr Arg Ala Gly Glu Arg Val His
50 55 60

Glu Tyr Leu Gly Ser Glu Ser Gln Asn Phe Phe Ile Ala Pro Phe Met
65 70 75 80

Leu Leu Gly Leu Leu Ser Val Leu Ala Val Val Ala Ser Ala Leu Met
85 90 95

Trp Gln Trp Arg Glu His Arg Gly Pro Gln Met Val Ala Gly Leu Ser
100 105 110

Ile Gly Leu Thr Thr Ala Ala Ala Ile Ala Ala Gly Val Gly Ala Leu
115 120 125

Val Val Arg Leu Arg Tyr Gly Ala Leu Asp Phe Asp Thr Val Pro Leu
130 135 140

Ser Arg Gly Asp His Ala Leu Thr Tyr Val Thr Gln Ala Pro Pro Val
145 150 155 160

Phe Phe Ala Arg Arg Pro Leu Gln Ile Ala Leu Thr Leu Met Trp Pro
165 170 175

Ala Gly Ile Ala Ser Leu Val Tyr Ala Leu Leu Ala Ala Gly Thr Ala
180 185 190

Arg Asp Asp Leu Gly Gly Tyr Pro Ala Val Asp Pro Ser Ser Asn Ala
195 200 205

Arg Thr Glu Ala Leu Glu Thr Pro Gln Ala Pro Val Ser
210 215 220

<210> 476

<211> 235

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1610, H37Rv2.tab 1809443:1810147 forward MW:24586

<400> 476

Val Ala Ala Asn Ala Gly Ser Val Arg Pro Asn Arg Arg Ala Arg Pro
1 5 10 15

Met Ile Gly Ile Ala Gln Leu Leu Leu Val Val Ala Ala Gly Ala Leu
20 25 30

Trp Met Ala Ala Arg Leu Pro Trp Val Val Ile Gly Ser Phe Asp Glu

35 40 45

Leu Gly Pro Pro Lys Glu Val Thr Leu Thr Gly Ala Ser Trp Ser Thr
50 55 60

Ala Leu Leu Pro Leu Ala Leu Leu Met Leu Ala Ala Ala Val Ala Ala
65 70 75 80

Leu Ala Val Arg Gly Trp Pro Leu Arg Ala Leu Ala Val Leu Leu Ala
85 90 95

Ala Ala Ser Phe Ala Val Gly Tyr Leu Gly Ile Ser Leu Trp Val Val
100 105 110

Pro Asp Val Ala Ala Arg Gly Ala Asp Leu Ala His Val Pro Val Val
115 120 125

Thr Leu Val Gly Ser Ala Arg His Tyr Trp Gly Ala Val Ala Ala Val
130 135 140

Leu Ala Ala Val Cys Ala Leu Leu Ala Ala Val Phe Leu Met Ser Ser
145 150 155 160

Ala Ala Ile Arg Gly Ser Ala Gly Glu Asp Met Ala Arg Tyr Ala Ala
165 170 175

Pro Arg Ala Arg Arg Ser Ile Ala Arg Arg Gln His Ser Asn Ala Ala
180 185 190

Gly Arg Ala Ala Pro Gln Asp Asp Gly Pro Asp Met Gly Pro Arg Met
195 200 205

Ser Glu Arg Met Ile Trp Glu Ala Leu Asp Glu Gly Arg Asp Pro Thr
210 215 220

Asp Arg Glu Gln Glu Ser Asp Thr Glu Gly Arg
225 230 235

<210> 477

<211> 556

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1635c, H37Rv2.tab 1840575:1842242 reverse MW:60035

<400> 477

Met His Ala Ser Arg Pro Gly Ala Pro Pro His Ala Gly Leu Pro Ser
1 5 10 15

```
Arg Arg Thr Ala Gly Asp Gln Asp His Arg Ala Asp Pro Lys Val Thr
            20                  25                  30

Arg Ile Met Ser Ala Ser Thr Leu Glu Gln Pro Ala Ala Ala His Val
        35                  40                  45

Asp Glu Leu Val Ala Arg Met Arg Gly Arg Leu Leu Asp Pro Leu Ala
    50                  55                  60

Ile Ala Val Leu Ala Ala Val Ile Ser Gly Ala Trp Ala Ser Arg Pro
65                  70                  75                  80

Ser Leu Trp Phe Asp Glu Gly Ala Thr Ile Ser Ala Ser Ala Ser Arg
                85                  90                  95

Thr Leu Pro Glu Leu Trp Ser Leu Leu Gly His Ile Asp Ala Val His
            100                 105                 110

Gly Leu Tyr Tyr Leu Leu Met His Gly Trp Phe Ala Ile Phe Pro Pro
        115                 120                 125

Thr Glu Leu Trp Ser Arg Leu Pro Ser Cys Leu Ala Ile Gly Ala Ala
    130                 135                 140

Ala Ala Gly Val Val Val Phe Ala Lys Gln Phe Ser Gly Arg Thr Thr
145                 150                 155                 160

Ala Val Cys Ala Gly Ala Val Phe Ala Ile Leu Pro Arg Val Thr Trp
                165                 170                 175

Ala Gly Ile Glu Ala Arg Ser Ser Ala Leu Ser Val Ala Ala Ala Val
            180                 185                 190

Trp Leu Thr Val Leu Leu Val Ala Ala Val Arg Cys Asn Thr Gln Arg
        195                 200                 205

Arg Trp Leu Leu Tyr Ala Leu Val Leu Met Leu Ser Ile Leu Val Ser
    210                 215                 220

Ile Asn Leu Ala Leu Leu Val Pro Ala Tyr Ala Thr Met Val Pro Leu
225                 230                 235                 240

Leu Ala Ser Gly Lys Ser Arg Lys Ser Pro Val Ile Trp Trp Thr Val
                245                 250                 255

Val Thr Ala Ala Ala Leu Gly Ala Met Thr Pro Phe Ile Leu Phe Ala
            260                 265                 270

His Gly Gln Val Trp Gln Val Gly Trp Ile Ala Gly Leu Asn Arg Asn
        275                 280                 285

Ile Ile Leu Asp Val Ile His Arg Gln Tyr Phe Asp His Ser Val Pro
    290                 295                 300

Phe Ala Ile Leu Ala Gly Leu Ile Val Ala Ala Gly Ile Ala Ala His
305                 310                 315                 320

Leu Ala Gly Ala Arg Gly Pro Gly Gly Asp Thr His Arg Leu Val Leu
                325                 330                 335

Val Ser Ala Ala Trp Ile Val Val Pro Thr Ala Val Val Leu Ile Tyr
```

340 345 350

Ser Ala Thr Val Glu Pro Ile Tyr Tyr Pro Arg Tyr Leu Ile Leu Thr
355 360 365

Ala Pro Ala Ala Ala Val Ile Leu Ala Val Cys Val Val Thr Ile Ala
370 375 380

Arg Lys Pro Trp Leu Ile Ala Gly Val Val Phe Leu Leu Ala Ala Ala
385 390 395 400

Ala Phe Pro Asn Tyr Phe Phe Thr Gln Arg Gly Pro Tyr Ala Lys Glu
405 410 415

Gly Trp Asp Tyr Ser Gln Val Ala Asp Val Ile Ser Ala His Ala Lys
420 425 430

Pro Gly Asp Cys Leu Leu Val Asp Asn Thr Ala Gly Trp Arg Pro Gly
435 440 445

Pro Ile Arg Ala Leu Leu Ala Thr Arg Pro Ala Ala Phe Arg Ser Leu
450 455 460

Ile Asp Val Glu Arg Gly Thr Tyr Gly Pro Lys Val Gly Thr Leu Trp
465 470 475 480

Asp Gly His Val Ala Val Trp Leu Thr Thr Ala Lys Ile Asp Lys Cys
485 490 495

Pro Thr Leu Trp Thr Ile Ala Asn Arg Asp Lys Ser Leu Pro Asp His
500 505 510

Gln Val Gly Glu Met Leu Ser Pro Gly Thr Gly Phe Gly Arg Thr Pro
515 520 525

Val Tyr Arg Phe Pro Ser Tyr Leu Gly Phe Arg Ile Val Glu Arg Trp
530 535 540

Gln Phe His Tyr Ser Gln Val Val Lys Ser Thr Arg
545 550 555

<210> 478

<211> 316

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1647, H37Rv2.tab 1856774:1857721 forward MW:33939

<400> 478

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Leu Ala Gly Ser Ala Arg Thr Thr Tyr Pro Cys His Val Glu Val Gly
1               5                  10                  15

Pro Gln Asp Ser Glu Ser Gly Ala Pro Asp Glu Thr Ala Thr Ala Met
            20                  25                  30

Ala Ser Pro Val Pro Arg Gln Arg Ser Ala Leu Arg Trp Leu Arg Thr
        35                  40                  45

Val Asn Arg Ser Pro Gly Leu Val Ser Phe Ile His Arg Ala Arg Arg
    50                  55                  60

Leu Leu Pro Gly Asp Pro Glu Phe Gly Asp Pro Leu Ser Thr Ala Gly
65                  70                  75                  80

Glu Gly Gly Pro Arg Ala Ala Ala Arg Ala Ala Asp Arg Leu Leu Arg
                85                  90                  95

Asp Arg Asp Ala Ala Ser Arg Glu Val Gly Leu Ser Val Leu Gln Val
            100                 105                 110

Trp Gln Ala Leu Thr Glu Ala Val Ser Arg Arg Pro Ala Asn Pro Glu
        115                 120                 125

Val Thr Leu Val Phe Thr Asp Leu Val Gly Phe Ser Thr Trp Ser Leu
    130                 135                 140

His Ala Gly Asp Asp Ala Thr Leu Thr Leu Leu Arg Gln Val Ala Arg
145                 150                 155                 160

Ala Val Glu Ser Pro Leu Leu Asp Ala Gly Gly His Ile Val Lys Arg
                165                 170                 175

Leu Gly Asp Gly Ile Met Ala Val Phe Arg Asn Pro Thr Val Ala Leu
            180                 185                 190

Arg Ala Val Leu Val Ala Gln Asp Ala Val Lys Ser Leu Glu Val Gln
        195                 200                 205

Gly Tyr Thr Pro Arg Met Arg Ile Gly Ile His Thr Gly Arg Pro Gln
    210                 215                 220

Arg Leu Ala Ala Asp Trp Leu Gly Val Asp Val Asn Ile Ala Ala Arg
225                 230                 235                 240

Val Met Glu Arg Ala Thr Lys Gly Gly Ile Met Ile Ser Gln Pro Thr
                245                 250                 255

Leu Asp Leu Ile Pro Gln Ser Glu Leu Asp Ala Leu Gly Val Val Ala
            260                 265                 270

Arg Arg Val Arg Lys Pro Val Phe Ala Ser Lys Pro Thr Gly Ile Pro
        275                 280                 285

Pro Asp Leu Ala Ile Tyr Arg Ile Lys Thr Val Ser Glu Ser Thr Ala
    290                 295                 300

Ala Asp Asn Phe Asp Glu Met Ser Pro Asp Ala Gln
305                 310                 315
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<210> 479

<211> 58

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1693, H37Rv2.tab 1917756:1917929 forward MW:6094

<400> 479

Met Thr Ile Asp Pro Asp Gln Ile Arg Ala Glu Ile Asp Ala Leu Leu
1 5 10 15

Ala Ser Leu Pro Asp Pro Ala Asp Ala Glu Asn Gly Pro Ser Leu Ala
20 25 30

Glu Leu Glu Gly Ile Ala Arg Arg Leu Ser Glu Ala His Glu Val Leu
35 40 45

Leu Ala Ala Leu Glu Ser Ala Glu Lys Gly
50 55

<210> 480

<211> 393

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1697, H37Rv2.tab 1921542:1922720 forward MW:42423

<400> 480

Met Arg Met Ser Ala Leu Leu Ser Arg Asn Thr Ser Arg Pro Gly Leu
1 5 10 15

Ile Gly Ile Ala Arg Val Asp Arg Asn Ile Asp Arg Leu Leu Arg Arg
20 25 30

Val Cys Pro Gly Asp Ile Val Val Leu Asp Val Leu Asp Leu Asp Arg
35 40 45

```
Ile Thr Ala Asp Ala Leu Val Glu Ala Glu Ile Ala Ala Val Val Asn
     50                  55                  60

Ala Ser Ser Ser Val Ser Gly Arg Tyr Pro Asn Leu Gly Pro Glu Val
65                  70                  75                  80

Leu Val Thr Asn Gly Val Thr Leu Ile Asp Glu Thr Gly Pro Glu Ile
                85                  90                  95

Phe Lys Lys Val Lys Asp Gly Ala Lys Val Arg Leu Tyr Glu Gly Gly
            100                 105                 110

Val Tyr Ala Gly Asp Arg Arg Leu Ile Arg Gly Thr Glu Arg Thr Asp
        115                 120                 125

His Asp Ile Ala Asp Leu Met Arg Glu Ala Lys Ser Gly Leu Val Ala
    130                 135                 140

His Leu Glu Ala Phe Ala Gly Asn Thr Ile Glu Phe Ile Arg Ser Glu
145                 150                 155                 160

Ser Pro Leu Leu Ile Asp Gly Ile Gly Ile Pro Asp Val Asp Val Asp
                165                 170                 175

Leu Arg Arg Arg His Val Val Ile Val Ala Asp Glu Pro Ser Gly Pro
            180                 185                 190

Asp Asp Leu Lys Ser Leu Lys Pro Phe Ile Lys Glu Tyr Gln Pro Val
        195                 200                 205

Leu Val Gly Val Gly Thr Gly Ala Asp Val Leu Arg Lys Ala Gly Tyr
    210                 215                 220

Arg Pro Gln Leu Ile Val Gly Asp Pro Asp Gln Ile Ser Thr Glu Val
225                 230                 235                 240

Leu Lys Cys Gly Ala Gln Val Val Leu Pro Ala Asp Ala Asp Gly His
                245                 250                 255

Ala Pro Gly Leu Glu Arg Ile Gln Asp Leu Gly Val Gly Ala Met Thr
            260                 265                 270

Phe Pro Ala Ala Gly Ser Ala Thr Asp Leu Ala Leu Leu Leu Ala Asp
        275                 280                 285

His His Gly Ala Ala Leu Leu Val Thr Ala Gly His Ala Ala Asn Ile
    290                 295                 300

Glu Thr Phe Phe Asp Arg Thr Arg Val Gln Ser Asn Pro Ser Thr Phe
305                 310                 315                 320

Leu Thr Arg Leu Arg Val Gly Glu Lys Leu Val Asp Ala Lys Ala Val
                325                 330                 335

Ala Thr Leu Tyr Arg Asn His Ile Ser Gly Gly Ala Ile Ala Leu Leu
            340                 345                 350

Ala Leu Thr Met Leu Ile Ala Ile Ile Val Ala Leu Trp Val Ser Arg
        355                 360                 365

Thr Asp Gly Val Val Leu His Trp Ile Ile Asp Tyr Trp Asn Arg Phe
```

370 375 380

Ser Leu Trp Val Gln His Leu Val Ser
385 390

<210> 481

<211> 314

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1698, H37Rv2.tab 1922745:1923686 forward MW:32391

<400> 481

Met Ile Ser Leu Arg Gln His Ala Val Ser Leu Ala Ala Val Phe Leu
1 5 10 15

Ala Leu Ala Met Gly Val Val Leu Gly Ser Gly Phe Phe Ser Asp Thr
20 25 30

Leu Leu Ser Ser Leu Arg Ser Glu Lys Arg Asp Leu Tyr Thr Gln Ile
35 40 45

Asp Arg Leu Thr Asp Gln Arg Asp Ala Leu Arg Glu Lys Leu Ser Ala
50 55 60

Ala Asp Asn Phe Asp Ile Gln Val Gly Ser Arg Ile Val His Asp Ala
65 70 75 80

Leu Val Gly Lys Ser Val Val Ile Phe Arg Thr Pro Asp Ala His Asp
85 90 95

Asp Asp Ile Ala Ala Val Ser Lys Ile Val Gly Gln Ala Gly Gly Ala
100 105 110

Val Thr Ala Thr Val Ser Leu Thr Gln Glu Phe Val Glu Ala Asn Ser
115 120 125

Ala Glu Lys Leu Arg Ser Val Val Asn Ser Ser Ile Leu Pro Ala Gly
130 135 140

Ser Gln Leu Ser Thr Lys Leu Val Asp Gln Gly Ser Gln Ala Gly Asp
145 150 155 160

Leu Leu Gly Ile Ala Leu Leu Ser Asn Ala Asp Pro Ala Ala Pro Thr
165 170 175

Val Glu Gln Ala Gln Arg Asp Thr Val Leu Ala Ala Leu Arg Glu Thr
180 185 190

Gly Phe Ile Thr Tyr Gln Pro Arg Asp Arg Ile Gly Thr Ala Asn Ala
195 200 205

Thr Val Val Val Thr Gly Gly Ala Leu Ser Thr Asp Ala Gly Asn Gln
210 215 220

Gly Val Ser Val Ala Arg Phe Ala Ala Ala Leu Ala Pro Arg Gly Ser
225 230 235 240

Gly Thr Leu Leu Ala Gly Arg Asp Gly Ser Ala Asn Arg Pro Ala Ala
245 250 255

Val Ala Val Thr Arg Ala Asp Ala Asp Met Ala Ala Glu Ile Ser Thr
260 265 270

Val Asp Asp Ile Asp Ala Glu Pro Gly Arg Ile Thr Val Ile Leu Ala
275 280 285

Leu His Asp Leu Ile Asn Gly Gly His Val Gly His Tyr Gly Thr Gly
290 295 300

His Gly Ala Met Ser Val Thr Val Ser Gln
305 310

<210> 482

<211> 563

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1754c, H37Rv2.tab 1984982:1986670 reverse MW:60608

<400> 482

Met Tyr Arg Tyr Gln Val Arg Val Gln Gln Arg Arg Ser Glu Met Asn
1 5 10 15

Arg Trp Val Ala Thr Arg Ser Arg Arg His Thr Tyr Gln Trp Ile Thr
20 25 30

Asp His Lys Ser Pro Arg Asp His Tyr Arg His Ile Ser Glu Leu Arg
35 40 45

Thr Ser Ile Ala Thr Ser Ser Pro Gly Arg Cys Asp Met Ser Pro Ile
50 55 60

Pro Arg Ile Val Ser Val Ser Leu Ala Trp Ala Ala Ala Ile Gly Leu
65 70 75 80

Met Val Pro Ile Gly Leu Ala Pro Pro Ala Met Ala Ala Pro Cys Ser
85 90 95

```
Gly Asp Ala Ala Asn Ala Pro Pro Pro Pro Ser Ala Ile Val Thr Asp
            100                 105                 110

Pro Gly Ala Thr Ala Leu Gly Pro Val Arg Pro Gly His Gly Pro Ile
        115                 120                 125

Pro Thr Gly Arg Lys Pro Arg Gly Ala Asn Asp Arg Ala Pro Leu Pro
    130                 135                 140

Lys Leu Gly Pro Leu Ile Ser Ala Leu Leu Asn Pro Gly Ala Arg Asn
145                 150                 155                 160

Ala Ala Pro Leu Gln Gln Gln Ala Leu Val Pro Arg Ala Asn Pro Gly
                165                 170                 175

Pro Asn Pro Ala Pro Asn Pro Pro Ala Thr Gly Pro Gln Pro Pro Asn
            180                 185                 190

Ala Thr Gln Leu Thr Pro Asn Pro Ala Pro Ala Pro Asp Pro Ala Pro
        195                 200                 205

Ala Ala Ala Pro Asp Pro Gly Ala Thr Leu Ala Gly Ala Thr Thr Ser
    210                 215                 220

Leu Ala Glu Trp Val Thr Gly Pro Asp Ser Pro Asn Lys Thr Leu Glu
225                 230                 235                 240

Arg Phe Gly Ile Ser Gly Thr Asp Leu Gly Ile Pro Trp Asp Asn Gly
                245                 250                 255

Asp Pro Ala Asn Arg Gln Val Leu Met Ile Phe Gly Asp Thr Phe Gly
            260                 265                 270

Tyr Cys Ala Val Asp Gly His Gln Trp Arg Tyr Asn Thr Leu Phe Arg
        275                 280                 285

Ser Gln Asp Arg Asp Leu Gly Asn Gly Val His Val Thr Ser Gly Asp
    290                 295                 300

Ala Ser Asn Arg Tyr Ser Gly Ser Pro Val Arg Gln Pro Gly Phe Ser
305                 310                 315                 320

Lys Gln Leu Ile Asn Ser Ile Lys Trp Ala Arg Asp Glu Thr Gly Ile
                325                 330                 335

Ile Pro Thr Ala Gly Ile Ala Val Gly Lys Thr Gln Tyr Val Asn Phe
            340                 345                 350

Met Ser Ile Arg Asn Trp Gly Arg Asp Gly Glu Trp Thr Thr Asn Tyr
        355                 360                 365

Ser Gly Ile Ala Val Ser Lys Asp Asn Gly Gln Thr Trp Gly Val Phe
    370                 375                 380

Pro Gly Thr Ile Arg Ala Ser Gly Pro Asp Ser Gly Gly Lys Ala Arg
385                 390                 395                 400

Phe Val Pro Gly Asn Glu Asn Phe Gln Met Gly Ala Tyr Leu Lys Ser
                405                 410                 415
```

Asn Asp Gly Tyr Leu Tyr Ser Phe Gly Thr Pro Pro Gly Arg Gly Gly
420 425 430

Ser Ala Tyr Leu Ala Arg Val Pro Gln Arg Phe Val Pro Asp Leu Thr
435 440 445

Lys Tyr Gln Tyr Trp Asn Gly Asp Ser Asn Ser Trp Val Pro Asn Lys
450 455 460

Pro Asp Ala Ala Thr Pro Val Ile Pro Gly Pro Val Gly Glu Met Ser
465 470 475 480

Val Gln Tyr Asn Thr Tyr Leu Lys Gln Tyr Leu Ala Leu Tyr Thr Asn
485 490 495

Gly Met Asn Asp Val Val Ala Arg Thr Ala Pro Ala Pro Gln Gly Pro
500 505 510

Trp Ser Ala Glu Gln Met Leu Val Ser Ser Trp Gln Met Pro Gly Gly
515 520 525

Ile Tyr Ala Pro Met Met His Pro Trp Ser Thr Gly Lys Asp Val Tyr
530 535 540

Phe Asn Leu Ser Leu Trp Ser Ala Tyr Asn Val Met Leu Met His Thr
545 550 555 560

Val Leu Pro

<210> 483

<211> 506

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1782, H37Rv2.tab 2017740:2019257 forward MW:53689

<400> 483

Val Ala Glu Glu Ser Arg Gly Gln Arg Gly Ser Gly Tyr Gly Leu Gly
1 5 10 15

Leu Ser Thr Arg Thr Gln Val Thr Gly Tyr Gln Phe Leu Ala Arg Arg
20 25 30

Thr Ala Met Ala Leu Thr Arg Trp Arg Val Arg Met Glu Ile Glu Pro
35 40 45

Gly Arg Arg Gln Thr Leu Ala Val Val Ala Ser Val Ser Ala Ala Leu
50 55 60

```
Val Ile Cys Leu Gly Ala Leu Leu Trp Ser Phe Ile Ser Pro Ser Gly
65                  70                  75                  80

Gln Leu Asn Glu Ser Pro Ile Ile Ala Asp Arg Asp Ser Gly Ala Leu
                85                  90                  95

Tyr Val Arg Val Gly Asp Arg Leu Tyr Pro Ala Leu Asn Leu Ala Ser
            100                 105                 110

Ala Arg Leu Ile Thr Gly Arg Pro Asp Asn Pro His Leu Val Arg Ser
        115                 120                 125

Ser Gln Ile Ala Thr Met Pro Arg Gly Pro Leu Val Gly Ile Pro Gly
    130                 135                 140

Ala Pro Ser Ser Phe Ser Pro Lys Ser Pro Pro Ala Ser Ser Trp Leu
145                 150                 155                 160

Val Cys Asp Thr Val Ala Thr Ser Ser Ser Ile Gly Ser Leu Gln Gly
                165                 170                 175

Val Thr Val Thr Val Ile Asp Gly Thr Pro Asp Leu Thr Gly His Arg
            180                 185                 190

Gln Ile Leu Ser Gly Ser Asp Ala Val Val Leu Arg Tyr Gly Gly Asp
        195                 200                 205

Ala Trp Val Ile Arg Glu Gly Arg Arg Ser Arg Ile Glu Pro Thr Asn
    210                 215                 220

Arg Ala Val Leu Leu Pro Leu Gly Leu Thr Pro Glu Gln Val Ser Gln
225                 230                 235                 240

Ala Arg Pro Met Ser Arg Ala Leu Phe Asp Ala Leu Pro Val Gly Pro
                245                 250                 255

Glu Leu Leu Val Pro Glu Val Pro Asn Ala Gly Gly Pro Ala Thr Phe
            260                 265                 270

Pro Gly Ala Pro Gly Pro Ile Gly Thr Val Ile Val Thr Pro Gln Ile
        275                 280                 285

Ser Gly Pro Gln Gln Tyr Ser Leu Val Leu Gly Asp Gly Val Gln Thr
    290                 295                 300

Leu Pro Pro Leu Val Ala Gln Ile Leu Gln Asn Ala Gly Ser Ala Gly
305                 310                 315                 320

Asn Thr Lys Pro Leu Thr Val Glu Pro Ser Thr Leu Ala Lys Met Pro
                325                 330                 335

Val Val Asn Arg Leu Asp Leu Ser Ala Tyr Pro Asp Asn Pro Leu Glu
            340                 345                 350

Val Val Asp Ile Arg Glu His Pro Ser Thr Cys Trp Trp Trp Glu Arg
        355                 360                 365

Thr Ala Gly Glu Asn Arg Ala Arg Val Arg Val Val Ser Gly Pro Thr
    370                 375                 380
```

```
Ile Pro Val Ala Ala Thr Glu Met Asn Lys Val Val Ser Leu Val Lys
385                 390                 395                 400

Ala Asp Thr Ser Gly Arg Gln Ala Asp Gln Val Tyr Phe Gly Pro Asp
                405                 410                 415

His Ala Asn Phe Val Ala Val Thr Gly Asn Asn Pro Gly Ala Gln Thr
            420                 425                 430

Ser Glu Ser Leu Trp Trp Val Thr Asp Ala Gly Ala Arg Phe Gly Val
        435                 440                 445

Glu Asp Ser Lys Glu Ala Arg Asp Ala Leu Gly Leu Thr Leu Thr Pro
    450                 455                 460

Ser Leu Ala Pro Trp Val Ala Leu Arg Leu Leu Pro Gln Gly Pro Thr
465                 470                 475                 480

Leu Ser Arg Ala Asp Ala Leu Val Glu His Asp Thr Leu Pro Met Asp
                485                 490                 495

Met Thr Pro Ala Glu Leu Val Val Pro Lys
            500                 505
```

<210> 484

<211> 300

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1794, H37Rv2.tab 2031066:2031965 forward MW:32399

<400> 484

```
Met Asp Gln Gln Ser Thr Arg Thr Asp Ile Thr Val Asn Val Asp Gly
1               5                   10                  15

Phe Trp Met Leu Gln Ala Leu Leu Asp Ile Arg His Val Ala Pro Glu
            20                  25                  30

Leu Arg Cys Arg Pro Tyr Val Ser Thr Asp Ser Asn Asp Trp Leu Asn
        35                  40                  45

Glu His Pro Gly Met Ala Val Met Arg Glu Gln Gly Ile Val Val Asn
    50                  55                  60

Asp Ala Val Asn Glu Gln Val Ala Ala Arg Met Lys Val Leu Ala Ala
65                  70                  75                  80

Pro Asp Leu Glu Val Val Ala Leu Leu Ser Arg Gly Lys Leu Leu Tyr
                85                  90                  95
```

Gly Val Ile Asp Asp Glu Asn Gln Pro Pro Gly Ser Arg Asp Ile Pro
100 105 110

Asp Asn Glu Phe Arg Val Val Leu Ala Arg Arg Gly Gln His Trp Val
115 120 125

Ser Ala Val Arg Val Gly Asn Asp Ile Thr Val Asp Asp Val Thr Val
130 135 140

Ser Asp Ser Ala Ser Ile Ala Ala Leu Val Met Asp Gly Leu Glu Ser
145 150 155 160

Ile His His Ala Asp Pro Ala Ala Ile Asn Ala Val Asn Val Pro Met
165 170 175

Glu Glu Met Leu Glu Ala Thr Lys Ser Trp Gln Glu Ser Gly Phe Asn
180 185 190

Val Phe Ser Gly Gly Asp Leu Arg Arg Met Gly Ile Ser Ala Ala Thr
195 200 205

Val Ala Ala Leu Gly Gln Ala Leu Ser Asp Pro Ala Ala Glu Val Ala
210 215 220

Val Tyr Ala Arg Gln Tyr Arg Asp Asp Ala Lys Gly Pro Ser Ala Ser
225 230 235 240

Val Leu Ser Leu Lys Asp Gly Ser Gly Gly Arg Ile Ala Leu Tyr Gln
245 250 255

Gln Ala Arg Thr Ala Gly Ser Gly Glu Ala Trp Leu Ala Ile Cys Pro
260 265 270

Ala Thr Pro Gln Leu Val Gln Val Gly Val Lys Thr Val Leu Asp Thr
275 280 285

Leu Pro Tyr Gly Glu Trp Lys Thr His Ser Arg Val
290 295 300

<210> 485

<211> 406

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1797, H37Rv2.tab 2035483:2036700 forward MW:44178

<400> 485

Met Lys Ala Gln Arg Ser Phe Gly Leu Ala Leu Ser Trp Pro Arg Val

```
1               5                   10                  15

Thr Ala Val Phe Leu Val Asp Val Leu Ile Leu Ala Val Ala Ser His
            20                  25                  30

Cys Pro Asp Ser Trp Gln Ala Asp His His Val Ala Trp Trp Val Gly
        35                  40                  45

Val Gly Val Ala Ala Val Val Thr Leu Leu Ser Val Val Ser Tyr His
    50                  55                  60

Gly Ile Thr Val Ile Ser Gly Leu Ala Thr Trp Val Arg Asp Trp Ser
65                  70                  75                  80

Ala Asp Pro Gly Thr Thr Leu Gly Ala Gly Cys Thr Pro Ala Ile Asp
                85                  90                  95

His Gln Arg Arg Phe Gly Arg Asp Thr Val Gly Val Arg Glu Tyr Asn
            100                 105                 110

Gly Arg Leu Val Ser Val Ile Glu Val Thr Cys Gly Glu Ser Gly Pro
        115                 120                 125

Ser Gly Arg His Trp His Arg Lys Ser Pro Val Pro Met Leu Pro Val
    130                 135                 140

Val Ala Val Ala Asp Gly Leu Arg Gln Phe Asp Ile His Leu Asp Gly
145                 150                 155                 160

Ile Asp Ile Val Ser Val Leu Val Arg Gly Gly Val Asp Ala Ala Lys
                165                 170                 175

Ala Ser Ala Ser Leu Gln Glu Trp Glu Pro Gln Gly Trp Lys Ser Glu
            180                 185                 190

Glu Arg Ala Gly Asp Arg Thr Val Ala Asp Arg Arg Arg Thr Trp Leu
        195                 200                 205

Val Leu Arg Met Asn Pro Gln Arg Asn Val Ala Ala Val Ala Cys Arg
    210                 215                 220

Asp Ser Leu Ala Ser Thr Leu Val Ala Ala Thr Glu Arg Leu Val Gln
225                 230                 235                 240

Asp Leu Asp Gly Gln Ser Cys Ala Ala Arg Pro Val Thr Ala Asp Glu
                245                 250                 255

Leu Thr Glu Val Asp Ser Ala Val Leu Ala Asp Leu Glu Pro Thr Trp
            260                 265                 270

Ser Arg Pro Gly Trp Arg His Leu Lys His Phe Asn Gly Tyr Ala Thr
        275                 280                 285

Ser Phe Trp Val Thr Pro Ser Asp Ile Thr Ser Glu Thr Leu Asp Glu
    290                 295                 300

Leu Cys Leu Pro Asp Ser Pro Glu Val Gly Thr Thr Val Val Thr Val
305                 310                 315                 320

Arg Leu Thr Thr Arg Val Gly Ser Pro Ala Leu Ser Ala Trp Val Arg
                325                 330                 335
```

Tyr His Ser Asp Thr Arg Leu Pro Lys Glu Val Ala Ala Gly Leu Asn
340 345 350

Arg Leu Thr Gly Arg Gln Leu Ala Ala Val Arg Ala Ser Leu Pro Ala
355 360 365

Pro Thr His Arg Pro Leu Leu Val Ile Pro Ser Arg Asn Leu Arg Asp
370 375 380

His Asp Glu Leu Val Leu Pro Val Gly Gln Glu Leu Glu His Ala Thr
385 390 395 400

Ser Ser Phe Val Gly Gln
405

<210> 486

<211> 247

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1828, H37Rv2.tab 2073081:2073821 forward MW:26411

<400> 486

Val Ser Ala Pro Asp Ser Pro Ala Leu Ala Gly Met Ser Ile Gly Ala
1 5 10 15

Val Leu Asp Leu Leu Arg Pro Asp Phe Pro Asp Val Thr Ile Ser Lys
20 25 30

Ile Arg Phe Leu Glu Ala Glu Gly Leu Val Thr Pro Arg Arg Ala Ser
35 40 45

Ser Gly Tyr Arg Arg Phe Thr Ala Tyr Asp Cys Ala Arg Leu Arg Phe
50 55 60

Ile Leu Thr Ala Gln Arg Asp His Tyr Leu Pro Leu Lys Val Ile Arg
65 70 75 80

Ala Gln Leu Asp Ala Gln Pro Asp Gly Glu Leu Pro Pro Phe Gly Ser
85 90 95

Pro Tyr Val Leu Pro Arg Leu Val Pro Val Ala Gly Asp Ser Ala Gly
100 105 110

Gly Val Gly Ser Asp Thr Ala Ser Val Ser Leu Thr Gly Ile Arg Leu
115 120 125

Ser Arg Glu Asp Leu Leu Glu Arg Ser Glu Val Ala Asp Glu Leu Leu

130 135 140

Thr Ala Leu Leu Lys Ala Gly Val Ile Thr Thr Gly Pro Gly Gly Phe
145 150 155 160

Phe Asp Glu His Ala Val Val Ile Leu Gln Cys Ala Arg Ala Leu Ala
165 170 175

Glu Tyr Gly Val Glu Pro Arg His Leu Arg Ala Phe Arg Ser Ala Ala
180 185 190

Asp Arg Gln Ser Asp Leu Ile Ala Gln Ile Ala Gly Pro Leu Val Lys
195 200 205

Ala Gly Lys Ala Gly Ala Arg Asp Arg Ala Asp Asp Leu Ala Arg Glu
210 215 220

Val Ala Ala Leu Ala Ile Thr Leu His Thr Ser Leu Ile Lys Ser Ala
225 230 235 240

Val Arg Asp Val Leu His Arg
245

<210> 487

<211> 225

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1830, H37Rv2.tab 2074841:2075515 forward MW:23988

<400> 487

Val Thr Gln Leu Val Thr Arg Ala Arg Ser Ala Arg Gly Ser Thr Leu
1 5 10 15

Gly Glu Gln Pro Arg Gln Asp Gln Leu Asp Phe Ala Asp His Thr Gly
20 25 30

Thr Ala Gly Asp Gly Asn Asp Gly Ala Ala Ala Ala Ser Gly Pro Val
35 40 45

Gln Pro Gly Leu Phe Pro Asp Asp Ser Val Pro Asp Glu Leu Val Gly
50 55 60

Tyr Arg Gly Pro Ser Ala Cys Gln Ile Ala Gly Ile Thr Tyr Arg Gln
65 70 75 80

Leu Asp Tyr Trp Ala Arg Thr Ser Leu Val Val Pro Ser Ile Arg Ser
85 90 95

Ala Ala Gly Ser Gly Ser Gln Arg Leu Tyr Ser Phe Lys Asp Ile Leu
100 105 110

Val Leu Lys Ile Val Lys Arg Leu Leu Asp Thr Gly Ile Ser Leu His
115 120 125

Asn Ile Arg Val Ala Val Asp His Leu Arg Gln Arg Gly Val Gln Asp
130 135 140

Leu Ala Asn Ile Thr Leu Phe Ser Asp Gly Thr Thr Val Tyr Glu Cys
145 150 155 160

Thr Ser Ala Glu Glu Val Val Asp Leu Leu Gln Gly Gly Gln Gly Val
165 170 175

Phe Gly Ile Ala Val Ser Gly Ala Met Arg Glu Leu Thr Gly Val Ile
180 185 190

Ala Asp Phe His Gly Glu Arg Ala Asp Gly Gly Glu Ser Ile Ala Ala
195 200 205

Pro Glu Asp Glu Leu Ala Ser Arg Arg Lys His Arg Asp Arg Lys Ile
210 215 220

Gly
225

<210> 488

<211> 677

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1836c, H37Rv2.tab 2082606:2084636 reverse MW:69677

<400> 488

Met Gly Arg His Ser Lys Pro Asp Pro Glu Asp Ser Val Asp Asp Leu
1 5 10 15

Ser Asp Gly His Ala Ala Glu Gln Gln His Trp Glu Asp Ile Ser Gly
20 25 30

Ser Tyr Asp Tyr Pro Gly Val Asp Gln Pro Asp Asp Gly Pro Leu Ser
35 40 45

Ser Glu Gly His Tyr Ser Ala Val Gly Gly Tyr Ser Ala Ser Gly Ser
50 55 60

Glu Asp Tyr Pro Asp Ile Pro Pro Arg Pro Asp Trp Glu Pro Thr Gly
65 70 75 80

```
Ala Glu Pro Ile Ala Ala Ala Pro Pro Pro Leu Phe Arg Phe Gly His
                85                  90                  95

Arg Gly Pro Gly Asp Trp Gln Ala Gly His Arg Ser Ala Asp Gly Arg
            100                 105                 110

Arg Gly Val Ser Ile Gly Val Ile Val Ala Leu Val Ala Val Val Val
        115                 120                 125

Met Val Ala Gly Val Ile Leu Trp Arg Phe Phe Gly Asp Ala Leu Ser
    130                 135                 140

Asn Arg Ser His Thr Ala Ala Ala Arg Cys Val Gly Gly Lys Asp Thr
145                 150                 155                 160

Val Ala Val Ile Ala Asp Pro Ser Ile Ala Asp Gln Val Lys Glu Ser
                165                 170                 175

Ala Asp Ser Tyr Asn Ala Ser Ala Gly Pro Val Gly Asp Arg Cys Val
            180                 185                 190

Ala Val Ala Val Thr Ser Ala Gly Ser Asp Ala Val Ile Asn Gly Phe
        195                 200                 205

Ile Gly Lys Trp Pro Thr Glu Leu Gly Gly Gln Pro Gly Leu Trp Ile
    210                 215                 220

Pro Ser Ser Ser Ile Ser Ala Ala Arg Leu Thr Gly Ala Ala Gly Ser
225                 230                 235                 240

Gln Ala Ile Ser Asp Ser Arg Ser Leu Val Ile Ser Pro Val Leu Leu
                245                 250                 255

Ala Val Arg Pro Glu Leu Gln Gln Ala Leu Ala Asn Gln Asn Trp Ala
            260                 265                 270

Ala Leu Pro Gly Leu Gln Thr Asn Pro Asn Ser Leu Ser Gly Leu Asp
        275                 280                 285

Leu Pro Ala Trp Gly Ser Leu Arg Leu Ala Met Pro Ser Ser Gly Asn
    290                 295                 300

Gly Asp Ala Ala Tyr Leu Ala Gly Glu Ala Val Ala Ala Ala Ser Ala
305                 310                 315                 320

Pro Ala Gly Ala Pro Ala Thr Ala Gly Ile Gly Ala Val Arg Thr Leu
                325                 330                 335

Met Gly Ala Arg Pro Lys Leu Ala Asp Asp Ser Leu Thr Ala Ala Met
            340                 345                 350

Asp Thr Leu Leu Lys Pro Gly Asp Val Ala Thr Ala Pro Val His Ala
        355                 360                 365

Val Val Thr Thr Glu Gln Gln Leu Phe Gln Arg Gly Gln Ser Leu Ser
    370                 375                 380

Asp Ala Glu Asn Thr Leu Gly Ser Trp Leu Pro Pro Gly Pro Ala Ala
385                 390                 395                 400
```

Val Ala Asp Tyr Pro Thr Val Leu Leu Ser Gly Ala Trp Leu Ser Gln
405 410 415

Glu Gln Thr Ser Ala Ala Ser Ala Phe Ala Arg Tyr Leu His Lys Pro
420 425 430

Glu Gln Leu Ala Lys Leu Ala Arg Ala Gly Phe Arg Val Ser Asp Val
435 440 445

Lys Pro Pro Ser Ser Pro Val Thr Ser Phe Pro Ala Leu Pro Ser Thr
450 455 460

Leu Ser Val Gly Asp Asp Ser Met Arg Ala Thr Leu Ala Asp Thr Met
465 470 475 480

Val Thr Ala Ser Ala Gly Val Ala Ala Thr Ile Met Leu Asp Gln Ser
485 490 495

Met Pro Asn Asp Glu Gly Gly Asn Ser Arg Leu Ser Asn Val Val Ala
500 505 510

Ala Leu Glu Asn Arg Ile Lys Ala Met Pro Pro Ser Ser Val Val Gly
515 520 525

Leu Trp Thr Phe Asp Gly Arg Glu Gly Arg Thr Glu Val Pro Ala Gly
530 535 540

Pro Leu Ala Asp Pro Val Asn Gly Gln Pro Arg Pro Ala Ala Leu Thr
545 550 555 560

Ala Ala Leu Gly Lys Gln Tyr Ser Ser Gly Gly Gly Ala Val Ser Phe
565 570 575

Thr Thr Leu Arg Leu Ile Tyr Gln Glu Met Leu Ala Asn Tyr Arg Val
580 585 590

Gly Gln Ala Asn Ser Val Leu Val Ile Thr Ala Gly Pro His Thr Asp
595 600 605

Gln Thr Leu Asp Gly Pro Gly Leu Gln Asp Phe Ile Arg Lys Ser Ala
610 615 620

Asp Pro Ala Lys Pro Ile Ala Val Asn Ile Ile Asp Phe Gly Ala Asp
625 630 635 640

Pro Asp Arg Ala Thr Trp Glu Ala Val Ala Gln Leu Ser Gly Gly Ser
645 650 655

Tyr Gln Asn Leu Glu Thr Ser Ala Ser Pro Asp Leu Ala Thr Ala Val
660 665 670

Asn Ile Phe Leu Ser
675

<210> 489

<211> 316

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1845c, H37Rv2.tab 2095221:2096168 reverse MW:32704

<400> 489

Val Ser Ala Leu Ala Phe Thr Ile Leu Ala Val Leu Leu Ala Gly Pro
1 5 10 15

Thr Pro Ala Leu Leu Ala Arg Ala Thr Trp Pro Leu Arg Ala Pro Arg
20 25 30

Ala Ala Met Val Leu Trp Gln Ala Ile Ala Leu Ala Ala Val Leu Ser
35 40 45

Ser Phe Ser Ala Gly Ile Ala Ile Ala Ser Arg Leu Leu Met Pro Gly
50 55 60

Pro Asp Gly Arg Pro Thr Thr Ser Phe Val Gly Ala Ala Gly Arg Leu
65 70 75 80

Gly Trp Pro Leu Trp Ala Ala Tyr Ile Thr Val Phe Ala Leu Thr Val
85 90 95

Leu Val Gly Ala Arg Leu Ala Val Ala Val Val Arg Val Ala Thr Ala
100 105 110

Thr Arg Arg Arg Arg Ala His His Arg Met Val Val Asp Leu Val Gly
115 120 125

Val Gly His Asn Gly Ala Leu Ala Gln Pro Cys Ala Arg Ala Arg Asp
130 135 140

Leu Arg Val Leu Asp Val Ala Gln Pro Leu Ala Tyr Cys Leu Pro Gly
145 150 155 160

Val Arg Ser Arg Val Val Val Ser Glu Gly Thr Leu Thr Ala Leu Ala
165 170 175

Asp Ala Glu Val Ala Ala Ile Leu Thr His Glu Arg Ala His Leu Arg
180 185 190

Ala Arg His Asp Leu Val Leu Glu Ala Phe Thr Ala Val His Ala Ala
195 200 205

Phe Pro Arg Leu Val Arg Ser Ala Asn Ala Leu Gly Ala Val Gln Leu
210 215 220

Leu Val Glu Leu Leu Ala Asp Asp Ala Ala Val Arg Ala Ala Gly Arg
225 230 235 240

Thr Pro Leu Ala Arg Ala Leu Val Ala Cys Ala Ser Gly Arg Ala Pro
245 250 255

Ser Gly Ala Leu Ala Val Gly Gly Pro Ser Thr Val Leu Arg Val Arg
260 265 270

Arg Leu Ser Gly Arg Gly Asn Ser Ala Val Leu Ser Ala Ala Ala Tyr
275 280 285

Leu Ala Ala Ala Ala Val Leu Val Val Pro Thr Val Ala Leu Ala Val
290 295 300

Pro Trp Leu Thr Gln Leu Gln Arg Leu Phe Ile Ala
305 310 315

<210> 490

<211> 138

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1846c, H37Rv2.tab 2096186:2096599 reverse MW:15211

<400> 490

Met Ala Lys Leu Thr Arg Leu Gly Asp Leu Glu Arg Ala Val Met Asp
1 5 10 15

His Leu Trp Ser Arg Thr Glu Pro Gln Thr Val Arg Gln Val His Glu
20 25 30

Ala Leu Ser Ala Arg Arg Asp Leu Ala Tyr Thr Thr Val Met Thr Val
35 40 45

Leu Gln Arg Leu Ala Lys Lys Asn Leu Val Leu Gln Ile Arg Asp Asp
50 55 60

Arg Ala His Arg Tyr Ala Pro Val His Gly Arg Asp Glu Leu Val Ala
65 70 75 80

Gly Leu Met Val Asp Ala Leu Ala Gln Ala Glu Asp Ser Gly Ser Arg
85 90 95

Gln Ala Ala Leu Val His Phe Val Glu Arg Val Gly Ala Asp Glu Ala
100 105 110

Asp Ala Leu Arg Arg Ala Leu Ala Glu Leu Glu Ala Gly His Gly Asn
115 120 125

Arg Pro Pro Ala Gly Ala Ala Thr Glu Thr
130 135

<210> 491

<211> 101

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1861, H37Rv2.tab 2109165:2109467 forward MW:10330

<400> 491

Met Asp Ile Thr Ala Thr Thr Glu Phe Ser Ala Met Asn Leu Asp Gly
1 5 10 15

Lys Thr Gly Ile Gly Trp Leu Gly Tyr Ile Val Ile Gly Gly Ile Ala
20 25 30

Gly Trp Leu Ala Ser Lys Ile Val Lys Gly Gly Gly Ser Gly Ile Leu
35 40 45

Met Asn Val Val Ile Gly Val Val Gly Ala Phe Gly Ala Gly Leu Val
50 55 60

Leu Asn Ala Leu Gly Val Asp Val Asn His Gly Gly Tyr Trp Phe Thr
65 70 75 80

Phe Phe Val Ala Leu Gly Gly Ala Val Val Leu Leu Trp Ile Val Gly
85 90 95

Met Val Arg Lys Thr
100

<210> 492

<211> 129

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1871c, H37Rv2.tab 2121498:2121884 reverse MW:14663

<400> 492

Leu Asn Ala Ala Met Asn Leu Lys Arg Glu Phe Val His Arg Val Gln
1 5 10 15

Arg Phe Val Val Asn Pro Ile Gly Arg Gln Leu Pro Met Thr Met Leu
20 25 30

Glu Thr Ile Gly Arg Lys Thr Gly Gln Pro Arg Arg Thr Ala Val Gly
35 40 45

Gly Arg Val Val Asp Asn Gln Phe Trp Met Val Ser Glu His Gly Glu
50 55 60

His Ser Asp Tyr Val Tyr Asn Ile Lys Ala Asn Pro Ala Val Arg Val
65 70 75 80

Arg Ile Gly Gly Arg Trp Arg Ser Gly Thr Ala Tyr Leu Leu Pro Asp
85 90 95

Asp Asp Pro Arg Gln Arg Leu Arg Gly Leu Pro Arg Leu Asn Ser Ala
100 105 110

Gly Val Arg Ala Met Gly Thr Asp Leu Leu Thr Ile Arg Val Asp Leu
115 120 125

Asp

<210> 493

<211> 153

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1883c, H37Rv2.tab 2133234:2133692 reverse MW:17280

<400> 493

Met Cys Leu Asp Gln Val Met Glu Gly Ser Ala Thr Val His Met Ala
1 5 10 15

Ala Pro Pro Asp Lys Ile Trp Thr Leu Ile Ala Asp Val Arg Asn Thr
20 25 30

Gly Arg Phe Ser Pro Glu Thr Phe Glu Ala Glu Trp Leu Asp Gly Ala
35 40 45

Thr Gly Pro Ala Leu Gly Ala Arg Phe Arg Gly His Val Arg Arg Asn
50 55 60

Gly Ile Gly Pro Val Tyr Trp Thr Val Cys Glu Pro Gly Arg Glu Phe
65 70 75 80

Gly Phe Ala Val Leu Leu Gly Asp Arg Pro Val Asn Asn Trp His Tyr
85 90 95

Arg Leu Thr Pro Thr Ala Asp Gly Thr Glu Val Thr Glu Ser Phe Arg
100 105 110

Leu Pro Pro Ser Val Leu Thr Thr Val Tyr Tyr Arg Val Phe Gly Gly
115 120 125

Trp Leu Arg Gln Arg Arg Asn Ile Arg Asp Met Thr Lys Thr Leu Gln
130 135 140

Arg Ile Lys Asp Leu Val Glu Ala Gly
145 150

<210> 494

<211> 135

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1891, H37Rv2.tab 2139741:2140145 forward MW:14108

<400> 494

Met Ile Arg Glu Leu Val Thr Thr Ala Ala Ile Thr Gly Ala Ala Ile
1 5 10 15

Gly Gly Ala Pro Val Ala Gly Ala Asp Pro Gln Arg Tyr Asp Gly Asp
20 25 30

Val Pro Gly Met Asn Tyr Asp Ala Ser Leu Gly Ala Pro Cys Ser Ser
35 40 45

Trp Glu Arg Phe Ile Phe Gly Arg Gly Pro Ser Gly Gln Ala Glu Ala
50 55 60

Cys His Phe Pro Pro Pro Asn Gln Phe Pro Pro Ala Glu Thr Gly Tyr
65 70 75 80

Trp Val Ile Ser Tyr Pro Leu Tyr Gly Val Gln Gln Val Gly Ala Pro
85 90 95

Cys Pro Lys Pro Gln Ala Ala Ala Gln Ser Pro Asp Gly Leu Pro Met
100 105 110

Leu Cys Leu Gly Ala Arg Gly Trp Gln Pro Gly Trp Phe Thr Gly Ala
115 120 125

Gly Phe Phe Pro Pro Glu Pro

130 135

<210> 495

<211> 72

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1893, H37Rv2.tab 2140486:2140701 forward MW:7467

<400> 495

Met Ser Phe Asn Pro Lys Asp Ala Val Asp Ala Val Arg Asp Ile Ala
1 5 10 15

Ala Asn Ala Val Glu Lys Ala Ser Asp Ile Val Glu Asn Ala Gly His
20 25 30

Ile Ile Arg Gly Asp Ile Ala Gly Gly Ala Ser Gly Ile Val Lys Asp
35 40 45

Ser Ile Asp Ile Ala Thr His Ala Val Asp Arg Thr Lys Glu Val Phe
50 55 60

Thr Gly Lys Thr Asp Asp Glu Gly
65 70

<210> 496

<211> 156

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1906c, H37Rv2.tab 2152428:2152895 reverse MW:15536

<400> 496

Met Arg Leu Lys Pro Ala Pro Ser Pro Ala Ala Ala Phe Ala Val Ala
1 5 10 15

Gly Leu Ile Leu Ala Gly Trp Ala Gly Ser Val Gly Leu Ala Gly Ala

20 25 30

Asp Pro Glu Pro Ala Pro Thr Pro Lys Thr Ala Ile Asp Ser Asp Gly
35 40 45

Thr Tyr Ala Val Gly Ile Asp Ile Ala Pro Gly Thr Tyr Ser Ser Ala
50 55 60

Gly Pro Val Gly Asp Gly Thr Cys Tyr Trp Lys Arg Met Gly Asn Pro
65 70 75 80

Asp Gly Ala Leu Ile Asp Asn Ala Leu Ser Lys Lys Pro Gln Val Val
85 90 95

Thr Ile Glu Pro Thr Asp Lys Ala Phe Lys Thr His Gly Cys Gln Pro
100 105 110

Trp Gln Asn Thr Gly Ser Glu Gly Ala Ala Pro Ala Gly Val Pro Gly
115 120 125

Pro Glu Ala Gly Ala Gln Leu Gln Asn Gln Leu Gly Ile Leu Asn Gly
130 135 140

Leu Leu Gly Pro Thr Gly Gly Arg Val Pro Gln Pro
145 150 155

<210> 497

<211> 154

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1919c, H37Rv2.tab 2171064:2171525 reverse MW:16803

<400> 497

Met Ser Gly Arg Lys Phe Ser Phe Glu Val Thr Lys Thr Ser Ser Ala
1 5 10 15

Pro Ala Ala Thr Leu Phe Arg Leu Val Thr Asp Gly Gly Asn Trp Ala
20 25 30

Thr Trp Ala Lys Pro Ile Val Ala Gln Ser Ser Trp Ala Arg Arg Gly
35 40 45

Asp Pro Ala Pro Gly Gly Ile Gly Ala Ile Arg Lys Leu Gly Met Trp
50 55 60

Pro Val Phe Val Gln Glu Glu Thr Val Glu Tyr Glu Gln Asp Arg Arg
65 70 75 80

His Val Tyr Lys Leu Val Gly Ala Arg Thr Pro Val Gln Asp Tyr Phe
85 90 95

Gly Glu Val Val Leu Thr Pro Asn Ala Ser Gly Gly Thr Asp Leu Arg
100 105 110

Trp Ser Gly Ser Phe Thr Glu Lys Val Arg Gly Thr Gly Pro Val Met
115 120 125

Arg Ala Ala Leu Gly Gly Ala Val Arg Phe Phe Ala Gly Gln Leu Val
130 135 140

Lys Ala Ala Glu Arg Glu Ala Val Arg Arg
145 150

<210> 498

<211> 135

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv1976c, H37Rv2.tab 2218847:2219251 reverse MW:14997

<400> 498

Val Arg Trp Ile Val Asp Gly Met Asn Val Ile Gly Ser Arg Pro Asp
1 5 10 15

Gly Trp Trp Arg Asp Arg His Arg Ala Met Val Met Leu Val Glu Arg
20 25 30

Leu Glu Gly Trp Ala Ile Thr Lys Ala Arg Gly Asp Asp Val Thr Val
35 40 45

Val Phe Glu Arg Pro Pro Ser Thr Ala Ile Pro Ser Ser Val Val Glu
50 55 60

Val Ala His Ala Pro Lys Ala Ala Ala Asn Ser Ala Asp Asp Glu Ile
65 70 75 80

Val Arg Leu Val Arg Ser Gly Ala Gln Pro Gln Glu Ile Arg Val Val
85 90 95

Thr Ser Asp Lys Ala Leu Thr Asp Arg Val Arg Asp Leu Gly Ala Ala
100 105 110

Val Tyr Pro Ala Glu Arg Phe Arg Asp Leu Ile Asp Pro Arg Gly Ser
115 120 125

Asn Ala Ala Arg Arg Thr Gln
130 135

<210> 499

<211> 111

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2050, H37Rv2.tab 2307821:2308153 forward MW:12971

<400> 499

Met Ala Asp Arg Val Leu Arg Gly Ser Arg Leu Gly Ala Val Ser Tyr
1 5 10 15

Glu Thr Asp Arg Asn His Asp Leu Ala Pro Arg Gln Ile Ala Arg Tyr
20 25 30

Arg Thr Asp Asn Gly Glu Glu Phe Glu Val Pro Phe Ala Asp Asp Ala
35 40 45

Glu Ile Pro Gly Thr Trp Leu Cys Arg Asn Gly Met Glu Gly Thr Leu
50 55 60

Ile Glu Gly Asp Leu Pro Glu Pro Lys Lys Val Lys Pro Pro Arg Thr
65 70 75 80

His Trp Asp Met Leu Leu Glu Arg Arg Ser Ile Glu Glu Leu Glu Glu
85 90 95

Leu Leu Lys Glu Arg Leu Glu Leu Ile Arg Ser Arg Arg Arg Gly
100 105 110

<210> 500

<211> 237

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2054, H37Rv2.tab 2313125:2313835 forward MW:25183

<400> 500

```
Met Thr Thr Ile Glu Ile Asp Ala Pro Ala Gly Pro Ile Asp Ala Leu
1               5                  10                  15

Leu Gly Leu Pro Pro Gly Gln Gly Pro Trp Pro Gly Val Val Val Val
            20                  25                  30

His Asp Ala Val Gly Tyr Val Pro Asp Asn Lys Leu Ile Ser Glu Arg
        35                  40                  45

Ile Ala Arg Ala Gly Tyr Val Val Leu Thr Pro Asn Met Tyr Ala Arg
    50                  55                  60

Gly Gly Arg Ala Arg Cys Ile Thr Arg Val Phe Arg Glu Leu Leu Thr
65                  70                  75                  80

Lys Arg Gly Arg Ala Leu Asp Asp Ile Leu Ala Ala Arg Asp His Leu
                85                  90                  95

Leu Ala Met Pro Glu Cys Ser Gly Arg Val Gly Ile Val Gly Phe Cys
            100                 105                 110

Met Gly Gly Gln Phe Ala Leu Val Leu Ser Pro Arg Gly Phe Gly Ala
        115                 120                 125

Thr Ala Pro Phe Tyr Gly Thr Pro Leu Pro Arg His Leu Ser Glu Thr
    130                 135                 140

Leu Asn Gly Ala Cys Pro Ile Val Ala Ser Phe Gly Thr Arg Asp Pro
145                 150                 155                 160

Leu Gly Ile Gly Ala Ala Asn Arg Leu Arg Lys Val Thr Ala Ala Lys
                165                 170                 175

Asn Ile Pro Ala Asp Ile Lys Ser Tyr Pro Gly Ala Gly His Ser Phe
            180                 185                 190

Ala Asn Lys Leu Pro Gly Gln Pro Leu Val Arg Ile Ala Gly Phe Gly
        195                 200                 205

Tyr Asn Glu Ala Ala Thr Glu Asp Ala Trp Arg Arg Val Phe Glu Phe
    210                 215                 220

Phe Gly Gln His Leu Arg Ala Gly Ser Pro Gly Glu Pro
225                 230                 235
```

<210> 501

<211> 134

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2061c, H37Rv2.tab 2316684:2317085 reverse MW:14782

<400> 501

Val Thr Pro Thr Phe Ser Asp Leu Ala Glu Ala Gln Tyr Leu Leu Leu
1 5 10 15

Thr Thr Phe Thr Lys Asp Gly Arg Pro Lys Pro Val Pro Ile Trp Ala
20 25 30

Ala Leu Asp Thr Asp Arg Gly Asp Arg Leu Leu Val Ile Thr Glu Lys
35 40 45

Lys Ser Trp Lys Val Lys Arg Ile Arg Asn Thr Pro Arg Val Thr Leu
50 55 60

Ala Thr Cys Thr Leu Arg Gly Arg Pro Thr Ser Glu Ala Val Glu Ala
65 70 75 80

Thr Ala Ala Ile Leu Asp Glu Ser Gln Thr Gly Ala Val Tyr Asp Ala
85 90 95

Ile Val Lys Arg Tyr Gly Ile Gln Gly Lys Leu Phe Thr Phe Val Ser
100 105 110

Lys Leu Arg Gly Gly Met Arg Asn Asn Ile Gly Leu Glu Leu Lys Val
115 120 125

Ala Glu Ser Glu Thr Gly
130

<210> 502

<211> 244

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2091c, H37Rv2.tab 2348561:2349292 reverse MW:26019

<400> 502

Met Ser Gly Pro Gln Gly Ser Asp Pro Arg Gln Pro Trp Gln Pro Pro
1 5 10 15

Gly Gln Gly Ala Asp His Ser Ser Asp Pro Thr Val Ala Ala Gly Tyr
20 25 30

Pro Trp Gln Gln Gln Pro Thr Gln Glu Ala Thr Trp Gln Ala Pro Ala
35 40 45

```
Tyr Thr Pro Gln Tyr Gln Gln Pro Ala Asp Pro Ala Tyr Pro Gln Gln
     50                  55                  60

Tyr Pro Gln Pro Thr Pro Gly Tyr Ala Gln Pro Glu Gln Phe Gly Ala
65                  70                  75                  80

Gln Pro Thr Gln Leu Gly Val Pro Gly Gln Tyr Gly Gln Tyr Gln Gln
                85                  90                  95

Pro Gly Gln Tyr Gly Gln Pro Gly Gln Tyr Gly Gln Pro Gly Gln Tyr
            100                 105                 110

Ala Pro Pro Gly Gln Tyr Pro Gly Gln Tyr Gly Pro Tyr Gly Gln Ser
        115                 120                 125

Gly Gln Gly Ser Lys Arg Ser Val Ala Val Ile Gly Gly Val Ile Ala
    130                 135                 140

Val Met Ala Val Leu Phe Ile Gly Ala Val Leu Ile Leu Gly Phe Trp
145                 150                 155                 160

Ala Pro Gly Phe Phe Val Thr Thr Lys Leu Asp Val Ile Lys Ala Gln
                165                 170                 175

Ala Gly Val Gln Gln Val Leu Thr Asp Glu Thr Thr Gly Tyr Gly Ala
            180                 185                 190

Lys Asn Val Lys Asp Val Lys Cys Asn Asn Gly Ser Asp Pro Thr Val
        195                 200                 205

Lys Lys Gly Ala Thr Phe Glu Cys Thr Val Ser Ile Asp Gly Thr Ser
    210                 215                 220

Lys Arg Val Thr Val Thr Phe Gln Asp Asn Lys Gly Thr Tyr Glu Val
225                 230                 235                 240

Gly Arg Pro Gln
```

<210> 503

<211> 64

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2111c, H37Rv2.tab 2370601:2370792 reverse MW:6944

<400> 503

```
Met Ala Gln Glu Gln Thr Lys Arg Gly Gly Gly Gly Asp Asp Asp
1               5                   10                  15
```

Asp Ile Ala Gly Ser Thr Ala Ala Gly Gln Glu Arg Arg Glu Lys Leu
20 25 30

Thr Glu Glu Thr Asp Asp Leu Leu Asp Glu Ile Asp Asp Val Leu Glu
35 40 45

Glu Asn Ala Glu Asp Phe Val Arg Ala Tyr Val Gln Lys Gly Gly Gln
50 55 60

<210> 504

<211> 292

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2125, H37Rv2.tab 2386293:2387168 forward MW:31808

<400> 504

Val Thr Pro Ser Glu Gly Asn Ala Pro Leu Pro Glu Leu His Asn Thr
1 5 10 15

Val Val Val Ala Ala Phe Glu Gly Trp Asn Asp Ala Gly Asp Ala Ala
20 25 30

Gly Asp Ala Val Ala His Leu Ala Ala Ser Trp Gln Ala Leu Pro Ile
35 40 45

Val Glu Ile Asp Asp Glu Ala Tyr Tyr Asp Tyr Gln Val Asn Arg Pro
50 55 60

Val Ile Arg Gln Val Asp Gly Val Thr Arg Glu Leu Gln Trp Pro Ala
65 70 75 80

Met Arg Ile Ser His Cys Arg Pro Pro Gly Ser Asp Arg Asp Val Val
85 90 95

Leu Met Cys Gly Val Glu Pro Asn Met Arg Trp Arg Thr Phe Cys Asp
100 105 110

Glu Leu Leu Ala Val Ile Asp Lys Leu Asn Val Asp Thr Val Val Ile
115 120 125

Leu Gly Ala Leu Leu Ala Asp Thr Pro His Thr Arg Pro Val Pro Val
130 135 140

Ser Gly Ala Ala Tyr Ser Ala Ala Ser Ala Arg Gln Phe Gly Leu Gln
145 150 155 160

Glu Thr Arg Tyr Glu Gly Pro Thr Gly Ile Ala Gly Val Phe Gln Ser

165 170 175

Ala Cys Val Gly Ala Gly Ile Pro Ala Val Thr Phe Trp Ala Ala Val
180 185 190

Pro His Tyr Val Ser His Pro Pro Asn Pro Lys Ala Thr Ile Ala Leu
195 200 205

Leu Arg Arg Val Glu Asp Val Leu Asp Val Glu Val Pro Leu Ala Asp
210 215 220

Leu Pro Ala Gln Ala Glu Ala Trp Glu Arg Glu Ile Thr Glu Thr Ile
225 230 235 240

Ala Glu Asp His Glu Leu Ala Glu Tyr Val Gln Thr Leu Glu Gln His
245 250 255

Gly Asp Ala Ala Val Asp Met Asn Glu Ala Leu Gly Asn Ile Asp Gly
260 265 270

Asp Ala Leu Ala Ala Glu Phe Glu Arg Tyr Leu Arg Arg Arg Arg Pro
275 280 285

Gly Phe Gly Arg
290

<210> 505

<211> 262

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2133c, H37Rv2.tab 2393854:2394639 reverse MW:28284

<400> 505

Val Leu Ala Asp Gly Glu Leu Thr Val Leu Gly Arg Ile Arg Ser Ala
1 5 10 15

Ser Asn Ala Thr Phe Leu Cys Glu Ser Thr Leu Gly Leu Arg Ser Leu
20 25 30

His Cys Val Tyr Lys Pro Val Ser Gly Glu Arg Pro Leu Trp Asp Phe
35 40 45

Pro Asp Gly Thr Leu Ala Gly Arg Glu Leu Ser Ala Tyr Leu Val Ser
50 55 60

Thr Gln Leu Gly Trp Asn Leu Val Pro His Thr Ile Ile Arg Asp Gly
65 70 75 80

Pro Ala Gly Ile Gly Met Leu Gln Leu Trp Val Gln Gln Pro Gly Asp
85 90 95

Ala Val Asp Ser Asp Pro Leu Pro Gly Pro Asp Leu Val Asp Leu Phe
100 105 110

Pro Ala His Arg Pro Arg Pro Gly Tyr Leu Pro Val Leu Arg Ala Tyr
115 120 125

Asp Tyr Ala Gly Asp Glu Val Val Leu Met His Ala Asp Asp Ile Arg
130 135 140

Leu Arg Arg Met Ala Val Phe Asp Val Leu Ile Asn Asn Ala Asp Arg
145 150 155 160

Lys Gly Gly His Ile Leu Cys Gly Ile Asp Gly Gln Val Tyr Gly Val
165 170 175

Asp His Gly Leu Cys Leu His Val Glu Asn Lys Leu Arg Thr Val Leu
180 185 190

Trp Gly Trp Ala Gly Lys Pro Ile Asp Asp Gln Ile Leu Gln Ala Val
195 200 205

Ala Gly Leu Ala Asp Ala Leu Gly Gly Pro Leu Ala Glu Ala Leu Ala
210 215 220

Gly Arg Ile Ala Ala Ala Glu Ile Gly Ala Leu Arg Arg Arg Ala Gln
225 230 235 240

Ser Leu Leu Asp Gln Pro Val Met Pro Gly Pro Asn Gly His Arg Pro
245 250 255

Ile Pro Trp Pro Ala Phe
260

<210> 506

<211> 195

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2134c, H37Rv2.tab 2394653:2395237 reverse MW:21217

<400> 506

Met Ala Arg Ala Ile His Val Phe Arg Thr Pro Asp Arg Phe Val Ala
1 5 10 15

Gly Thr Val Gly Gln Pro Gly Asn Arg Thr Phe Tyr Leu Gln Ala Val
20 25 30

His Asp Ser Arg Val Val Ser Val Val Leu Glu Lys Gln Gln Val Ala
35 40 45

Val Leu Ala Glu Arg Ile Gly Ala Leu Leu Phe Glu Val Asn Arg Arg
50 55 60

Phe Gly Thr Pro Val Pro Pro Glu Pro Thr Glu Ile Asp Asp Leu Ser
65 70 75 80

Pro Leu Ile Met Pro Val Asp Ala Glu Phe Arg Val Gly Thr Met Gly
85 90 95

Leu Gly Trp Asp Ser Glu Ala Gln Ser Val Val Val Glu Leu Leu Ala
100 105 110

Val Thr Asp Ala Glu Phe Asp Ala Ser Val Val Leu Asp Asp Thr Glu
115 120 125

Glu Gly Pro Asp Ala Val Arg Val Phe Leu Thr Pro Glu Ser Ala Arg
130 135 140

Gln Phe Ala Thr Arg Ser Tyr Arg Val Ile Ser Ala Gly Arg Pro Pro
145 150 155 160

Cys Pro Leu Cys Asp Glu Pro Leu Asp Pro Glu Gly His Ile Cys Ala
165 170 175

Arg Thr Asn Gly Tyr Arg Arg Asp Val Leu Leu Gly Ser Gly Asp Asp
180 185 190

Pro Ala Gly
195

<210> 507

<211> 137

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2137c, H37Rv2.tab 2396905:2397315 reverse MW:14965

<400> 507

Met Arg Asn Met Lys Ser Thr Ser His Glu Ser Glu Ser Gly Lys Leu
1 5 10 15

Leu Ser Ile Ser Ser Cys Arg Pro Arg Glu Met Val Leu Gln Arg Tyr
20 25 30

Ser Leu Gly Met Thr Val Thr Ala Asp Arg His Leu Ala Asp Lys Arg

35 40 45

Glu Glu Phe Ala Val Glu Asp Ile Ser Thr Gly Ile Phe Ala Ser Gly
50 55 60

Tyr Gly Gln Val Gly Asp Gly Arg Ser Phe Ser Phe His Ile Glu His
65 70 75 80

Arg Ser Leu Val Val Glu Ile Tyr Arg Pro Arg Val Ala Gly Pro Val
85 90 95

Pro Gln Ala Glu Asp Val Val Ala Met Ala Val Arg Gly Leu Val Asp
100 105 110

Ile Asp Leu Thr Asp Glu Arg Ser Leu Ala Ala Ala Val Arg Asp Ser
115 120 125

Val Ala Ser Ala Ala Pro Val Ser Arg
130 135

<210> 508

<211> 118

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2144c, H37Rv2.tab 2404168:2404521 reverse MW:12027

<400> 508

Met Leu Ile Ile Ala Leu Val Leu Ala Leu Ile Gly Leu Leu Ala Leu
1 5 10 15

Val Phe Ala Val Val Thr Ser Asn Gln Leu Val Ala Trp Val Cys Ile
20 25 30

Gly Ala Ser Val Leu Gly Val Ala Leu Leu Ile Val Asp Ala Leu Arg
35 40 45

Glu Arg Gln Gln Gly Gly Ala Asp Glu Ala Asp Gly Ala Gly Glu Thr
50 55 60

Gly Val Ala Glu Glu Ala Asp Val Asp Tyr Pro Glu Glu Ala Pro Glu
65 70 75 80

Glu Ser Gln Ala Val Asp Ala Gly Val Ile Gly Ser Glu Glu Pro Ser
85 90 95

Glu Glu Ala Ser Glu Ala Thr Glu Glu Ser Ala Val Ser Ala Asp Arg
100 105 110

Ser Asp Asp Ser Ala Lys
115

<210> 509

<211> 96

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2146c, H37Rv2.tab 2405669:2405956 reverse MW:10804

<400> 509

Leu Val Val Phe Phe Gln Ile Leu Gly Phe Ala Leu Phe Ile Phe Trp
1 5 10 15

Leu Leu Leu Ile Ala Arg Val Val Val Glu Phe Ile Arg Ser Phe Ser
20 25 30

Arg Asp Trp Arg Pro Thr Gly Val Thr Val Val Ile Leu Glu Ile Ile
35 40 45

Met Ser Ile Thr Asp Pro Pro Val Lys Val Leu Arg Arg Leu Ile Pro
50 55 60

Gln Leu Thr Ile Gly Ala Val Arg Phe Asp Leu Ser Ile Met Val Leu
65 70 75 80

Leu Leu Val Ala Phe Ile Gly Met Gln Leu Ala Phe Gly Ala Ala Ala
85 90 95

<210> 510

<211> 241

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2147c, H37Rv2.tab 2406121:2406843 reverse MW:27629

<400> 510

Val Asn Ser His Cys Ser His Thr Phe Ile Thr Asp Asn Arg Ser Pro
1 5 10 15

Arg Ala Arg Arg Gly His Ala Met Ser Thr Leu His Lys Val Lys Ala
20 25 30

Tyr Phe Gly Met Ala Pro Met Glu Asp Tyr Asp Asp Glu Tyr Tyr Asp
35 40 45

Asp Arg Ala Pro Ser Arg Gly Tyr Ala Arg Pro Arg Phe Asp Asp Asp
50 55 60

Tyr Gly Arg Tyr Asp Gly Arg Asp Tyr Asp Asp Ala Arg Ser Asp Ser
65 70 75 80

Arg Gly Asp Leu Arg Gly Glu Pro Ala Asp Tyr Pro Pro Pro Gly Tyr
85 90 95

Arg Gly Gly Tyr Ala Asp Glu Pro Arg Phe Arg Pro Arg Glu Phe Asp
100 105 110

Arg Ala Glu Met Thr Arg Pro Arg Phe Gly Ser Trp Leu Arg Asn Ser
115 120 125

Thr Arg Gly Ala Leu Ala Met Asp Pro Arg Arg Met Ala Met Met Phe
130 135 140

Glu Asp Gly His Pro Leu Ser Lys Ile Thr Thr Leu Arg Pro Lys Asp
145 150 155 160

Tyr Ser Glu Ala Arg Thr Ile Gly Glu Arg Phe Arg Asp Gly Ser Pro
165 170 175

Val Ile Met Asp Leu Val Ser Met Asp Asn Ala Asp Ala Lys Arg Leu
180 185 190

Val Asp Phe Ala Ala Gly Leu Ala Phe Ala Leu Arg Gly Ser Phe Asp
195 200 205

Lys Val Ala Thr Lys Val Phe Leu Leu Ser Pro Ala Asp Val Asp Val
210 215 220

Ser Pro Glu Glu Arg Arg Arg Ile Ala Glu Thr Gly Phe Tyr Ala Tyr
225 230 235 240

Gln

<210> 511

<211> 384

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2164c, H37Rv2.tab 2427087:2428238 reverse MW:39647

<400> 511

Met Arg Ala Lys Arg Glu Ala Pro Lys Ser Arg Ser Ser Asp Arg Arg
1 5 10 15

Arg Arg Ala Asp Ser Pro Ala Ala Ala Thr Arg Arg Thr Thr Thr Asn
20 25 30

Ser Ala Pro Ser Arg Arg Ile Arg Ser Arg Ala Gly Lys Thr Ser Ala
35 40 45

Pro Gly Arg Gln Ala Arg Val Ser Arg Pro Gly Pro Gln Thr Ser Pro
50 55 60

Met Leu Ser Pro Phe Asp Arg Pro Ala Pro Ala Lys Asn Thr Ser Gln
65 70 75 80

Ala Lys Ala Arg Ala Lys Ala Arg Lys Ala Lys Ala Pro Lys Leu Val
85 90 95

Arg Pro Thr Pro Met Glu Arg Leu Ala Ala Arg Leu Thr Ser Ile Asp
100 105 110

Leu Arg Pro Arg Thr Leu Ala Asn Lys Val Pro Phe Val Val Leu Val
115 120 125

Ile Gly Ser Leu Gly Val Gly Leu Gly Leu Thr Leu Trp Leu Ser Thr
130 135 140

Asp Ala Ala Glu Arg Ser Tyr Gln Leu Ser Asn Ala Arg Glu Arg Thr
145 150 155 160

Arg Met Leu Gln Gln His Lys Glu Ala Leu Glu Arg Asp Val Arg Glu
165 170 175

Ala Ala Ser Ala Pro Ala Leu Ala Glu Ala Ala Arg Arg Gln Gly Met
180 185 190

Ile Pro Thr Arg Asp Thr Ala His Leu Val Gln Asp Pro Asp Gly Asn
195 200 205

Trp Val Val Val Gly Thr Pro Lys Pro Ala Asp Gly Val Pro Pro Pro
210 215 220

Pro Leu Asn Thr Lys Leu Pro Glu Asp Pro Pro Pro Pro Pro Lys Pro
225 230 235 240

Ala Ala Val Pro Leu Glu Val Pro Val Arg Val Thr Pro Gly Pro Asp
245 250 255

Asp Pro Ala Pro Pro Ala Arg Ser Gly Pro Glu Val Leu Val Arg Thr
260 265 270

Pro Asp Gly Thr Ala Thr Leu Gly Gly Ala Thr His Leu Pro Thr Gln
275 280 285

```
Ala Gly Pro Gln Leu Pro Gly Pro Val Pro Ile Pro Gly Ala Pro Gly
     290                 295                 300

Pro Met Pro Ala Pro Pro Leu Gly Ala Val Pro Ser Pro Ala Pro Ala
305                 310                 315                 320

Glu Asn Pro Val Pro Leu Gln Val Gly Ala Ala Pro Pro Ala Gly Leu
                325                 330                 335

Pro Gly Pro Ala Pro Val Ala Ala Thr Pro Gly Leu Ser Gly Gly Ser
            340                 345                 350

Gln Pro Met Val Ala Pro Pro Ala Pro Val Pro Ala Asn Gly Glu Gln
        355                 360                 365

Phe Gly Pro Val Thr Ala Pro Val Pro Thr Ala Pro Gly Ala Pro Arg
    370                 375                 380
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<210> 512

<211> 134

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2169c, H37Rv2.tab 2431568:2431969 reverse MW:14571

<400> 512

```
Met Pro Leu Ser Asp His Glu Gln Arg Met Leu Asp Gln Ile Glu Ser
1               5                   10                  15

Ala Leu Tyr Ala Glu Asp Pro Lys Phe Ala Ser Ser Val Arg Gly Gly
            20                  25                  30

Gly Phe Arg Ala Pro Thr Ala Arg Arg Arg Leu Gln Gly Ala Ala Leu
        35                  40                  45

Phe Ile Ile Gly Leu Gly Met Leu Val Ser Gly Val Ala Phe Lys Glu
    50                  55                  60

Thr Met Ile Gly Ser Phe Pro Ile Leu Ser Val Phe Gly Phe Val Val
65                  70                  75                  80

Met Phe Gly Gly Val Val Tyr Ala Ile Thr Gly Pro Arg Leu Ser Gly
                85                  90                  95

Arg Met Asp Arg Gly Gly Ser Ala Ala Gly Ala Ser Arg Gln Arg Arg
            100                 105                 110

Thr Lys Gly Ala Gly Gly Ser Phe Thr Ser Arg Met Glu Asp Arg Phe
```

115 120 125

Arg Arg Arg Phe Asp Glu
130

<210> 513

<211> 206

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2170, H37Rv2.tab 2432235:2432852 forward MW:22926

<400> 513

Leu Ala Ile Phe Leu Ile Asp Leu Pro Pro Ser Asp Met Glu Arg Arg
1 5 10 15

Leu Gly Asp Ala Leu Thr Val Tyr Val Asp Ala Met Arg Tyr Pro Arg
20 25 30

Gly Thr Glu Thr Leu Arg Ala Pro Met Trp Leu Glu His Ile Arg Arg
35 40 45

Arg Gly Trp Gln Ala Val Ala Ala Val Glu Val Thr Ala Ala Glu Gln
50 55 60

Ala Glu Ala Ala Asp Thr Thr Ala Leu Pro Ser Ala Ala Glu Leu Ser
65 70 75 80

Asn Ala Pro Met Leu Gly Val Ala Tyr Gly Tyr Pro Gly Ala Pro Gly
85 90 95

Gln Trp Trp Gln Gln Gln Val Val Leu Gly Leu Gln Arg Ser Gly Phe
100 105 110

Pro Arg Leu Ala Ile Ala Arg Leu Met Thr Ser Tyr Phe Glu Leu Thr
115 120 125

Glu Leu His Ile Leu Pro Arg Ala Gln Gly Arg Gly Leu Gly Glu Ala
130 135 140

Leu Ala Arg Arg Leu Leu Ala Gly Arg Asp Glu Asp Asn Val Leu Leu
145 150 155 160

Ser Thr Pro Glu Thr Asn Gly Glu Asp Asn Arg Ala Trp Arg Leu Tyr
165 170 175

Arg Arg Leu Gly Phe Thr Asp Ile Ile Arg Gly Tyr His Phe Ala Gly
180 185 190

Asp Pro Arg Ala Phe Ala Ile Leu Gly Arg Thr Leu Pro Leu
195 200 205

<210> 514

<211> 301

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2172c, H37Rv2.tab 2433634:2434536 reverse MW:33007

<400> 514

Val Thr Leu Asn Thr Ile Ala Leu Glu Leu Val Pro Pro Asn Leu Glu
1 5 10 15

Gly Gly Lys Glu Arg Ala Ile Glu Asp Ala Arg Lys Val Val Gln Tyr
20 25 30

Ser Ala Ala Ser Gly Leu Asp Gly Arg Ile Arg His Val Met Met Pro
35 40 45

Gly Met Ile Ala Glu Asp Asp Asp Arg Pro Ile Pro Met Gln Pro Lys
50 55 60

Leu Asp Val Leu Asp Phe Trp Ser Ile Ile Lys Pro Glu Leu Ala Gly
65 70 75 80

Val His Gly Leu Cys Thr Gln Val Thr Ala Phe Met Asp Glu Pro Ser
85 90 95

Leu His Arg Arg Leu Val Asp Leu Ser Asp Ala Gly Met Glu Gly Ile
100 105 110

Val Phe Val Gly Val Pro Arg Thr Met Gln Asp Gly Glu Gly Ser Gly
115 120 125

Val Ala Pro Thr Asp Ala Leu Ser Leu Tyr Arg Gln Leu Val Ala Asn
130 135 140

Arg Gly Val Ile Val Ile Pro Thr Arg Asp Gly Glu Gln Gly Arg Leu
145 150 155 160

Asn Phe Lys Cys Ser Arg Gly Ala Thr Tyr Gly Met Thr Gln Leu Leu
165 170 175

Tyr Ser Asp Ala Ile Val Gly Phe Leu Arg Glu Phe Ala Arg Thr Thr
180 185 190

Glu His Arg Pro Glu Ile Leu Leu Ser Phe Gly Phe Val Pro Lys Val
195 200 205

Glu Thr Arg Ile Gly Leu Ile Asn Trp Leu Ile Gln Asp Pro Gly Asn
210 215 220

Ala Ala Val Ala Asp Glu Gln Ala Phe Val Gln Lys Leu Ala Gly Ser
225 230 235 240

Glu Pro Ala Arg Arg Arg Arg Leu Met Val Asp Leu Tyr Lys Arg Val
245 250 255

Leu Asp Gly Val Ala Asp Leu Gly Phe Pro Leu Ser Ile His Leu Glu
260 265 270

Ala Thr Tyr Gly Val Ser Ala Ala Ala Phe Glu Thr Phe Ala Glu Met
275 280 285

Leu Ala Tyr Trp Ser Pro Ala Glu Pro Gly Lys Pro Asp
290 295 300

<210> 515

<211> 146

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2175c, H37Rv2.tab 2437449:2437886 reverse MW:15743

<400> 515

Met Pro Gly Arg Ala Pro Gly Ser Thr Leu Ala Arg Val Gly Ser Ile
1 5 10 15

Pro Ala Gly Asp Asp Val Leu Asp Pro Asp Glu Pro Thr Tyr Asp Leu
20 25 30

Pro Arg Val Ala Glu Leu Leu Gly Val Pro Val Ser Lys Val Ala Gln
35 40 45

Gln Leu Arg Glu Gly His Leu Val Ala Val Arg Arg Ala Gly Gly Val
50 55 60

Val Ile Pro Gln Val Phe Phe Thr Asn Ser Gly Gln Val Val Lys Ser
65 70 75 80

Leu Pro Gly Leu Leu Thr Ile Leu His Asp Gly Gly Tyr Arg Asp Thr
85 90 95

Glu Ile Met Arg Trp Leu Phe Thr Pro Asp Pro Ser Leu Thr Ile Thr
100 105 110

Arg Asp Gly Ser Arg Asp Ala Val Ser Asn Ala Arg Pro Val Asp Ala

115 120 125

Leu His Ala His Gln Ala Arg Glu Val Val Arg Arg Ala Gln Ala Met
130 135 140

Ala Tyr
145

<210> 516

<211> 168

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2179c, H37Rv2.tab 2441814:2442317 reverse MW:19488

<400> 516

Val Arg Tyr Phe Tyr Asp Thr Glu Phe Ile Glu Asp Gly His Thr Ile
1 5 10 15

Glu Leu Ile Ser Ile Gly Val Val Ala Glu Asp Gly Arg Glu Tyr Tyr
20 25 30

Ala Val Ser Thr Glu Phe Asp Pro Glu Arg Ala Gly Ser Trp Val Arg
35 40 45

Thr His Val Leu Pro Lys Leu Pro Pro Pro Ala Ser Gln Leu Trp Arg
50 55 60

Ser Arg Gln Gln Ile Arg Leu Asp Leu Glu Glu Phe Leu Arg Ile Asp
65 70 75 80

Gly Thr Asp Ser Ile Glu Leu Trp Ala Trp Val Gly Ala Tyr Asp His
85 90 95

Val Ala Leu Cys Gln Leu Trp Gly Pro Met Thr Ala Leu Pro Pro Thr
100 105 110

Val Pro Arg Phe Thr Arg Glu Leu Arg Gln Leu Trp Glu Asp Arg Gly
115 120 125

Cys Pro Arg Met Pro Pro Arg Pro Arg Asp Val His Asp Ala Leu Val
130 135 140

Asp Ala Arg Asp Gln Leu Arg Arg Phe Arg Leu Ile Thr Ser Thr Asp
145 150 155 160

Asp Ala Gly Arg Gly Ala Ala Arg
165

<210> 517

<211> 131

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2183c, H37Rv2.tab 2445418:2445810 reverse MW:13322

<400> 517

Val Ser Gly Ala His Thr Asp Val Arg Pro Glu Leu Arg Lys Leu Ala
1 5 10 15

Gln Ala Ile Leu Asp Gly Ile Asp Pro Ala Val Arg Val Ala Ala Ala
20 25 30

Met Ala Ser Gly Gly Gly Pro Gly Thr Gly Lys Cys Gln Gln Val Trp
35 40 45

Cys Pro Leu Cys Ala Leu Ala Ala Leu Val Thr Gly Glu Gln His Pro
50 55 60

Leu Leu Thr Val Ile Ala Asp His Ser Leu Ala Leu Leu Glu Val Ile
65 70 75 80

Arg Ala Ile Val Asp Asp Ile Asp Arg Ser Ala Lys Pro Pro Pro Glu
85 90 95

Gly Pro Pro Gly Gly Gly Gln Thr Gly Ala Ser Gly Gly Glu Asn Thr
100 105 110

Asn Gly Glu Gly Ser Met Lys Ser His Tyr Gln Ala Ile Pro Val Thr
115 120 125

Ile Glu Glu
130

<210> 518

<211> 144

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2185c, H37Rv2.tab 2447069:2447500 reverse MW:16292

<400> 518

Val Ala Asp Lys Thr Thr Gln Thr Ile Tyr Ile Asp Ala Asp Pro Gly
1 5 10 15

Glu Val Met Lys Ala Ile Ala Asp Ile Glu Ala Tyr Pro Gln Trp Ile
20 25 30

Ser Glu Tyr Lys Glu Val Glu Ile Leu Glu Ala Asp Asp Glu Gly Tyr
35 40 45

Pro Lys Arg Ala Arg Met Leu Met Asp Ala Ala Ile Phe Lys Asp Thr
50 55 60

Leu Ile Met Ser Tyr Glu Trp Pro Glu Asp Arg Gln Ser Leu Ser Trp
65 70 75 80

Thr Leu Glu Ser Ser Ser Leu Leu Lys Ser Leu Glu Gly Thr Tyr Arg
85 90 95

Leu Ala Pro Lys Gly Ser Gly Thr Glu Val Thr Tyr Glu Leu Ala Val
100 105 110

Asp Leu Ala Val Pro Met Ile Gly Met Leu Lys Arg Lys Ala Glu Arg
115 120 125

Arg Leu Ile Asp Gly Ala Leu Lys Asp Leu Lys Lys Arg Val Glu Gly
130 135 140

<210> 519

<211> 129

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2186c, H37Rv2.tab 2447608:2447994 reverse MW:14573

<400> 519

Met Asn Ser Ile Gln Ile Ala Asp Glu Thr Tyr Val Ala Ala Asp Ala
1 5 10 15

Ala Arg Val Ser Ala Ala Val Ala Asp Arg Cys Ser Trp Arg Arg Trp
20 25 30

Trp Pro Asp Leu Arg Leu Gln Val Thr Glu Asp Arg Ala Asp Lys Gly
35 40 45

Ile Arg Trp Thr Val Thr Gly Ala Leu Thr Gly Thr Met Glu Ile Trp
50 55 60

Leu Glu Pro Ser Met Asp Gly Val Leu Leu His Tyr Phe Leu His Ala
65 70 75 80

Glu Pro Thr Gly Val Ala Ala Trp Gln Leu Ala Arg Met Asn Leu Ala
85 90 95

Arg Met Thr His His Arg Arg Val Ala Gly Lys Lys Met Ala Phe Glu
100 105 110

Val Lys Thr Val Leu Glu Arg Ser Arg Pro Ile Gly Val Ser Pro Val
115 120 125

Thr

<210> 520

<211> 214

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2197c, H37Rv2.tab 2461507:2462148 reverse MW:22480

<400> 520

Met Val Ser Arg Tyr Ser Ala Tyr Arg Arg Gly Pro Asp Val Ile Ser
1 5 10 15

Pro Asp Val Ile Asp Arg Ile Leu Val Gly Ala Cys Ala Ala Val Trp
20 25 30

Leu Val Phe Thr Gly Val Ser Val Ala Ala Ala Val Ala Leu Met Asp
35 40 45

Leu Gly Arg Gly Phe His Glu Met Ala Gly Asn Pro His Thr Thr Trp
50 55 60

Val Leu Tyr Ala Val Ile Val Val Ser Ala Leu Val Ile Val Gly Ala
65 70 75 80

Ile Pro Val Leu Leu Arg Ala Arg Arg Met Ala Glu Ala Glu Pro Ala
85 90 95

Thr Arg Pro Thr Gly Ala Ser Val Arg Gly Gly Arg Ser Ile Gly Ser
100 105 110

Gly His Pro Ala Lys Arg Ala Val Ala Glu Ser Ala Pro Val Gln His

115 120 125

Ala Asp Ala Phe Glu Val Ala Ala Glu Trp Ser Ser Glu Ala Val Asp
130 135 140

Arg Ile Trp Leu Arg Gly Thr Val Val Leu Thr Ser Ala Ile Gly Ile
145 150 155 160

Ala Leu Ile Ala Val Ala Ala Ala Thr Tyr Leu Met Ala Val Gly His
165 170 175

Asp Gly Pro Ser Trp Ile Ser Tyr Gly Leu Ala Gly Val Val Thr Ala
180 185 190

Gly Met Pro Val Ile Glu Trp Leu Tyr Ala Arg Gln Leu Arg Arg Val
195 200 205

Val Ala Pro Gln Ser Ser
210

<210> 521

<211> 139

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2199c, H37Rv2.tab 2463236:2463652 reverse MW:14865

<400> 521

Met His Ile Glu Ala Arg Leu Phe Glu Phe Val Ala Ala Phe Phe Val
1 5 10 15

Val Thr Ala Val Leu Tyr Gly Val Leu Thr Ser Met Phe Ala Thr Gly
20 25 30

Gly Val Glu Trp Ala Gly Thr Thr Ala Leu Ala Leu Thr Gly Gly Met
35 40 45

Ala Leu Ile Val Ala Thr Phe Phe Arg Phe Val Ala Arg Arg Leu Asp
50 55 60

Ser Arg Pro Glu Asp Tyr Glu Gly Ala Glu Ile Ser Asp Gly Ala Gly
65 70 75 80

Glu Leu Gly Phe Phe Ser Pro His Ser Trp Trp Pro Ile Met Val Ala
85 90 95

Leu Ser Gly Ser Val Ala Ala Val Gly Ile Ala Leu Trp Leu Pro Trp
100 105 110

Leu Ile Ala Ala Gly Val Ala Phe Ile Leu Ala Ser Ala Ala Gly Leu
115 120 125

Val Phe Glu Tyr Tyr Val Gly Pro Glu Lys His
130 135

<210> 522

<211> 230

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2203, H37Rv2.tab 2468231:2468920 forward MW:24371

<400> 522

Met Pro Gly Pro His Ser Pro Asn Pro Gly Val Gly Thr Asn Gly Pro
1 5 10 15

Ala Pro Tyr Pro Glu Pro Ser Ser His Glu Pro Gln Ala Leu Asp Tyr
20 25 30

Pro His Asp Leu Gly Ala Ala Glu Pro Ala Phe Ala Pro Gly Pro Ala
35 40 45

Asp Asp Ala Ala Leu Pro Pro Ala Ala Tyr Pro Gly Val Pro Pro Gln
50 55 60

Val Ser Tyr Pro Lys Arg Arg His Lys Arg Leu Leu Ile Gly Ile Val
65 70 75 80

Val Ala Leu Ala Leu Val Ser Ala Met Thr Ala Ala Ile Ile Tyr Gly
85 90 95

Val Arg Thr Asn Gly Ala Asn Thr Ala Gly Thr Phe Ser Glu Gly Pro
100 105 110

Ala Lys Thr Ala Ile Gln Gly Tyr Leu Asn Ala Leu Glu Asn Arg Asp
115 120 125

Val Asp Thr Ile Val Arg Asn Ala Leu Cys Gly Ile His Asp Gly Val
130 135 140

Arg Asp Lys Arg Ser Asp Gln Ala Leu Ala Lys Leu Ser Ser Asp Ala
145 150 155 160

Phe Arg Lys Gln Phe Ser Gln Val Glu Val Thr Ser Ile Asp Lys Ile
165 170 175

Val Tyr Trp Ser Gln Tyr Gln Ala Gln Val Leu Phe Thr Met Gln Val
180 185 190

Thr Pro Ala Ala Gly Gly Pro Pro Arg Gly Gln Val Gln Gly Ile Ala
195 200 205

Gln Leu Leu Phe Gln Arg Gly Gln Val Leu Val Cys Ser Tyr Val Leu
210 215 220

Arg Thr Ala Gly Ser Tyr
225 230

<210> 523

<211> 124

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2206, H37Rv2.tab 2470958:2471329 forward MW:13988

<400> 523

Met Met Ala Gly Glu Glu Ala Tyr Leu Leu Pro Arg Asp Arg Gly Pro
1 5 10 15

Val Arg Arg Tyr Val Arg Asp Val Val Asp Ser Arg Arg Asn Leu Leu
20 25 30

Gly Leu Phe Met Pro Ser Ala Leu Thr Leu Leu Phe Val Met Phe Ala
35 40 45

Val Pro Gln Val Gln Phe Tyr Leu Ser Pro Ala Met Leu Ile Leu Leu
50 55 60

Ala Leu Met Thr Ile Asp Ala Ile Ile Leu Gly Arg Lys Val Gly Arg
65 70 75 80

Leu Val Asp Thr Lys Phe Pro Ser Asn Thr Glu Ser Arg Trp Arg Leu
85 90 95

Gly Leu Tyr Ala Ala Gly Arg Ala Ser Gln Ile Arg Arg Leu Arg Ala
100 105 110

Pro Arg Pro Gln Val Glu Arg Gly Gly Asp Val Gly
115 120

<210> 524

<211> 250

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2219, H37Rv2.tab 2486235:2486984 forward MW:26864

<400> 524

Met Ala Lys Pro Arg Asn Ala Ala Glu Ser Lys Ala Ala Lys Ala Gln
1 5 10 15

Ala Asn Ala Ala Arg Lys Ala Ala Ala Arg Gln Arg Arg Ala Gln Leu
20 25 30

Trp Gln Ala Phe Thr Leu Gln Arg Lys Glu Asp Lys Arg Leu Leu Pro
35 40 45

Tyr Met Ile Gly Ala Phe Leu Leu Ile Val Gly Ala Ser Val Gly Val
50 55 60

Gly Val Trp Ala Gly Gly Phe Thr Met Phe Thr Met Ile Pro Leu Gly
65 70 75 80

Val Leu Leu Gly Ala Leu Val Ala Phe Val Ile Phe Gly Arg Arg Ala
85 90 95

Gln Arg Thr Val Tyr Arg Lys Ala Glu Gly Gln Thr Gly Ala Ala Ala
100 105 110

Trp Ala Leu Asp Asn Leu Arg Gly Lys Trp Arg Val Thr Pro Gly Val
115 120 125

Ala Ala Thr Gly Asn Leu Asp Ala Val His Arg Val Ile Gly Arg Pro
130 135 140

Gly Val Ile Phe Val Gly Glu Gly Ser Ala Ala Arg Val Lys Pro Leu
145 150 155 160

Leu Ala Gln Glu Lys Lys Arg Thr Ala Arg Leu Val Gly Asp Val Pro
165 170 175

Ile Tyr Asp Ile Ile Val Gly Asn Gly Asp Gly Glu Val Pro Leu Ala
180 185 190

Lys Leu Glu Arg His Leu Thr Arg Leu Pro Ala Asn Ile Thr Val Lys
195 200 205

Gln Met Asp Thr Val Glu Ser Arg Leu Ala Ala Leu Gly Ser Arg Ala
210 215 220

Gly Ala Gly Val Met Pro Lys Gly Pro Leu Pro Thr Thr Ala Lys Met
225 230 235 240

Arg Ser Val Gln Arg Thr Val Arg Arg Lys
245 250

<210> 525

<211> 245

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2229c, H37Rv2.tab 2502738:2503472 reverse MW:26851

<400> 525

Met Lys Ala Gly Val Ala Gln Gln Arg Ser Leu Leu Glu Leu Ala Lys
1 5 10 15

Leu Asp Ala Glu Leu Thr Arg Ile Ala His Arg Ala Thr His Leu Pro
20 25 30

Gln Arg Ala Ala Tyr Gln Gln Val Gln Ala Glu His Asn Ala Ala Asn
35 40 45

Asp Arg Met Ala Ala Leu Arg Ile Ala Ala Glu Asp Leu Asp Gly Gln
50 55 60

Val Ser Arg Phe Glu Ser Glu Ile Asp Ala Val Arg Lys Arg Gly Asp
65 70 75 80

Arg Asp Arg Ser Leu Leu Thr Ser Gly Ala Thr Asp Ala Lys Gln Leu
85 90 95

Ala Asp Leu Gln His Glu Leu Asp Ser Leu Gln Arg Arg Gln Ala Ser
100 105 110

Leu Glu Asp Ala Leu Leu Glu Val Leu Glu Arg Arg Glu Glu Leu Gln
115 120 125

Ala Gln Gln Thr Ala Glu Ser Arg Ala Leu Gln Ala Leu Arg Ala Asp
130 135 140

Leu Ala Ala Ala Gln Gln Ala Leu Asp Glu Ala Leu Ala Glu Ile Asp
145 150 155 160

Gln Ala Arg His Gln His Ser Ser Gln Arg Asp Met Leu Thr Ala Thr
165 170 175

Leu Asp Pro Glu Leu Ala Gly Leu Tyr Glu Arg Gln Arg Ala Gly Gly
180 185 190

Gly Pro Gly Ala Gly Arg Leu Gln Gly His Arg Cys Gly Ala Cys Arg
195 200 205

Ile Glu Ile Gly Arg Gly Glu Leu Ala Gln Ile Ser Ala Ala Ala Glu

210 215 220

Asp Glu Val Val Arg Cys Pro Glu Cys Gly Ala Ile Leu Leu Arg Leu
225 230 235 240

Glu Gly Phe Glu Glu
245

<210> 526

<211> 271

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2235, H37Rv2.tab 2507637:2508449 forward MW:29762

<400> 526

Met Pro Arg Leu Ala Phe Leu Leu Arg Pro Gly Trp Leu Ala Leu Ala
1 5 10 15

Leu Val Val Val Ala Phe Thr Tyr Leu Cys Phe Thr Val Leu Ala Pro
20 25 30

Trp Gln Leu Gly Lys Asn Ala Lys Thr Ser Arg Glu Asn Gln Gln Ile
35 40 45

Arg Tyr Ser Leu Asp Thr Pro Pro Val Pro Leu Lys Thr Leu Leu Pro
50 55 60

Gln Gln Asp Ser Ser Ala Pro Asp Ala Gln Trp Arg Arg Val Thr Ala
65 70 75 80

Thr Gly Gln Tyr Leu Pro Asp Val Gln Val Leu Ala Arg Leu Arg Val
85 90 95

Val Glu Gly Asp Gln Ala Phe Glu Val Leu Ala Pro Phe Val Val Asp
100 105 110

Gly Gly Pro Thr Val Leu Val Asp Arg Gly Tyr Val Arg Pro Gln Val
115 120 125

Gly Ser His Val Pro Pro Ile Pro Arg Leu Pro Val Gln Thr Val Thr
130 135 140

Ile Thr Ala Arg Leu Arg Asp Ser Glu Pro Ser Val Ala Gly Lys Asp
145 150 155 160

Pro Phe Val Arg Asp Gly Phe Gln Gln Val Tyr Ser Ile Asn Thr Gly
165 170 175

Gln Val Ala Ala Leu Thr Gly Val Gln Leu Ala Gly Ser Tyr Leu Gln
180 185 190

Leu Ile Glu Asp Gln Pro Gly Gly Leu Gly Val Leu Gly Val Pro His
195 200 205

Leu Asp Pro Gly Pro Phe Leu Ser Tyr Gly Ile Gln Trp Ile Ser Phe
210 215 220

Gly Ile Leu Ala Pro Ile Gly Leu Gly Tyr Phe Ala Tyr Ala Glu Ile
225 230 235 240

Arg Ala Arg Arg Arg Glu Lys Ala Gly Ser Pro Pro Pro Asp Lys Pro
245 250 255

Met Thr Val Glu Gln Lys Leu Ala Asp Arg Tyr Gly Arg Arg Arg
260 265 270

<210> 527

<211> 158

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2239c, H37Rv2.tab 2511179:2511652 reverse MW:16962

<400> 527

Met Pro Ile Ala Thr Val Cys Thr Trp Pro Ala Glu Thr Glu Gly Gly
1 5 10 15

Ser Thr Val Val Ala Ala Asp His Ala Ser Asn Tyr Ala Arg Lys Leu
20 25 30

Gly Ile Gln Arg Asp Gln Leu Ile Gln Glu Trp Gly Trp Asp Glu Asp
35 40 45

Thr Asp Asp Asp Ile Arg Ala Ala Ile Glu Glu Ala Cys Gly Gly Glu
50 55 60

Leu Leu Asp Glu Asp Thr Asp Glu Val Ile Asp Val Val Leu Leu Trp
65 70 75 80

Trp Arg Asp Gly Asp Gly Asp Leu Val Asp Thr Leu Met Asp Ala Ile
85 90 95

Gly Pro Leu Ala Glu Asp Gly Val Ile Trp Val Val Thr Pro Lys Thr
100 105 110

Gly Gln Pro Gly His Val Leu Pro Ala Glu Ile Ala Glu Ala Ala Pro
115 120 125

Thr Ala Gly Leu Met Pro Thr Ser Ser Val Asn Leu Gly Asn Trp Ser
130 135 140

Ala Ser Arg Leu Val Gln Pro Lys Ser Arg Ala Gly Lys Arg
145 150 155

<210> 528

<211> 414

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2242, H37Rv2.tab 2515304:2516545 forward MW:44606

<400> 528

Val Asn Asp Asn Gln Leu Ala Pro Val Ala Arg Pro Arg Ser Pro Leu
1 5 10 15

Glu Leu Leu Asp Thr Val Pro Asp Ser Leu Leu Arg Arg Leu Lys Gln
20 25 30

Tyr Ser Gly Arg Leu Ala Thr Glu Ala Val Ser Ala Met Gln Glu Arg
35 40 45

Leu Pro Phe Phe Ala Asp Leu Glu Ala Ser Gln Arg Ala Ser Val Ala
50 55 60

Leu Val Val Gln Thr Ala Val Val Asn Phe Val Glu Trp Met His Asp
65 70 75 80

Pro His Ser Asp Val Gly Tyr Thr Ala Gln Ala Phe Glu Leu Val Pro
85 90 95

Gln Asp Leu Thr Arg Arg Ile Ala Leu Arg Gln Thr Val Asp Met Val
100 105 110

Arg Val Thr Met Glu Phe Phe Glu Glu Val Val Pro Leu Leu Ala Arg
115 120 125

Ser Glu Glu Gln Leu Thr Ala Leu Thr Val Gly Ile Leu Lys Tyr Ser
130 135 140

Arg Asp Leu Ala Phe Thr Ala Ala Thr Ala Tyr Ala Asp Ala Ala Glu
145 150 155 160

Ala Arg Gly Thr Trp Asp Ser Arg Met Glu Ala Ser Val Val Asp Ala
165 170 175

Val Val Arg Gly Asp Thr Gly Pro Glu Leu Leu Ser Arg Ala Ala Ala

180 185 190

Leu Asn Trp Asp Thr Thr Ala Pro Ala Thr Val Leu Val Gly Thr Pro
195 200 205

Ala Pro Gly Pro Asn Gly Ser Asn Ser Asp Gly Asp Ser Glu Arg Ala
210 215 220

Ser Gln Asp Val Arg Asp Thr Ala Ala Arg His Gly Arg Ala Ala Leu
225 230 235 240

Thr Asp Val His Gly Thr Trp Leu Val Ala Ile Val Ser Gly Gln Leu
245 250 255

Ser Pro Thr Glu Lys Phe Leu Lys Asp Leu Leu Ala Ala Phe Ala Asp
260 265 270

Ala Pro Val Val Ile Gly Pro Thr Ala Pro Met Leu Thr Ala Ala His
275 280 285

Arg Ser Ala Ser Glu Ala Ile Ser Gly Met Asn Ala Val Ala Gly Trp
290 295 300

Arg Gly Ala Pro Arg Pro Val Leu Ala Arg Glu Leu Leu Pro Glu Arg
305 310 315 320

Ala Leu Met Gly Asp Ala Ser Ala Ile Val Ala Leu His Thr Asp Val
325 330 335

Met Arg Pro Leu Ala Asp Ala Gly Pro Thr Leu Ile Glu Thr Leu Asp
340 345 350

Ala Tyr Leu Asp Cys Gly Gly Ala Ile Glu Ala Cys Ala Arg Lys Leu
355 360 365

Phe Val His Pro Asn Thr Val Arg Tyr Arg Leu Lys Arg Ile Thr Asp
370 375 380

Phe Thr Gly Arg Asp Pro Thr Gln Pro Arg Asp Ala Tyr Val Leu Arg
385 390 395 400

Val Ala Ala Thr Val Gly Gln Leu Asn Tyr Pro Thr Pro His
405 410

<210> 529

<211> 177

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2256c, H37Rv2.tab 2529344:2529874 reverse MW:18896

<400> 529

Val Glu Pro Lys Glu Gln Gln Met Arg Ala Ser Asn Gln Phe Ala Asp
1 5 10 15

Val Thr Ser Gly Val Val Tyr Ile His Ala Ser Pro Ala Ala Val Cys
20 25 30

Pro His Val Glu Trp Ala Leu Ser Ser Thr Leu Gln Ala Lys Ala Asn
35 40 45

Leu Val Trp Thr Pro Gln Pro Ala Leu Pro Pro Gln Leu Arg Ala Val
50 55 60

Thr Asn Trp Val Gly Pro Val Gly Thr Gly Ala Arg Leu Ala Asn Ala
65 70 75 80

Leu Arg Ser Trp Ser Val Leu Arg Phe Glu Val Thr Glu Asp Pro Ser
85 90 95

Pro Gly Val Asp Gly Gln Arg Phe Ser His Thr Pro Gln Leu Gly Leu
100 105 110

Trp Ser Gly Ala Met Ser Ala Asn Gly Asp Ile Met Val Gly Glu Met
115 120 125

Arg Leu Arg Ala Met Met Ala Gln Gly Ala Asp Thr Leu Ala Ala Glu
130 135 140

Leu Asp Ser Val Leu Gly Thr Ala Trp Asp Gln Ala Leu Glu Val Tyr
145 150 155 160

Arg Asp Gly Gly Asp Ala Gly Glu Val Thr Trp Leu Ser Arg Gly Val
165 170 175

Gly

<210> 530

<211> 272

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2257c, H37Rv2.tab 2530007:2530822 reverse MW:28385

<400> 530

Met Thr Ala Leu Glu Val Leu Gly Gly Trp Pro Val Pro Ala Ala Ala

1 5 10 15

Ala Ala Val Ile Gly Pro Ala Gly Val Leu Ala Thr His Gly Asp Thr
20 25 30

Ala Arg Val Phe Ala Leu Ala Ser Val Thr Lys Pro Leu Val Ala Arg
35 40 45

Ala Ala Gln Val Ala Val Glu Glu Gly Val Val Asn Leu Asp Thr Pro
50 55 60

Ala Gly Pro Pro Gly Ser Thr Val Arg His Leu Leu Ala His Thr Ser
65 70 75 80

Gly Leu Ala Met His Ser Asp Gln Ala Leu Ala Arg Pro Gly Thr Arg
85 90 95

Arg Met Tyr Ser Asn Tyr Gly Phe Thr Val Leu Ala Glu Ser Val Gln
100 105 110

Arg Glu Ser Gly Ile Glu Phe Gly Arg Tyr Leu Thr Glu Ala Val Cys
115 120 125

Glu Pro Leu Gly Met Val Thr Thr Arg Leu Asp Gly Gly Pro Ala Ala
130 135 140

Ala Gly Phe Gly Ala Thr Ser Thr Val Ala Asp Leu Ala Val Phe Ala
145 150 155 160

Gly Asp Leu Leu Arg Pro Ser Thr Val Ser Ala Gln Met His Ala Asp
165 170 175

Ala Thr Thr Val Gln Phe Pro Gly Leu Asp Gly Val Leu Pro Gly Tyr
180 185 190

Gly Val Gln Arg Pro Asn Asp Trp Gly Leu Gly Phe Glu Ile Arg Asn
195 200 205

Ser Lys Ser Pro His Trp Thr Gly Glu Cys Asn Ser Thr Arg Thr Phe
210 215 220

Gly His Phe Gly Gln Ser Gly Gly Phe Ile Trp Val Asp Pro Lys Ala
225 230 235 240

Asp Leu Ala Leu Val Val Leu Thr Ala Arg Asp Phe Gly Asp Trp Ala
245 250 255

Leu Asp Leu Trp Pro Ala Ile Ser Asp Ala Val Leu Ala Glu Tyr Thr
260 265 270

<210> 531

<211> 85

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2342, H37Rv2.tab 2620272:2620526 forward MW:9187

<400> 531

Leu Ile Gly Tyr Val Ala Val Leu Gly Leu Gly Tyr Val Leu Gly Ala
1 5 10 15

Lys Ala Gly Arg Arg Arg Tyr Glu Gln Ile Ala Ser Thr Tyr Arg Ala
20 25 30

Leu Thr Gly Ser Pro Val Ala Arg Ser Met Ile Glu Gly Gly Arg Arg
35 40 45

Lys Ile Ala Asn Arg Ile Ser Pro Asp Ala Gly Phe Val Thr Leu Ala
50 55 60

Glu Ile Asp Asn Gln Thr Ala Val Val Gln Arg Gly Val Glu Arg Gln
65 70 75 80

Pro Lys Thr Ala Arg
85

<210> 532

<211> 98

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2347c, H37Rv2.tab 2626226:2626519 reverse MW:10977

<400> 532

Met Ala Thr Arg Phe Met Thr Asp Pro His Ala Met Arg Asp Met Ala
1 5 10 15

Gly Arg Phe Glu Val His Ala Gln Thr Val Glu Asp Glu Ala Arg Arg
20 25 30

Met Trp Ala Ser Ala Gln Asn Ile Ser Gly Ala Gly Trp Ser Gly Met
35 40 45

Ala Glu Ala Thr Ser Leu Asp Thr Met Ala Gln Met Asn Gln Ala Phe
50 55 60

Arg Asn Ile Val Asn Met Leu His Gly Val Arg Asp Gly Leu Val Arg

65 70 75 80

Asp Ala Asn Asn Tyr Glu Gln Gln Glu Gln Ala Ser Gln Gln Ile Leu
85 90 95

Ser Ser

<210> 533

<211> 113

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2365c, H37Rv2.tab 2646750:2647088 reverse MW:11130

<400> 533

Met Met Arg Arg Pro Ile Thr Leu Ala Glu Gln Leu Asp Ala Glu Asp
1 5 10 15

Ala Lys Leu Val Val Leu Ala Arg Ala Ala Met Ala Arg Ala Glu Ala
20 25 30

Gly Ala Gly Ala Ala Val Arg Asp Val Asp Gly Arg Thr Tyr Ala Ala
35 40 45

Ala Pro Val Ala Leu Ser Ala Leu Glu Leu Thr Gly Leu Gln Ala Ala
50 55 60

Val Ala Ala Ala Val Ser Ser Gly Ala Thr Gly Leu Gln Ala Ala Val
65 70 75 80

Leu Val Ala Gly Ser Val Asp Asp Pro Gly Ile Ala Ala Val Arg Glu
85 90 95

Leu Ala Pro Thr Ala Ala Ile Ile Val Thr Asp Arg Ala Gly Asn Pro
100 105 110

Leu

<210> 534

<211> 168

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2376c, H37Rv2.tab 2655612:2656115 reverse MW:16635

<400> 534

Met Lys Met Val Lys Ser Ile Ala Ala Gly Leu Thr Ala Ala Ala Ala
1 5 10 15

Ile Gly Ala Ala Ala Ala Gly Val Thr Ser Ile Met Ala Gly Gly Pro
20 25 30

Val Val Tyr Gln Met Gln Pro Val Val Phe Gly Ala Pro Leu Pro Leu
35 40 45

Asp Pro Ala Ser Ala Pro Asp Val Pro Thr Ala Ala Gln Leu Thr Ser
50 55 60

Leu Leu Asn Ser Leu Ala Asp Pro Asn Val Ser Phe Ala Asn Lys Gly
65 70 75 80

Ser Leu Val Glu Gly Gly Ile Gly Gly Thr Glu Ala Arg Ile Ala Asp
85 90 95

His Lys Leu Lys Lys Ala Ala Glu His Gly Asp Leu Pro Leu Ser Phe
100 105 110

Ser Val Thr Asn Ile Gln Pro Ala Ala Ala Gly Ser Ala Thr Ala Asp
115 120 125

Val Ser Val Ser Gly Pro Lys Leu Ser Ser Pro Val Thr Gln Asn Val
130 135 140

Thr Phe Val Asn Gln Gly Gly Trp Met Leu Ser Arg Ala Ser Ala Met
145 150 155 160

Glu Leu Leu Gln Ala Ala Gly Asn
165

<210> 535

<211> 316

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2413c, H37Rv2.tab 2710354:2711301 reverse MW:33113

<400> 535

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Leu His Leu Val Leu Gly Asp Glu Glu Leu Leu Val Glu Arg Ala Val
1               5                  10                  15

Ala Asp Val Leu Arg Ser Ala Arg Gln Arg Ala Gly Thr Ala Asp Val
            20                  25                  30

Pro Val Ser Arg Met Arg Ala Gly Asp Val Gly Ala Tyr Glu Leu Ala
        35                  40                  45

Glu Leu Leu Ser Pro Ser Leu Phe Ala Glu Glu Arg Ile Val Val Leu
    50                  55                  60

Gly Ala Ala Ala Glu Ala Gly Lys Asp Ala Ala Ala Val Ile Glu Ser
65                  70                  75                  80

Ala Ala Ala Asp Leu Pro Ala Gly Thr Val Leu Val Val Val His Ser
                85                  90                  95

Gly Gly Gly Arg Ala Lys Ser Leu Ala Asn Gln Leu Arg Ser Met Gly
            100                 105                 110

Ala Gln Val His Pro Cys Ala Arg Ile Thr Lys Val Ser Glu Arg Ala
        115                 120                 125

Asp Phe Ile Arg Ser Glu Phe Ala Ser Leu Arg Val Lys Val Asp Asp
    130                 135                 140

Glu Thr Val Thr Ala Leu Leu Asp Ala Val Gly Ser Asp Val Arg Glu
145                 150                 155                 160

Leu Ala Ser Ala Cys Ser Gln Leu Val Ala Asp Thr Gly Gly Ala Val
                165                 170                 175

Asp Ala Ala Ala Val Arg Arg Tyr His Ser Gly Lys Ala Glu Val Arg
            180                 185                 190

Gly Phe Asp Ile Ala Asp Lys Ala Val Ala Gly Asp Val Ala Gly Ala
        195                 200                 205

Ala Glu Ala Leu Arg Trp Ala Met Met Arg Gly Glu Pro Leu Val Val
    210                 215                 220

Leu Ala Asp Ala Leu Ala Glu Ala Val His Thr Ile Gly Arg Val Gly
225                 230                 235                 240

Pro Gln Ser Gly Asp Pro Tyr Arg Leu Ala Ala Gln Leu Gly Met Pro
                245                 250                 255

Pro Trp Arg Val Gln Lys Ala Gln Lys Gln Ala Arg Arg Trp Ser Arg
            260                 265                 270

Asp Thr Val Ala Thr Ala Met Arg Leu Val Ala Glu Leu Asn Ala Asn
        275                 280                 285

Val Lys Gly Ala Val Ala Asp Ala Asp Tyr Ala Leu Glu Ser Ala Val
    290                 295                 300
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Arg Gln Val Ala Glu Leu Val Ala Asp Arg Gly Arg
305 310 315

<210> 536

<211> 123

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2446c, H37Rv2.tab 2745770:2746138 reverse MW:13311

<400> 536

Met Thr Asp Arg Ser Arg Glu Pro Ala Asp Pro Trp Lys Gly Phe Ser
1 5 10 15

Ala Val Met Ala Ala Thr Leu Ile Leu Glu Ala Ile Val Val Leu Leu
20 25 30

Ala Ile Pro Val Val Asp Ala Val Gly Gly Gly Leu Arg Pro Ala Ser
35 40 45

Leu Gly Tyr Leu Val Gly Leu Ala Val Leu Leu Ile Leu Leu Thr Gly
50 55 60

Leu Gln Arg Arg Pro Trp Ala Ile Trp Val Asn Leu Gly Ala Gln Pro
65 70 75 80

Val Leu Val Ala Gly Phe Ala Val Tyr Pro Gly Val Gly Phe Ile Gly
85 90 95

Val Leu Phe Ala Ala Leu Trp Val Leu Ile Ala Tyr Leu Arg Ala Glu
100 105 110

Val Arg Arg Arg Arg Asp Tyr Arg Val Ser Gln
115 120

<210> 537

<211> 207

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2466c, H37Rv2.tab 2768264:2768884 reverse MW:23035

<400> 537

Met Leu Glu Lys Ala Pro Gln Lys Ser Val Ala Asp Phe Trp Phe Asp
1 5 10 15

Pro Leu Cys Pro Trp Cys Trp Ile Thr Ser Arg Trp Ile Leu Glu Val
20 25 30

Ala Lys Val Arg Asp Ile Glu Val Asn Phe His Val Met Ser Leu Ala
35 40 45

Ile Leu Asn Glu Asn Arg Asp Asp Leu Pro Glu Gln Tyr Arg Glu Gly
50 55 60

Met Ala Arg Ala Trp Gly Pro Val Arg Val Ala Ile Ala Ala Glu Gln
65 70 75 80

Ala His Gly Ala Lys Val Leu Asp Pro Leu Tyr Thr Ala Met Gly Asn
85 90 95

Arg Ile His Asn Gln Gly Asn His Glu Leu Asp Glu Val Ile Thr Gln
100 105 110

Ser Leu Ala Asp Ala Gly Leu Pro Ala Glu Leu Ala Lys Ala Ala Thr
115 120 125

Ser Asp Ala Tyr Asp Asn Ala Leu Arg Lys Ser His His Ala Gly Met
130 135 140

Asp Ala Val Gly Glu Asp Val Gly Thr Pro Thr Ile His Val Asn Gly
145 150 155 160

Val Ala Phe Phe Gly Pro Val Leu Ser Lys Ile Pro Arg Gly Glu Glu
165 170 175

Ala Gly Lys Leu Trp Asp Ala Ser Val Thr Phe Ala Ser Tyr Pro His
180 185 190

Phe Phe Glu Leu Lys Arg Thr Arg Thr Glu Pro Pro Gln Phe Asp
195 200 205

<210> 538

<211> 167

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2468c, H37Rv2.tab 2771647:2772147 reverse MW:17288

<400> 538

Met Thr His Arg Ser Ser Arg Leu Glu Val Gly Pro Val Ala Arg Gly
1 5 10 15

Asp Val Ala Thr Ile Glu His Ala Glu Leu Pro Pro Gly Trp Val Leu
20 25 30

Thr Thr Ser Gly Arg Ile Ser Gly Val Thr Glu Pro Gly Glu Leu Ser
35 40 45

Val His Tyr Pro Phe Pro Ile Ala Asp Leu Val Ala Leu Asp Asp Ala
50 55 60

Leu Thr Tyr Ser Ser Arg Ala Cys Gln Val Arg Phe Ala Ile Tyr Leu
65 70 75 80

Gly Asp Leu Gly Arg Asp Thr Ala Ala Arg Ala Arg Glu Ile Leu Gly
85 90 95

Lys Val Pro Thr Pro Asp Asn Ala Val Leu Leu Ala Val Ser Pro Asn
100 105 110

Gln Cys Ala Ile Glu Val Val Tyr Gly Ser Gln Val Arg Gly Arg Gly
115 120 125

Ala Glu Ser Ala Ala Pro Leu Gly Val Ala Ala Ala Ser Ser Ala Phe
130 135 140

Glu Gln Gly Glu Leu Val Asp Gly Leu Ile Ser Ala Ile Arg Val Leu
145 150 155 160

Ser Ala Gly Ile Ala Pro Gly
165

<210> 539

<211> 1624

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2476c, H37Rv2.tab 2777391:2782262 reverse MW:176902

<400> 539

Met Thr Ile Asp Pro Gly Ala Lys Gln Asp Val Glu Ala Trp Thr Thr
1 5 10 15

Phe Thr Ala Ser Ala Asp Ile Pro Asp Trp Ile Ser Lys Ala Tyr Ile

```
            20                  25                  30

Asp Ser Tyr Arg Gly Pro Arg Asp Asp Ser Ser Glu Ala Thr Lys Ala
        35                  40                  45

Ala Glu Ala Ser Trp Leu Pro Ala Ser Leu Leu Thr Pro Ala Met Leu
    50                  55                  60

Gly Ala His Tyr Arg Leu Gly Arg His Arg Ala Ala Gly Glu Ser Cys
65                  70                  75                  80

Val Ala Val Tyr Arg Ala Asp Asp Pro Ala Gly Phe Gly Pro Ala Leu
                85                  90                  95

Gln Val Val Ala Glu His Gly Gly Met Leu Met Asp Ser Val Thr Val
            100                 105                 110

Leu Leu His Arg Leu Gly Ile Ala Tyr Ala Ala Ile Leu Thr Pro Val
        115                 120                 125

Phe Asp Val His Arg Ser Pro Thr Gly Glu Leu Leu Arg Ile Glu Pro
    130                 135                 140

Lys Ala Glu Gly Thr Ser Pro His Leu Gly Glu Ala Trp Met His Val
145                 150                 155                 160

Ala Leu Ser Pro Ala Val Asp His Lys Gly Leu Ala Glu Val Glu Arg
                165                 170                 175

Leu Leu Pro Lys Val Leu Ala Asp Val Gln Arg Val Ala Thr Asp Ala
            180                 185                 190

Thr Ala Leu Ile Ala Thr Leu Ser Glu Leu Ala Gly Glu Val Glu Ser
        195                 200                 205

Asn Ala Gly Gly Arg Phe Ser Ala Pro Asp Arg Gln Asp Val Gly Glu
    210                 215                 220

Leu Leu Arg Trp Leu Gly Asp Gly Asn Phe Leu Leu Leu Gly Tyr Gln
225                 230                 235                 240

Arg Cys Arg Val Ala Asp Gly Met Val Tyr Gly Glu Gly Ser Ser Gly
                245                 250                 255

Met Gly Val Leu Arg Gly Arg Thr Gly Ser Arg Pro Arg Leu Thr Asp
            260                 265                 270

Asp Asp Lys Leu Leu Val Leu Ala Gln Ala Arg Val Gly Ser Tyr Leu
        275                 280                 285

Arg Tyr Gly Ala Tyr Pro Tyr Ala Ile Ala Val Arg Glu Tyr Val Asp
    290                 295                 300

Gly Ser Val Val Glu His Arg Phe Val Gly Leu Phe Ser Val Ala Ala
305                 310                 315                 320

Met Asn Ala Asp Val Leu Glu Ile Pro Thr Ile Ser Arg Arg Val Arg
                325                 330                 335

Glu Ala Leu Ala Met Ala Glu Ser Asp Pro Ser His Pro Gly Gln Leu
            340                 345                 350
```

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Leu Leu Asp Val Ile Gln Thr Val Pro Arg Pro Glu Leu Phe Thr Leu
        355                 360                 365

Ser Ala Gln Arg Leu Leu Thr Met Ala Arg Ala Val Val Asp Leu Gly
    370                 375                 380

Ser Gln Arg Gln Ala Leu Leu Phe Leu Arg Ala Asp Arg Leu Gln Tyr
385                 390                 395                 400

Phe Val Ser Cys Leu Val Tyr Met Pro Arg Asp Arg Tyr Thr Thr Ala
                405                 410                 415

Val Arg Met Gln Phe Glu Asp Ile Leu Val Arg Glu Phe Gly Gly Thr
            420                 425                 430

Arg Leu Glu Phe Thr Ala Arg Val Ser Glu Ser Pro Trp Ala Leu Met
        435                 440                 445

His Phe Met Val Arg Leu Pro Glu Val Gly Val Ala Gly Glu Gly Ala
    450                 455                 460

Ala Ala Pro Pro Val Asp Val Ser Glu Ala Asn Arg Ile Arg Ile Gln
465                 470                 475                 480

Gly Leu Leu Thr Glu Ala Ala Arg Thr Trp Ala Asp Arg Leu Ile Gly
                485                 490                 495

Ala Ala Ala Ala Ala Gly Ser Val Gly Gln Ala Asp Ala Met His Tyr
            500                 505                 510

Ala Ala Ala Phe Ser Glu Ala Tyr Lys Gln Ala Val Thr Pro Ala Asp
        515                 520                 525

Ala Ile Gly Asp Ile Ala Val Ile Thr Glu Leu Thr Asp Asp Ser Val
    530                 535                 540

Lys Leu Val Phe Ser Glu Arg Asp Glu Gln Gly Val Ala Gln Leu Thr
545                 550                 555                 560

Trp Phe Leu Gly Gly Arg Thr Ala Ser Leu Ser Gln Leu Leu Pro Met
                565                 570                 575

Leu Gln Ser Met Gly Val Val Val Leu Glu Glu Arg Pro Phe Ser Val
            580                 585                 590

Thr Arg Pro Asp Gly Leu Pro Val Trp Ile Tyr Gln Phe Lys Ile Ser
        595                 600                 605

Pro His Pro Thr Ile Pro Leu Ala Pro Thr Val Ala Glu Arg Ala Ala
    610                 615                 620

Thr Ala His Arg Phe Ala Glu Ala Val Thr Ala Ile Trp His Gly Arg
625                 630                 635                 640

Val Glu Ile Asp Arg Phe Asn Glu Leu Val Met Arg Ala Gly Leu Thr
                645                 650                 655

Trp Gln Gln Val Val Leu Leu Arg Ala Tyr Ala Lys Tyr Leu Arg Gln
            660                 665                 670
```

Ala Gly Phe Pro Tyr Ser Gln Ser Tyr Ile Glu Ser Val Leu Asn Glu
675 680 685

His Pro Ala Thr Val Arg Ser Leu Val Asp Leu Phe Glu Ala Leu Phe
690 695 700

Val Pro Val Pro Ser Gly Ser Ala Ser Asn Arg Asp Ala Gln Ala Ala
705 710 715 720

Ala Ala Ala Val Ala Ala Asp Ile Asp Ala Leu Val Ser Leu Asp Thr
725 730 735

Asp Arg Ile Leu Arg Ala Phe Ala Ser Leu Val Gln Ala Thr Leu Arg
740 745 750

Thr Asn Tyr Phe Val Thr Arg Gln Gly Ser Ala Arg Cys Arg Asp Val
755 760 765

Leu Ala Leu Lys Leu Asn Ala Gln Leu Ile Asp Glu Leu Pro Leu Pro
770 775 780

Arg Pro Arg Tyr Glu Ile Phe Val Tyr Ser Pro Arg Val Glu Gly Val
785 790 795 800

His Leu Arg Phe Gly Pro Val Ala Arg Gly Gly Leu Arg Trp Ser Asp
805 810 815

Arg Arg Asp Asp Phe Arg Thr Glu Ile Leu Gly Leu Val Lys Ala Gln
820 825 830

Ala Val Lys Asn Ala Val Ile Val Pro Val Gly Ala Lys Gly Gly Phe
835 840 845

Val Val Lys Arg Pro Pro Leu Pro Thr Gly Asp Pro Ala Ala Asp Arg
850 855 860

Asp Ala Thr Arg Ala Glu Gly Val Ala Cys Tyr Gln Leu Phe Ile Ser
865 870 875 880

Gly Leu Leu Asp Val Thr Asp Asn Val Asp His Ala Thr Ala Ser Val
885 890 895

Asn Pro Pro Pro Glu Val Val Arg Arg Asp Gly Asp Asp Ala Tyr Leu
900 905 910

Val Val Ala Ala Asp Lys Gly Thr Ala Thr Phe Ser Asp Ile Ala Asn
915 920 925

Asp Val Ala Lys Ser Tyr Gly Phe Trp Leu Gly Asp Ala Phe Ala Ser
930 935 940

Gly Gly Ser Val Gly Tyr Asp His Lys Ala Met Gly Ile Thr Ala Arg
945 950 955 960

Gly Ala Trp Glu Ala Val Lys Arg His Phe Arg Glu Ile Gly Ile Asp
965 970 975

Thr Gln Thr Gln Asp Phe Thr Val Val Gly Ile Gly Asp Met Ser Gly
980 985 990

Asp Val Phe Gly Asn Gly Met Leu Leu Ser Lys His Ile Arg Leu Ile

995 1000 1005

Ala Ala Phe Asp His Arg His Ile Phe Leu Asp Pro Asn Pro Asp
1010 1015 1020

Ala Ala Val Ser Trp Ala Glu Arg Arg Arg Met Phe Glu Leu Pro
1025 1030 1035

Arg Ser Ser Trp Ser Asp Tyr Asp Arg Ser Leu Ile Ser Glu Gly
1040 1045 1050

Gly Gly Val Tyr Ser Arg Glu Gln Lys Ala Ile Pro Leu Ser Ala
1055 1060 1065

Gln Val Arg Ala Val Leu Gly Ile Asp Gly Ser Val Asp Gly Gly
1070 1075 1080

Ala Ala Glu Met Ala Pro Pro Asn Leu Ile Arg Ala Ile Leu Arg
1085 1090 1095

Ala Pro Val Asp Leu Leu Phe Asn Gly Gly Ile Gly Thr Tyr Ile
1100 1105 1110

Lys Ala Glu Ser Glu Ser Asp Ala Asp Val Gly Asp Arg Ala Asn
1115 1120 1125

Asp Pro Val Arg Val Asn Ala Asn Gln Val Arg Ala Lys Val Ile
1130 1135 1140

Gly Glu Gly Gly Asn Leu Gly Val Thr Ala Leu Gly Arg Val Glu
1145 1150 1155

Phe Asp Leu Ser Gly Gly Arg Ile Asn Thr Asp Ala Leu Asp Asn
1160 1165 1170

Ser Ala Gly Val Asp Cys Ser Asp His Glu Val Asn Ile Lys Ile
1175 1180 1185

Leu Ile Asp Ser Leu Val Ser Ala Gly Thr Val Lys Ala Asp Glu
1190 1195 1200

Arg Thr Gln Leu Leu Glu Ser Met Thr Asp Glu Val Ala Gln Leu
1205 1210 1215

Val Leu Ala Asp Asn Glu Asp Gln Asn Asp Leu Met Gly Thr Ser
1220 1225 1230

Arg Ala Asn Ala Ala Ser Leu Leu Pro Val His Ala Met Gln Ile
1235 1240 1245

Lys Tyr Leu Val Ala Glu Arg Gly Val Asn Arg Glu Leu Glu Ala
1250 1255 1260

Leu Pro Ser Glu Lys Glu Ile Ala Arg Arg Ser Glu Ala Gly Ile
1265 1270 1275

Gly Leu Thr Ser Pro Glu Leu Ala Thr Leu Met Ala His Val Lys
1280 1285 1290

Leu Gly Leu Lys Glu Glu Val Leu Ala Thr Glu Leu Pro Asp Gln
1295 1300 1305

```
Asp Val  Phe Ala Ser Arg Leu  Pro Arg Tyr Phe Pro  Thr Ala Leu
     1310                 1315                 1320

Arg Glu  Arg Phe Thr Pro Glu  Ile Arg Ser His Gln  Leu Arg Arg
     1325                 1330                 1335

Glu Ile  Val Thr Thr Met Leu  Ile Asn Asp Leu Val  Asp Thr Ala
     1340                 1345                 1350

Gly Ile  Thr Tyr Ala Phe Arg  Ile Ala Glu Asp Val  Gly Val Thr
     1355                 1360                 1365

Pro Ile  Asp Ala Val Arg Thr  Tyr Val Ala Thr Asp  Ala Ile Phe
     1370                 1375                 1380

Gly Val  Gly His Ile Trp Arg  Arg Ile Arg Ala Ala  Asn Leu Pro
     1385                 1390                 1395

Ile Ala  Leu Ser Asp Arg Leu  Thr Leu Asp Thr Arg  Arg Leu Ile
     1400                 1405                 1410

Asp Arg  Ala Gly Arg Trp Leu  Leu Asn Tyr Arg Pro  Gln Pro Leu
     1415                 1420                 1425

Ala Val  Gly Ala Glu Ile Asn  Arg Phe Ala Ala Met  Val Lys Ala
     1430                 1435                 1440

Leu Thr  Pro Arg Met Ser Glu  Trp Leu Arg Gly Asp  Asp Lys Ala
     1445                 1450                 1455

Ile Val  Glu Lys Thr Ala Ala  Glu Phe Ala Ser Gln  Gly Val Pro
     1460                 1465                 1470

Glu Asp  Leu Ala Tyr Arg Val  Ser Thr Gly Leu Tyr  Arg Tyr Ser
     1475                 1480                 1485

Leu Leu  Asp Ile Ile Asp Ile  Ala Asp Ile Ala Asp  Ile Asp Ala
     1490                 1495                 1500

Ala Glu  Val Ala Asp Thr Tyr  Phe Ala Leu Met Asp  Arg Leu Gly
     1505                 1510                 1515

Thr Asp  Gly Leu Leu Thr Ala  Val Ser Gln Leu Pro  Arg His Asp
     1520                 1525                 1530

Arg Trp  His Ser Leu Ala Arg  Leu Ala Ile Arg Asp  Asp Ile Tyr
     1535                 1540                 1545

Gly Ala  Leu Arg Ser Leu Cys  Phe Asp Val Leu Ala  Val Gly Glu
     1550                 1555                 1560

Pro Gly  Glu Ser Ser Glu Gln  Lys Ile Ala Glu Trp  Glu His Leu
     1565                 1570                 1575

Ser Ala  Ser Arg Val Ala Arg  Ala Arg Arg Thr Leu  Asp Asp Ile
     1580                 1585                 1590

Arg Ala  Ser Gly Gln Lys Asp  Leu Ala Thr Leu Ser  Val Ala Ala
     1595                 1600                 1605
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Arg Gln Ile Arg Arg Met Thr Arg Thr Ser Gly Arg Gly Ile Ser
1610 1615 1620

Gly

<210> 540

<211> 491

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2484c, H37Rv2.tab 2791022:2792494 reverse MW:52309

<400> 540

Met Ala Glu Ser Gly Glu Ser Pro Arg Leu Ser Asp Glu Leu Gly Pro
1 5 10 15

Val Asp Tyr Leu Met His Arg Gly Glu Ala Asn Pro Arg Thr Arg Ser
20 25 30

Gly Ile Met Ala Leu Glu Leu Leu Asp Gly Thr Pro Asp Trp Asp Arg
35 40 45

Phe Arg Thr Arg Phe Glu Asn Ala Ser Arg Arg Val Leu Arg Leu Arg
50 55 60

Gln Lys Val Val Val Pro Thr Leu Pro Thr Ala Ala Pro Arg Trp Val
65 70 75 80

Val Asp Pro Asp Phe Asn Leu Asp Phe His Val Arg Arg Val Arg Val
85 90 95

Ser Gly Pro Ala Thr Leu Arg Glu Val Leu Asp Leu Ala Glu Val Ile
100 105 110

Leu Gln Ser Pro Leu Asp Ile Ser Arg Pro Leu Trp Thr Ala Thr Leu
115 120 125

Val Glu Gly Met Ala Asp Gly Arg Ala Ala Met Leu Leu His Val Ser
130 135 140

His Ala Val Thr Asp Gly Val Gly Gly Val Glu Met Phe Ala Gln Ile
145 150 155 160

Tyr Asp Leu Glu Arg Asp Pro Pro Pro Arg Ser Thr Pro Pro Gln Pro
165 170 175

Ile Pro Glu Asp Leu Ser Pro Asn Asp Leu Met Arg Arg Gly Ile Asn
180 185 190

```
His Leu Pro Ile Ala Val Val Gly Gly Val Leu Asp Ala Leu Ser Gly
        195                 200                 205

Ala Val Ser Met Ala Gly Arg Ala Val Leu Glu Pro Val Ser Thr Val
    210                 215                 220

Ser Gly Ile Leu Gly Tyr Ala Arg Ser Gly Ile Arg Val Leu Asn Arg
225                 230                 235                 240

Ala Ala Glu Pro Ser Pro Leu Leu Arg Arg Arg Ser Leu Thr Thr Arg
                245                 250                 255

Thr Glu Ala Ile Asp Ile Arg Leu Ala Asp Leu His Lys Ala Ala Lys
            260                 265                 270

Ala Gly Gly Gly Ser Ile Asn Asp Ala Tyr Leu Ala Gly Leu Cys Gly
        275                 280                 285

Ala Leu Arg Arg Tyr His Glu Ala Leu Gly Val Pro Ile Ser Thr Leu
    290                 295                 300

Pro Met Ala Val Pro Val Asn Leu Arg Ala Glu Gly Asp Ala Ala Gly
305                 310                 315                 320

Gly Asn Gln Phe Thr Gly Val Asn Leu Ala Ala Pro Val Gly Thr Ile
                325                 330                 335

Asp Pro Val Ala Arg Met Lys Lys Ile Arg Ala Gln Met Thr Gln Arg
            340                 345                 350

Arg Asp Glu Pro Ala Met Asn Ile Ile Gly Ser Ile Ala Pro Val Leu
        355                 360                 365

Ser Val Leu Pro Thr Ala Val Leu Glu Gly Ile Thr Gly Ser Val Ile
    370                 375                 380

Gly Ser Asp Val Gln Ala Ser Asn Val Pro Val Tyr Pro Gly Asp Thr
385                 390                 395                 400

Tyr Leu Ala Gly Ala Lys Ile Leu Arg Gln Tyr Gly Ile Gly Pro Leu
                405                 410                 415

Pro Gly Val Ala Met Met Val Val Leu Ile Ser Arg Gly Gly Trp Cys
            420                 425                 430

Thr Val Thr Val Arg Tyr Asp Arg Ala Ser Val Arg Asn Asp Glu Leu
        435                 440                 445

Phe Ala Gln Cys Leu Gln Ala Gly Phe Asp Glu Ile Leu Ala Leu Ala
    450                 455                 460

Gly Gly Pro Ala Pro Arg Val Leu Pro Ala Ser Phe Asp Thr Gln Gly
465                 470                 475                 480

Ala Gly Ser Val Pro Arg Ser Val Ser Gly Ser
                485                 490
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<210> 541

<211> 273

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2507, H37Rv2.tab 2822438:2823256 forward MW:28520

<400> 541

Met Asn Asp Pro Arg Arg Pro Gln Arg Phe Gly Pro Pro Leu Ser Gly
1 5 10 15

Tyr Gly Pro Thr Gly Pro Gln Val Pro Pro Asn Pro Pro Thr Ala Asp
20 25 30

Pro Ala Tyr Ala Asp Gln Ser Pro Tyr Ala Ser Thr Tyr Gly Gly Tyr
35 40 45

Val Ser Pro Pro Trp Ser Pro Gly Gly Pro Pro Pro Arg Pro Pro Gln
50 55 60

Trp Pro Pro Gly Pro His Glu Ala Ser Pro Thr Gln Gln Leu Pro Gln
65 70 75 80

Tyr Trp Gln Tyr Asp Gln Pro Pro Pro Gly Gly Phe Pro Pro Asp Gly
85 90 95

Leu Thr Pro Pro Pro Pro Gln Gly Pro Arg Thr Pro Arg Trp Leu Trp
100 105 110

Phe Ala Ala Gly Ser Ala Val Leu Leu Val Val Ala Leu Val Ile Ala
115 120 125

Leu Val Ile Ala Asn Gly Ser Val Lys Lys Gln Thr Ala Ile Glu Pro
130 135 140

Leu Pro Pro Met Pro Gly Pro Ser Pro Thr Arg Pro Thr Thr Thr Thr
145 150 155 160

Pro Thr Pro Pro Ser Pro Ser Ala Ala Pro Ala Pro Thr Thr Thr Thr
165 170 175

Gly Thr Pro Ser Glu Thr Val Ala Gly Ala Met Gln Thr Val Val Tyr
180 185 190

Asp Val Thr Gly Glu Gly Arg Ala Ile Ser Ile Thr Tyr Met Asp Ser
195 200 205

Gly Asn Val Ile Gln Thr Glu Phe Asn Val Ala Leu Pro Trp Arg Lys
210 215 220

Glu Val Ser Leu Ser Lys Ser Ser Leu His Pro Ala Ser Val Thr Ile

225 230 235 240

Val Asn Ile Gly His Asn Val Thr Cys Ser Val Thr Val Ala Gly Val
245 250 255

Gln Val Arg Gln Arg Thr Gly Ala Gly Leu Thr Ile Cys Asp Ala Pro
260 265 270

Ser

<210> 542

<211> 75

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2520c, H37Rv2.tab 2837391:2837615 reverse MW:8341

<400> 542

Val Val Asp Arg Asp Pro Asn Thr Ile Lys Gln Glu Ile Asp Gln Thr
1 5 10 15

Arg Asp Gln Leu Ala Ala Thr Ile Asp Ser Leu Ala Glu Arg Ala Asn
20 25 30

Pro Arg Arg Leu Ala Asp Asp Ala Lys Thr Arg Val Ile Ala Phe Leu
35 40 45

Arg Lys Pro Ile Val Thr Val Ser Leu Val Gly Ile Gly Ser Val Val
50 55 60

Val Val Val Val Ile His Lys Ile Arg Asn Arg
65 70 75

<210> 543

<211> 240

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2525c, H37Rv2.tab 2849855:2850574 reverse MW:25369

<400> 543

Met Ser Val Ser Arg Arg Asp Val Leu Lys Phe Ala Ala Ala Thr Pro
1 5 10 15

Gly Val Leu Gly Leu Gly Val Val Ala Ser Ser Leu Arg Ala Ala Pro
20 25 30

Ala Ser Ala Gly Ser Leu Gly Thr Leu Leu Asp Tyr Ala Ala Gly Val
35 40 45

Ile Pro Ala Ser Gln Ile Arg Ala Ala Gly Ala Val Gly Ala Ile Arg
50 55 60

Tyr Val Ser Asp Arg Arg Pro Gly Gly Ala Trp Met Leu Gly Lys Pro
65 70 75 80

Ile Gln Leu Ser Glu Ala Arg Asp Leu Ser Gly Asn Gly Leu Lys Ile
85 90 95

Val Ser Cys Tyr Gln Tyr Gly Lys Gly Ser Thr Ala Asp Trp Leu Gly
100 105 110

Gly Ala Ser Ala Gly Val Gln His Ala Arg Arg Gly Ser Glu Leu His
115 120 125

Ala Ala Ala Gly Gly Pro Thr Ser Ala Pro Ile Tyr Ala Ser Ile Asp
130 135 140

Asp Asn Pro Ser Tyr Glu Gln Tyr Lys Asn Gln Ile Val Pro Tyr Leu
145 150 155 160

Arg Ser Trp Glu Ser Val Ile Gly His Gln Arg Thr Gly Val Tyr Ala
165 170 175

Asn Ser Lys Thr Ile Asp Trp Ala Val Asn Asp Gly Leu Gly Ser Tyr
180 185 190

Phe Trp Gln His Asn Trp Gly Ser Pro Lys Gly Tyr Thr His Pro Ala
195 200 205

Ala His Leu His Gln Val Glu Ile Asp Lys Arg Lys Val Gly Gly Val
210 215 220

Gly Val Asp Val Asn Gln Ile Leu Lys Pro Gln Phe Gly Gln Trp Ala
225 230 235 240

<210> 544

<211> 230

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2536, H37Rv2.tab 2860452:2861141 forward MW:24626

<400> 544

Met Thr Asn Trp Met Leu Arg Gly Leu Ala Phe Ala Ala Ala Met Val
1 5 10 15

Val Leu Arg Leu Phe Gln Gly Ala Leu Ile Asn Ala Trp Gln Met Leu
20 25 30

Ser Gly Leu Ile Ser Leu Val Leu Leu Leu Phe Ala Ile Gly Gly
35 40 45

Val Val Trp Gly Val Met Asp Gly Arg Ala Asp Ala Lys Ala Ser Pro
50 55 60

Asp Pro Asp Arg Arg Gln Asp Leu Ala Met Thr Trp Leu Leu Ala Gly
65 70 75 80

Leu Val Ala Gly Ala Leu Ser Gly Ala Val Ala Trp Leu Ile Ser Leu
85 90 95

Phe Tyr Lys Ala Ile Tyr Thr Gly Gly Pro Ile Asn Glu Leu Thr Thr
100 105 110

Phe Ala Ala Phe Thr Ala Leu Ile Val Phe Leu Val Gly Ile Val Gly
115 120 125

Val Ala Val Gly Arg Trp Leu Val Asp Arg Gln Leu Ala Lys Ala Pro
130 135 140

Val Arg His His Gly Leu Ala Ala Glu His Glu Arg Ala Ala Asp Thr
145 150 155 160

Asp Val Phe Ser Ala Val Arg Ala Asp Asp Ser Pro Thr Gly Glu Met
165 170 175

Gln Val Ala Gln Pro Glu Ala Gln Thr Ala Ala Val Ala Thr Val Glu
180 185 190

Arg Glu Ala Pro Thr Glu Val Ile Arg Thr Thr Glu Ser Asp Thr Pro
195 200 205

Thr Glu Val Ile Arg Thr Asp Thr Glu Ala Asp Gln Thr Lys Pro Gly
210 215 220

Asp Glu Pro Lys Lys Asp
225 230

<210> 545

<211> 115

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2588c, H37Rv2.tab 2915849:2916193 reverse MW:12966

<400> 545

Met Glu Ser Phe Val Leu Phe Leu Pro Phe Leu Leu Ile Met Gly Gly
1 5 10 15

Phe Met Tyr Phe Ala Ser Arg Arg Gln Arg Arg Ala Met Gln Ala Thr
20 25 30

Ile Asp Leu His Asp Ser Leu Gln Pro Gly Glu Arg Val His Thr Thr
35 40 45

Ser Gly Leu Glu Ala Thr Ile Val Ala Ile Ala Asp Asp Thr Ile Asp
50 55 60

Leu Glu Ile Ala Pro Gly Val Val Thr Thr Trp Met Lys Leu Ala Ile
65 70 75 80

Arg Asp Arg Ile Leu Pro Asp Asp Asp Ile Asp Glu Glu Leu Asn Glu
85 90 95

Asp Leu Asp Lys Asp Val Asp Asp Val Ala Gly Glu Arg Arg Val Thr
100 105 110

Asn Asp Ser
115

<210> 546

<211> 351

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2609c, H37Rv2.tab 2936813:2937865 reverse MW:38096

<400> 546

Met Thr Trp Leu Val Leu Ala Gly Ala Val Leu Leu Val Val Leu Val
1 5 10 15

```
Ala Phe Gly Ala Trp Gly Tyr Gln Thr Ala Asn Arg Leu Asn Arg Leu
            20                  25                  30

Asn Val Arg Tyr Asp Leu Ser Trp Gln Ser Leu Asp Ser Ala Leu Ala
        35                  40                  45

Arg Arg Ala Val Val Ala Arg Ala Val Ala Ile Asp Ala Tyr Gly Gly
    50                  55                  60

Ala Pro Gln Gly Ser Arg Leu Ala Ala Leu Ala Asp Ala Ala Glu Gly
65                  70                  75                  80

Ala Pro Arg His Ala Arg Glu Asn Ala Glu Asn Glu Leu Ser Ala Ala
                85                  90                  95

Leu Ala Met Val Asn Pro Ala Ser Leu Pro Ala Ala Leu Ile Ala Glu
            100                 105                 110

Leu Ala Asp Ala Glu Ala Arg Val Leu Leu Ala Arg Arg Phe His Asn
        115                 120                 125

Asp Ala Val Arg Asp Thr Leu Ala Leu Gly Glu Arg Arg Leu Val Arg
    130                 135                 140

Leu Leu Arg Leu Gly Gly Thr Ala Val Leu Pro Thr Tyr Phe Glu Ile
145                 150                 155                 160

Val Glu Arg Pro His Ala Leu Val His Gly Asp Gln Gly Ala Ser Gly
                165                 170                 175

Arg Arg Thr Ser Ala Arg Val Val Leu Leu Asp Asp Ser Gly Ala Val
            180                 185                 190

Leu Leu Leu Cys Gly Ser Asp Pro Ala Asn Pro Ala Phe Arg Asp Gly
        195                 200                 205

Ala Ala Pro Lys Trp Trp Phe Thr Val Gly Gly Gln Val Arg Pro Gly
    210                 215                 220

Glu Arg Leu Ala Gln Ala Ala Ala Arg Glu Leu Ala Glu Glu Thr Gly
225                 230                 235                 240

Leu Arg Val Ala Pro Ala Asp Met Ile Gly Pro Ile Trp Arg Arg Asp
                245                 250                 255

Glu Val Phe Glu Phe Asn Gly Ser Leu Ile Asp Ser Glu Glu Phe Tyr
            260                 265                 270

Leu Val His Arg Thr Arg Arg Phe Glu Pro Ala Val Gln Gly Arg Thr
        275                 280                 285

Glu Leu Glu Arg Arg Tyr Ile Arg Asp Ala Arg Trp Cys Asp Ala Asn
    290                 295                 300

Asp Ile Ala Gln Leu Val Ala Ala Gly Glu Arg Val Tyr Pro Leu Gln
305                 310                 315                 320

Leu Gly Glu Leu Leu Pro Ala Ala Asn Arg Leu Val Asp Val Ala Leu
                325                 330                 335

Asp Asn Gly Ala Ala Arg Asp Ala Gly Val Pro Gln Pro Ile Arg
```

340 345 350

<210> 547

<211> 433

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2673, H37Rv2.tab 2989290:2990588 forward MW:48883

<400> 547

Val Tyr Gly Ala Leu Val Thr Ala Ala Asp Ser Ile Arg Thr Gly Leu
1 5 10 15

Gly Ala Ser Leu Leu Ala Gly Phe Arg Pro Arg Thr Gly Ala Pro Ser
20 25 30

Thr Ala Thr Ile Leu Arg Ser Ala Leu Trp Pro Ala Ala Val Leu Ser
35 40 45

Val Leu His Arg Ser Ile Val Leu Thr Thr Asn Gly Asn Ile Thr Asp
50 55 60

Asp Phe Lys Pro Val Tyr Arg Ala Val Leu Asn Phe Arg Arg Gly Trp
65 70 75 80

Asp Ile Tyr Asn Glu His Phe Asp Tyr Val Asp Pro His Tyr Leu Tyr
85 90 95

Pro Pro Gly Gly Thr Leu Leu Met Ala Pro Phe Gly Tyr Leu Pro Phe
100 105 110

Ala Pro Ser Arg Tyr Leu Phe Ile Ser Ile Asn Thr Ala Ala Ile Leu
115 120 125

Val Ala Ala Tyr Leu Leu Leu Arg Met Phe Asn Phe Thr Leu Thr Ser
130 135 140

Val Ala Ala Pro Ala Leu Ile Leu Ala Met Phe Ala Thr Glu Thr Val
145 150 155 160

Thr Asn Thr Leu Val Phe Thr Asn Ile Asn Gly Cys Ile Leu Leu Leu
165 170 175

Glu Val Leu Phe Leu Arg Trp Leu Leu Asp Gly Arg Ala Ser Arg Gln
180 185 190

Trp Cys Gly Gly Leu Ala Ile Gly Leu Thr Leu Val Leu Lys Pro Leu
195 200 205

```
Leu Gly Pro Leu Leu Leu Leu Pro Leu Leu Asn Arg Gln Trp Arg Ala
    210                 215                 220

Leu Val Ala Ala Val Val Val Pro Val Val Val Asn Val Ala Ala Leu
225                 230                 235                 240

Pro Leu Val Ser Asp Pro Met Ser Phe Phe Thr Arg Thr Leu Pro Tyr
                245                 250                 255

Ile Leu Gly Thr Arg Asp Tyr Phe Asn Ser Ser Ile Leu Gly Asn Gly
            260                 265                 270

Val Tyr Phe Gly Leu Pro Thr Trp Leu Ile Leu Phe Leu Arg Ile Leu
        275                 280                 285

Phe Thr Ala Ile Thr Phe Gly Ala Leu Trp Leu Leu Tyr Arg Tyr Tyr
    290                 295                 300

Arg Thr Gly Asp Pro Leu Phe Trp Phe Thr Thr Ser Ser Gly Val Leu
305                 310                 315                 320

Leu Leu Trp Ser Trp Leu Val Met Ser Leu Ala Gln Gly Tyr Tyr Ser
                325                 330                 335

Met Met Leu Phe Pro Phe Leu Met Thr Val Val Leu Pro Asn Ser Val
            340                 345                 350

Ile Arg Asn Trp Pro Ala Trp Leu Gly Val Tyr Gly Phe Met Thr Leu
        355                 360                 365

Asp Arg Trp Leu Leu Phe Asn Trp Met Arg Trp Gly Arg Ala Leu Glu
    370                 375                 380

Tyr Leu Lys Ile Thr Tyr Gly Trp Ser Leu Leu Leu Ile Val Thr Phe
385                 390                 395                 400

Thr Val Leu Tyr Phe Arg Tyr Leu Asp Ala Lys Ala Asp Asn Arg Leu
                405                 410                 415

Asp Gly Gly Ile Asp Pro Ala Trp Leu Thr Pro Glu Arg Glu Gly Gln
            420                 425                 430

Arg
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<210> 548

<211> 210

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2680, H37Rv2.tab 2996104:2996733 forward MW:22555

<400> 548

Leu Thr Ser Ala Gly Asp Asp Ala Glu Arg Ser Asp Glu Glu Glu Arg
1 5 10 15

Arg Leu Thr Ser Ala Glu Pro Ala Leu Phe Arg Glu Ala Val Ala Ala
20 25 30

Met Asn Ala Val Thr Val Arg Pro Glu Ile Glu Leu Gly Pro Ile Arg
35 40 45

Pro Pro Gln Arg Leu Ala Pro Tyr Ser Tyr Ala Leu Gly Ala Glu Ile
50 55 60

Lys His Pro Glu Leu Asp Val Ile Pro Glu Arg Ser Glu Gly Asp Ala
65 70 75 80

Phe Gly Arg Leu Ile Met Leu Tyr Asp Pro Asp Gly Ser Asp Ala Trp
85 90 95

Asp Gly Thr Ile Arg Leu Val Ala Tyr Val Gln Ala Asp Leu Asp Ser
100 105 110

Ser Glu Ala Val Asp Pro Leu Leu Pro Glu Val Ala Trp Ser Trp Leu
115 120 125

Val Asp Ala Leu Thr Ala Arg Thr Asp Gln Val Arg Ala Leu Gly Gly
130 135 140

Thr Val Thr Ala Thr Thr Ser Val Arg Tyr Gly Asp Ile Ser Gly Pro
145 150 155 160

Pro Arg Ala His Gln Leu Glu Leu Arg Ala Ser Trp Thr Ala Thr Thr
165 170 175

Pro Asp Leu Gly Ala His Val Gln Ala Phe Cys Asp Val Leu Glu His
180 185 190

Ala Ala Gly Leu Pro Pro Ala Gly Val Thr Asp Leu Gly Ser Arg Ser
195 200 205

Arg Ala
210

<210> 549

<211> 165

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2683, H37Rv2.tab 3000111:3000605 forward MW:17729

<400> 549

Met Lys Val Asn Ile Asp Pro Thr Ala Pro Thr Phe Ala Thr Tyr Arg
1 5 10 15

Arg Asp Met Arg Ala Glu Gln Met Ala Glu Asp Tyr Pro Val Val Ser
20 25 30

Ile Asp Ser Asp Ala Leu Asp Ala Ala Arg Met Leu Ala Glu His Arg
35 40 45

Leu Pro Gly Leu Leu Val Thr Ala Gly Ala Gly Lys Gln Tyr Ala Val
50 55 60

Leu Pro Ala Ser Gln Val Val Arg Phe Ile Val Pro Arg Tyr Val Gln
65 70 75 80

Asp Asp Pro Leu Leu Ala Gly Val Leu Asn Glu Ser Thr Ala Asp Arg
85 90 95

Cys Ala Glu Arg Leu Ser Gly Lys Lys Val Arg Asp Val Leu Pro Asp
100 105 110

His Leu Val Glu Val Pro Pro Ala Asn Ala Asp Asp Thr Ile Ile Glu
115 120 125

Val Ala Ala Val Met Ala Arg Leu Arg Ser Pro Leu Leu Ala Val Val
130 135 140

Lys Asp Gly Ser Leu Leu Gly Val Val Thr Ala Ser Arg Leu Leu Ala
145 150 155 160

Ala Ala Leu Lys Thr
165

<210> 550

<211> 235

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2695, H37Rv2.tab 3011915:3012619 forward MW:24154

<400> 550

Met Ala Val Asp Leu Asp Gly Val Thr Thr Val Leu Leu Pro Gly Thr
1 5 10 15

```
Gly Ser Asp Asn Asp Tyr Val Arg Arg Ala Phe Ser Ala Pro Leu Arg
            20                  25                  30

Arg Ala Gly Ala Val Leu Val Thr Pro Val Pro His Pro Gly Arg Leu
        35                  40                  45

Ile Asp Gly Tyr Arg Ala Ala Leu Asp Asp Ala Ala Arg Asp Gly Pro
    50                  55                  60

Val Val Val Gly Gly Val Ser Leu Gly Ala Ala Val Ala Ala Ala Trp
65                  70                  75                  80

Ala Leu Glu His Pro Asp Arg Ala Val Ala Val Leu Ala Ala Leu Pro
                85                  90                  95

Ala Trp Thr Gly Glu Pro Glu Leu Ala Pro Ala Ala Gln Ala Ala Arg
            100                 105                 110

Tyr Thr Ala Ala Arg Leu Arg Cys Asp Gly Leu Ala Ala Thr Thr Thr
        115                 120                 125

Arg Met Arg Ala Ser Ser Pro Val Trp Leu Ala Glu Glu Leu Thr Arg
    130                 135                 140

Ser Trp Arg Val Gln Trp Pro Glu Leu Pro Asp Ala Met Glu Glu Ala
145                 150                 155                 160

Ala Ala Tyr Val Ala Pro Ser Arg Ala Glu Leu Ala Arg Leu Val Ala
                165                 170                 175

Pro Leu Ala Val Ala Ala Ala Val Asp Asp Pro Ile His Pro Leu Gln
            180                 185                 190

Val Ala Ala Asp Trp Val Ser Val Ala Pro His Ala Ala Leu Arg Thr
        195                 200                 205

Val Thr Leu Asp Glu Ile Gly Ala Asp Ala Ala Ala Leu Gly Ser Ala
    210                 215                 220

Cys Leu Ala Ala Leu Ala Glu Val Ser Gly Ala
225                 230                 235
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<210> 551

<211> 259

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2696c, H37Rv2.tab 3012831:3013607 reverse MW:27216

<400> 551

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Met Ala Phe Gly Arg Arg Thr Gly Lys Asp Gly Gly Lys Arg Lys Ala
1               5                  10                  15

Gly His Ala Pro Val Gln Pro Ala Asp Glu His Val Arg Pro Glu Asp
            20                  25                  30

Thr Val Val Ala Ser Ala Ala Ala Ala Ser Gly Val Glu Asp Gln Glu
        35                  40                  45

Glu Leu Gln Gly Pro Phe Asp Ile Asp Asp Phe Asp Asp Pro Ser Val
    50                  55                  60

Ala Val Leu Ala Arg Leu Asp Leu Gly Ser Val Leu Ile Pro Met Pro
65                  70                  75                  80

Ala Ala Gly Gln Val Gln Val Glu Leu Thr Glu Ser Gly Val Pro Ser
                85                  90                  95

Ala Val Trp Val Ile Thr Pro Asn Gly Arg Tyr Ser Ile Ala Ala Tyr
            100                 105                 110

Ala Ala Pro Lys Thr Gly Gly Leu Trp Arg Glu Val Ala Gly Glu Leu
        115                 120                 125

Ala Asp Ser Leu Arg Lys Asp Ser Ala Lys Val Ser Ile Lys Asp Gly
    130                 135                 140

Pro Trp Gly Arg Glu Val Ile Gly Ile Ala Ala Gly Val Val Arg Phe
145                 150                 155                 160

Ile Gly Val Asp Gly Tyr Arg Trp Met Ile Arg Cys Val Val Asn Gly
                165                 170                 175

Pro Gln Glu Thr Val Asp Ala Leu Thr Glu Glu Ala Arg Glu Ala Leu
            180                 185                 190

Ala Asp Thr Val Val Arg Arg Gly Asp Thr Pro Leu Pro Val Arg Thr
        195                 200                 205

Pro Leu Pro Val His Leu Pro Glu Pro Met Ala Ala Gln Leu Arg Glu
    210                 215                 220

Ala Ala Ala Ala Gln Ala Asp Thr Gln Arg Gln Ala Ala Ala Gly Val
225                 230                 235                 240

Ala Arg Arg Gly Ala Gln Gly Ser Ala Met Gln Gln Leu Arg Ser Thr
                245                 250                 255

Thr Gly Gly
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<210> 552

<211> 161

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2698, H37Rv2.tab 3014172:3014654 forward MW:17530

<400> 552

Val Ser Gly Thr Arg Leu Ala Pro His Ser Val Arg Tyr Arg Glu Arg
1 5 10 15

Leu Trp Val Pro Trp Trp Trp Trp Pro Leu Ala Phe Ala Leu Ala Ala
20 25 30

Leu Ile Ala Phe Glu Val Asn Leu Gly Val Ala Ala Leu Pro Asp Trp
35 40 45

Val Pro Phe Ala Thr Leu Phe Thr Val Ala Ala Gly Thr Leu Leu Trp
50 55 60

Leu Gly Arg Val Glu Ile Arg Val Thr Ala Gly Ser Ala Asp Gly Ala
65 70 75 80

Gly Val Lys Leu Trp Ala Gly Pro Ala His Leu Pro Val Ala Val Ile
85 90 95

Ala Arg Ser Ala Glu Ile Pro Ala Thr Ala Lys Ser Ala Ala Leu Gly
100 105 110

Arg Gln Leu Asp Pro Ala Ala Tyr Val Leu His Arg Ala Trp Val Gly
115 120 125

Pro Met Val Leu Val Val Leu Asp Asp Pro Asn Asp Pro Thr Pro Tyr
130 135 140

Trp Leu Val Ser Cys Arg His Pro Glu Arg Val Leu Ser Ala Leu Arg
145 150 155 160

Ser

<210> 553

<211> 100

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2699c, H37Rv2.tab 3014665:3014964 reverse MW:10915

<400> 553

Met Pro Thr Asp Tyr Asp Ala Pro Arg Arg Thr Glu Thr Asp Asp Val
1 5 10 15

Ser Glu Asp Ser Leu Glu Glu Leu Lys Ala Arg Arg Asn Glu Ala Ala
20 25 30

Ser Ala Val Val Asp Val Asp Glu Ser Glu Ser Ala Glu Ser Phe Glu
35 40 45

Leu Pro Gly Ala Asp Leu Ser Gly Glu Glu Leu Ser Val Arg Val Val
50 55 60

Pro Lys Gln Ala Asp Glu Phe Thr Cys Ser Ser Cys Phe Leu Val Gln
65 70 75 80

His Arg Ser Arg Leu Ala Ser Glu Lys Asn Gly Val Met Ile Cys Thr
85 90 95

Asp Cys Ala Ala
100

<210> 554

<211> 216

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2700, H37Rv2.tab 3015202:3015849 forward MW:22627

<400> 554

Val Val Ala Gln Ile Thr Glu Gly Thr Ala Phe Asp Lys His Gly Arg
1 5 10 15

Pro Phe Arg Arg Arg Asn Pro Arg Pro Ala Ile Val Val Val Ala Phe
20 25 30

Leu Val Val Val Thr Cys Val Met Trp Thr Leu Ala Leu Thr Arg Pro
35 40 45

Pro Asp Val Arg Glu Ala Ala Val Cys Asn Pro Pro Pro Gln Pro Ala
50 55 60

Gly Ser Ala Pro Thr Asn Leu Gly Glu Gln Val Ser Arg Thr Asp Met
65 70 75 80

Thr Asp Val Ala Pro Ala Lys Leu Ser Asp Thr Lys Val His Val Leu

85 90 95

Asn Ala Ser Gly Arg Gly Gly Gln Ala Ala Asp Ile Ala Gly Ala Leu
100 105 110

Gln Asp Leu Gly Phe Ala Gln Pro Thr Ala Ala Asn Asp Pro Ile Tyr
115 120 125

Ala Gly Thr Arg Leu Asp Cys Gln Gly Gln Ile Arg Phe Gly Thr Ala
130 135 140

Gly Gln Ala Thr Ala Ala Ala Leu Trp Leu Val Ala Pro Cys Thr Glu
145 150 155 160

Leu Tyr His Asp Ser Arg Ala Asp Asp Ser Val Asp Leu Ala Leu Gly
165 170 175

Thr Asp Phe Thr Thr Leu Ala His Asn Asp Asp Ile Asp Ala Val Leu
180 185 190

Ala Asn Leu Arg Pro Gly Ala Thr Glu Pro Ser Asp Pro Ala Leu Leu
195 200 205

Ala Lys Ile His Ala Asn Ser Cys
210 215

<210> 555

<211> 82

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2708c, H37Rv2.tab 3021550:3021795 reverse MW:8962

<400> 555

Met Ser Gly Met Gln Thr Gln Thr Ile Glu Arg Thr Asp Ala Asp Glu
1 5 10 15

Arg Val Asp Asp Gly Thr Gly Ser Asp Thr Pro Lys Tyr Phe His Tyr
20 25 30

Val Lys Lys Asp Lys Ile Ala Glu Ser Ala Val Met Gly Ser His Val
35 40 45

Val Ala Leu Cys Gly Glu Val Phe Pro Val Thr Arg Ala Pro Lys Pro
50 55 60

Gly Ser Pro Val Cys Pro Asp Cys Lys Arg Ile Tyr Asp Thr Leu Lys
65 70 75 80

Lys Gly

<210> 556

<211> 148

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2709, H37Rv2.tab 3021838:3022281 forward MW:16810

<400> 556

Met Trp Asp Ser Arg Val Met Lys His Gly Leu Arg Leu Gly Phe Asn
1 5 10 15

Gly Gln Phe Asp Asp Phe Asp Asp Phe Asp Asp Lys Gly Arg Pro Val
20 25 30

Leu Ile Thr Ala Ala Ala Pro Ser Tyr Glu Val Glu His Arg Thr Arg
35 40 45

Val Arg Lys Tyr Leu Thr Leu Met Ala Phe Arg Val Pro Ala Leu Ile
50 55 60

Leu Ala Ala Ile Ala Tyr Gly Ala Trp His Asn Gly Leu Ile Ser Leu
65 70 75 80

Leu Ile Val Ala Ala Ser Val Pro Leu Pro Trp Met Ala Val Leu Ile
85 90 95

Ala Asn Asp Arg Pro Pro Arg Arg Ala Asp Glu Pro Arg Arg Phe Asp
100 105 110

Val Ala Arg Arg Arg Ile Pro Leu Phe Pro Thr Ala Glu Arg Pro Ala
115 120 125

Leu Glu Pro Arg Arg Gln Pro Ala Glu Arg Ser Ala Pro Arg Gly Phe
130 135 140

Ala Asp His Gly
145

<210> 557

<211> 324

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2714, H37Rv2.tab 3027064:3028035 forward MW:35520

<400> 557

Met Ala Arg Asp Gln Gly Ala Asp Glu Ala Arg Glu Tyr Glu Pro Gly
1 5 10 15

Gln Pro Gly Met Tyr Glu Leu Glu Phe Pro Ala Pro Gln Leu Ser Ser
20 25 30

Ser Asp Gly Arg Gly Pro Val Leu Val His Ala Leu Glu Gly Phe Ser
35 40 45

Asp Ala Gly His Ala Ile Arg Leu Ala Ala Ala His Leu Lys Ala Ala
50 55 60

Leu Asp Thr Glu Leu Val Ala Ser Phe Ala Ile Asp Glu Leu Leu Asp
65 70 75 80

Tyr Arg Ser Arg Arg Pro Leu Met Thr Phe Lys Thr Asp His Phe Thr
85 90 95

His Ser Asp Asp Pro Glu Leu Ser Leu Tyr Ala Leu Arg Asp Ser Ile
100 105 110

Gly Thr Pro Phe Leu Leu Leu Ala Gly Leu Glu Pro Asp Leu Lys Trp
115 120 125

Glu Arg Phe Ile Thr Ala Val Arg Leu Leu Ala Glu Arg Leu Gly Val
130 135 140

Arg Gln Thr Ile Gly Leu Gly Thr Val Pro Met Ala Val Pro His Thr
145 150 155 160

Arg Pro Ile Thr Met Thr Ala His Ser Asn Asn Arg Glu Leu Ile Ser
165 170 175

Asp Phe Gln Pro Ser Ile Ser Glu Ile Gln Val Pro Gly Ser Ala Ser
180 185 190

Asn Leu Leu Glu Tyr Arg Met Ala Gln His Gly His Glu Val Val Gly
195 200 205

Phe Thr Val His Val Pro His Tyr Leu Thr Gln Thr Asp Tyr Pro Ala
210 215 220

Ala Ala Gln Ala Leu Leu Glu Gln Val Ala Lys Thr Gly Ser Leu Gln
225 230 235 240

Leu Pro Leu Ala Val Leu Ala Glu Ala Ala Ala Glu Val Gln Ala Lys
245 250 255

Ile Asp Glu Gln Val Gln Ala Ser Ala Glu Val Ala Gln Val Val Ala

260 265 270

Ala Leu Glu Arg Gln Tyr Asp Ala Phe Ile Asp Ala Gln Glu Asn Arg
275 280 285

Ser Leu Leu Thr Arg Asp Glu Asp Leu Pro Ser Gly Asp Glu Leu Gly
290 295 300

Ala Glu Phe Glu Arg Phe Leu Ala Gln Gln Ala Glu Lys Lys Ser Asp
305 310 315 320

Asp Asp Pro Thr

<210> 558

<211> 165

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2719c, H37Rv2.tab 3031042:3031536 reverse MW:17324

<400> 558

Met Thr Pro Val Arg Pro Pro His Thr Pro Asp Pro Leu Asn Leu Arg
1 5 10 15

Gly Pro Leu Asp Gly Pro Arg Trp Arg Arg Ala Glu Pro Ala Gln Ser
20 25 30

Arg Arg Pro Gly Arg Ser Arg Pro Gly Gly Ala Pro Leu Arg Tyr His
35 40 45

Arg Thr Gly Val Gly Met Ser Arg Thr Gly His Gly Ser Arg Pro Val
50 55 60

Pro Pro Ala Thr Thr Val Gly Leu Ala Leu Leu Ala Ala Ala Ile Thr
65 70 75 80

Leu Trp Leu Gly Leu Val Ala Gln Phe Gly Gln Met Ile Thr Gly Gly
85 90 95

Ser Ala Asp Gly Ser Ala Asp Ser Thr Gly Arg Val Pro Asp Arg Leu
100 105 110

Ala Val Val Arg Val Glu Thr Gly Glu Ser Leu Tyr Asp Val Ala Val
115 120 125

Arg Val Ala Pro Asn Ala Pro Thr Arg Gln Val Ala Asp Arg Ile Arg
130 135 140

Glu Leu Asn Gly Leu Gln Thr Pro Ala Leu Ala Val Gly Gln Thr Leu
145 150 155 160

Ile Ala Pro Val Gly
165

<210> 559

<211> 82

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2722, H37Rv2.tab 3034634:3034879 forward MW:9077

<400> 559

Met Pro Cys Leu Ala Arg Gln Pro Val Asp Leu Pro Pro Trp Ala Gly
1 5 10 15

Pro Arg Cys Gly Pro Tyr Cys Pro Arg Ala Arg Ile Thr Leu Leu Gln
20 25 30

Arg Thr Thr Ile Ala Lys Ser Asn Arg Lys Tyr Tyr Glu Asn Gly Tyr
35 40 45

Pro Ala Asp Val Lys Leu Met Pro Gly His Ala Ala Val Val Ser Asn
50 55 60

Arg Ala Ala Ala Arg Ala Gly Phe Ala Leu Pro Cys Arg Lys Arg Gln
65 70 75 80

Pro Asp

<210> 560

<211> 231

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2728c, H37Rv2.tab 3040768:3041460 reverse MW:23455

<400> 560

Val Leu Ser Ala Ile Gly Ile Val Pro Ser Ala Pro Val Leu Val Pro
1 5 10 15

Glu Leu Ala Gly Ala Ala Ala Ala Glu Leu Ala Asp Leu Gly Ala Ala
20 25 30

Val Ile Ala Ala Ala Ser Leu Leu Pro Lys Ser Trp Ile Ala Val Gly
35 40 45

Thr Gly Arg Ala Asp Asp Val Val Arg Pro Thr Asp Val Gly Thr Phe
50 55 60

Ala Gly Phe Gly Ala Asp Val Arg Val Gly Leu Ala Pro Gln Asp Gly
65 70 75 80

Asp Gly Val Ala Val Pro Val Glu Leu Pro Leu Cys Ala Leu Leu Thr
85 90 95

Ala Trp Val Arg Gly Gln Ala Arg Pro Glu Ala Arg Ala Gln Val His
100 105 110

Val Tyr Ala Ser Asp His Gly Ser Asp Ala Ala Val Ala Arg Gly Arg
115 120 125

Gln Leu Arg Ala Asp Ile Asp Arg Glu Pro Asp Pro Ile Gly Val Leu
130 135 140

Val Val Ala Asp Gly Leu Asn Thr Leu Thr Pro Arg Ala Pro Gly Gly
145 150 155 160

Tyr Asp Pro Asp Gly Ala Gly Met Gln Arg Ala Leu Asp Asp Ala Leu
165 170 175

Ala Ser Gly Asp Leu Ala Val Leu Thr Arg Leu Pro Ala Gln Val Leu
180 185 190

Gly Arg Val Ala Phe Gln Val Leu Ala Gly Leu Ala Glu Pro Gly Pro
195 200 205

Arg Ser Ala Lys Glu Phe Tyr Arg Gly Ala Pro His Gly Val Gly Tyr
210 215 220

Phe Ala Gly Val Trp Gln Pro
225 230

<210> 561

<211> 204

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2732c, H37Rv2.tab 3044377:3044988 reverse MW:21989

<400> 561

Met Met Ser His Glu His Asp Ala Gly Asp Leu Asp Ala Leu Arg Ala
1 5 10 15

Glu Ile Glu Ala Ala Glu Arg Arg Val Ala Arg Glu Ile Glu Pro Gly
20 25 30

Ala Arg Ala Leu Val Val Ala Ile Leu Val Phe Val Leu Leu Gly Ser
35 40 45

Phe Ile Leu Pro His Thr Gly Ser Val Arg Gly Trp Asp Val Leu Phe
50 55 60

Ser Ser His Gly Ala Gly Arg Ala Ala Val Ala Leu Pro Ser Arg Val
65 70 75 80

Phe Ala Trp Leu Ala Leu Val Phe Gly Val Gly Phe Ser Met Leu Ala
85 90 95

Leu Leu Thr Arg Arg Trp Ala Leu Ala Trp Val Ala Leu Ala Gly Ser
100 105 110

Ala Met Ala Ser Gly Thr Gly Leu Leu Ala Val Trp Ser Arg Gln Thr
115 120 125

Val Ala Ala Gly His Pro Gly Pro Gly Ile Gly Leu Ile Val Ala Trp
130 135 140

Ile Thr Ala Ile Val Leu Thr Phe His Trp Ala Gln Val Val Trp Ser
145 150 155 160

Arg Thr Ile Val Gln Leu Ala Ala Glu Glu Arg Arg Arg Arg Val Val
165 170 175

Ala Gln Gln Gln Cys Lys Thr Leu Leu Asp His Val Gln Thr Asp Ser
180 185 190

Glu Ala Gly Thr Thr Pro Asp Arg Gly Thr Asp Arg
195 200

<210> 562

<211> 68

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2738c, H37Rv2.tab 3051808:3052011 reverse MW:7551

<400> 562

Met Leu Ala Gly Val Arg Leu Thr Glu Phe His Glu Arg Val Ala Leu
1 5 10 15

His Phe Gly Ala Ala Tyr Gly Ser Ser Val Leu Leu Asp His Val Leu
20 25 30

Thr Gly Phe Asp Gly Arg Ser Ala Ala Gln Ala Ile Glu Asp Gly Val
35 40 45

Glu Pro Arg Asp Val Trp Arg Ala Leu Cys Ala Asp Phe Asp Val Pro
50 55 60

His Asp Arg Trp
65

<210> 563

<211> 149

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2740, H37Rv2.tab 3053232:3053678 forward MW:16593

<400> 563

Met Ala Glu Leu Thr Glu Thr Ser Pro Glu Thr Pro Glu Thr Thr Glu
1 5 10 15

Ala Ile Arg Ala Val Glu Ala Phe Leu Asn Ala Leu Gln Asn Glu Asp
20 25 30

Phe Asp Thr Val Asp Ala Ala Leu Gly Asp Asp Leu Val Tyr Glu Asn
35 40 45

Val Gly Phe Ser Arg Ile Arg Gly Gly Arg Arg Thr Ala Thr Leu Leu
50 55 60

Arg Arg Met Gln Gly Arg Val Gly Phe Glu Val Lys Ile His Arg Ile
65 70 75 80

Gly Ala Asp Gly Ala Ala Val Leu Thr Glu Arg Thr Asp Ala Leu Ile
85 90 95

Ile Gly Pro Leu Arg Val Gln Phe Trp Val Cys Gly Val Phe Glu Val
100 105 110

Asp Asp Gly Arg Ile Thr Leu Trp Arg Asp Tyr Phe Asp Val Tyr Asp
115 120 125

Met Phe Lys Gly Leu Leu Arg Gly Leu Val Ala Leu Val Val Pro Ser
130 135 140

Leu Lys Ala Thr Leu
145

<210> 564

<211> 150

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2771c, H37Rv2.tab 3080583:3081032 reverse MW:16000

<400> 564

Val Arg Arg Leu Leu Ile Val His His Thr Pro Ser Pro His Met Gln
1 5 10 15

Glu Met Phe Glu Ala Val Val Ser Gly Ala Thr Asp Pro Glu Ile Glu
20 25 30

Gly Val Glu Val Val Arg Arg Pro Ala Leu Thr Val Ser Pro Ile Glu
35 40 45

Met Leu Glu Ala Asp Gly Tyr Leu Leu Gly Thr Pro Ala Asn Leu Gly
50 55 60

Tyr Ile Ser Gly Ala Leu Lys His Ala Phe Asp Val Cys Tyr Tyr Leu
65 70 75 80

Cys Leu Asp Thr Thr Arg Gly Arg Ser Phe Gly Ala Tyr Ile His Gly
85 90 95

Asn Glu Gly Thr Glu Gly Ala Glu Arg Ala Val Asp Ala Ile Thr Thr
100 105 110

Gly Leu Gly Trp Val Gln Ala Ala Glu Thr Val Val Val Met Gly Lys
115 120 125

Pro Ser Lys Ala Asp Ile Glu Ala Cys Trp Asn Leu Gly Ala Thr Val
130 135 140

Ala Ala Gln Leu Met Gly
145 150

<210> 565

<211> 157

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2772c, H37Rv2.tab 3081121:3081591 reverse MW:17326

<400> 565

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Met Thr Arg Arg Thr Leu Tyr Val Gln Leu Ile Ile Ala Phe Met Cys
1               5                  10                  15

Val Ala Met Val Ala Tyr Leu Val Met Leu Gly Arg Val Ala Val Ala
            20                  25                  30

Met Ile Gly Ser Gly Arg Ala Ala Ala Ala Gly Leu Gly Leu Ala Leu
        35                  40                  45

Leu Ile Leu Pro Val Ile Gly Leu Trp Ala Met Ile Ala Thr Leu Arg
    50                  55                  60

Ala Gly Phe Ala Tyr Gln Arg Leu Ala Arg Leu Ile Ala Glu Asp Gly
65                  70                  75                  80

Leu Asp Ile Asp Ala Ser Ala Leu Pro Arg Arg Ala Ser Gly Arg Ile
                85                  90                  95

Gln Arg Asp Ala Ala Asp Ala Leu Phe Ala Ala Val Arg Thr Glu Leu
            100                 105                 110

Glu Asp Asp Ala Asp Asp Trp Arg Arg Trp Tyr Arg Leu Ala Arg Ala
        115                 120                 125

Tyr Asp Tyr Ala Gly Asp Arg Arg Arg Ala Arg Glu Ala Met Lys Thr
    130                 135                 140

Ala Leu Gln Leu Glu Gly Arg Ala Arg Pro Gly Ala Arg
145                 150                 155
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<210> 566

<211> 324

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2795c, H37Rv2.tab 3103939:3104910 reverse MW:37568

<400> 566

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Val Thr Trp Lys Gly Ser Gly Gln Glu Thr Val Gly Ala Glu Pro Thr
1               5                  10                  15

Leu Trp Ala Ile Ser Asp Leu His Thr Gly His Leu Gly Asn Lys Pro
            20                  25                  30

Val Ala Glu Ser Leu Tyr Pro Ser Ser Pro Asp Asp Trp Leu Ile Val
        35                  40                  45

Ala Gly Asp Val Ala Glu Arg Thr Asp Glu Ile Arg Trp Ser Leu Asp
    50                  55                  60

Leu Leu Arg Arg Arg Phe Ala Lys Val Ile Trp Val Pro Gly Asn His
65                  70                  75                  80

Glu Leu Trp Thr Thr Asn Arg Asp Pro Met Gln Ile Phe Gly Arg Ala
                85                  90                  95

Arg Tyr Asp Tyr Leu Val Asn Met Cys Asp Glu Met Gly Val Val Thr
            100                 105                 110

Pro Glu His Pro Phe Pro Val Trp Thr Glu Arg Gly Gly Pro Ala Thr
        115                 120                 125

Ile Val Pro Met Phe Leu Leu Tyr Asp Tyr Ser Phe Leu Pro Glu Gly
    130                 135                 140

Ala Asn Ser Lys Ala Glu Gly Val Ala Ile Ala Lys Glu Arg Asn Val
145                 150                 155                 160

Val Ala Thr Asp Glu Phe Leu Leu Ser Pro Glu Pro Tyr Pro Thr Arg
                165                 170                 175

Asp Ala Trp Cys His Glu Arg Val Ala Ala Thr Arg Ala Arg Leu Glu
            180                 185                 190

Gln Leu Asp Trp Met Gln Pro Thr Val Leu Val Asn His Phe Pro Leu
        195                 200                 205

Leu Arg Gln Pro Cys Asp Ala Leu Phe Tyr Pro Glu Phe Ser Leu Trp
    210                 215                 220

Cys Gly Thr Thr Lys Thr Ala Asp Trp His Thr Arg Tyr Asn Ala Val
225                 230                 235                 240

Cys Ser Val Tyr Gly His Leu His Ile Pro Arg Thr Thr Trp Tyr Asp
                245                 250                 255

Gly Val Arg Phe Glu Glu Val Ser Val Gly Tyr Pro Arg Glu Trp Arg
            260                 265                 270
```

Arg Arg Lys Pro Tyr Ser Trp Leu Arg Gln Val Leu Pro Asp Pro Gln
275 280 285

Tyr Ala Pro Gly Tyr Leu Asn Asp Phe Gly Gly His Phe Val Ile Thr
290 295 300

Pro Glu Met Arg Thr Gln Ala Ala Gln Phe Arg Glu Arg Leu Arg Gln
305 310 315 320

Arg Gln Ser Arg

<210> 567

<211> 99

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2840c, H37Rv2.tab 3147961:3148257 reverse MW:10601

<400> 567

Val Arg Thr Cys Val Gly Cys Arg Lys Arg Gly Leu Ala Val Glu Leu
1 5 10 15

Leu Arg Val Val Ala Val Ser Thr Gly Asn Gly Asn Tyr Ala Val Ile
20 25 30

Val Asp Thr Ala Thr Ser Leu Pro Gly Arg Gly Ala Trp Leu His Pro
35 40 45

Leu Arg Gln Cys Ala Gln Gln Ala Ile Arg Arg Arg Ala Phe Ala Arg
50 55 60

Ala Leu Arg Ile Ala Gly Ser Pro Asp Thr Ser Ala Val Val Glu Tyr
65 70 75 80

Leu Glu Ser Leu Gly Glu Leu Glu Pro Pro Gly Asn Arg Thr Gly Ser
85 90 95

Asn Arg Thr

<210> 568

<211> 181

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2843, H37Rv2.tab 3150170:3150712 forward MW:17735

<400> 568

Val Leu Arg Ala Ala Pro Val Ile Asn Arg Leu Thr Asn Arg Pro Ile
1 5 10 15

Ser Arg Arg Gly Val Leu Ala Gly Gly Ala Ala Leu Ala Ala Leu Gly
20 25 30

Val Val Ser Ala Cys Gly Glu Ser Ala Pro Lys Ala Pro Ala Val Glu
35 40 45

Glu Leu Arg Ser Pro Leu Asp Gln Ala Arg His Asp Gly Ala Leu Ala
50 55 60

Ala Ala Ala Ala Thr Ala Ile Gly Ile Pro Pro Gln Val Ala Ala Ala
65 70 75 80

Leu Thr Val Val Ala Thr Gln Arg Thr Ser His Ala Arg Ala Leu Ala
85 90 95

Thr Glu Ile Ala Arg Ala Ala Gly Lys Leu Val Ser Ala Thr Ser Glu
100 105 110

Thr Ser Ser Ser Ser Pro Ser Pro Thr Asp Pro Ala Ala Pro Pro Pro
115 120 125

Ala Val Ser Asp Val Ile Asp Ser Leu Arg Thr Ser Ala Gly Glu Ala
130 135 140

Ser Arg Leu Val Ala Thr Thr Ser Gly Tyr Arg Ala Gly Leu Leu Ala
145 150 155 160

Ser Ile Ala Ala Ser Cys Thr Ala Ser Tyr Thr Val Ala Leu Val Pro
165 170 175

Ser Gly Pro Ser Ile
180

<210> 569

<211> 162

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2844, H37Rv2.tab 3150712:3151197 forward MW:16940

<400> 569

Met Thr Ser Ser Glu Pro Ala His Gly Ala Thr Pro Lys Arg Ser Pro
1 5 10 15

Ser Glu Gly Ser Ala Asp Asn Ala Ala Leu Cys Asp Ala Leu Ala Val
20 25 30

Glu His Ala Thr Ile Tyr Gly Tyr Gly Ile Val Ser Ala Leu Ser Pro
35 40 45

Pro Gly Val Asn Phe Leu Val Ala Asp Ala Leu Lys Gln His Arg His
50 55 60

Arg Arg Asp Asp Val Ile Val Met Leu Ser Ala Arg Gly Val Thr Ala
65 70 75 80

Pro Ile Ala Ala Ala Gly Tyr Gln Leu Pro Met Gln Val Ser Ser Ala
85 90 95

Ala Asp Ala Ala Arg Leu Ala Val Arg Met Glu Asn Asp Gly Ala Thr
100 105 110

Ala Trp Arg Ala Val Val Glu His Ala Glu Thr Ala Asp Asp Arg Val
115 120 125

Phe Ala Ser Thr Ala Leu Thr Glu Ser Ala Val Met Ala Thr Arg Trp
130 135 140

Asn Arg Val Leu Gly Ala Trp Pro Ile Thr Ala Ala Phe Pro Gly Gly
145 150 155 160

Asp Glu

<210> 570

<211> 104

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2876, H37Rv2.tab 3187662:3187973 forward MW:11805

<400> 570

Met Phe Gly Gln Trp Glu Phe Asp Val Ser Pro Thr Gly Gly Ile Ala
1 5 10 15

Val Ala Ser Thr Glu Val Glu His Phe Ala Gly Ser Gln His Glu Val
20 25 30

Asp Thr Ala Glu Val Pro Ser Ala Ala Trp Gly Trp Ser Arg Ile Asp
35 40 45

His Arg Thr Trp His Ile Val Gly Leu Cys Ile Phe Gly Phe Leu Leu
50 55 60

Ala Met Leu Arg Gly Asn His Val Gly His Val Glu Asp Trp Phe Leu
65 70 75 80

Ile Thr Phe Ala Ala Val Val Leu Phe Val Leu Ala Arg Asp Leu Trp
85 90 95

Gly Arg Arg Arg Gly Trp Ile Arg
100

<210> 571

<211> 128

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2898c, H37Rv2.tab 3207944:3208327 reverse MW:14223

<400> 571

Met Thr Thr Leu Lys Thr Met Thr Arg Val Gln Leu Gly Ala Met Gly
1 5 10 15

Glu Ala Leu Ala Val Asp Tyr Leu Thr Ser Met Gly Leu Arg Ile Leu
20 25 30

Asn Arg Asn Trp Arg Cys Arg Tyr Gly Glu Leu Asp Val Ile Ala Cys
35 40 45

Asp Ala Ala Thr Arg Thr Val Val Phe Val Glu Val Lys Thr Arg Thr
50 55 60

Gly Asp Gly Tyr Gly Gly Leu Ala His Ala Val Thr Glu Arg Lys Val
65 70 75 80

Arg Arg Leu Arg Arg Leu Ala Gly Leu Trp Leu Ala Asp Gln Glu Glu
85 90 95

Arg Trp Ala Ala Val Arg Ile Asp Val Ile Gly Val Arg Val Gly Pro
100 105 110

Lys Asn Ser Gly Arg Thr Pro Glu Leu Thr His Leu Gln Gly Ile Gly
115 120 125

<210> 572

<211> 101

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2901c, H37Rv2.tab 3211805:3212107 reverse MW:12225

<400> 572

Met Ser Ala Glu Asp Leu Glu Lys Tyr Glu Thr Glu Met Glu Leu Ser
1 5 10 15

Leu Tyr Arg Glu Tyr Lys Asp Ile Val Gly Gln Phe Ser Tyr Val Val
20 25 30

Glu Thr Glu Arg Arg Phe Tyr Leu Ala Asn Ser Val Glu Met Val Pro
35 40 45

Arg Asn Thr Asp Gly Glu Val Tyr Phe Glu Leu Arg Leu Ala Asp Ala
50 55 60

Trp Val Trp Asp Met Tyr Arg Pro Ala Arg Phe Val Lys Gln Val Arg
65 70 75 80

Val Val Thr Phe Lys Asp Val Asn Ile Glu Glu Val Glu Lys Pro Glu
85 90 95

Leu Arg Leu Pro Glu
100

<210> 573

<211> 626

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2917, H37Rv2.tab 3226362:3228239 forward MW:68334

<400> 573

```
Val Arg Val Thr Arg Leu Val Asp Ala Glu Ser Thr Arg Cys Asp Val
1               5                  10                  15

Gly Pro Ala Pro Lys Ser Val Ala Met Leu His Phe Thr Ala Ala Thr
            20                  25                  30

Ser Arg Phe Arg Leu Gly Arg Glu Arg Ala Asn Ser Val Arg Ser Asp
        35                  40                  45

Gly Gly Trp Gly Val Leu Gln Pro Val Ser Ala Thr Phe Asn Pro Pro
    50                  55                  60

Leu Arg Gly Trp Gln Arg Arg Ala Leu Val Gln Tyr Leu Gly Thr Gln
65                  70                  75                  80

Pro Arg Asp Phe Leu Ala Val Ala Thr Pro Gly Ser Gly Lys Thr Ser
                85                  90                  95

Phe Ala Leu Arg Ile Ala Ala Glu Leu Leu Arg Tyr His Thr Val Glu
            100                 105                 110

Gln Val Thr Val Val Val Pro Thr Glu His Leu Lys Val Gln Trp Ala
        115                 120                 125

His Ala Ala Ala Ala His Gly Leu Ser Leu Asp Pro Lys Phe Ala Asn
    130                 135                 140

Ser Asn Pro Gln Thr Ser Pro Glu Tyr His Gly Val Met Val Thr Tyr
145                 150                 155                 160

Ala Gln Val Ala Ser His Pro Thr Leu His Arg Val Arg Thr Glu Ala
                165                 170                 175

Arg Lys Thr Leu Val Val Phe Asp Glu Ile His His Gly Gly Asp Ala
            180                 185                 190

Lys Thr Trp Gly Asp Ala Ile Arg Glu Ala Phe Gly Asp Ala Thr Arg
        195                 200                 205

Arg Leu Ala Leu Thr Gly Thr Pro Phe Arg Ser Asp Asp Ser Pro Ile
    210                 215                 220

Pro Phe Val Ser Tyr Gln Pro Asp Ala Asp Gly Val Leu Arg Ser Gln
225                 230                 235                 240

Ala Asp His Thr Tyr Gly Tyr Ala Glu Ala Leu Ala Asp Gly Val Val
                245                 250                 255

Arg Pro Val Val Phe Leu Ala Tyr Ser Gly Gln Ala Arg Trp Arg Asp
            260                 265                 270

Ser Ala Gly Glu Glu Tyr Glu Ala Arg Leu Gly Glu Pro Leu Ser Ala
        275                 280                 285

Glu Gln Thr Ala Arg Ala Trp Arg Thr Ala Leu Asp Pro Glu Gly Glu
    290                 295                 300
```

```
Trp Met Pro Ala Val Ile Thr Ala Ala Asp Arg Arg Leu Arg Gln Leu
305                 310                 315                 320

Arg Ala His Val Pro Asp Ala Gly Gly Met Ile Ile Ala Ser Asp Arg
                325                 330                 335

Thr Thr Ala Arg Ala Tyr Ala Arg Leu Leu Thr Thr Met Thr Ala Glu
            340                 345                 350

Glu Pro Thr Val Val Leu Ser Asp Asp Pro Gly Ser Ser Ala Arg Ile
        355                 360                 365

Thr Glu Phe Ala Gln Gly Thr Ser Arg Trp Leu Val Ala Val Arg Met
    370                 375                 380

Val Ser Glu Gly Val Asp Val Pro Arg Leu Ser Val Gly Val Tyr Ala
385                 390                 395                 400

Thr Asn Ala Ser Thr Pro Leu Phe Phe Ala Gln Ala Ile Gly Arg Phe
                405                 410                 415

Val Arg Ser Arg Arg Pro Gly Glu Thr Ala Ser Ile Phe Val Pro Ser
            420                 425                 430

Val Pro Asn Leu Leu Gln Leu Ala Ser Ala Leu Glu Val Gln Arg Asn
        435                 440                 445

His Val Leu Gly Arg Pro His Arg Glu Ser Ala His Asp Pro Leu Asp
    450                 455                 460

Gly Asp Pro Ala Thr Arg Thr Gln Thr Glu Arg Gly Gly Ala Glu Arg
465                 470                 475                 480

Gly Phe Thr Ala Leu Gly Ala Asp Ala Glu Leu Asp Gln Val Ile Phe
                485                 490                 495

Asp Gly Ser Ser Phe Gly Thr Ala Thr Pro Thr Gly Ser Asp Glu Glu
            500                 505                 510

Ala Asp Tyr Leu Gly Ile Pro Gly Leu Leu Asp Ala Glu Gln Met Arg
        515                 520                 525

Ala Leu Leu His Arg Arg Gln Asp Glu Gln Leu Arg Lys Arg Ala Gln
    530                 535                 540

Leu Gln Lys Gly Ala Thr Gln Pro Ala Thr Ser Gly Ala Ser Ala Ser
545                 550                 555                 560

Val His Gly Gln Leu Arg Asp Leu Arg Arg Glu Leu His Thr Leu Val
                565                 570                 575

Ser Ile Ala His His Arg Thr Gly Lys Pro His Gly Trp Ile His Asp
            580                 585                 590

Glu Arg Arg Arg Arg Cys Gly Gly Pro Pro Ile Ala Ala Ala Thr Arg
        595                 600                 605

Ala Gln Ile Lys Ala Arg Ile Asp Ala Leu Arg Gln Leu Asn Ser Glu
    610                 615                 620

Arg Ser
```

625

<210> 574

<211> 207

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2926c, H37Rv2.tab 3240550:3241170 reverse MW:22378

<400> 574

Val Asp Leu Gly Gly Val Arg Arg Arg Ile Ser Leu Met Ala Arg Gln
1 5 10 15

His Gly Pro Thr Ala Gln Arg His Val Ala Ser Pro Met Thr Val Asp
20 25 30

Ile Ala Arg Leu Gly Arg Arg Pro Gly Ala Met Phe Glu Leu His Asp
35 40 45

Thr Val His Ser Pro Ala Arg Ile Gly Leu Glu Leu Ile Ala Ile Asp
50 55 60

Gln Gly Ala Leu Leu Asp Leu Asp Leu Arg Val Glu Ser Val Ser Glu
65 70 75 80

Gly Val Leu Val Thr Gly Thr Val Ala Ala Pro Thr Val Gly Glu Cys
85 90 95

Ala Arg Cys Leu Ser Pro Val Arg Gly Arg Val Gln Val Ala Leu Thr
100 105 110

Glu Leu Phe Ala Tyr Pro Asp Ser Ala Thr Asp Glu Thr Thr Glu Glu
115 120 125

Asp Glu Val Gly Arg Val Val Asp Glu Thr Ile Asp Leu Glu Gln Pro
130 135 140

Ile Ile Asp Ala Val Gly Leu Glu Leu Pro Phe Ser Pro Val Cys Arg
145 150 155 160

Pro Asp Cys Pro Gly Leu Cys Pro Gln Cys Gly Val Pro Leu Ala Ser
165 170 175

Glu Pro Gly His Arg His Glu Gln Ile Asp Pro Arg Trp Ala Lys Leu
180 185 190

Val Glu Met Leu Gly Pro Glu Ser Asp Thr Leu Arg Gly Glu Arg
195 200 205

<210> 575

<211> 199

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2949c, H37Rv2.tab 3299973:3300569 reverse MW:22587

<400> 575

```
Met Thr Glu Cys Phe Leu Ser Asp Gln Glu Ile Arg Lys Leu Asn Arg
1               5                  10                  15

Asp Leu Arg Ile Leu Ile Ala Ala Asn Gly Thr Leu Thr Arg Val Leu
            20                  25                  30

Asn Ile Val Ala Asp Asp Glu Val Ile Val Gln Ile Val Lys Gln Arg
        35                  40                  45

Ile His Asp Val Ser Pro Lys Leu Ser Glu Phe Glu Gln Leu Gly Gln
    50                  55                  60

Val Gly Val Gly Arg Val Leu Gln Arg Tyr Ile Ile Leu Lys Gly Arg
65                  70                  75                  80

Asn Ser Glu His Leu Phe Val Ala Ala Glu Ser Leu Ile Ala Ile Asp
                85                  90                  95

Arg Leu Pro Ala Ala Ile Ile Thr Arg Leu Thr Gln Thr Asn Asp Pro
            100                 105                 110

Leu Gly Glu Val Met Ala Ala Ser His Ile Glu Thr Phe Lys Glu Glu
        115                 120                 125

Ala Lys Val Trp Val Gly Asp Leu Pro Gly Trp Leu Ala Leu His Gly
    130                 135                 140

Tyr Gln Asn Ser Arg Lys Arg Ala Val Ala Arg Arg Tyr Arg Val Ile
145                 150                 155                 160

Ser Gly Gly Gln Pro Ile Met Val Val Thr Glu His Phe Leu Arg Ser
                165                 170                 175

Val Phe Arg Asp Ala Pro His Glu Glu Pro Asp Arg Trp Gln Phe Ser
            180                 185                 190

Asn Ala Ile Thr Leu Ala Arg
        195
```

<210> 576

<211> 210

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2968c, H37Rv2.tab 3323073:3323702 reverse MW:23100

<400> 576

```
Val Val Ala Ala Arg Pro Ala Glu Arg Ser Gly Asp Pro Ala Ala Val
1               5                  10                  15

Arg Val Pro Val Pro Ser Ala Trp Trp Val Leu Ile Gly Gly Val Ile
            20                  25                  30

Gly Leu Phe Ala Ser Met Thr Leu Thr Val Glu Lys Val Arg Ile Leu
        35                  40                  45

Leu Asp Pro Ile Tyr Val Pro Ser Cys Asn Val Asn Pro Ile Val Ser
    50                  55                  60

Cys Gly Ser Val Met Thr Thr Pro Gln Ala Ser Leu Leu Gly Phe Pro
65                  70                  75                  80

Asn Pro Leu Leu Gly Ile Ala Gly Phe Thr Val Val Val Val Thr Gly
                85                  90                  95

Val Leu Ala Val Ala Lys Val Pro Leu Pro Arg Trp Tyr Trp Ile Gly
            100                 105                 110

Leu Ala Val Gly Ile Leu Val Gly Val Ala Phe Val His Trp Leu Ile
        115                 120                 125

Phe Gln Ser Leu Tyr Arg Ile Gly Ala Leu Cys Pro Tyr Cys Met Val
    130                 135                 140

Val Trp Ala Val Ile Ala Thr Leu Leu Val Val Val Ala Ser Ile Val
145                 150                 155                 160

Phe Gly Pro Met Arg Glu Asn Arg Gly Ser Gln Glu Arg Val Gly Ala
                165                 170                 175

Arg Leu Leu Tyr Gln Trp Arg Trp Ser Leu Ala Thr Leu Trp Phe Thr
            180                 185                 190

Thr Val Phe Leu Leu Ile Met Val Arg Phe Trp Asp Tyr Trp Ser Thr
        195                 200                 205

Leu Ile
    210
```

<210> 577

<211> 181

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv2980, H37Rv2.tab 3335959:3336501 forward MW:18752

<400> 577

```
Val Thr Gly Glu Ser Asp Gly Pro Pro Arg Ala Val Leu Ile Ala Ala
1               5                  10                  15

Ala Ala Leu Ala Ala Ala Val Ile Gly Val Ile Leu Val Val Ala Ala
            20                  25                  30

Asn Arg Gln Pro Pro Glu Arg Pro Val Val Ile Pro Ala Val Pro Ala
        35                  40                  45

Pro Gln Ala Thr Gly Pro Gly Cys Lys Ala Leu Leu Ala Ala Leu Pro
    50                  55                  60

Gln Arg Leu Gly Glu Tyr Arg Arg Ala Pro Val Ala Glu Pro Thr Thr
65                  70                  75                  80

Ala Gly Ala Thr Ala Trp Arg Thr Gly Pro Asn Ser Thr Pro Val Ile
                85                  90                  95

Leu Arg Cys Gly Leu Asp Arg Pro Ala Glu Phe Val Val Gly Ser Ala
            100                 105                 110

Ile Gln Val Val Asp Arg Val Gln Trp Phe Gln Val Ala Ala Gln Asn
        115                 120                 125

Pro Asp Glu Pro Gly Arg Ser Thr Trp Tyr Thr Val Asp Arg Pro Val
    130                 135                 140

Tyr Val Ala Leu Thr Leu Pro Ser Gly Ser Gly Pro Thr Ala Ile Gln
145                 150                 155                 160

Glu Leu Ser Asp Val Ile Asp His Thr Ile Pro Ala Val Pro Ile Asp
                165                 170                 175

Pro Ala Pro Ala Arg
            180
```

<210> 578

<211> 279

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3005c, H37Rv2.tab 3363695:3364531 reverse MW:28827

<400> 578

Val Thr Ser Ser Asn Asp Ser His Trp Gln Arg Pro Asp Asp Ser Pro
1 5 10 15

Gly Pro Met Pro Gly Arg Pro Val Ser Ala Ser Leu Val Asp Pro Glu
20 25 30

Asp Asp Leu Thr Pro Ala Arg Tyr Ala Gly Asp Phe Gly Ser Gly Thr
35 40 45

Thr Thr Val Ile Pro Pro Tyr Asp Ala Ala Ser Ser Gly Val Gly Asn
50 55 60

Ser Gly Tyr Ser Leu Ile Glu Ala Ala Glu Pro Leu Pro Tyr Val Gln
65 70 75 80

Pro Gln Pro Gly Arg Gln Val Pro Ala Gly Ser Ala Gly Ile Asp Met
85 90 95

Asp Asp Asp Glu Arg Val Arg Ala Ala Gly Arg Arg Gly Thr Gln Asn
100 105 110

Leu Gly Leu Leu Ile Leu Arg Val Gly Leu Gly Ala Val Leu Ile Ala
115 120 125

His Gly Leu Gln Lys Leu Phe Gly Trp Trp Asp Gly Gln Gly Leu Ala
130 135 140

Gly Phe Gln Asn Ser Leu Ser Asp Ile Gly Tyr Gln His Ala Glu Ile
145 150 155 160

Leu Ala Tyr Val Ser Ala Gly Gly Glu Ile Val Ala Gly Val Leu Leu
165 170 175

Val Leu Gly Leu Phe Thr Pro Leu Ala Ala Ala Gly Ala Leu Ala Phe
180 185 190

Leu Ile Asn Gly Leu Leu Ala Gly Ile Ser Ala Gln His Ser Arg Pro
195 200 205

Val Ala Tyr Phe Leu Gln Asp Gly His Glu Tyr Gln Ile Thr Leu Val
210 215 220

Val Met Ala Val Ala Val Ile Leu Ser Gly Pro Gly Arg Tyr Gly Leu
225 230 235 240

Asp Ala Ala Arg Gly Trp Ala His Arg Pro Phe Ile Gly Ser Phe Val
245 250 255

Ala Leu Leu Gly Gly Ile Ala Ala Gly Ile Ala Val Trp Val Leu Leu
260 265 270

Asn Gly Ala Asn Pro Leu Ala
275

<210> 579

<211> 218

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3013, H37Rv2.tab 3371814:3372467 forward MW:22967

<400> 579

Val Arg Ser Tyr Leu Leu Arg Ile Glu Leu Ala Asp Arg Pro Gly Ser
1 5 10 15

Leu Gly Ser Leu Ala Val Ala Leu Gly Ser Val Gly Ala Asp Ile Leu
20 25 30

Ser Leu Asp Val Val Glu Arg Gly Asn Gly Tyr Ala Ile Asp Asp Leu
35 40 45

Val Val Glu Leu Pro Pro Gly Ala Met Pro Asp Thr Leu Ile Thr Ala
50 55 60

Ala Glu Ala Leu Asn Gly Val Arg Val Asp Ser Val Arg Pro His Thr
65 70 75 80

Gly Leu Leu Glu Ala His Arg Glu Leu Glu Leu Leu Asp His Val Ala
85 90 95

Ala Ala Glu Gly Ala Thr Ala Arg Leu Gln Val Leu Val Asn Glu Ala
100 105 110

Pro Arg Val Leu Arg Val Ser Trp Cys Thr Val Leu Arg Ser Ser Gly
115 120 125

Gly Glu Leu His Arg Leu Ala Gly Ser Pro Gly Ala Pro Glu Thr Arg
130 135 140

Ala Asn Ser Ala Pro Trp Leu Pro Ile Glu Arg Ala Ala Ala Leu Asp
145 150 155 160

Gly Gly Ala Asp Trp Val Pro Gln Ala Trp Arg Asp Met Asp Thr Thr
165 170 175

Met Val Ala Ala Pro Leu Gly Asp Thr His Thr Ala Val Val Leu Gly
180 185 190

Arg Pro Gly Pro Glu Phe Arg Pro Ser Glu Val Ala Arg Leu Gly Tyr
195 200 205

Leu Ala Gly Ile Val Ala Thr Met Leu Arg
210 215

<210> 580

<211> 337

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3015c, H37Rv2.tab 3374653:3375663 reverse MW:34212

<400> 580

Val Ser Val Phe Ala Thr Ala Thr Gly Ile Gly Ser Trp Pro Gly Thr
1 5 10 15

Ala Ala Arg Glu Ala Ala Gln Val Val Val Gly Glu Leu Ala Gly Ala
20 25 30

Leu Ala Tyr Leu Thr Glu Leu Pro Ala Arg Gly Val Gly Ala Asp Met
35 40 45

Leu Gly Arg Ala Gly Gly Leu Leu Val Asp Val Ala Ile Asp Thr Val
50 55 60

Pro Arg Gly Tyr Arg Ile Ala Ala Arg Pro Gly Ala Val Thr Arg Arg
65 70 75 80

Ala Ala Ser Leu Leu Asp Glu Asp Met Asp Ala Leu Glu Glu Ala Trp
85 90 95

Glu Thr Ala Gly Leu Arg Gly Cys Gly Arg Ala Val Lys Val Gln Ala
100 105 110

Pro Gly Pro Val Thr Leu Val Ala Gly Leu Glu Leu Ala Asn Gly His
115 120 125

Arg Ala Ile Thr Asp Pro Gly Ala Val Arg Asp Leu Ala Ala Ser Leu
130 135 140

Ala Glu Gly Val Ala Ala His Arg Ala Ala Leu Ala Arg Arg Leu Asp
145 150 155 160

Thr Pro Val Val Val Gln Phe Asp Glu Pro Ser Leu Pro Ala Ala Leu

165 170 175

Gly Gly Arg Leu Thr Gly Val Thr Ala Leu Ser Pro Val Ala Pro Leu
180 185 190

Asp Glu Thr Val Ala Glu Ala Leu Leu Asp Thr Cys Ile Ala Ala Val
195 200 205

Asp Ala Asp Val Ala Leu His Ser Cys Ser Pro Asp Leu Pro Trp Asp
210 215 220

Leu Leu Gln Arg Ser Arg Ile Ser Ala Val Ser Val Asp Ala Ser Thr
225 230 235 240

Leu Gln Ala Ala Asp Leu Asp Ala Val Ala Ala Phe Val Glu Ser Gly
245 250 255

Arg Thr Val Val Leu Gly Leu Val Pro Val Thr Ala Pro Glu Arg Ala
260 265 270

Pro Ser Met Glu Glu Val Ala Ala Ala Ala Val Ala Val Thr Asp Arg
275 280 285

Leu Gly Val Pro Arg Ser Ala Leu Arg Asp Arg Leu Gly Val Ser Pro
290 295 300

Ala Cys Gly Leu Ala Asn Ala Thr Gly Gln Trp Ala Arg Thr Ala Val
305 310 315 320

Gly Leu Ala Arg Asp Val Ala Glu Ala Phe Ala Arg Asp Pro Glu Ala
325 330 335

Ile

<210> 581

<211> 360

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3035, H37Rv2.tab 3395378:3396457 forward MW:37305

<400> 581

Leu Ala Ala Gly Pro Ala Leu Ser Ala Arg Gly Tyr Leu Ala Leu Asn
1 5 10 15

Gly Gln Thr Pro Ala Gly Cys Ser Leu Met Glu Trp Gln Asn Asp Asn
20 25 30

```
Asn Gly Arg Gln Arg Trp Cys Val Arg Leu Val Gln Gly Gly Gly Phe
        35                  40                  45

Ala Gly Pro Leu Phe Asp Gly Phe Asp Asn Leu Tyr Val Gly Gln Pro
    50                  55                  60

Gly Ala Ile Ile Ser Phe Pro Pro Thr Gln Trp Thr Arg Trp Arg Gln
65                  70                  75                  80

Pro Val Ile Gly Met Pro Ser Thr Pro Arg Phe Leu Gly His Gly Arg
                85                  90                  95

Leu Leu Val Ser Thr His Leu Gly Gln Leu Leu Val Phe Asp Thr Arg
            100                 105                 110

Arg Gly Met Val Val Gly Ser Pro Val Asp Leu Val Asp Gly Ile Asp
        115                 120                 125

Pro Thr Asp Ala Thr Arg Gly Leu Ala Asp Cys Ala Pro Ala Arg Pro
    130                 135                 140

Gly Cys Pro Val Ala Ala Ala Pro Ala Phe Ser Ser Val Asn Gly Thr
145                 150                 155                 160

Val Val Val Ser Val Trp Gln Pro Gly Glu Pro Ala Ala Lys Leu Val
                165                 170                 175

Gly Leu Lys Tyr His Ala Glu Gln Leu Val Arg Glu Trp Thr Ser Asp
            180                 185                 190

Ala Val Ser Ala Gly Val Leu Ala Ser Pro Val Leu Ser Ala Asp Gly
        195                 200                 205

Ser Thr Val Tyr Val Asn Gly Arg Asp His Arg Leu Trp Ala Leu Asn
    210                 215                 220

Ala Ala Asp Gly Lys Ala Lys Trp Ser Ala Pro Leu Gly Phe Leu Ala
225                 230                 235                 240

Gln Thr Pro Pro Ala Leu Thr Pro His Gly Leu Ile Val Ser Gly Gly
                245                 250                 255

Gly Pro Asp Thr Ala Leu Ala Ala Phe Arg Asp Ala Gly Asp His Ala
            260                 265                 270

Glu Gly Ala Trp Arg Arg Asp Asp Val Thr Ala Leu Ser Thr Ala Ser
        275                 280                 285

Leu Ala Gly Thr Gly Val Gly Tyr Thr Val Ile Ser Gly Pro Asn His
    290                 295                 300

Asp Gly Thr Pro Gly Leu Ser Leu Leu Val Phe Asp Pro Ala Asn Gly
305                 310                 315                 320

His Thr Val Asn Ser Tyr Pro Leu Pro Gly Ala Thr Gly Tyr Pro Val
                325                 330                 335

Gly Val Ser Val Gly Asn Asp Arg Arg Val Val Thr Ala Thr Ser Asp
            340                 345                 350

Gly Gln Val Tyr Ser Phe Ala Pro
```

355 360

<210> 582

<211> 327

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3038c, H37Rv2.tab 3398427:3399407 reverse MW:36049

<400> 582

Met Thr Arg Ser Ser Asn Ile Pro Ala Asp Ala Thr Pro Asn Pro His
1 5 10 15

Ala Thr Ala Glu Gln Val Ala Ala Ala Arg His Asp Ser Lys Leu Ala
20 25 30

Gln Val Leu Tyr His Asp Trp Glu Ala Glu Asn Tyr Asp Glu Lys Trp
35 40 45

Ser Ile Ser Tyr Asp Gln Arg Cys Val Asp Tyr Ala Arg Gly Arg Phe
50 55 60

Asp Ala Ile Val Pro Asp Glu Val Ile Ala Gln Leu Pro Tyr Asp Arg
65 70 75 80

Ala Leu Glu Leu Gly Cys Gly Thr Gly Phe Phe Leu Leu Asn Leu Ile
85 90 95

Gln Ala Gly Val Ala Arg Arg Gly Ser Val Thr Asp Leu Ser Pro Gly
100 105 110

Met Val Lys Val Ala Thr Arg Asn Gly Gln Ala Leu Gly Leu Asp Ile
115 120 125

Asp Gly Arg Val Ala Asp Ala Glu Gly Ile Pro Tyr Asp Asp Asp Ala
130 135 140

Phe Asp Leu Val Val Gly His Ala Val Leu His His Ile Pro Asp Val
145 150 155 160

Glu Leu Ser Leu Arg Glu Val Val Arg Val Leu Lys Pro Gly Gly Arg
165 170 175

Phe Val Phe Ala Gly Glu Pro Thr Thr Val Gly Asp Gly Tyr Ala Arg
180 185 190

Thr Leu Ser Thr Leu Thr Trp Arg Val Val Thr Asn Ala Thr Lys Leu
195 200 205

Pro Gly Leu Arg Gly Trp Arg Arg Pro Gln Gly Glu Leu Asp Glu Ser
210 215 220

Ser Arg Ala Ala Ala Leu Glu Ala Leu Val Asp Leu His Thr Phe Thr
225 230 235 240

Pro Gln Asp Leu Gln Arg Ile Ala His Asn Ala Gly Ala Val Glu Val
245 250 255

Gln Thr Ala Thr Glu Glu Phe Thr Ala Ala Met Leu Gly Trp Pro Leu
260 265 270

Arg Thr Phe Glu Cys Thr Val Pro Pro Gly Arg Leu Gly Trp Gly Trp
275 280 285

Ala Arg Phe Ala Phe Thr Ser Trp Lys Thr Leu Gly Trp Val Asp Ala
290 295 300

Asn Val Trp Arg His Val Val Pro Lys Gly Trp Phe Tyr Asn Val Met
305 310 315 320

Ile Thr Gly Val Lys Pro Ser
325

<210> 583

<211> 472

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3195, H37Rv2.tab 3564363:3565778 forward MW:49325

<400> 583

Val Ser Thr Gly Glu Val Met Gly Asp Leu Pro Phe Gly Phe Ser Ser
1 5 10 15

Gly Asp Asp Pro Pro Glu Asp Pro Ser Gly Arg Asp Lys Arg Gly Lys
20 25 30

Asp Gly Ala Asp Ser Gly Ser Gly Ala Asn Pro Leu Gly Ala Phe Gly
35 40 45

Ile Gly Gly Glu Phe Asn Met Ala Asp Leu Gly Gln Ile Phe Thr Arg
50 55 60

Leu Gly Glu Met Phe Gly Gly Val Gly Thr Ala Met Ala Ala Gly Lys
65 70 75 80

Thr Ser Gly Pro Val Asn Tyr Asp Leu Ala Arg Gln Val Ala Ser Ser
85 90 95

```
Ser Ile Gly Phe Ile Ala Pro Ile Pro Ala Ala Thr Asn Ser Ala Ile
            100                 105                 110

Ala Asp Ala Val His Leu Ala Asp Thr Trp Leu Asp Gly Ala Thr Ser
        115                 120                 125

Leu Pro Ala Gly Ala Thr Lys Ala Val Gly Trp Ser Pro Thr Asp Trp
    130                 135                 140

Val Asp Asn Thr Leu Ala Thr Trp Lys Arg Leu Cys Asp Pro Met Ala
145                 150                 155                 160

Gln Gln Ile Ser Thr Val Trp Ala Ser Ser Leu Pro Glu Glu Ala Lys
                165                 170                 175

Ser Met Ala Gly Pro Leu Leu Ser Ile Met Ser Gln Met Gly Gly Ile
            180                 185                 190

Ala Phe Gly Ser Gln Leu Gly Gln Ala Leu Gly Arg Leu Ser Arg Glu
        195                 200                 205

Val Leu Thr Ser Thr Asp Ile Gly Leu Pro Leu Gly Pro Lys Gly Val
    210                 215                 220

Ala Ala Ile Leu Pro Gly Ala Val Glu Ser Phe Ala Ala Gly Leu Glu
225                 230                 235                 240

Gln Pro Arg Ser Glu Ile Leu Thr Phe Leu Ala Thr Arg Glu Ala Ala
                245                 250                 255

His His Arg Leu Phe Ser His Val Pro Trp Leu Ala Ser Gln Leu Leu
            260                 265                 270

Gly Ala Val Glu Ala Tyr Ala Met Gly Met Lys Ile Asp Met Thr Gly
        275                 280                 285

Ile Glu Glu Leu Ala Arg Asp Ile Asn Pro Thr Ser Leu Ala Asp Pro
    290                 295                 300

Ala Ala Met Glu Gln Leu Leu Ser Gln Gly Val Phe Glu Pro Lys Ala
305                 310                 315                 320

Thr Pro Ala Gln Thr Gln Ala Leu Glu Arg Leu Glu Thr Leu Leu Ala
                325                 330                 335

Leu Ile Glu Gly Trp Val Gln Thr Val Val Thr Ala Ala Leu Gly Glu
            340                 345                 350

Arg Ile Pro Gly Glu Ala Ala Leu Ser Glu Thr Leu Arg Arg Arg Arg
        355                 360                 365

Ala Ser Gly Gly Pro Ala Glu Gln Thr Phe Ala Thr Leu Val Gly Leu
    370                 375                 380

Glu Leu Arg Pro Arg Lys Leu Arg Glu Ala Gly Ala Leu Trp Glu Arg
385                 390                 395                 400

Leu Thr Arg Ala Val Gly Met Asp Ala Arg Asp Ala Val Trp Gln His
                405                 410                 415
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Pro Asp Leu Leu Pro Ala Thr Asp Asp Leu Asp Asp Pro Ala Ala Phe
420 425 430

Ile Asp Arg Val Ile Gly Gly Asp Thr Ser Gly Ile Asp Glu Ala Ile
435 440 445

Ala Glu Leu Glu Arg Asp Gln Gln Ala Arg Gly Ala Asp Asp Ser Gly
450 455 460

His Asp Gly Gly Pro Val Asp Asn
465 470

<210> 584

<211> 292

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3205c, H37Rv2.tab 3581629:3582504 reverse MW:31352

<400> 584

Met Gly Ser Thr Arg Leu Thr Gly Val Asn Val Glu Pro Pro Pro Glu
1 5 10 15

His Val Leu Val Ala Phe Gly Leu Ala Gly Ala Gln Pro Ile Leu Leu
20 25 30

Gly Ala Gly Trp Glu Gly Gly Trp Arg Cys Gly Glu Val Val Leu Ser
35 40 45

Met Val Ala Asp Asn Ala Arg Ala Ala Trp Ser Ala Arg Val Arg Glu
50 55 60

Thr Leu Phe Val Asp Gly Val Arg Leu Ala Arg Pro Val Arg Ser Thr
65 70 75 80

Asp Gly Arg Tyr Val Val Ser Gly Trp Arg Ala Asp Thr Phe Val Ala
85 90 95

Gly Ala Pro Glu Pro Arg His Asp Glu Val Val Ser Ala Ala Val Arg
100 105 110

Leu His Glu Ala Thr Gly Lys Leu Glu Arg Pro Arg Phe Leu Thr Gln
115 120 125

Gly Pro Ala Ala Pro Trp Ala Glu Ile Asp Val Phe Val Ala Ala Asp
130 135 140

Arg Ala Gly Trp Glu Glu Arg Pro Leu Gln Ser Val Pro Pro Gly Val
145 150 155 160

Pro Thr Ala Pro Pro Ala Ala Asp Pro Gln Arg Ser Ile Asp Leu Ile
165 170 175

Asn Gln Leu Ala Gly Leu Arg Lys Pro Thr Lys Ser Pro Asn Gln Leu
180 185 190

Val His Gly Asp Leu Tyr Gly Thr Val Leu Phe Ala Gly Thr Ala Pro
195 200 205

Pro Gly Ile Thr Asp Ile Thr Pro Tyr Trp Arg Pro Ala Ser Trp Ala
210 215 220

Ala Gly Val Ala Val Val Asp Ala Leu Ser Trp Gly Ala Ala Asp Asp
225 230 235 240

Gly Leu Ile Glu Arg Trp Asn Ala Leu Pro Glu Trp Pro Gln Met Leu
245 250 255

Leu Arg Ala Leu Met Phe Arg Leu Ala Val Tyr Ala Leu His Pro Arg
260 265 270

Ser Thr Ala Glu Ala Phe Pro Gly Leu Ala His Thr Ala Ala Leu Val
275 280 285

Arg Leu Val Leu
290

<210> 585

<211> 285

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3207c, H37Rv2.tab 3583803:3584657 reverse MW:31034

<400> 585

Val Ser Thr Tyr Gly Trp Arg Ala Tyr Ala Leu Pro Val Leu Met Val
1 5 10 15

Leu Thr Thr Val Val Val Tyr Gln Thr Val Thr Gly Thr Ser Thr Pro
20 25 30

Arg Pro Ala Ala Ala Gln Thr Val Arg Asp Ser Pro Ala Ile Gly Val
35 40 45

Val Gly Thr Ala Ile Leu Asp Ala Pro Pro Arg Gly Leu Ala Val Phe
50 55 60

Asp Ala Asn Leu Pro Ala Gly Thr Leu Pro Asp Gly Gly Pro Phe Thr

65 70 75 80

Glu Ala Gly Asp Lys Thr Trp Arg Val Val Pro Gly Thr Thr Pro Gln
85 90 95

Val Gly Gln Gly Thr Val Lys Val Phe Arg Tyr Thr Val Glu Ile Glu
100 105 110

Asn Gly Leu Asp Pro Thr Met Tyr Gly Gly Asp Asn Ala Phe Ala Gln
115 120 125

Met Val Asp Gln Thr Leu Thr Asn Pro Lys Gly Trp Thr His Asn Pro
130 135 140

Gln Phe Ala Phe Val Arg Ile Asp Ser Gly Lys Pro Asp Phe Arg Ile
145 150 155 160

Ser Leu Val Ser Pro Thr Thr Val Arg Gly Gly Cys Gly Tyr Glu Phe
165 170 175

Arg Leu Glu Thr Ser Cys Tyr Asn Pro Ser Phe Gly Gly Met Asp Arg
180 185 190

Gln Ser Arg Val Phe Ile Asn Glu Ala Arg Trp Val Arg Gly Ala Val
195 200 205

Pro Phe Glu Gly Asp Val Gly Ser Tyr Arg Gln Tyr Val Ile Asn His
210 215 220

Glu Val Gly His Ala Ile Gly Tyr Leu Arg His Glu Pro Cys Asp Gln
225 230 235 240

Gln Gly Gly Leu Ala Pro Val Met Met Gln Gln Thr Phe Ser Thr Ser
245 250 255

Asn Asp Asp Ala Ala Lys Phe Asp Pro Asp Phe Val Lys Ala Asp Gly
260 265 270

Lys Thr Cys Arg Phe Asn Pro Trp Pro Tyr Pro Ile Pro
275 280 285

<210> 586

<211> 90

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3208c, H37Rv2.tab 3585679:3585948 reverse MW:9400

<400> 586

Val Glu Val Lys Ile Gly Ile Thr Asp Ser Pro Arg Glu Leu Val Phe
1 5 10 15

Ser Ser Ala Gln Thr Pro Ser Glu Val Glu Glu Leu Val Ser Asn Ala
20 25 30

Leu Arg Asp Asp Ser Gly Leu Leu Thr Leu Thr Asp Glu Arg Gly Arg
35 40 45

Arg Phe Leu Ile His Thr Ala Arg Ile Ala Tyr Val Glu Ile Gly Val
50 55 60

Ala Asp Ala Arg Arg Val Gly Phe Gly Val Gly Val Asp Ala Ala Ala
65 70 75 80

Gly Ser Ala Gly Lys Val Ala Thr Ser Gly
85 90

<210> 587

<211> 186

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3209, H37Rv2.tab 3586273:3586830 forward MW:19118

<400> 587

Val Ala Leu Gly Ala Val Ala Thr Ala Val Ile Ile Asn Ser Gly Asp
1 5 10 15

Ser Thr Ser Thr Lys Ala Ile Val Gly Ala Pro Ala Pro Arg Thr Val
20 25 30

Ile Ser Thr Ser Pro Arg Pro Thr Ala Pro Thr Ser Thr Ser Pro His
35 40 45

Pro Ser Pro Ser Thr Leu Arg Pro Gln Leu Pro Pro Glu Thr Val Thr
50 55 60

Thr Val Ala Pro Pro Gly Thr Gly Pro Thr Thr Val Pro Thr Arg Thr
65 70 75 80

Pro Thr Ala Ala Pro Pro Gln Thr Ala Val Pro Pro Pro Ala Pro Leu
85 90 95

Asn Pro Arg Thr Val Val Tyr Arg Val Thr Gly Thr Lys Gln Leu Phe
100 105 110

Asp Leu Val Asn Val Val Tyr Thr Asp Ala Arg Gly Phe Pro Val Thr
115 120 125

Asp Phe Asn Val Ser Leu Pro Trp Thr Lys Met Val Val Leu Asn Pro
130 135 140

Gly Val Gln Thr Glu Ser Val Val Ala Thr Ser Leu Tyr Ser Arg Leu
145 150 155 160

Asn Cys Ser Ile Val Asn Thr Gly Ala Gln Thr Val Val Ala Ser Thr
165 170 175

Asn Asn Ala Ile Ile Ala Thr Cys Thr Arg
180 185

<210> 588

<211> 407

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3212, H37Rv2.tab 3589393:3590613 forward MW:42506

<400> 588

Met Val Lys Pro Glu Arg Arg Thr Lys Thr Asp Ile Ala Ala Ala Ala
1 5 10 15

Thr Ile Ala Val Val Val Ala Val Ala Ala Ser Leu Ile Trp Trp Thr
20 25 30

Ser Asp Ala Arg Ala Thr Ile Ser Arg Pro Ala Ala Val Ala Val Pro
35 40 45

Thr Pro Ala Pro Ala Arg Glu Val Pro Thr Ser Leu Lys Gln Leu Trp
50 55 60

Thr Ala Ala Ser Pro Ala Thr Arg Val Pro Val Val Val Gly Gly Thr
65 70 75 80

Val Ala Thr Gly Asp Gly Arg Gln Val Asp Gly Arg Asp Pro Ala Thr
85 90 95

Gly Glu Ser Leu Trp Ser Tyr Ala Arg Asp Thr Asp Leu Cys Gly Val
100 105 110

Thr Trp Val Tyr His Tyr Ala Val Ala Val Tyr Arg Tyr Asp Arg Gly
115 120 125

Cys Gly Gln Val Ser Thr Ile Asp Gly Ser Thr Gly Arg Arg Gly Ala
130 135 140

Ala Arg Ser Gly Tyr Ala Asp Pro Arg Val Arg Leu Phe Ser Asp Gly

145 150 155 160

Thr Thr Val Leu Ser Ala Gly Asp Thr Arg Leu Glu Leu Trp Arg Ser
165 170 175

Asp Met Val Arg Met Leu Ala Tyr Gly Glu Ile Asp Ala Arg Val Lys
180 185 190

Pro Ser Asn Arg Gly Leu Gln Ser Gly Cys Thr Leu Glu Ser Ala Ala
195 200 205

Ala Ser Ser Ala Ala Val Ser Val Leu Glu Ala Cys Thr Asn Gln Ala
210 215 220

Asp Leu Arg Leu Val Leu Leu Arg Pro Gly Lys Glu Asp Asp Glu Pro
225 230 235 240

Ile Gln Arg Ile Val Pro Glu Pro Gly Val Arg Pro Gly Ser Gly Ala
245 250 255

Arg Val Leu Val Val Ser Gln Asn Asn Thr Ala Val Tyr Leu Pro Ala
260 265 270

Arg Ser Gly Ala Gln Pro Arg Val Asp Val Ile Asp Glu Thr Gly Ala
275 280 285

Thr Val Ser Ser Thr Leu Leu Ala Lys Pro Pro Ser Thr Ser Ala Val
290 295 300

Ala Ser Arg Thr Gly Asn Leu Val Thr Trp Trp Thr Gly Asp Ala Leu
305 310 315 320

Leu Val Phe Asp Ala Gly Asn Leu Thr Gln Arg Tyr Thr Ile Ala Ala
325 330 335

Gly Glu Thr Thr Ala Pro Val Gly Pro Gly Val Met Met Ala Gly Gln
340 345 350

Leu Leu Val Pro Val Thr Gly Gly Ile Gly Val Tyr Asp Pro Val Ser
355 360 365

Gly Ala Asn Asn Arg Tyr Ile Pro Val Thr Arg Pro Pro Ser Thr Ser
370 375 380

Ala Val Ile Pro Ala Val Ser Gly Ser Arg Val Ile Glu Gln Arg Gly
385 390 395 400

Asp Thr Leu Val Ala Leu Gly
405

<210> 589

<211> 143

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3217c, H37Rv2.tab 3593806:3594234 reverse MW:14260

<400> 589

Val Pro Val Arg Ala Pro Ala Ala Val Arg Gly Ala Gly Leu Ile Val
1 5 10 15

Ala Val Gln Gly Gly Ala Ala Leu Val Val Ala Ala Ala Leu Leu Val
20 25 30

Arg Gly Leu Ala Gly Ala Asp Gln His Ile Val Asn Gly Leu Gly Thr
35 40 45

Ala Gly Trp Phe Val Leu Val Gly Gly Ala Val Leu Ala Ala Gly Cys
50 55 60

Arg Leu Ala Val Gly Lys Leu Trp Gly Arg Gly Leu Ala Val Phe Ala
65 70 75 80

Gln Leu Leu Leu Leu Pro Val Ala Trp Tyr Leu Ile Val Gly Ser His
85 90 95

Gln Pro Ala Ile Gly Ile Pro Val Gly Ile Ile Ala Leu Gly Val Leu
100 105 110

Val Leu Leu Phe Ser Pro Pro Ser Ile Arg Trp Ala Ala Gly Arg Asp
115 120 125

Gln Arg Gly Ala Ala Ser Ala Ala Asn Arg Gly Pro Asp Ser Arg
130 135 140

<210> 590

<211> 213

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3242c, H37Rv2.tab 3621572:3622210 reverse MW:22481

<400> 590

Val Leu Asp Leu Val Leu Pro Leu Glu Cys Gly Gly Cys Gly Ala Pro
1 5 10 15

Ala Thr Arg Trp Cys Ala Ala Cys Ala Ala Glu Leu Ser Val Ala Ala

20 25 30

Gly Glu Pro His Val Val Ser Pro Arg Val Asp Pro Gln Val Pro Val
35 40 45

Phe Ala Leu Gly Arg Tyr Ala Gly Val Arg Arg Gln Ala Ile Leu Ala
50 55 60

Met Lys Glu His Gly Arg Arg Asp Leu Val Ala Pro Leu Ala Cys Ala
65 70 75 80

Leu Ile Val Gly Val Asp His Leu Leu Ser Trp Gly Met Leu Glu Asn
85 90 95

Pro Leu Thr Met Val Pro Ala Pro Thr Arg Arg Trp Ala Ala Arg Arg
100 105 110

Arg Gly Gly Asp Pro Val Ser Arg Met Ala Arg Ile Ala Gly Ala Thr
115 120 125

Leu Gly Arg His His Asp Val Thr Val Val Pro Ala Leu Arg Met Arg
130 135 140

Ala Leu Ala Arg Asp Ser Val Gly Leu Gly Ala Ser Ala Arg Glu Arg
145 150 155 160

Asn Ile Thr Gly Arg Val Leu Leu Arg Gly Gln Arg Pro Arg Asn Glu
165 170 175

Val Val Leu Val Asp Asp Ile Ile Thr Thr Gly Ala Thr Ala Arg Glu
180 185 190

Ser Val Arg Val Leu Gln Ala Ala Gly Val Arg Val Gly Ala Val Leu
195 200 205

Ala Val Ala Ala Ala
210

<210> 591

<211> 346

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3256c, H37Rv2.tab 3636277:3637314 reverse MW:35277

<400> 591

Val Asn Val Ala Arg Ala Ile Asp Leu Glu Asp Thr Glu Gly Leu Ile
1 5 10 15

```
Ala Ala Asp Arg Gly Ala Leu Leu Arg Ala Ala Ser Met Ala Gly Ala
            20                  25                  30

Gln Val Arg Ala Ile Ala Ala Ala Ala Asp Glu Gly Glu Leu Asp Leu
        35                  40                  45

Leu Arg Gly Ser Asp Arg Pro Arg Ser Val Ile Trp Val Thr Gly Arg
    50                  55                  60

Gly Thr Ala Glu Thr Ala Gly Thr Ile Leu Ala Ser Thr Leu Gly Ala
65                  70                  75                  80

Gly Ala Ala Glu Pro Ile Val Leu Ala Ser Ala Ala Pro Pro Trp Val
                85                  90                  95

Gly Pro Leu Asp Val Leu Ile Val Ala Gly Asp Asp Pro Gly Asp Pro
            100                 105                 110

Ala Leu Val Gly Ala Ala Ala Ile Gly Val Arg Arg Gly Ala Arg Val
        115                 120                 125

Val Val Val Ala Pro Tyr Glu Gly Pro Leu Arg Asp Ser Thr Ala Gly
    130                 135                 140

Arg Val Ala Val Leu Glu Pro Arg Leu Arg Val Pro Asp Glu Phe Gly
145                 150                 155                 160

Leu Ser Arg Tyr Leu Ala Ala Gly Leu Ala Ala Leu Gln Thr Val Asp
                165                 170                 175

Pro Lys Leu Arg Ile Asp Leu Ala Ser Leu Ala Asp Glu Leu Asp Ala
            180                 185                 190

Glu Ala Leu Arg Asn Ser Ala Gly Arg Glu Val Phe Thr Asn Pro Ala
        195                 200                 205

Lys Ala Leu Ala Ala Arg Val Ser Gly Cys Gln Leu Ala Leu Ala Gly
    210                 215                 220

Asp Asn Ala Ala Thr Leu Ala Leu Ala Arg His Gly Ser Ser Val Met
225                 230                 235                 240

Leu Arg Ile Ala Asn Gln Val Val Ala Ala Thr Arg Leu Ser Asp Ala
                245                 250                 255

Val Val Ala Leu Arg Ala Gly Thr Pro Pro Asp Ala Leu Phe His Asp
            260                 265                 270

Glu Glu Ile Asp Gly Pro Ala Pro Gln Arg Leu Arg Val Leu Ala Leu
        275                 280                 285

Ala Leu Ala Gly Glu Arg Thr Val Val Ala Ala Arg Val Ala Gly Leu
    290                 295                 300

Asp Asp Ala Tyr Leu Val Ala Ala Glu Asp Val Pro Glu Leu Leu Asp
305                 310                 315                 320

Ala Pro Val Gly Ser Gly Gly Ala Val Leu Ala Val Arg Leu Glu Met
                325                 330                 335

Ala Ala Val Tyr Leu Arg Leu Val Arg Gly
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340 345

<210> 592

<211> 163

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3258c, H37Rv2.tab 3638813:3639301 reverse MW:16810

<400> 592

Met Arg Val Ser Gly Ala Ser Ala Ala Leu Val His Asp Ser Leu Ser
1 5 10 15

Val Val Asn Val Pro Arg Arg Cys Cys Arg Pro Gly Cys Pro His Tyr
20 25 30

Ala Val Ala Thr Leu Thr Phe Val Tyr Ser Asp Ser Thr Ala Val Ile
35 40 45

Gly Pro Leu Ala Thr Ala Arg Glu Pro His Ser Trp Asp Leu Cys Val
50 55 60

Gly His Ala Gly Arg Ile Thr Ala Pro Arg Gly Trp Glu Leu Val Arg
65 70 75 80

His Ala Gly Pro Leu Pro Ser His Pro Asp Glu Asp Asp Leu Val Ala
85 90 95

Leu Ala Asp Ala Val Arg Glu Gly Gly Pro Ser Ala Gly Arg Arg His
100 105 110

His Pro Gly Gly Asn Gly Ala Pro Leu His Gly Phe Asp Asp Phe Pro
115 120 125

Ala Ala Ala Thr Gly Ala Pro Thr Gly Gly Gly Val Leu Ala Pro Pro
130 135 140

Glu Pro Gly Ala Gly Arg Arg Arg Gly His Leu Arg Val Leu Pro Asp
145 150 155 160

Pro Ala Asp

<210> 593

<211> 139

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3259, H37Rv2.tab 3639424:3639840 forward MW:15649

<400> 593

Met Arg Gly Pro Leu Leu Pro Pro Thr Val Pro Gly Trp Arg Ser Arg
1 5 10 15

Ala Glu Arg Phe Asp Met Ala Val Leu Glu Ala Tyr Glu Pro Ile Glu
20 25 30

Arg Arg Trp Gln Glu Arg Val Ser Gln Leu Asp Ile Ala Val Asp Glu
35 40 45

Ile Pro Arg Ile Ala Ala Lys Asp Pro Glu Ser Val Gln Trp Pro Pro
50 55 60

Glu Val Ile Ala Asp Gly Pro Ile Ala Leu Ala Arg Leu Ile Pro Ala
65 70 75 80

Gly Val Asp Val Arg Gly Asn Ala Thr Arg Ala Arg Ile Val Leu Phe
85 90 95

Arg Lys Pro Ile Glu Arg Arg Ala Lys Asp Thr Glu Glu Leu Gly Glu
100 105 110

Leu Leu His Glu Ile Leu Val Ala Gln Val Ala Ile Tyr Leu Asp Val
115 120 125

Asp Pro Ser Val Ile Asp Pro Thr Ile Asp Asp
130 135

<210> 594

<211> 93

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3269, H37Rv2.tab 3650233:3650511 forward MW:9750

<400> 594

Met Ala Ile Gln Val Phe Leu Ala Lys Ala Thr Thr Thr Val Ile Thr
1 5 10 15

Gly Leu Ala Gly Val Thr Ala Tyr Glu Ile Leu Lys Lys Ala Ala Ala
20 25 30

Lys Ala Pro Leu Arg Gln Thr Ala Val Ser Ala Ala Ala Leu Gly Leu
35 40 45

Arg Gly Thr Arg Lys Ala Glu Glu Ala Ala Glu Ser Ala Arg Leu Lys
50 55 60

Val Ala Asp Val Met Ala Glu Ala Arg Glu Arg Ile Gly Glu Glu Ser
65 70 75 80

Pro Thr Pro Ala Ile Ser Asp Leu His Asp His Asp His
85 90

<210> 595

<211> 272

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3277, H37Rv2.tab 3659877:3660692 forward MW:30079

<400> 595

Met Asn Glu Val Thr Ala Gly Val Arg Glu Leu Ala Thr Ala Ile Met
1 5 10 15

Val Ser Arg His Leu Thr Gly Val Leu Ala Gly His Gly Ser Gln Thr
20 25 30

Val Thr Tyr His Phe Ala Ser Ile Leu Cys Ser Ser Val His Ser Leu
35 40 45

Val Val Ser Phe Ala Asp Ala Thr Ile Ala Arg Leu Pro Gly Val Val
50 55 60

Gln Pro Tyr Ala Gln Arg His His Glu Leu Ile Lys Phe Ala Ile Val
65 70 75 80

Gly Gly Thr Thr Phe Ile Ile Asp Thr Ala Ile Phe Tyr Thr Leu Lys
85 90 95

Leu Thr Val Leu Glu Pro Lys Pro Val Thr Ala Lys Val Ile Ala Gly
100 105 110

Ile Val Ala Val Ile Ala Ser Tyr Val Leu Asn Arg Glu Trp Ser Phe
115 120 125

Arg Asp Arg Gly Gly Arg Glu Arg His His Glu Ala Leu Leu Phe Phe
130 135 140

Ala Phe Ser Gly Val Gly Val Leu Leu Ser Met Ala Pro Leu Trp Phe
145 150 155 160

Ser Ser Tyr Ile Leu Gln Leu Arg Val Pro Thr Val Ser Leu Thr Met
165 170 175

Glu Asn Ile Ala Asp Phe Ile Ser Ala Tyr Ile Ile Gly Asn Leu Leu
180 185 190

Gln Met Ala Phe Arg Phe Trp Ala Phe Arg Arg Trp Val Phe Pro Asp
195 200 205

Glu Phe Ala Arg Asn Pro Asp Lys Ala Leu Glu Ser Ala Leu Thr Ala
210 215 220

Gly Gly Ile Ala Glu Val Phe Glu Asp Val Leu Glu Gly Gly Phe Glu
225 230 235 240

Asp Gly Asn Val Thr Leu Leu Arg Ala Trp Arg Asn Arg Ala Asn Arg
245 250 255

Phe Ala Gln Leu Gly Asp Ser Ser Glu Pro Arg Val Ser Lys Thr Ser
260 265 270

<210> 596

<211> 172

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3278c, H37Rv2.tab 3660653:3661168 reverse MW:19820

<400> 596

Met Ser Tyr Pro Glu Asn Val Leu Ala Ala Gly Glu Gln Val Val Leu
1 5 10 15

His Arg His Pro His Trp Asn Arg Leu Ile Trp Pro Val Val Val Leu
20 25 30

Val Leu Leu Thr Gly Leu Ala Ala Phe Gly Ser Gly Phe Val Asn Ser
35 40 45

Thr Pro Trp Gln Gln Ile Ala Lys Asn Val Ile His Ala Val Ile Trp
50 55 60

Gly Ile Trp Leu Val Ile Val Gly Trp Leu Thr Leu Trp Pro Phe Leu

65 70 75 80

Ser Trp Leu Thr Thr His Phe Val Val Thr Asn Arg Arg Val Met Phe
85 90 95

Arg His Gly Val Leu Thr Arg Ser Gly Ile Asp Ile Pro Leu Ala Arg
100 105 110

Ile Asn Ser Val Glu Phe Arg Asp Arg Ile Phe Glu Arg Ile Phe Arg
115 120 125

Thr Gly Thr Leu Ile Ile Glu Ser Ala Ser Gln Asp Pro Leu Glu Phe
130 135 140

Tyr Asn Ile Pro Arg Leu Arg Glu Val His Ala Leu Leu Tyr His Glu
145 150 155 160

Val Phe Asp Thr Leu Gly Ser Asp Glu Ser Pro Ser
165 170

<210> 597

<211> 177

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3281, H37Rv2.tab 3663688:3664218 forward MW:19013

<400> 597

Met Gly Thr Cys Pro Cys Glu Ser Ser Glu Arg Asn Glu Pro Val Ser
1 5 10 15

Arg Val Ser Gly Thr Asn Glu Val Ser Asp Gly Asn Glu Thr Asn Asn
20 25 30

Pro Ala Glu Val Ser Asp Gly Asn Glu Thr Asn Asn Pro Ala Glu Val
35 40 45

Ser Asp Gly Asn Glu Thr Asn Asn Pro Ala Pro Val Ser Arg Val Ser
50 55 60

Gly Thr Asn Glu Val Ser Asp Gly Asn Glu Thr Asn Asn Pro Ala Pro
65 70 75 80

Val Ser Arg Val Ser Gly Thr Asn Glu Val Ser Asp Gly Asn Glu Thr
85 90 95

Asn Asn Pro Ala Pro Val Thr Glu Lys Pro Leu His Pro His Glu Pro
100 105 110

His Ile Glu Ile Leu Arg Gly Gln Pro Thr Asp Gln Glu Leu Ala Ala
115 120 125

Leu Ile Ala Val Leu Gly Ser Ile Ser Gly Ser Thr Pro Pro Ala Gln
130 135 140

Pro Glu Pro Thr Arg Trp Gly Leu Pro Val Asp Gln Leu Arg Tyr Pro
145 150 155 160

Val Phe Ser Trp Gln Arg Ile Thr Leu Gln Glu Met Thr His Met Arg
165 170 175

Arg

<210> 598

<211> 420

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3311, H37Rv2.tab 3698120:3699379 forward MW:45732

<400> 598

Met Val Ala Asp Leu Val Pro Ile Arg Leu Ser Leu Ser Ala Gly Asp
1 5 10 15

Arg Tyr Thr Leu Trp Ala Pro Arg Trp Arg Asp Ala Gly Asp Glu Trp
20 25 30

Glu Ala Phe Leu Gly Lys Asp Asp Asp Leu Tyr Gly Phe Glu Ser Val
35 40 45

Ser Asp Leu Val Ala Phe Val Arg Thr Asp Thr Glu Asn Asp Leu Val
50 55 60

Asp His Pro Ala Trp Gln Asp Leu Thr Gly Ala His Ala His Asn Leu
65 70 75 80

Asn Pro Ala Glu Asp Asn Gln Phe Asp Leu Val Val Val Glu Glu Leu
85 90 95

Leu Ala Glu Lys Pro Thr Ala Glu Ser Val Ala Ala Leu Ala Ala Ser
100 105 110

Leu Ala Ile Val Ser Ala Ile Gly Ser Val Cys Glu Leu Ala Ala Val
115 120 125

Ser Lys Phe Phe Asn Gly Asn Pro Ile Leu Gly Thr Val Ser Gly Gly
130 135 140

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Leu Glu His Phe Thr Gly Lys Ala Gly Asn Lys Arg Trp Asn Ser Ile
145                 150                 155                 160

Ala Glu Val Ile Gly Arg Ser Trp Asp Asp Val Leu Ala Ala Ile Asp
                165                 170                 175

Glu Ile Ile Ser Thr Pro Glu Val Asp Ala Glu Leu Ser Glu Lys Val
            180                 185                 190

Ala Glu Glu Leu Ala Glu Glu Pro Glu Gly Ala Glu Glu Val Ala Ala
        195                 200                 205

Glu Val Glu Ala Thr Gln Asp Thr Gln Glu Ala Ala Glu Ser Asp Asp
    210                 215                 220

Glu Glu Ala Asp Ala Pro Gly Asp Ser Val Val Leu Gly Gly Asp Arg
225                 230                 235                 240

Asp Phe Trp Leu Gln Val Gly Ile Asp Pro Ile Gln Ile Met Thr Gly
                245                 250                 255

Thr Ala Thr Phe Tyr Thr Leu Arg Cys Tyr Leu Asp Asp Arg Pro Ile
            260                 265                 270

Phe Leu Gly Arg Asn Gly Arg Ile Ser Val Phe Gly Ser Glu Arg Ala
        275                 280                 285

Leu Ala Arg Tyr Leu Ala Asp Glu His Asp His Asp Leu Ser Asp Leu
    290                 295                 300

Ser Thr Tyr Asp Asp Ile Arg Thr Ala Ala Thr Asp Gly Ser Leu Ala
305                 310                 315                 320

Val Ala Val Thr Asp Asp Asn Val Tyr Val Leu Ser Gly Leu Val Asp
                325                 330                 335

Asp Phe Ala Asp Gly Pro Asp Ala Val Asp Arg Glu Gln Leu Asp Leu
            340                 345                 350

Ala Val Glu Leu Leu Arg Asp Ile Gly Asp Tyr Ser Glu Asp Ser Ala
        355                 360                 365

Val Asp Lys Ala Leu Glu Thr Thr Arg Pro Leu Gly Gln Leu Val Ala
    370                 375                 380

Tyr Val Leu Asp Pro His Ser Val Gly Lys Pro Thr Ala Pro Tyr Ala
385                 390                 395                 400

Ala Ala Val Arg Glu Trp Glu Lys Leu Glu Arg Phe Val Glu Ser Arg
                405                 410                 415

Leu Arg Arg Glu
            420
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<210> 599

<211> 129

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3354, H37Rv2.tab 3769110:3769496 forward MW:12987

<400> 599

Met Asn Leu Arg Arg His Gln Thr Leu Thr Leu Arg Leu Leu Ala Ala
1 5 10 15

Ser Ala Gly Ile Leu Ser Ala Ala Ala Phe Ala Ala Pro Ala Gln Ala
20 25 30

Asn Pro Val Asp Asp Ala Phe Ile Ala Ala Leu Asn Asn Ala Gly Val
35 40 45

Asn Tyr Gly Asp Pro Val Asp Ala Lys Ala Leu Gly Gln Ser Val Cys
50 55 60

Pro Ile Leu Ala Glu Pro Gly Gly Ser Phe Asn Thr Ala Val Ala Ser
65 70 75 80

Val Val Ala Arg Ala Gln Gly Met Ser Gln Asp Met Ala Gln Thr Phe
85 90 95

Thr Ser Ile Ala Ile Ser Met Tyr Cys Pro Ser Val Met Ala Asp Val
100 105 110

Ala Ser Gly Asn Leu Pro Ala Leu Pro Asp Met Pro Gly Leu Pro Gly
115 120 125

Ser

<210> 600

<211> 214

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3368c, H37Rv2.tab 3780337:3780978 reverse MW:23733

<400> 600

Met Thr Leu Asn Leu Ser Val Asp Glu Val Leu Thr Thr Thr Arg Ser
1 5 10 15

Val Arg Lys Arg Leu Asp Phe Asp Lys Pro Val Pro Arg Asp Val Leu
20 25 30

Met Glu Cys Leu Glu Leu Ala Leu Gln Ala Pro Thr Gly Ser Asn Ser
35 40 45

Gln Gly Trp Gln Trp Val Phe Val Glu Asp Ala Ala Lys Lys Lys Ala
50 55 60

Ile Ala Asp Val Tyr Leu Ala Asn Ala Arg Gly Tyr Leu Ser Gly Pro
65 70 75 80

Ala Pro Glu Tyr Pro Asp Gly Asp Thr Arg Gly Glu Arg Met Gly Arg
85 90 95

Val Arg Asp Ser Ala Thr Tyr Leu Ala Glu His Met His Arg Ala Pro
100 105 110

Val Leu Leu Ile Pro Cys Leu Lys Gly Arg Glu Asp Glu Ser Ala Val
115 120 125

Gly Gly Val Ser Phe Trp Ala Ser Leu Phe Pro Ala Val Trp Ser Phe
130 135 140

Cys Leu Ala Leu Arg Ser Arg Gly Leu Gly Ser Cys Trp Thr Thr Leu
145 150 155 160

His Leu Leu Asp Asn Gly Glu His Lys Val Ala Asp Val Leu Gly Ile
165 170 175

Pro Tyr Asp Glu Tyr Ser Gln Gly Gly Leu Leu Pro Ile Ala Tyr Thr
180 185 190

Gln Gly Ile Asp Phe Arg Pro Ala Lys Arg Leu Pro Ala Glu Ser Val
195 200 205

Thr His Trp Asn Gly Trp
210

<210> 601

<211> 136

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3412, H37Rv2.tab 3831725:3832132 forward MW:15269

<400> 601

Val Arg Asp His Leu Pro Pro Gly Leu Pro Pro Asp Pro Phe Ala Asp
1 5 10 15

Asp Pro Cys Asp Pro Ser Ala Ala Leu Glu Ala Val Glu Pro Gly Gln
20 25 30

Pro Leu Asp Gln Gln Glu Arg Met Ala Val Glu Ala Asp Leu Ala Asp
35 40 45

Leu Ala Val Tyr Glu Ala Leu Leu Ala His Lys Gly Ile Arg Gly Leu
50 55 60

Val Val Cys Cys Asp Glu Cys Gln Gln Asp His Tyr His Asp Trp Asp
65 70 75 80

Met Leu Arg Ser Asn Leu Leu Gln Leu Leu Ile Asp Gly Thr Val Arg
85 90 95

Pro His Glu Pro Ala Tyr Asp Pro Glu Pro Asp Ser Tyr Val Thr Trp
100 105 110

Asp Tyr Cys Arg Gly Tyr Ala Asp Ala Ser Leu Asn Glu Ala Ala Pro
115 120 125

Asp Ala Asp Arg Phe Arg Arg Arg
130 135

<210> 602

<211> 275

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3415c, H37Rv2.tab 3833696:3834520 reverse MW:28627

<400> 602

Val Asn Glu Thr Pro His Ala Pro Val Val Glu Gln Val Leu Val Ala
1 5 10 15

Ala Ala Phe Gly Asn Gln Pro Gly Ser Trp Pro Leu Pro Thr Ala Ile
20 25 30

Thr Pro His His Leu Trp Leu Arg Ala Val Ala Ala Gly Gly Gln Gly
35 40 45

Arg Tyr Ala His Ala Tyr Gly Asp Leu Ser Val Leu Arg Arg Leu Val
50 55 60

Pro Ala Gly Pro Leu Ala Ser Leu Ala His Ser Thr Gln Gly Ser Leu

65 70 75 80

Leu Arg Gln Leu Gly Trp His Thr Leu Ala Arg Gly Trp Asp Gly Arg
85 90 95

Ala Leu Ala Leu Ala Gly Ala Asp Arg Glu Ala Gly Ala Asp Ala Leu
100 105 110

Ile Gly Leu Ala Ala Asp Ala Leu Gly Val Gly Arg Phe Ala Ala Ala
115 120 125

Gly Ala Leu Leu Asp Arg Ala Asp Pro Leu Val Val Ser Pro Leu Val
130 135 140

Ala Asp Arg Leu Ala Val Arg Arg Arg Trp Val Ala Ala Glu Leu Ala
145 150 155 160

Met Ala Thr Gly Asp Gly Ala Thr Ala Val Arg His Ala Glu Glu Ala
165 170 175

Val Glu Leu Thr Gln Ala Met Ala Val Ala Ser Ala Arg His Arg Val
180 185 190

Lys Ser Asp Val Val Leu Ala Ala Ala Leu Cys Ser Ala Gly Ala Val
195 200 205

Ala Arg Ala Arg Ala Val Gly Glu Glu Ala Leu Asp Ala Thr Ala Arg
210 215 220

Phe Gly Leu Leu Pro Leu Arg Trp Ala Leu Ala Cys Leu Leu Ile Asp
225 230 235 240

Ile Gly Thr Val Thr Phe Ser Ala Gln Gln Leu Arg Glu Leu Thr Lys
245 250 255

Ile Arg Asn Ile Cys Ala Gly Gln Val Arg Arg Ala Gly Gly Cys Trp
260 265 270

Arg Thr Ala
275

<210> 603

<211> 280

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3438, H37Rv2.tab 3857396:3858235 forward MW:29209

<400> 603

```
Val Pro Arg Ile Arg Lys Leu Val Ala Ala Leu His Arg Arg Gly Pro
1               5                  10                  15

His Arg Val Leu Arg Gly Asp Leu Ala Phe Ala Gly Leu Pro Gly Val
            20                  25                  30

Val Tyr Thr Pro Glu Ala Gly Leu His Leu Pro Gly Val Ala Phe Gly
        35                  40                  45

His Asp Trp Leu Thr Gly Thr Ser Arg Tyr Ser Gly Leu Leu Glu His
    50                  55                  60

Leu Ala Ser Trp Gly Ile Val Ala Ala Ala Pro Asp Ser Glu Arg Gly
65                  70                  75                  80

Leu Ala Pro Ser Val Leu Asn Leu Ala Phe Asp Leu Gly Val Ala Leu
                85                  90                  95

Asp Ile Val Ala Gly Val Arg Leu Gly Pro Gly Lys Ile Ser Val His
            100                 105                 110

Pro Ala Lys Leu Gly Leu Val Gly His Gly Phe Gly Gly Ser Ala Ala
        115                 120                 125

Val Phe Ala Ala Ala Gly Leu Thr Gly Thr His Val Lys Ser Val Ala
    130                 135                 140

Ala Ile Phe Pro Thr Val Thr Asn Pro Ala Ala Glu Gln Pro Ala Ala
145                 150                 155                 160

Thr Leu Asp Val Pro Gly Leu Ile Leu Thr Ala Pro Gly Asp Pro Lys
                165                 170                 175

Thr Leu Thr Ser Asn Ala Leu Gly Leu Ser Arg Ala Trp Asp Lys Ala
            180                 185                 190

Thr Leu Arg Ile Val Ser Lys Ala Arg Ala Gly Gly Leu Val Glu Gly
        195                 200                 205

Arg Arg Leu Thr Lys Val Leu Gly Leu Pro Gly Pro His Arg Arg Thr
    210                 215                 220

Gln Arg Ser Val Arg Ala Leu Leu Thr Gly Tyr Leu Leu Tyr Thr Leu
225                 230                 235                 240

Gly Gly Asp Lys Thr Tyr Arg Arg Phe Ala Asp Pro Asp Leu Gln Leu
                245                 250                 255

Pro Lys Thr Asp Pro Ile Asp Pro Glu Ala Pro Pro Ile Thr Pro Gly
            260                 265                 270

Glu Lys Ile Val Thr Leu Leu Lys
        275                 280
```

<210> 604

<211> 264

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3587c, H37Rv2.tab 4028971:4029762 reverse MW:27067

<400> 604

```
Val Leu Asp Leu Glu Pro Arg Gly Pro Leu Pro Thr Glu Ile Tyr Trp
1               5                  10                  15

Arg Arg Arg Gly Leu Ala Leu Gly Ile Ala Val Val Val Val Gly Ile
            20                  25                  30

Ala Val Ala Ile Val Ile Ala Phe Val Asp Ser Ser Ala Gly Ala Lys
        35                  40                  45

Pro Val Ser Ala Asp Lys Pro Ala Ser Ala Gln Ser His Pro Gly Ser
    50                  55                  60

Pro Ala Pro Gln Ala Pro Gln Pro Ala Gly Gln Thr Glu Gly Asn Ala
65                  70                  75                  80

Ala Ala Ala Pro Pro Gln Gly Gln Asn Pro Glu Thr Pro Thr Pro Thr
                85                  90                  95

Ala Ala Val Gln Pro Pro Pro Val Leu Lys Glu Gly Asp Asp Cys Pro
            100                 105                 110

Asp Ser Thr Leu Ala Val Lys Gly Leu Thr Asn Ala Pro Gln Tyr Tyr
        115                 120                 125

Val Gly Asp Gln Pro Lys Phe Thr Met Val Val Thr Asn Ile Gly Leu
    130                 135                 140

Val Ser Cys Lys Arg Asp Val Gly Ala Ala Val Leu Ala Ala Tyr Val
145                 150                 155                 160

Tyr Ser Leu Asp Asn Lys Arg Leu Trp Ser Asn Leu Asp Cys Ala Pro
                165                 170                 175

Ser Asn Glu Thr Leu Val Lys Thr Phe Ser Pro Gly Glu Gln Val Thr
            180                 185                 190

Thr Ala Val Thr Trp Thr Gly Met Gly Ser Ala Pro Arg Cys Pro Leu
        195                 200                 205

Pro Arg Pro Ala Ile Gly Pro Gly Thr Tyr Asn Leu Val Val Gln Leu
    210                 215                 220

Gly Asn Leu Arg Ser Leu Pro Val Pro Phe Ile Leu Asn Gln Pro Pro
225                 230                 235                 240

Pro Pro Pro Gly Pro Val Pro Ala Pro Gly Pro Ala Gln Ala Pro Pro
                245                 250                 255
```

Pro Glu Ser Pro Ala Gln Gly Gly
260

<210> 605

<211> 303

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3603c, H37Rv2.tab 4045210:4046118 reverse MW:31104

<400> 605

Met Glu Arg Phe Asp Gly Leu Arg Pro Ala Arg Leu Lys Val Gly Ile
1 5 10 15

Ile Ser Ala Gly Arg Val Gly Thr Ala Leu Gly Val Ala Leu Gln Arg
20 25 30

Ala Asp His Val Val Val Ala Cys Ser Ala Ile Ser His Ala Ser Arg
35 40 45

Arg Arg Ala Gln Arg Arg Leu Pro Asp Thr Pro Val Leu Pro Pro Leu
50 55 60

Asp Val Ala Ala Ser Ala Glu Leu Leu Leu Leu Ala Val Thr Asp Ser
65 70 75 80

Glu Leu Ala Gly Leu Val Ser Gly Leu Ala Ala Thr Ser Ala Val Arg
85 90 95

Pro Gln Thr Ile Val Ala His Thr Ser Gly Ala Asn Gly Ile Gly Ile
100 105 110

Leu Ala Pro Leu Ala Gln Gln Gly Cys Ile Pro Leu Ala Ile His Pro
115 120 125

Ala Met Thr Phe Thr Gly Ser Asp Glu Asp Ile Ser Arg Leu Pro Asp
130 135 140

Thr Cys Phe Gly Ile Thr Ala Ala Asp Asp Val Gly Tyr Ala Ile Gly
145 150 155 160

Gln Ser Leu Val Leu Glu Met Gly Gly Glu Pro Phe Cys Val Arg Glu
165 170 175

Asp Ala Arg Ile Leu Tyr His Ala Ala Leu Ala His Ala Ser Asn His
180 185 190

Ile Val Thr Val Leu Ala Asp Ala Leu Glu Ala Leu Arg Ala Ala Leu

195 200 205

Ser Gly Gly Glu Leu Leu Gly Gln Gln Thr Val Asp Asp Gln Pro Gly
210 215 220

Gly Ile Val Glu Arg Ile Val Gly Pro Leu Ala Arg Ala Ala Leu Glu
225 230 235 240

Asn Thr Leu Gln Arg Gly Gln Ala Ala Leu Thr Gly Pro Val Ala Arg
245 250 255

Gly Asp Ala Ala Ala Val Ala Asp His Leu Ala Ala Leu Ala Asp Val
260 265 270

Asp Ala Ala Leu Ala Gln Ala Tyr Arg Ile Asn Ala Leu Arg Thr Ala
275 280 285

Gln Arg Ala His Ala Pro Ala Asp Val Val Glu Val Leu Thr Ala
290 295 300

<210> 606

<211> 462

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3604c, H37Rv2.tab 4046306:4047691 reverse MW:49862

<400> 606

Val Pro Arg Ala Ala Ser Ala Met Ala Glu Pro Ala Met Gly Val Gly
1 5 10 15

Arg Arg Arg Cys Trp Pro Gly Gly Arg Pro Gly Met Arg Gly Cys Leu
20 25 30

Arg Gly Glu Phe Gly Arg Thr Ala Tyr Pro Ala Lys Pro Cys Gly Asn
35 40 45

Arg Arg Thr Gly Ala Thr Arg Gly Leu Thr Ser Pro Gly Tyr Ser Gln
50 55 60

Ala Met Thr Val Leu Ser Arg Gly Ala Arg Val Arg Arg Gly Gly Arg
65 70 75 80

Arg Pro Gly Trp Val Leu Leu Thr Ala Leu Leu Val Leu Ala Ile Gly
85 90 95

Ala Ser Ser Ala Leu Val Phe Thr Asp Arg Val Glu Leu Leu Lys Leu
100 105 110

Ala Val Leu Leu Ala Leu Trp Ala Ala Val Ala Gly Ala Phe Val Ser
115 120 125

Val Leu Tyr Arg Arg Gln Ser Asp Val Asp Gln Ala Arg Val Arg Asp
130 135 140

Leu Lys Leu Val Tyr Asp Leu Gln Leu Asp Arg Glu Ile Ser Ala Arg
145 150 155 160

Arg Glu Tyr Glu Leu Thr Leu Glu Ser Gln Leu Arg Arg Glu Leu Ala
165 170 175

Ser Glu Leu Arg Ala Pro Ala Ala Asp Glu Val Ala Ala Leu Arg Ala
180 185 190

Glu Leu Ala Ala Leu Arg Thr Ser Leu Glu Ile Leu Phe Asp Ala Asp
195 200 205

Leu Glu His Arg Pro Ala Leu Gly Thr Val Glu Lys Glu Ala Arg Ala
210 215 220

Ala Arg Ala Leu Asp Gly Glu Ser Pro Pro Ala Asp Trp Val Ser Ser
225 230 235 240

Asp Arg Val Met Ala Val Arg Gly Gly Asp Gly Ala Ser Arg Thr Asp
245 250 255

Glu Ala Ser Ile Ile Asp Val Pro Glu Val Gly Val Pro Pro Val Ser
260 265 270

Gly Gly Pro Arg His Tyr Glu Ala Pro Pro Pro Pro Gln Pro Glu Pro
275 280 285

Leu Phe Glu Pro Arg His Arg Pro Pro Pro Leu Pro Pro Gln Gln Glu
290 295 300

Arg Pro Val Trp Gln Pro Val Thr Ser His Gly Gln Trp Leu Pro Ala
305 310 315 320

Glu Thr Pro Gly Ser Gln Trp Ala Ser Val Glu Pro Glu Thr Thr Pro
325 330 335

Ala Ala Pro Pro Pro Gly Arg Arg Arg Arg Ala Arg His Ala Ser Pro
340 345 350

Ala Asp Gln Ala Tyr Asn Pro Pro Ala Tyr Val Glu Leu Ala Ala Gln
355 360 365

Tyr Gly Glu Ser Gly Arg Arg Ser Arg His Ser Ala Glu His Arg Asp
370 375 380

His Asp Ile Gly Gly Ser Gly Ala Gly Thr Gly Glu Arg Pro Pro Ser
385 390 395 400

Pro Pro Met Ala Pro Pro Pro Pro Ala Glu Pro Thr Arg Arg His Arg
405 410 415

Thr Ala Asp Thr Pro Pro Asp Asp Ser Gly Gly Leu His Ala Arg Asp
420 425 430

Pro Leu Thr Gly Gly Gln Ser Val Ala Asp Leu Met Ala Arg Leu Gln

435 440 445

Val Glu Ser Thr Gly Gly Gly Arg Arg Arg Arg Arg Gly Glu
450 455 460

<210> 607

<211> 158

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3605c, H37Rv2.tab 4047708:4048181 reverse MW:16789

<400> 607

Met Gly Pro Thr Arg Lys Arg Asp Leu Thr Ala Ala Val Val Gly Ala
1 5 10 15

Ala Ala Val Gly Tyr Leu Leu Val Ala Val Leu Tyr Arg Trp Phe Pro
20 25 30

Pro Ile Thr Val Trp Thr Gly Leu Ser Leu Leu Ala Val Ala Val Ala
35 40 45

Glu Ala Leu Trp Ala Arg Tyr Val Arg Val Lys Ile Ser Asp Gly Glu
50 55 60

Ile Gly Asp Gly Pro Gly Trp Leu His Pro Leu Val Val Ala Arg Ser
65 70 75 80

Leu Met Val Ala Lys Ala Ser Ala Trp Val Gly Ala Leu Val Thr Gly
85 90 95

Trp Trp Ile Gly Val Leu Ala Tyr Phe Leu Pro Arg Arg Ser Trp Leu
100 105 110

Arg Ala Ala Ala Glu Asp Thr Thr Gly Thr Val Val Ala Ala Gly Ser
115 120 125

Ala Leu Ala Leu Val Val Ala Ala Leu Trp Leu Gln His Cys Cys Lys
130 135 140

Ser Pro Gln Asp Pro Thr Glu His Ala Asp Gly Ala Glu Ser
145 150 155

<210> 608

<211> 184

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3614c, H37Rv2.tab 4054145:4054696 reverse MW:19802

<400> 608

Val Asp Leu Pro Gly Asn Asp Phe Asp Ser Asn Asp Phe Asp Ala Val
1 5 10 15

Asp Leu Trp Gly Ala Asp Gly Ala Glu Gly Trp Thr Ala Asp Pro Ile
20 25 30

Ile Gly Val Gly Ser Ala Ala Thr Pro Asp Thr Gly Pro Asp Leu Asp
35 40 45

Asn Ala His Gly Gln Ala Glu Thr Asp Thr Glu Gln Glu Ile Ala Leu
50 55 60

Phe Thr Val Thr Asn Pro Pro Arg Thr Val Ser Val Ser Thr Leu Met
65 70 75 80

Asp Gly Arg Ile Asp His Val Glu Leu Ser Ala Arg Val Ala Trp Met
85 90 95

Ser Glu Ser Gln Leu Ala Ser Glu Ile Leu Val Ile Ala Asp Leu Ala
100 105 110

Arg Gln Lys Ala Gln Ser Ala Gln Tyr Ala Phe Ile Leu Asp Arg Met
115 120 125

Ser Gln Gln Val Asp Ala Asp Glu His Arg Val Ala Leu Leu Arg Lys
130 135 140

Thr Val Gly Glu Thr Trp Gly Leu Pro Ser Pro Glu Glu Ala Ala Ala
145 150 155 160

Ala Glu Ala Glu Val Phe Ala Thr Arg Tyr Ser Asp Asp Cys Pro Ala
165 170 175

Pro Asp Asp Glu Ser Asp Pro Trp
180

<210> 609

<211> 103

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3615c, H37Rv2.tab 4054815:4055123 reverse MW:10795

<400> 609

Met Thr Glu Asn Leu Thr Val Gln Pro Glu Arg Leu Gly Val Leu Ala
1 5 10 15

Ser His His Asp Asn Ala Ala Val Asp Ala Ser Ser Gly Val Glu Ala
20 25 30

Ala Ala Gly Leu Gly Glu Ser Val Ala Ile Thr His Gly Pro Tyr Cys
35 40 45

Ser Gln Phe Asn Asp Thr Leu Asn Val Tyr Leu Thr Ala His Asn Ala
50 55 60

Leu Gly Ser Ser Leu His Thr Ala Gly Val Asp Leu Ala Lys Ser Leu
65 70 75 80

Arg Ile Ala Ala Lys Ile Tyr Ser Glu Ala Asp Glu Ala Trp Arg Lys
85 90 95

Ala Ile Asp Gly Leu Phe Thr
100

<210> 610

<211> 392

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3616c, H37Rv2.tab 4055200:4056375 reverse MW:39888

<400> 610

Met Ser Arg Ala Phe Ile Ile Asp Pro Thr Ile Ser Ala Ile Asp Gly
1 5 10 15

Leu Tyr Asp Leu Leu Gly Ile Gly Ile Pro Asn Gln Gly Gly Ile Leu
20 25 30

Tyr Ser Ser Leu Glu Tyr Phe Glu Lys Ala Leu Glu Glu Leu Ala Ala
35 40 45

Ala Phe Pro Gly Asp Gly Trp Leu Gly Ser Ala Ala Asp Lys Tyr Ala

50 55 60

Gly Lys Asn Arg Asn His Val Asn Phe Phe Gln Glu Leu Ala Asp Leu
65 70 75 80

Asp Arg Gln Leu Ile Ser Leu Ile His Asp Gln Ala Asn Ala Val Gln
85 90 95

Thr Thr Arg Asp Ile Leu Glu Gly Ala Lys Lys Gly Leu Glu Phe Val
100 105 110

Arg Pro Val Ala Val Asp Leu Thr Tyr Ile Pro Val Val Gly His Ala
115 120 125

Leu Ser Ala Ala Phe Gln Ala Pro Phe Cys Ala Gly Ala Met Ala Val
130 135 140

Val Gly Gly Ala Leu Ala Tyr Leu Val Val Lys Thr Leu Ile Asn Ala
145 150 155 160

Thr Gln Leu Leu Lys Leu Leu Ala Lys Leu Ala Glu Leu Val Ala Ala
165 170 175

Ala Ile Ala Asp Ile Ile Ser Asp Val Ala Asp Ile Ile Lys Gly Thr
180 185 190

Leu Gly Glu Val Trp Glu Phe Ile Thr Asn Ala Leu Asn Gly Leu Lys
195 200 205

Glu Leu Trp Asp Lys Leu Thr Gly Trp Val Thr Gly Leu Phe Ser Arg
210 215 220

Gly Trp Ser Asn Leu Glu Ser Phe Phe Ala Gly Val Pro Gly Leu Thr
225 230 235 240

Gly Ala Thr Ser Gly Leu Ser Gln Val Thr Gly Leu Phe Gly Ala Ala
245 250 255

Gly Leu Ser Ala Ser Ser Gly Leu Ala His Ala Asp Ser Leu Ala Ser
260 265 270

Ser Ala Ser Leu Pro Ala Leu Ala Gly Ile Gly Gly Gly Ser Gly Phe
275 280 285

Gly Gly Leu Pro Ser Leu Ala Gln Val His Ala Ala Ser Thr Arg Gln
290 295 300

Ala Leu Arg Pro Arg Ala Asp Gly Pro Val Gly Ala Ala Ala Glu Gln
305 310 315 320

Val Gly Gly Gln Ser Gln Leu Val Ser Ala Gln Gly Ser Gln Gly Met
325 330 335

Gly Gly Pro Val Gly Met Gly Gly Met His Pro Ser Ser Gly Ala Ser
340 345 350

Lys Gly Thr Thr Thr Lys Lys Tyr Ser Glu Gly Ala Ala Ala Gly Thr
355 360 365

Glu Asp Ala Glu Arg Ala Pro Val Glu Ala Asp Ala Gly Gly Gly Gln
370 375 380

Lys Val Leu Val Arg Asn Val Val
385 390

<210> 611

<211> 94

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3619c, H37Rv2.tab 4059987:4060268 reverse MW:9832

<400> 611

Met Thr Ile Asn Tyr Gln Phe Gly Asp Val Asp Ala His Gly Ala Met
1 5 10 15

Ile Arg Ala Gln Ala Gly Ser Leu Glu Ala Glu His Gln Ala Ile Ile
20 25 30

Ser Asp Val Leu Thr Ala Ser Asp Phe Trp Gly Gly Ala Gly Ser Ala
35 40 45

Ala Cys Gln Gly Phe Ile Thr Gln Leu Gly Arg Asn Phe Gln Val Ile
50 55 60

Tyr Glu Gln Ala Asn Ala His Gly Gln Lys Val Gln Ala Ala Gly Asn
65 70 75 80

Asn Met Ala Gln Thr Asp Ser Ala Val Gly Ser Ser Trp Ala
85 90

<210> 612

<211> 114

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3632, H37Rv2.tab 4071236:4071577 forward MW:13068

<400> 612

```
Met Asn Trp Ile Gln Val Leu Leu Ile Ala Ser Ile Ile Gly Leu Leu
1               5                  10                  15

Phe Tyr Leu Leu Arg Ser Arg Arg Ser Ala Arg Ser Arg Ala Trp Val
            20                  25                  30

Lys Val Gly Tyr Val Leu Phe Val Leu Ala Gly Ile Tyr Ala Val Leu
        35                  40                  45

Arg Pro Asp Asp Thr Thr Val Val Ala Asn Trp Phe Gly Val Arg Arg
    50                  55                  60

Gly Thr Asp Leu Met Leu Tyr Ala Leu Val Met Ala Phe Ser Phe Thr
65                  70                  75                  80

Thr Leu Ser Thr Tyr Met Arg Phe Lys Asp Leu Glu Leu Arg Tyr Ala
                85                  90                  95

Arg Ile Ala Arg Ala Leu Ala Leu Glu Gly Ala Gln Ala Pro Glu Gln
            100                 105                 110

Cys Arg
```

<210> 613

<211> 192

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3647c, H37Rv2.tab 4087613:4088188 reverse MW:20314

<400> 613

```
Val Ser Gln Leu Ser Phe Phe Ala Ala Glu Ser Val Pro Pro Ala Val
1               5                  10                  15

Ala Asp Leu Ser Gly Val Leu Ala Gly Pro Gly Gln Ile Val Leu Val
            20                  25                  30

Gly Cys Gly Ala Arg Leu Ser Val Val Val Ala Glu Ser Trp Arg Ala
        35                  40                  45

Ser Ala Leu Ala Glu Met Ile Gln Glu Ala Gly Leu Val Pro Glu Val
    50                  55                  60

Ala Arg Thr Asp Glu Asn Thr Pro Leu Val Arg Thr Ala Val Asp Pro
65                  70                  75                  80

Leu Leu Cys Gly Ile Ala Ala Glu Trp Thr Arg Gly Ala Val Lys Thr
```

85 90 95

Val Pro Pro Arg Trp Leu Pro Gly Pro Arg Glu Leu Arg Ala Trp Thr
100 105 110

Leu Ala Ala Gly Ser Pro Glu Ala Asp Arg Tyr Leu Leu Gly Leu Asp
115 120 125

Pro His Ala Pro Asp Thr His Ser Pro Leu Ala Ser Ala Leu Met Arg
130 135 140

Val Gly Ile Ala Pro Thr Leu Ile Gly Thr Arg Gly Thr Arg Pro Ala
145 150 155 160

Leu Arg Ile Ser Gly Arg Arg Arg Leu Ser Arg Leu Val Glu Asn Val
165 170 175

Gly Glu Pro Pro Asp Gly Ala Glu Ala Trp Val Gln Trp Pro Arg Thr
180 185 190

<210> 614

<211> 256

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3662c, H37Rv2.tab 4101268:4102035 reverse MW:26338

<400> 614

Val Thr Val Asp Pro Leu Ala Pro Leu Met Glu Leu Pro Gly Val Ala
1 5 10 15

Ala Ala Ser Asp Arg Val Arg Asp Ala Leu Ser Arg Val His Arg His
20 25 30

Arg Ala Asn Leu Arg Gly Trp Pro Val Ala Ala Ala Glu Ala Ser Leu
35 40 45

Arg Ala Ala Arg Ala Ser Ser Val Leu Asp Gly Gly Pro Ala Arg Leu
50 55 60

His Asp Ala Gly Ala Pro Thr Ser Gly Lys Pro Ala Leu Ser Asp Pro
65 70 75 80

Val Phe Ala Gly Ala Leu Arg Val Gly Gln Ala Leu Glu Gly Gly Ala
85 90 95

Gly Pro Val Val Gly Val Trp Arg Arg Ala Pro Leu Gln Ala Leu Ala
100 105 110

Arg Leu His Met Leu Ala Ala Ala Asp Gln Val Asp Asp Asp Arg Leu
115 120 125

Gly Arg Pro Arg Ser Asp Ala Asp Val Gly Pro Arg Leu Glu Leu Leu
130 135 140

Ala Asp Val Val Thr His Pro Thr Leu Ala Ser Ala Pro Val Val Ala
145 150 155 160

Ala Val Ala His Gly Glu Leu Leu Thr Leu Arg Pro Phe Gly Cys Ala
165 170 175

Asp Gly Val Val Ala Arg Ala Val Ser Arg Leu Val Thr Ile Ala Thr
180 185 190

Gly Leu Asp Pro His Gly Leu Gly Val Pro Glu Val Ile Trp Met Arg
195 200 205

Gln Pro Ala Glu Tyr His Asp Ala Ala Arg Arg Phe Ala Gly Gly Thr
210 215 220

Pro Asp Gly Val Ala Gly Trp Leu Leu Leu Cys Cys Gly Ala Met Leu
225 230 235 240

Asp Gly Ala Arg Glu Ala Leu Ser Ile Ala Glu Ser Leu Ser Pro Gly
245 250 255

<210> 615

<211> 232

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3668c, H37Rv2.tab 4109786:4110481 reverse MW:23102

<400> 615

Leu Gln Thr Ala His Arg Arg Phe Ala Ala Ala Phe Ala Ala Val Leu
1 5 10 15

Leu Ala Val Val Cys Leu Pro Ala Asn Thr Ala Ala Ala Asp Asp Lys
20 25 30

Leu Pro Leu Gly Gly Gly Ala Gly Ile Val Val Asn Gly Asp Thr Met
35 40 45

Cys Thr Leu Thr Thr Ile Gly His Asp Lys Asn Gly Asp Leu Ile Gly
50 55 60

Phe Thr Ser Ala His Cys Gly Gly Pro Gly Ala Gln Ile Ala Ala Glu
65 70 75 80

Gly Ala Glu Asn Ala Gly Pro Val Gly Ile Met Val Ala Gly Asn Asp
85 90 95

Gly Leu Asp Tyr Ala Val Ile Lys Phe Asp Pro Ala Lys Val Thr Pro
100 105 110

Val Ala Val Phe Asn Gly Phe Ala Ile Asn Gly Ile Gly Pro Asp Pro
115 120 125

Ser Phe Gly Gln Ile Ala Cys Lys Gln Gly Arg Thr Thr Gly Asn Ser
130 135 140

Cys Gly Val Thr Trp Gly Pro Gly Glu Ser Pro Gly Thr Leu Val Met
145 150 155 160

Gln Val Cys Gly Gly Pro Gly Asp Ser Gly Ala Pro Val Thr Val Asp
165 170 175

Asn Leu Leu Val Gly Met Ile His Gly Ala Phe Ser Asp Asn Leu Pro
180 185 190

Ser Cys Ile Thr Lys Tyr Ile Pro Leu His Thr Pro Ala Val Val Met
195 200 205

Ser Ile Asn Ala Asp Leu Ala Asp Ile Asn Ala Lys Asn Arg Pro Gly
210 215 220

Ala Gly Phe Val Pro Val Pro Ala
225 230

<210> 616

<211> 172

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3669, H37Rv2.tab 4110827:4111342 forward MW:18887

<400> 616

Val Ser Lys Ile Asp Arg Lys Asn Gly Val Pro Ser Thr Leu Thr Thr
1 5 10 15

Ile Pro Leu Ala Asp Pro His Ala Gly Pro Ala Glu Pro Ser Ile Gly
20 25 30

Asp Leu Ile Lys Asp Ala Thr Thr Gln Met Ser Thr Leu Val Arg Ala
35 40 45

Glu Val Glu Leu Ala Arg Ala Glu Ile Thr Arg Asp Val Lys Lys Gly

50 55 60

Leu Thr Gly Ser Val Phe Phe Ile Ser Ser Leu Val Val Gly Phe Tyr
65 70 75 80

Ser Thr Phe Phe Phe Phe Phe Phe Val Ala Glu Leu Leu Asp Thr Trp
85 90 95

Ile Trp Arg Trp Val Ala Phe Leu Leu Val Phe Ala Ile Met Val Val
100 105 110

Val Thr Ala Val Leu Ala Leu Leu Gly Phe Leu Lys Val Arg Arg Ile
115 120 125

Arg Gly Pro Arg Gln Thr Ile Ala Ser Val Lys Glu Thr Arg Thr Ala
130 135 140

Leu Thr Pro Gly His Asp Lys Thr Pro Val Thr Pro Lys Pro Val Thr
145 150 155 160

Ser Asp Arg Ala Thr Pro Val Asp Pro Ser Gly Trp
165 170

<210> 617

<211> 386

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3680, H37Rv2.tab 4119795:4120952 forward MW:41405

<400> 617

Met Ser Val Thr Pro Lys Thr Leu Asp Met Gly Ala Ile Leu Ala Asp
1 5 10 15

Thr Ser Asn Arg Val Val Val Cys Cys Gly Ala Gly Gly Val Gly Lys
20 25 30

Thr Thr Thr Ala Ala Ala Leu Ala Leu Arg Ala Ala Glu Tyr Gly Arg
35 40 45

Thr Val Val Val Leu Thr Ile Asp Pro Ala Lys Arg Leu Ala Gln Ala
50 55 60

Leu Gly Ile Asn Asp Leu Gly Asn Thr Pro Gln Arg Val Pro Leu Ala
65 70 75 80

Pro Glu Val Pro Gly Glu Leu His Ala Met Met Leu Asp Met Arg Arg
85 90 95

Thr Phe Asp Glu Met Val Met Gln Tyr Ser Gly Pro Glu Arg Ala Gln
100 105 110

Ser Ile Leu Asp Asn Gln Phe Tyr Gln Thr Val Ala Thr Ser Leu Ala
115 120 125

Gly Thr Gln Glu Tyr Met Ala Met Glu Lys Leu Gly Gln Leu Leu Ser
130 135 140

Gln Asp Arg Trp Asp Leu Ile Val Val Asp Thr Pro Pro Ser Arg Asn
145 150 155 160

Ala Leu Asp Phe Leu Asp Ala Pro Lys Arg Leu Gly Ser Phe Met Asp
165 170 175

Ser Arg Leu Trp Arg Leu Leu Leu Ala Pro Gly Arg Gly Ile Gly Arg
180 185 190

Leu Ile Thr Gly Val Met Gly Leu Ala Met Lys Ala Leu Ser Thr Val
195 200 205

Leu Gly Ser Gln Met Leu Ala Asp Ala Ala Ala Phe Val Gln Ser Leu
210 215 220

Asp Ala Thr Phe Gly Gly Phe Arg Glu Lys Ala Asp Arg Thr Tyr Ala
225 230 235 240

Leu Leu Lys Arg Arg Gly Thr Gln Phe Val Val Val Ser Ala Ala Glu
245 250 255

Pro Asp Ala Leu Arg Glu Ala Ser Phe Phe Val Asp Arg Leu Ser Gln
260 265 270

Glu Ser Met Pro Leu Ala Gly Leu Val Phe Asn Arg Thr His Pro Met
275 280 285

Leu Cys Ala Leu Pro Ile Glu Arg Ala Ile Asp Ala Ala Glu Thr Leu
290 295 300

Asp Ala Glu Thr Thr Asp Ser Asp Ala Thr Ser Leu Ala Ala Ala Val
305 310 315 320

Leu Arg Ile His Ala Glu Arg Gly Gln Thr Ala Lys Arg Glu Ile Arg
325 330 335

Leu Leu Ser Arg Phe Thr Gly Ala Asn Pro Thr Val Pro Val Val Gly
340 345 350

Val Pro Ser Leu Pro Phe Asp Val Ser Asp Leu Glu Ala Leu Arg Ala
355 360 365

Leu Ala Asp Gln Leu Thr Thr Val Gly Asn Asp Ala Gly Arg Ala Ala
370 375 380

Gly Arg
385

<210> 618

<211> 214

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3705c, H37Rv2.tab 4148321:4148962 reverse MW:22359

<400> 618

Met Arg Ile Ala Ala Ala Val Val Ser Ile Gly Leu Ala Val Ile Ala
1 5 10 15

Gly Phe Ala Val Pro Val Ala Asp Ala His Pro Ser Glu Pro Gly Val
20 25 30

Val Ser Tyr Ala Val Leu Gly Lys Gly Ser Val Gly Asn Ile Val Gly
35 40 45

Ala Pro Met Gly Trp Glu Ala Val Phe Thr Arg Pro Phe Gln Ala Phe
50 55 60

Trp Val Glu Leu Pro Ala Cys Asn Asn Trp Val Asp Ile Gly Leu Pro
65 70 75 80

Glu Val Tyr Asp Asp Pro Asp Leu Ala Ser Phe Asn Gly Ala Thr Thr
85 90 95

Gln Thr Ser Ala Thr Asp Gln Thr His Leu Val Lys Gln Ala Val Gly
100 105 110

Val Phe Ala Ser Asn Asp Ala Ala Asp Arg Ala Phe His Arg Val Val
115 120 125

Asp Arg Thr Val Gly Cys Ser Gly Gln Thr Thr Ala Ile His Leu Asp
130 135 140

Asp Gly Thr Thr Gln Val Trp Ser Phe Ala Gly Gly Pro Ser Thr Gly
145 150 155 160

Thr Asp Glu Ala Trp Thr Lys Gln Glu Ala Gly Thr Asp Arg Arg Cys
165 170 175

Phe Val Gln Thr Arg Leu Arg Glu Asn Val Leu Leu Gln Ala Lys Val
180 185 190

Cys Gln Ser Gly Asn Ala Gly Pro Ala Val Asn Val Leu Ala Gly Ala
195 200 205

Met Gln Asn Thr Leu Gly
210

<210> 619

<211> 133

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3716c, H37Rv2.tab 4160515:4160913 reverse MW:13357

<400> 619

Met Gln Pro Gly Gly Asp Met Ser Ala Leu Leu Ala Gln Ala Gln Gln
1 5 10 15

Met Gln Gln Lys Leu Leu Glu Ala Gln Gln Gln Leu Ala Asn Ser Glu
20 25 30

Val His Gly Gln Ala Gly Gly Gly Leu Val Lys Val Val Val Lys Gly
35 40 45

Ser Gly Glu Val Ile Gly Val Thr Ile Asp Pro Lys Val Val Asp Pro
50 55 60

Asp Asp Ile Glu Thr Leu Gln Asp Leu Ile Val Gly Ala Met Arg Asp
65 70 75 80

Ala Ser Gln Gln Val Thr Lys Met Ala Gln Glu Arg Leu Gly Ala Leu
85 90 95

Ala Gly Ala Met Arg Pro Pro Ala Pro Pro Ala Ala Pro Pro Gly Ala
100 105 110

Pro Gly Met Pro Gly Met Pro Gly Met Pro Gly Ala Pro Gly Ala Pro
115 120 125

Pro Val Pro Gly Ile
130

<210> 620

<211> 147

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3718c, H37Rv2.tab 4161818:4162258 reverse MW:15661

<400> 620

Met Gly Gln Val Ser Ala Ala Ser Thr Ile Leu Ile Asn Ala Glu Pro
1 5 10 15

Thr Ala Thr Leu Asp Ala Leu Ala Asp Tyr Glu Thr Val Arg Pro Lys
20 25 30

Ile Leu Ser Pro His Tyr Ser Glu Tyr Gln Val Leu Glu Gly Gly Lys
35 40 45

Gly Arg Gly Thr Val Ala Lys Trp Arg Leu Gln Ala Thr Gln Ser Arg
50 55 60

Val Arg Asp Val Gln Val Asn Val Asp Val Ala Gly His Thr Val Ile
65 70 75 80

Glu Lys Asp Met Asn Ser Ser Met Val Thr Asn Trp Thr Val Ala Pro
85 90 95

Ala Gly Pro Gly Ser Ser Val Thr Val Lys Thr Thr Trp Thr Gly Ala
100 105 110

Gly Gly Val Lys Gly Phe Phe Glu Lys Thr Phe Ala Pro Leu Gly Leu
115 120 125

Lys Lys Ile Gln Ala Glu Val Leu Ser Asn Leu Lys Thr Glu Leu Glu
130 135 140

Gly Asp Ala
145

<210> 621

<211> 254

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3723, H37Rv2.tab 4168536:4169297 forward MW:27367

<400> 621

Met Gly Arg Lys Val Ala Val Leu Trp His Ala Ser Phe Ser Ile Gly
1 5 10 15

Ala Gly Val Leu Tyr Phe Tyr Phe Val Leu Pro Arg Trp Pro Glu Leu
20 25 30

Met Gly Asp Thr Gly His Ser Leu Gly Thr Gly Leu Arg Ile Ala Thr

35 40 45

Gly Ala Leu Val Gly Leu Ala Ala Leu Pro Val Val Phe Thr Leu Leu
50 55 60

Arg Thr Arg Lys Pro Glu Leu Gly Thr Pro Gln Leu Ala Leu Ser Met
65 70 75 80

Arg Ile Trp Ser Ile Met Ala His Val Leu Ala Gly Ala Leu Ile Val
85 90 95

Gly Thr Ala Ile Ser Glu Val Trp Leu Ser Leu Asp Ala Ala Gly Gln
100 105 110

Trp Leu Phe Gly Ile Tyr Gly Ala Ala Ala Ala Ile Ala Val Leu Gly
115 120 125

Phe Phe Gly Phe Tyr Leu Ser Phe Val Ala Glu Leu Pro Pro Pro Pro
130 135 140

Pro Lys Pro Leu Lys Pro Lys Lys Pro Lys Gln Arg Arg Leu Arg Arg
145 150 155 160

Lys Lys Thr Ala Lys Gly Asp Glu Ala Glu Pro Glu Ala Ala Glu Glu
165 170 175

Ala Glu Asn Thr Glu Leu Ala Ala Gln Glu Asp Glu Glu Ala Val Glu
180 185 190

Ala Pro Pro Glu Ser Ile Glu Ser Pro Gly Gly Glu Pro Glu Ser Ala
195 200 205

Thr Arg Glu Ala Pro Ala Ala Glu Thr Ala Thr Ala Glu Glu Pro Arg
210 215 220

Gly Gly Leu Arg Asn Arg Arg Pro Thr Gly Lys Thr Ser His Arg Arg
225 230 235 240

Arg Arg Thr Arg Ser Gly Val Gln Val Ala Lys Val Asp Glu
245 250

<210> 622

<211> 166

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3753c, H37Rv2.tab 4199724:4200221 reverse MW:17917

<400> 622

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Met Gln Arg Pro Ala Ala Asp Thr Pro Asp Gly Phe Gly Val Ala Val
1               5                  10                  15

Val Arg Glu Glu Gly Arg Trp Arg Cys Ser Pro Met Gly Pro Lys Ala
            20                  25                  30

Leu Thr Ser Leu Arg Ala Ala Glu Thr Glu Leu Arg Glu Leu Arg Ser
        35                  40                  45

Ala Gly Ala Val Phe Gly Leu Leu Asp Val Asp Asp Glu Phe Phe Val
    50                  55                  60

Ile Val Arg Pro Ala Pro Ser Gly Thr Arg Leu Leu Leu Ser Asp Ala
65                  70                  75                  80

Thr Ala Ala Leu Asp Tyr Asp Ile Ala Ala Glu Val Leu Asp Asn Leu
                85                  90                  95

Asp Ala Glu Ile Asp Pro Glu Asp Leu Glu Asp Ala Asp Pro Phe Glu
            100                 105                 110

Glu Gly Asp Leu Gly Leu Leu Ser Asp Ile Gly Leu Pro Glu Ala Val
        115                 120                 125

Leu Gly Val Ile Leu Asp Glu Thr Asp Leu Tyr Ala Asp Glu Gln Leu
    130                 135                 140

Gly Arg Ile Ala Arg Glu Met Gly Phe Ala Asp Gln Leu Ser Ala Val
145                 150                 155                 160

Ile Asp Arg Leu Gly Arg
                165
```

<210> 623

<211> 100

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3760, H37Rv2.tab 4205538:4205837 forward MW:10533

<400> 623

```
Val Pro Gly Ser Val Pro Gly Lys Ala Pro Glu Glu Pro Pro Val Lys
1               5                  10                  15

Phe Thr Arg Ala Ala Ala Val Trp Ser Ala Leu Ile Val Gly Phe Leu
            20                  25                  30

Ile Leu Ile Leu Leu Leu Ile Phe Ile Ala Gln Asn Thr Ala Ser Ala
        35                  40                  45
```

Gln Phe Ala Phe Phe Gly Trp Arg Trp Ser Leu Pro Leu Gly Val Ala
50 55 60

Ile Leu Leu Ala Ala Val Gly Gly Gly Leu Ile Thr Val Phe Ala Gly
65 70 75 80

Thr Ala Arg Ile Leu Gln Leu Arg Arg Ala Ala Lys Lys Thr His Ala
85 90 95

Ala Ala Leu Arg
100

<210> 624

<211> 666

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3779, H37Rv2.tab 4224985:4226982 forward MW:71763

<400> 624

Val Gly Leu Trp Phe Gly Thr Leu Ile Ala Leu Ile Leu Leu Ile Ala
1 5 10 15

Pro Gly Ala Met Val Ala Arg Ile Ala Gln Leu Arg Trp Pro Val Ala
20 25 30

Ile Ala Val Gly Pro Ala Leu Thr Tyr Gly Val Val Ala Leu Ala Ile
35 40 45

Ile Pro Tyr Gly Ala Leu Gly Ile Pro Trp Asn Gly Trp Thr Ala Leu
50 55 60

Ala Ala Leu Ala Val Thr Cys Ala Val Ala Thr Gly Leu Gln Leu Leu
65 70 75 80

Leu Ala Arg Phe Arg Asp Leu Asp Ala Glu Ala Leu Ala Val Ser Arg
85 90 95

Trp Pro Ala Val Thr Val Ala Ala Gly Val Leu Leu Gly Ala Leu Leu
100 105 110

Ile Gly Trp Ala Ala Tyr Arg Gly Ile Pro His Trp Gln Ser Ile Pro
115 120 125

Ser Thr Trp Asp Ala Val Trp His Ala Asn Thr Val Arg Phe Ile Leu
130 135 140

Asp Thr Gly Gln Ala Ser Ser Thr His Met Gly Glu Leu Arg Asn Val

145 150 155 160

Glu Thr His Ala Pro Leu Tyr Tyr Pro Ser Val Phe His Gly Leu Val
165 170 175

Ala Val Phe Cys Gln Leu Thr Gly Ala Ala Pro Thr Thr Gly Tyr Thr
180 185 190

Leu Ser Ser Leu Ala Ala Ser Val Trp Leu Phe Pro Val Ser Ala Ala
195 200 205

Val Leu Thr Trp Arg Ala Val Arg Ser His Pro Gly Ala Leu Trp Ser
210 215 220

Ala Ser Cys Ala Ser Ala Glu Trp Arg Ala Ala Gly Ala Ala Gly Thr
225 230 235 240

Ala Ala Ala Leu Ser Ala Ser Phe Thr Ala Val Pro Tyr Val Glu Phe
245 250 255

Asp Thr Ala Ala Met Pro Asn Leu Ala Ala Tyr Gly Ile Ala Val Pro
260 265 270

Thr Met Val Leu Ile Thr Ser Thr Leu Arg His Arg Asp Arg Ile Pro
275 280 285

Val Ala Val Leu Ala Leu Val Gly Val Phe Ser Leu His Ile Thr Gly
290 295 300

Gly Ile Val Val Ala Leu Leu Val Ser Ala Trp Trp Leu Phe Glu Ala
305 310 315 320

Leu Arg His Pro Val Arg Ser Arg Leu Ala Asp Leu Leu Thr Leu Ala
325 330 335

Gly Val Ala Ala Met Ala Gly Leu Val Met Leu Pro Gln Phe Leu Ser
340 345 350

Val Arg Gln Gln Glu Asp Ile Ile Ala Gly His Ala Phe Pro Thr Tyr
355 360 365

Leu Ser Lys Lys Arg Gly Leu Phe Asp Ala Val Phe Gln His Ser Arg
370 375 380

His Leu Asn Asp Phe Pro Val Gln Tyr Ala Leu Ile Val Leu Ala Ala
385 390 395 400

Ile Gly Gly Leu Ile Leu Leu Val Lys Lys Ile Trp Trp Pro Leu Ala
405 410 415

Val Trp Leu Leu Leu Ile Val Met Asn Val Asp Ala Gly Thr Pro Leu
420 425 430

Gly Gly Pro Ile Gly Gly Val Ala Gly Ala Leu Gly Glu Phe Phe Tyr
435 440 445

His Asp Pro Arg Arg Ile Ala Ala Ala Thr Thr Leu Leu Leu Met Leu
450 455 460

Met Ala Gly Val Ala Leu Phe Ala Thr Val Met Leu Leu Val Ala Ala
465 470 475 480

Ala Lys Arg Leu Thr Asp Arg Phe Arg Pro Gln Pro Val Ser Val Trp
485 490 495

Ala Ser Ala Thr Ala Thr Leu Leu Ile Gly Ala Thr Leu Val Ser Ala
500 505 510

Trp His Tyr Phe Pro Arg His Arg Phe Leu Phe Gly Asp Lys Tyr Asp
515 520 525

Ser Val Met Ile Asp Gln Lys Asp Leu Asp Ala Met Ala Tyr Leu Ala
530 535 540

Ser Leu Pro Gly Ala Arg Asp Thr Leu Ile Gly Asn Ala Asn Thr Asp
545 550 555 560

Gly Thr Ala Trp Met Tyr Ala Val Ala Gly Leu His Pro Leu Trp Thr
565 570 575

His Tyr Asp Tyr Pro Leu Gln Gln Gly Pro Gly Tyr His Arg Phe Ile
580 585 590

Phe Trp Ala Tyr Gly Arg Asn Gly Glu Ser Asp Pro Arg Val Leu Glu
595 600 605

Ala Ile Gln Val Leu Arg Ile Arg Tyr Ile Leu Thr Ser Thr Pro Thr
610 615 620

Val Arg Gly Phe Ala Val Pro Asp Gly Leu Val Ser Leu Glu Thr Ser
625 630 635 640

Arg Ser Trp Ala Lys Ile Tyr Asp Asn Gly Glu Ala Arg Ile Tyr Glu
645 650 655

Trp Arg Gly Thr Ala Ala Ala Thr His Ser
660 665

<210> 625

<211> 178

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3780, H37Rv2.tab 4226989:4227522 forward MW:19484

<400> 625

Val Arg Lys Arg Met Val Ile Gly Leu Ser Thr Gly Ser Asp Asp Asp
1 5 10 15

Asp Val Glu Val Ile Gly Gly Val Asp Pro Arg Leu Ile Ala Val Gln

20 25 30

Glu Asn Asp Ser Asp Glu Ser Ser Leu Thr Asp Leu Val Glu Gln Pro
35 40 45

Ala Lys Val Met Arg Ile Gly Thr Met Ile Lys Gln Leu Leu Glu Glu
50 55 60

Val Arg Ala Ala Pro Leu Asp Glu Ala Ser Arg Asn Arg Leu Arg Asp
65 70 75 80

Ile His Ala Thr Ser Ile Arg Glu Leu Glu Asp Gly Leu Ala Pro Glu
85 90 95

Leu Arg Glu Glu Leu Asp Arg Leu Thr Leu Pro Phe Asn Glu Asp Ala
100 105 110

Val Pro Ser Asp Ala Glu Leu Arg Ile Ala Gln Ala Gln Leu Val Gly
115 120 125

Trp Leu Glu Gly Leu Phe His Gly Ile Gln Thr Ala Leu Phe Ala Gln
130 135 140

Gln Met Ala Ala Arg Ala Gln Leu Gln Gln Met Arg Gln Gly Ala Leu
145 150 155 160

Pro Pro Gly Val Gly Lys Ser Gly Gln His Gly His Gly Thr Gly Gln
165 170 175

Tyr Leu

<210> 626

<211> 643

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3792, H37Rv2.tab 4237932:4239860 forward MW:69516

<400> 626

Met Pro Ser Arg Arg Lys Ser Pro Gln Phe Gly His Glu Met Gly Ala
1 5 10 15

Phe Thr Ser Ala Arg Ala Arg Glu Val Leu Val Ala Leu Gly Gln Leu
20 25 30

Ala Ala Ala Val Val Val Ala Val Gly Val Ala Val Val Ser Leu Leu
35 40 45

Ala Ile Ala Arg Val Glu Trp Pro Ala Phe Pro Ser Ser Asn Gln Leu
50 55 60

His Ala Leu Thr Thr Val Gly Gln Val Gly Cys Leu Ala Gly Leu Val
65 70 75 80

Gly Ile Gly Trp Leu Trp Arg His Gly Arg Phe Arg Arg Leu Ala Arg
85 90 95

Leu Gly Gly Leu Val Leu Val Ser Ala Phe Thr Val Val Thr Leu Gly
100 105 110

Met Pro Leu Gly Ala Thr Lys Leu Tyr Leu Phe Gly Ile Ser Val Asp
115 120 125

Gln Gln Phe Arg Thr Glu Tyr Leu Thr Arg Leu Thr Asp Thr Ala Ala
130 135 140

Leu Arg Asp Met Thr Tyr Ile Gly Leu Pro Pro Phe Tyr Pro Pro Gly
145 150 155 160

Trp Phe Trp Ile Gly Gly Arg Ala Ala Ala Leu Thr Gly Thr Pro Ala
165 170 175

Trp Glu Met Phe Lys Pro Trp Ala Ile Thr Ser Met Ala Ile Ala Val
180 185 190

Ala Val Ala Leu Val Leu Trp Trp Arg Met Ile Arg Phe Glu Tyr Ala
195 200 205

Leu Leu Val Thr Val Ala Thr Ala Ala Val Met Leu Ala Tyr Ser Ser
210 215 220

Pro Glu Pro Tyr Ala Ala Met Ile Thr Val Leu Leu Pro Pro Met Leu
225 230 235 240

Val Leu Thr Trp Ser Gly Leu Gly Ala Arg Asp Arg Gln Gly Trp Ala
245 250 255

Ala Val Val Gly Ala Gly Val Phe Leu Gly Phe Ala Ala Thr Trp Tyr
260 265 270

Thr Leu Leu Val Ala Tyr Gly Ala Phe Thr Val Val Leu Met Ala Leu
275 280 285

Leu Leu Ala Gly Ser Arg Leu Gln Ser Gly Ile Lys Ala Ala Val Asp
290 295 300

Pro Leu Cys Arg Leu Ala Val Val Gly Ala Ile Ala Ala Ala Ile Gly
305 310 315 320

Ser Thr Thr Trp Leu Pro Tyr Leu Leu Arg Ala Ala Arg Asp Pro Val
325 330 335

Ser Asp Thr Gly Ser Ala Gln His Tyr Leu Pro Ala Asp Gly Ala Ala
340 345 350

Leu Thr Phe Pro Met Leu Gln Phe Ser Leu Leu Gly Ala Ile Cys Leu
355 360 365

Leu Gly Thr Leu Trp Leu Val Met Arg Ala Arg Ser Ser Ala Pro Ala

370 375 380

Gly Ala Leu Ala Ile Gly Val Leu Ala Val Tyr Leu Trp Ser Leu Leu
385 390 395 400

Ser Met Leu Ala Thr Leu Ala Arg Thr Thr Leu Leu Ser Phe Arg Leu
405 410 415

Gln Pro Thr Leu Ser Val Leu Leu Val Ala Ala Gly Ala Phe Gly Phe
420 425 430

Val Glu Ala Val Gln Ala Leu Gly Lys Arg Gly Arg Gly Val Ile Pro
435 440 445

Met Ala Ala Ala Ile Gly Leu Ala Gly Ala Ile Ala Phe Ser Gln Asp
450 455 460

Ile Pro Asp Val Leu Arg Pro Asp Leu Thr Ile Ala Tyr Thr Asp Thr
465 470 475 480

Asp Gly Tyr Gly Gln Arg Gly Asp Arg Arg Pro Pro Gly Ser Glu Lys
485 490 495

Tyr Tyr Pro Ala Ile Asp Ala Ala Ile Arg Arg Val Thr Gly Lys Arg
500 505 510

Arg Asp Arg Thr Val Val Leu Thr Ala Asp Tyr Ser Phe Leu Ser Tyr
515 520 525

Tyr Pro Tyr Trp Gly Phe Gln Gly Leu Thr Pro His Tyr Ala Asn Pro
530 535 540

Leu Ala Gln Phe Asp Lys Arg Ala Thr Gln Ile Asp Ser Trp Ser Gly
545 550 555 560

Leu Ser Thr Ala Asp Glu Phe Ile Ala Ala Leu Asp Lys Leu Pro Trp
565 570 575

Gln Pro Pro Thr Val Phe Leu Met Arg His Gly Ala His Asn Ser Tyr
580 585 590

Thr Leu Arg Leu Ala Gln Asp Val Tyr Pro Asn Gln Pro Asn Val Arg
595 600 605

Arg Tyr Thr Val Asp Leu Arg Thr Ala Leu Phe Ala Asp Pro Arg Phe
610 615 620

Val Val Glu Asp Ile Gly Pro Phe Val Leu Ala Ile Arg Lys Pro Gln
625 630 635 640

Glu Ser Ala

<210> 627

<211> 336

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3802c, H37Rv2.tab 4263358:4264365 reverse MW:35448

<400> 627

Met Ala Lys Asn Ser Arg Arg Lys Arg His Arg Ile Leu Ala Trp Ile
1 5 10 15

Ala Ala Gly Ala Met Ala Ser Val Val Ala Leu Val Ile Val Ala Val
20 25 30

Val Ile Met Leu Arg Gly Ala Glu Ser Pro Pro Ser Ala Val Pro Pro
35 40 45

Gly Val Leu Pro Pro Gly Pro Thr Pro Ala His Pro His Lys Pro Arg
50 55 60

Pro Ala Phe Gln Asp Ala Ser Cys Pro Asp Val Gln Met Ile Ser Val
65 70 75 80

Pro Gly Thr Trp Glu Ser Ser Pro Gln Gln Asn Pro Leu Asn Pro Val
85 90 95

Gln Phe Pro Lys Ala Leu Leu Leu Lys Val Thr Gly Pro Ile Ala Gln
100 105 110

Gln Phe Ala Pro Ala Arg Val Gln Thr Tyr Thr Val Ala Tyr Thr Ala
115 120 125

Gln Phe His Asn Pro Leu Thr Thr Asp Asn Gln Met Ser Tyr Asn Asp
130 135 140

Ser Arg Ala Glu Gly Thr Arg Ala Met Val Ala Ala Met Thr Asp Met
145 150 155 160

Asn Asn Arg Cys Pro Leu Thr Ser Tyr Val Leu Ile Gly Phe Ser Gln
165 170 175

Gly Ala Val Ile Ala Gly Asp Val Ala Ser Asp Ile Gly Asn Gly Arg
180 185 190

Gly Pro Val Asp Glu Asp Leu Val Leu Gly Val Thr Leu Ile Ala Asp
195 200 205

Gly Arg Arg Gln Gln Gly Val Gly Asn Gln Val Pro Pro Ser Pro Arg
210 215 220

Gly Glu Gly Ala Glu Ile Thr Leu His Glu Val Pro Val Leu Ser Gly
225 230 235 240

Leu Gly Leu Thr Met Thr Gly Pro Arg Pro Gly Gly Phe Gly Ala Leu
245 250 255

Asp Gly Arg Thr Asn Glu Ile Cys Ala Gln Gly Asp Leu Ile Cys Ala

260 265 270

Ala Pro Ala Gln Ala Phe Ser Pro Ala Asn Leu Pro Thr Thr Leu Asn
275 280 285

Thr Leu Ala Gly Gly Ala Gly Gln Pro Val His Ala Met Tyr Ala Thr
290 295 300

Pro Glu Phe Trp Asn Ser Asp Gly Glu Pro Ala Thr Glu Trp Thr Leu
305 310 315 320

Asn Trp Ala His Gln Leu Ile Glu Asn Ala Pro His Pro Lys His Arg
325 330 335

<210> 628

<211> 627

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3805c, H37Rv2.tab 4266956:4268836 reverse MW:68710

<400> 628

Met Val Arg Val Ser Leu Trp Leu Ser Val Thr Ala Val Ala Val Leu
1 5 10 15

Phe Gly Trp Gly Ser Trp Gln Arg Arg Trp Ile Ala Asp Asp Gly Leu
20 25 30

Ile Val Leu Arg Thr Val Arg Asn Leu Leu Ala Gly Asn Gly Pro Val
35 40 45

Phe Asn Gln Gly Glu Arg Val Glu Ala Asn Thr Ser Thr Ala Trp Thr
50 55 60

Tyr Leu Leu Tyr Val Gly Gly Trp Val Gly Gly Pro Met Arg Leu Glu
65 70 75 80

Tyr Val Ala Leu Ala Leu Ala Met Val Leu Ser Leu Leu Gly Met Val
85 90 95

Leu Leu Met Leu Gly Thr Gly Arg Leu Tyr Ala Pro Ser Leu Arg Gly
100 105 110

Arg Arg Ala Ile Met Leu Pro Ala Gly Ala Leu Val Tyr Ile Ala Val
115 120 125

Pro Pro Ala Arg Asp Phe Ala Thr Ser Gly Leu Glu Ser Gly Leu Val
130 135 140

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Leu Ala Tyr Leu Gly Leu Leu Trp Trp Met Met Val Cys Trp Ser Gln
145                 150                 155                 160

Pro Leu Arg Ala Arg Pro Asp Ser Gln Met Phe Leu Gly Ala Leu Ala
                165                 170                 175

Phe Val Ala Gly Cys Ser Val Leu Val Arg Pro Glu Phe Ala Leu Ile
            180                 185                 190

Gly Gly Leu Ala Leu Ile Met Met Leu Ile Ala Ala Arg Thr Trp Arg
        195                 200                 205

Arg Arg Val Leu Ile Val Leu Ala Gly Gly Phe Leu Pro Val Ala Tyr
    210                 215                 220

Gln Ile Phe Arg Met Gly Tyr Tyr Gly Leu Leu Val Pro Ser Thr Ala
225                 230                 235                 240

Leu Ala Lys Asp Ala Ala Gly Asp Lys Trp Ser Gln Gly Met Ile Tyr
                245                 250                 255

Val Ser Asn Phe Asn Arg Pro Tyr Ala Leu Trp Val Pro Leu Val Leu
            260                 265                 270

Ser Val Pro Leu Gly Leu Leu Leu Met Thr Ala Arg Arg Arg Pro Ser
        275                 280                 285

Phe Leu Arg Pro Val Leu Ala Pro Asp Tyr Gly Arg Val Ala Arg Ala
    290                 295                 300

Val Gln Ser Pro Pro Ala Val Val Ala Phe Ile Val Gly Ser Gly Val
305                 310                 315                 320

Leu Gln Ala Leu Tyr Trp Ile Arg Gln Gly Gly Asp Phe Met His Gly
                325                 330                 335

Arg Val Leu Leu Ala Pro Leu Phe Cys Leu Leu Ala Pro Val Gly Val
            340                 345                 350

Ile Pro Ile Leu Leu Pro Asp Gly Lys Asp Phe Ser Arg Glu Thr Gly
        355                 360                 365

Arg Trp Leu Val Gly Ala Leu Ser Gly Leu Trp Leu Gly Ile Ala Gly
    370                 375                 380

Trp Ser Leu Trp Ala Ala Asn Ser Pro Gly Met Gly Asp Asp Ala Thr
385                 390                 395                 400

Arg Val Thr Tyr Ser Gly Ile Val Asp Glu Arg Arg Phe Tyr Ala Gln
                405                 410                 415

Ala Thr Gly His Ala His Pro Leu Thr Ala Ala Asp Tyr Leu Asp Tyr
            420                 425                 430

Pro Arg Met Ala Ala Val Leu Thr Ala Leu Asn Asn Thr Pro Glu Gly
        435                 440                 445

Ala Leu Leu Leu Pro Ser Gly Asn Tyr Asn Gln Trp Asp Leu Val Pro
    450                 455                 460

Met Ile Arg Pro Ser Ser Gly Thr Ala Pro Gly Gly Lys Pro Ala Pro
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465 470 475 480

Lys Pro Gln His Ala Val Phe Phe Thr Asn Met Gly Met Leu Gly Met
485 490 495

Asn Val Gly Leu Asp Val Arg Val Ile Asp Gln Ile Gly Leu Val Asn
500 505 510

Pro Leu Ala Ala His Thr Glu Arg Leu Lys His Ala Arg Ile Gly His
515 520 525

Asp Lys Asn Leu Phe Pro Asp Trp Val Ile Ala Asp Gly Pro Trp Val
530 535 540

Lys Trp Tyr Pro Gly Ile Pro Gly Tyr Ile Asp Gln Gln Trp Val Thr
545 550 555 560

Gln Ala Glu Ala Ala Leu Gln Cys Pro Ala Thr Arg Ala Val Leu Asn
565 570 575

Ser Val Arg Ala Pro Ile Thr Leu His Arg Phe Leu Ser Asn Val Leu
580 585 590

His Ser Tyr Glu Phe Thr Arg Tyr Arg Ile Asp Arg Val Pro Arg Tyr
595 600 605

Glu Leu Val Arg Cys Gly Leu Asp Val Pro Asp Gly Pro Gly Pro Pro
610 615 620

Pro Arg Glu
625

<210> 629

<211> 165

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3807c, H37Rv2.tab 4269843:4270337 reverse MW:17218

<400> 629

Met Val Ala Val Gln Ser Ala Leu Val Asp Arg Pro Gly Met Leu Ala
1 5 10 15

Thr Ala Arg Gly Leu Ser His Phe Gly Glu His Cys Ile Gly Trp Leu
20 25 30

Ile Leu Ala Leu Leu Gly Ala Ile Ala Leu Pro Arg Arg Arg Arg Glu
35 40 45

Trp Leu Val Ala Gly Ala Gly Ala Phe Val Ala His Ala Ile Ala Val
50 55 60

Leu Ile Lys Arg Leu Val Arg Arg Gln Arg Pro Asp His Pro Ala Ile
65 70 75 80

Ala Val Asn Val Asp Thr Pro Ser Gln Leu Ser Phe Pro Ser Ala His
85 90 95

Ala Thr Ser Thr Thr Ala Ala Ala Leu Leu Met Gly Arg Ala Thr Gly
100 105 110

Leu Pro Leu Pro Val Val Leu Val Pro Pro Met Ala Leu Ser Arg Ile
115 120 125

Leu Leu Gly Val His Tyr Pro Ser Asp Val Ala Val Gly Val Ala Leu
130 135 140

Gly Ala Thr Val Gly Ala Ile Val Asp Ser Val Gly Gly Gly Arg Gln
145 150 155 160

Arg Ala Arg Lys Arg
165

<210> 630

<211> 637

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3808c, H37Rv2.tab 4270369:4272279 reverse MW:71507

<400> 630

Met Ser Glu Leu Ala Ala Ser Leu Leu Ser Arg Val Ile Leu Pro Arg
1 5 10 15

Pro Gly Glu Pro Leu Asp Val Arg Lys Leu Tyr Leu Glu Glu Ser Thr
20 25 30

Thr Asn Ala Arg Arg Ala His Ala Pro Thr Arg Thr Ser Leu Gln Ile
35 40 45

Gly Ala Glu Ser Glu Val Ser Phe Ala Thr Tyr Phe Asn Ala Phe Pro
50 55 60

Ala Ser Tyr Trp Arg Arg Trp Thr Thr Cys Lys Ser Val Val Leu Arg
65 70 75 80

Val Gln Val Thr Gly Ala Gly Arg Val Asp Val Tyr Arg Thr Lys Ala
85 90 95

```
Thr Gly Ala Arg Ile Phe Val Glu Gly His Asp Phe Thr Gly Thr Glu
            100                 105                 110

Asp Gln Pro Ala Ala Val Glu Thr Glu Val Val Leu Gln Pro Phe Glu
        115                 120                 125

Asp Gly Gly Trp Val Trp Phe Asp Ile Thr Thr Asp Thr Ala Val Thr
    130                 135                 140

Leu His Ser Gly Gly Trp Tyr Ala Thr Ser Pro Ala Pro Gly Thr Ala
145                 150                 155                 160

Asn Ile Ala Val Gly Ile Pro Thr Phe Asn Arg Pro Ala Asp Cys Val
                165                 170                 175

Asn Ala Leu Arg Glu Leu Thr Ala Asp Pro Leu Val Asp Gln Val Ile
            180                 185                 190

Gly Ala Val Ile Val Pro Asp Gln Gly Glu Arg Lys Val Arg Asp His
        195                 200                 205

Pro Asp Phe Pro Ala Ala Ala Ala Arg Leu Gly Ser Arg Leu Ser Ile
    210                 215                 220

His Asp Gln Pro Asn Leu Gly Gly Ser Gly Gly Tyr Ser Arg Val Met
225                 230                 235                 240

Tyr Glu Ala Leu Lys Asn Thr Asp Cys Gln Gln Ile Leu Phe Met Asp
                245                 250                 255

Asp Asp Ile Arg Leu Glu Pro Asp Ser Ile Leu Arg Val Leu Ala Met
            260                 265                 270

His Arg Phe Ala Lys Ala Pro Met Leu Val Gly Gly Gln Met Leu Asn
        275                 280                 285

Leu Gln Glu Pro Ser His Leu His Ile Met Gly Glu Val Val Asp Arg
    290                 295                 300

Ser Ile Phe Met Trp Thr Ala Ala Pro His Ala Glu Tyr Asp His Asp
305                 310                 315                 320

Phe Ala Glu Tyr Pro Leu Asn Asp Asn Asn Ser Arg Ser Lys Leu Leu
                325                 330                 335

His Arg Arg Ile Asp Val Asp Tyr Asn Gly Trp Trp Thr Cys Met Ile
            340                 345                 350

Pro Arg Gln Val Ala Glu Glu Leu Gly Gln Pro Leu Pro Leu Phe Ile
        355                 360                 365

Lys Trp Asp Asp Ala Asp Tyr Gly Leu Arg Ala Ala Glu His Gly Tyr
    370                 375                 380

Pro Thr Val Thr Leu Pro Gly Ala Ala Ile Trp His Met Ala Trp Ser
385                 390                 395                 400

Asp Lys Asp Asp Ala Ile Asp Trp Gln Ala Tyr Phe His Leu Arg Asn
                405                 410                 415
```

Arg Leu Val Val Ala Ala Met His Trp Asp Gly Pro Lys Ala Gln Val
420 425 430

Ile Gly Leu Val Arg Ser His Leu Lys Ala Thr Leu Lys His Leu Ala
435 440 445

Cys Leu Glu Tyr Ser Thr Val Ala Ile Gln Asn Lys Ala Ile Asp Asp
450 455 460

Phe Leu Ala Gly Pro Glu His Ile Phe Ser Ile Leu Glu Ser Ala Leu
465 470 475 480

Pro Gln Val His Arg Ile Arg Lys Ser Tyr Pro Asp Ala Val Val Leu
485 490 495

Pro Ala Ala Ser Glu Leu Pro Pro Pro Leu His Lys Asn Lys Ala Met
500 505 510

Lys Pro Pro Val Asn Pro Leu Val Ile Gly Tyr Arg Leu Ala Arg Gly
515 520 525

Ile Met His Asn Leu Thr Ala Ala Asn Pro Gln His His Arg Arg Pro
530 535 540

Glu Phe Asn Val Pro Thr Gln Asp Ala Arg Trp Phe Leu Leu Cys Thr
545 550 555 560

Val Asp Gly Ala Thr Val Thr Thr Ala Asp Gly Cys Gly Val Val Tyr
565 570 575

Arg Gln Arg Asp Arg Ala Lys Met Phe Ala Leu Leu Trp Gln Ser Leu
580 585 590

Arg Arg Gln Arg Gln Leu Leu Lys Arg Phe Glu Glu Met Arg Arg Ile
595 600 605

Tyr Arg Asp Ala Leu Pro Thr Leu Ser Ser Lys Gln Lys Trp Glu Thr
610 615 620

Ala Leu Leu Pro Ala Ala Asn Gln Glu Pro Glu His Gly
625 630 635

<210> 631

<211> 237

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3821, H37Rv2.tab 4285973:4286683 forward MW:24627

<400> 631

Met Trp Ser Thr Val Leu Val Leu Ala Leu Ser Val Ile Cys Glu Pro
1 5 10 15

Val Arg Ile Gly Leu Val Val Leu Met Leu Asn Arg Arg Arg Pro Leu
20 25 30

Leu His Leu Leu Thr Phe Leu Cys Gly Gly Tyr Thr Met Ala Gly Gly
35 40 45

Val Ala Met Val Thr Leu Val Val Leu Gly Ala Thr Pro Leu Ala Gly
50 55 60

His Phe Ser Val Ala Glu Val Gln Ile Gly Thr Gly Leu Ile Ala Leu
65 70 75 80

Leu Ile Ala Phe Ala Leu Thr Thr Asn Val Ile Gly Lys His Val Arg
85 90 95

Arg Ala Thr His Ala Arg Val Gly Asp Asp Gly Gly Arg Val Leu Arg
100 105 110

Glu Ser Val Pro Pro Ser Gly Ala His Lys Leu Ala Val Arg Ala Arg
115 120 125

Cys Phe Leu Gln Gly Asp Ser Leu Tyr Val Ala Gly Val Ser Gly Leu
130 135 140

Gly Ala Ala Leu Pro Ser Ala Asn Tyr Met Gly Ala Met Ala Ala Ile
145 150 155 160

Leu Ala Ser Gly Ala Thr Pro Ala Thr Gln Ala Leu Ala Val Val Thr
165 170 175

Phe Asn Val Val Ala Phe Thr Val Ala Glu Val Pro Leu Val Ser Tyr
180 185 190

Leu Ala Ala Pro Arg Lys Thr Arg Ala Phe Met Ala Ala Leu Gln Ser
195 200 205

Trp Leu Arg Ser Arg Ser Arg Arg Asp Ala Ala Leu Leu Val Ala Ala
210 215 220

Gly Gly Cys Leu Met Leu Thr Leu Gly Leu Ser Asn Leu
225 230 235

<210> 632

<211> 449

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3835, H37Rv2.tab 4309047:4310393 forward MW:47043

<400> 632

```
Met Leu Asp Ala Pro Glu Gln Asp Pro Val Asp Pro Gly Asp Pro Ala
1               5                  10                  15

Ser Pro Pro His Gly Glu Ala Glu Gln Pro Leu Pro Gly Pro Arg Trp
            20                  25                  30

Pro Arg Ala Leu Arg Ala Ser Ala Thr Arg Arg Ala Leu Leu Leu Thr
        35                  40                  45

Ala Leu Gly Gly Leu Leu Ile Ala Gly Leu Val Thr Ala Ile Pro Ala
    50                  55                  60

Val Gly Arg Ala Pro Glu Arg Leu Ala Gly Tyr Ile Ala Ser Asn Pro
65                  70                  75                  80

Val Pro Ser Thr Gly Ala Lys Ile Asn Ala Ser Phe Asn Arg Val Ala
                85                  90                  95

Ser Gly Asp Cys Leu Met Trp Pro Asp Gly Thr Pro Glu Ser Ala Ala
            100                 105                 110

Ile Val Ser Cys Ala Asp Glu His Arg Phe Glu Val Ala Glu Ser Ile
        115                 120                 125

Asp Met Arg Thr Phe Pro Gly Met Glu Tyr Gly Gln Asn Ala Ala Pro
    130                 135                 140

Pro Ser Pro Ala Arg Ile Gln Gln Ile Ser Glu Glu Gln Cys Glu Ala
145                 150                 155                 160

Ala Val Arg Arg Tyr Leu Gly Thr Lys Phe Asp Pro Asn Ser Lys Phe
                165                 170                 175

Thr Ile Ser Met Leu Trp Pro Gly Asp Arg Ala Trp Arg Gln Ala Gly
            180                 185                 190

Glu Arg Arg Met Leu Cys Gly Leu Gln Ser Pro Gly Pro Asn Asn Gln
        195                 200                 205

Gln Leu Ala Phe Lys Gly Lys Val Ala Asp Ile Asp Gln Ser Lys Val
    210                 215                 220

Trp Pro Ala Gly Thr Cys Leu Gly Ile Asp Ala Thr Thr Asn Gln Pro
225                 230                 235                 240

Ile Asp Val Pro Val Asp Cys Ala Ala Pro His Ala Met Glu Val Ser
                245                 250                 255

Gly Thr Val Asn Leu Ala Glu Arg Phe Pro Asp Ala Leu Pro Ser Glu
            260                 265                 270

Pro Glu Gln Asp Gly Phe Ile Lys Asp Ala Cys Thr Arg Met Thr Asp
        275                 280                 285

Ala Tyr Leu Ala Pro Leu Lys Leu Arg Thr Thr Thr Leu Thr Leu Ile
    290                 295                 300
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```
Tyr Pro Thr Leu Thr Leu Pro Ser Trp Ser Ala Gly Ser Arg Val Val
305                 310                 315                 320

Ala Cys Ser Ile Gly Ala Thr Leu Gly Asn Gly Gly Trp Ala Thr Leu
                325                 330                 335

Val Asn Ser Ala Lys Gly Ala Leu Leu Ile Asn Gly Gln Pro Pro Val
            340                 345                 350

Pro Pro Pro Asp Ile Pro Glu Glu Arg Leu Asn Leu Pro Pro Ile Pro
        355                 360                 365

Leu Gln Leu Pro Thr Pro Arg Pro Ala Pro Pro Ala Gln Gln Leu Pro
    370                 375                 380

Ser Thr Pro Pro Gly Thr Gln His Leu Pro Ala Gln Gln Pro Val Val
385                 390                 395                 400

Thr Pro Thr Arg Pro Pro Glu Ser His Ala Pro Ala Ser Ala Ala Pro
                405                 410                 415

Ala Glu Thr Gln Pro Pro Pro Pro Asp Ala Gly Ala Pro Pro Ala Thr
            420                 425                 430

Gln Ser Pro Glu Ala Thr Pro Pro Gly Pro Ala Glu Pro Ala Pro Ala
        435                 440                 445

Gly
```

<210> 633

<211> 342

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3843c, H37Rv2.tab 4315571:4316596 reverse MW:37353

<400> 633

```
Val Ile Gln Val Cys Ser Gln Cys Gly Thr Gly Trp Asn Val Arg Glu
1               5                   10                  15

Arg Gln Arg Val Trp Cys Pro Arg Cys Arg Gly Met Leu Leu Ala Pro
            20                  25                  30

Leu Ala Asp Met Pro Ala Glu Ala Arg Trp Arg Thr Pro Ala Arg Pro
        35                  40                  45

Gln Val Pro Thr Ala Ser Asp Thr Arg Arg Thr Pro Pro Arg Leu Pro
```

50 55 60

Pro Gly Phe Arg Trp Ile Ala Val Arg Pro Gly Ala Ala Pro Pro Pro
65 70 75 80

Arg His Gly Pro Arg Leu Arg Gly Pro Thr Pro Arg Tyr Ala Gly Ile
85 90 95

Pro Arg Trp Gly Leu Thr Asp His Val Asp Gln Ala Pro Val Pro Ala
100 105 110

Ser Ala Lys Ala Gly Pro Ser Pro Ala Ala Val Arg Thr Thr Leu Leu
115 120 125

Val Ser Leu Leu Val Phe Ser Ile Ala Val Val Val Phe Val Val Arg
130 135 140

Tyr Val Leu Leu Val Ile Asn Arg Asn Thr Leu Leu Asn Ser Val Val
145 150 155 160

Ala Ser Ala Ser Val Trp Leu Gly Val Leu Val Ser Leu Ala Ala Ile
165 170 175

Ala Ala Ala Gly Thr Thr Ile Val Leu Leu Val Arg Trp Leu Val Ala
180 185 190

Arg Arg Ala Ala Ala Phe Met His Gln Gly Leu Pro Glu Arg Arg Ser
195 200 205

Ala Arg Glu Leu Trp Ala Gly Cys Leu Leu Pro Met Val Asn Leu Leu
210 215 220

Trp Ala Pro Leu Tyr Val Ile Glu Leu Ala Leu Val Glu Asp Arg Tyr
225 230 235 240

Thr Arg Leu Arg Arg Pro Ile Val Val Trp Trp Ile Val Trp Ile Val
245 250 255

Ser Asn Ala Ile Ser Met Phe Ala Phe Ala Thr Ser Trp Val Thr Asp
260 265 270

Ala Gln Gly Ile Ala Asn Asn Thr Thr Met Met Val Leu Ala Tyr Leu
275 280 285

Cys Ala Ala Ala Ala Val Ala Ala Ala Ala Arg Val Phe Glu Gly Phe
290 295 300

Glu Gln Lys Pro Val Glu Arg Pro Ala His Arg Trp Val Val Val Asn
305 310 315 320

Thr Asp Gly Arg Ser Ala Pro Ala Ser Ser Val Ala Val Glu Leu Asp
325 330 335

Gly Gln Glu Pro Ala Ala
340

<210> 634

<211> 177

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3847, H37Rv2.tab 4321538:4322068 forward MW:18278

<400> 634

Met Gly Thr Gly Ser Gly Gly Pro Ile Gly Val Ser Pro Phe His Ser
1 5 10 15

Arg Gly Ala Leu Lys Gly Phe Val Ile Ser Gly Arg Trp Pro Asp Ser
20 25 30

Thr Lys Glu Trp Ala Gln Leu Leu Met Val Ala Val Arg Val Ala Ser
35 40 45

Leu Pro Gly Leu Leu Ser Thr Thr Thr Val Phe Gly Ala Arg Glu Glu
50 55 60

Leu Pro Asp Glu Pro Glu Pro Gly Thr Val Gly Leu Val Leu Ala Glu
65 70 75 80

Gly Thr Val Phe Gly Glu Ser Ala Ile Gln Pro Gly Tyr Phe Ala Asp
85 90 95

His Gln Pro Pro Ala Leu Leu Met Leu His Pro Pro Ser Glu Thr Thr
100 105 110

Pro Ser Leu Pro Glu Cys Thr Gly Ala Ala Ser Gly Cys Val Leu Leu
115 120 125

Pro Gly Leu Pro Tyr Leu Gly Leu Glu His Arg Ala Ala Trp Val Glu
130 135 140

Ala Glu Ala Asp Gly Thr Ile Thr Ser Met Val Ser Arg Val Gly Val
145 150 155 160

Asp Pro Ile Ser His Pro Asp Thr Ala Ile Leu Ala Met Leu Leu Ala
165 170 175

Ala

<210> 635

<211> 132

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3849, H37Rv2.tab 4323499:4323894 forward MW:14708

<400> 635

Met Ser Thr Thr Phe Ala Ala Arg Leu Asn Arg Leu Phe Asp Thr Val
1 5 10 15

Tyr Pro Pro Gly Arg Gly Pro His Thr Ser Ala Glu Val Ile Ala Ala
20 25 30

Leu Lys Ala Glu Gly Ile Thr Met Ser Ala Pro Tyr Leu Ser Gln Leu
35 40 45

Arg Ser Gly Asn Arg Thr Asn Pro Ser Gly Ala Thr Met Ala Ala Leu
50 55 60

Ala Asn Phe Phe Arg Ile Lys Ala Ala Tyr Phe Thr Asp Asp Glu Tyr
65 70 75 80

Tyr Glu Lys Leu Asp Lys Glu Leu Gln Trp Leu Cys Thr Met Arg Asp
85 90 95

Asp Gly Val Arg Arg Ile Ala Gln Arg Ala His Gly Leu Pro Ser Ala
100 105 110

Ala Gln Gln Lys Val Leu Asp Arg Ile Asp Glu Leu Arg Arg Ala Glu
115 120 125

Gly Ile Asp Ala
130

<210> 636

<211> 218

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3850, H37Rv2.tab 4324015:4324668 forward MW:23811

<400> 636

Met Gly Leu Phe Gly Lys Arg Lys Ser Arg Ala Thr Arg Arg Ala Glu
1 5 10 15

Ala Arg Ala Ile Lys Ala Arg Ala Lys Leu Glu Ala Lys Leu Ser Ala
20 25 30

Lys Asn Glu Ala Arg Arg Ile Lys Ala Ala Gln Arg Ala Glu Ser Lys
35 40 45

Ala Leu Lys Ala Gln Leu Lys Ala Arg Arg Asp Ser Asp Arg Ala Ala
50 55 60

Leu Lys Val Ala Glu Ala Glu Leu Lys Val Ala Arg Glu Gly Lys Leu
65 70 75 80

Leu Ser Pro Thr Arg Ile Arg Arg Leu Leu Thr Val Ser Arg Leu Leu
85 90 95

Ala Pro Ile Leu Thr Pro Val Ile Tyr Arg Ala Ala Met Ala Ala Arg
100 105 110

Gly Leu Ile Asp Gln Arg Arg Ala Asp Gln Leu Gly Val Pro Leu Ala
115 120 125

Gln Ile Gly Arg Phe Ser Gly His Gly Ala Arg Leu Ser Ala Arg Val
130 135 140

Gly Gly Ala Glu Arg Ser Leu Arg Met Val Gln Glu Lys Lys Pro Lys
145 150 155 160

Asp Val Glu Thr Lys Gln Phe Val Ser Ala Val Thr Asn Arg Leu Thr
165 170 175

Asp Leu Ser Ala Ala Val Ala Ala Ala Glu His Met Pro Ala Lys Arg
180 185 190

Arg Arg Thr Ala His Ser Ala Ile Ser Ser Gln Leu Asp Gly Ile Glu
195 200 205

Ala Asp Leu Met Ala Arg Leu Gly Leu Thr
210 215

<210> 637

<211> 183

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3867, H37Rv2.tab 4342770:4343318 forward MW:19945

<400> 637

Met Val Asp Pro Pro Gly Asn Asp Asp Asp His Gly Asp Leu Asp Ala

1 5 10 15

Leu Asp Phe Ser Ala Ala His Thr Asn Glu Ala Ser Pro Leu Asp Ala
20 25 30

Leu Asp Asp Tyr Ala Pro Val Gln Thr Asp Asp Ala Glu Gly Asp Leu
35 40 45

Asp Ala Leu His Ala Leu Thr Glu Arg Asp Glu Glu Pro Glu Leu Glu
50 55 60

Leu Phe Thr Val Thr Asn Pro Gln Gly Ser Val Ser Val Ser Thr Leu
65 70 75 80

Met Asp Gly Arg Ile Gln His Val Glu Leu Thr Asp Lys Ala Thr Ser
85 90 95

Met Ser Glu Ala Gln Leu Ala Asp Glu Ile Phe Val Ile Ala Asp Leu
100 105 110

Ala Arg Gln Lys Ala Arg Ala Ser Gln Tyr Thr Phe Met Val Glu Asn
115 120 125

Ile Gly Glu Leu Thr Asp Glu Asp Ala Glu Gly Ser Ala Leu Leu Arg
130 135 140

Glu Phe Val Gly Met Thr Leu Asn Leu Pro Thr Pro Glu Glu Ala Ala
145 150 155 160

Ala Ala Glu Ala Glu Val Phe Ala Thr Arg Tyr Asp Val Asp Tyr Thr
165 170 175

Ser Arg Tyr Lys Ala Asp Asp
180

<210> 638

<211> 480

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3869, H37Rv2.tab 4345039:4346478 forward MW:51093

<400> 638

Met Gly Leu Arg Leu Thr Thr Lys Val Gln Val Ser Gly Trp Arg Phe
1 5 10 15

Leu Leu Arg Arg Leu Glu His Ala Ile Val Arg Arg Asp Thr Arg Met
20 25 30

```
Phe Asp Asp Pro Leu Gln Phe Tyr Ser Arg Ser Ile Ala Leu Gly Ile
        35                  40                  45

Val Val Ala Val Leu Ile Leu Ala Gly Ala Ala Leu Leu Ala Tyr Phe
    50                  55                  60

Lys Pro Gln Gly Lys Leu Gly Gly Thr Ser Leu Phe Thr Asp Arg Ala
65                  70                  75                  80

Thr Asn Gln Leu Tyr Val Leu Leu Ser Gly Gln Leu His Pro Val Tyr
                85                  90                  95

Asn Leu Thr Ser Ala Arg Leu Val Leu Gly Asn Pro Ala Asn Pro Ala
            100                 105                 110

Thr Val Lys Ser Ser Glu Leu Ser Lys Leu Pro Met Gly Gln Thr Val
        115                 120                 125

Gly Ile Pro Gly Ala Pro Tyr Ala Thr Pro Val Ser Ala Gly Ser Thr
    130                 135                 140

Ser Ile Trp Thr Leu Cys Asp Thr Val Ala Arg Ala Asp Ser Thr Ser
145                 150                 155                 160

Pro Val Val Gln Thr Ala Val Ile Ala Met Pro Leu Glu Ile Asp Ala
                165                 170                 175

Ser Ile Asp Pro Leu Gln Ser His Glu Ala Val Leu Val Ser Tyr Gln
            180                 185                 190

Gly Glu Thr Trp Ile Val Thr Thr Lys Gly Arg His Ala Ile Asp Leu
        195                 200                 205

Thr Asp Arg Ala Leu Thr Ser Ser Met Gly Ile Pro Val Thr Ala Arg
    210                 215                 220

Pro Thr Pro Ile Ser Glu Gly Met Phe Asn Ala Leu Pro Asp Met Gly
225                 230                 235                 240

Pro Trp Gln Leu Pro Pro Ile Pro Ala Ala Gly Ala Pro Asn Ser Leu
                245                 250                 255

Gly Leu Pro Asp Asp Leu Val Ile Gly Ser Val Phe Gln Ile His Thr
            260                 265                 270

Asp Lys Gly Pro Gln Tyr Tyr Val Val Leu Pro Asp Gly Ile Ala Gln
        275                 280                 285

Val Asn Ala Thr Thr Ala Ala Ala Leu Arg Ala Thr Gln Ala His Gly
    290                 295                 300

Leu Val Ala Pro Pro Ala Met Val Pro Ser Leu Val Val Arg Ile Ala
305                 310                 315                 320

Glu Arg Val Tyr Pro Ser Pro Leu Pro Asp Glu Pro Leu Lys Ile Val
                325                 330                 335

Ser Arg Pro Gln Asp Pro Ala Leu Cys Trp Ser Trp Gln Arg Ser Ala
            340                 345                 350

Gly Asp Gln Ser Pro Gln Ser Thr Val Leu Ser Gly Arg His Leu Pro
```

355 360 365

Ile Ser Pro Ser Ala Met Asn Met Gly Ile Lys Gln Ile His Gly Thr
370 375 380

Ala Thr Val Tyr Leu Asp Gly Gly Lys Phe Val Ala Leu Gln Ser Pro
385 390 395 400

Asp Pro Arg Tyr Thr Glu Ser Met Tyr Tyr Ile Asp Pro Gln Gly Val
405 410 415

Arg Tyr Gly Val Pro Asn Ala Glu Thr Ala Lys Ser Leu Gly Leu Ser
420 425 430

Ser Pro Gln Asn Ala Pro Trp Glu Ile Val Arg Leu Leu Val Asp Gly
435 440 445

Pro Val Leu Ser Lys Asp Ala Ala Leu Leu Glu His Asp Thr Leu Pro
450 455 460

Ala Asp Pro Ser Pro Arg Lys Val Pro Ala Gly Ala Ser Gly Ala Pro
465 470 475 480

<210> 639

<211> 100

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3874, H37Rv2.tab 4352274:4352573 forward MW:10793

<400> 639

Met Ala Glu Met Lys Thr Asp Ala Ala Thr Leu Ala Gln Glu Ala Gly
1 5 10 15

Asn Phe Glu Arg Ile Ser Gly Asp Leu Lys Thr Gln Ile Asp Gln Val
20 25 30

Glu Ser Thr Ala Gly Ser Leu Gln Gly Gln Trp Arg Gly Ala Ala Gly
35 40 45

Thr Ala Ala Gln Ala Ala Val Val Arg Phe Gln Glu Ala Ala Asn Lys
50 55 60

Gln Lys Gln Glu Leu Asp Glu Ile Ser Thr Asn Ile Arg Gln Ala Gly
65 70 75 80

Val Gln Tyr Ser Arg Ala Asp Glu Glu Gln Gln Ala Leu Ser Ser
85 90 95

Gln Met Gly Phe
100

<210> 640

<211> 666

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3876, H37Rv2.tab 4353010:4355007 forward MW:70645

<400> 640

Met Ala Ala Asp Tyr Asp Lys Leu Phe Arg Pro His Glu Gly Met Glu
1 5 10 15

Ala Pro Asp Asp Met Ala Ala Gln Pro Phe Phe Asp Pro Ser Ala Ser
20 25 30

Phe Pro Pro Ala Pro Ala Ser Ala Asn Leu Pro Lys Pro Asn Gly Gln
35 40 45

Thr Pro Pro Pro Thr Ser Asp Asp Leu Ser Glu Arg Phe Val Ser Ala
50 55 60

Pro Pro Pro Pro Pro Pro Pro Pro Pro Pro Pro Pro Pro Thr Pro Met
65 70 75 80

Pro Ile Ala Ala Gly Glu Pro Pro Ser Pro Glu Pro Ala Ala Ser Lys
85 90 95

Pro Pro Thr Pro Pro Met Pro Ile Ala Gly Pro Glu Pro Ala Pro Pro
100 105 110

Lys Pro Pro Thr Pro Pro Met Pro Ile Ala Gly Pro Glu Pro Ala Pro
115 120 125

Pro Lys Pro Pro Thr Pro Pro Met Pro Ile Ala Gly Pro Ala Pro Thr
130 135 140

Pro Thr Glu Ser Gln Leu Ala Pro Pro Arg Pro Pro Thr Pro Gln Thr
145 150 155 160

Pro Thr Gly Ala Pro Gln Gln Pro Glu Ser Pro Ala Pro His Val Pro
165 170 175

Ser His Gly Pro His Gln Pro Arg Arg Thr Ala Pro Ala Pro Pro Trp
180 185 190

Ala Lys Met Pro Ile Gly Glu Pro Pro Pro Ala Pro Ser Arg Pro Ser
195 200 205

```
Ala Ser Pro Ala Glu Pro Pro Thr Arg Pro Ala Pro Gln His Ser Arg
    210                 215                 220

Arg Ala Arg Arg Gly His Arg Tyr Arg Thr Asp Thr Glu Arg Asn Val
225                 230                 235                 240

Gly Lys Val Ala Thr Gly Pro Ser Ile Gln Ala Arg Leu Arg Ala Glu
                245                 250                 255

Glu Ala Ser Gly Ala Gln Leu Ala Pro Gly Thr Glu Pro Ser Pro Ala
            260                 265                 270

Pro Leu Gly Gln Pro Arg Ser Tyr Leu Ala Pro Pro Thr Arg Pro Ala
        275                 280                 285

Pro Thr Glu Pro Pro Pro Ser Pro Ser Pro Gln Arg Asn Ser Gly Arg
    290                 295                 300

Arg Ala Glu Arg Arg Val His Pro Asp Leu Ala Ala Gln His Ala Ala
305                 310                 315                 320

Ala Gln Pro Asp Ser Ile Thr Ala Ala Thr Thr Gly Gly Arg Arg Arg
                325                 330                 335

Lys Arg Ala Ala Pro Asp Leu Asp Ala Thr Gln Lys Ser Leu Arg Pro
            340                 345                 350

Ala Ala Lys Gly Pro Lys Val Lys Lys Val Lys Pro Gln Lys Pro Lys
        355                 360                 365

Ala Thr Lys Pro Pro Lys Val Val Ser Gln Arg Gly Trp Arg His Trp
    370                 375                 380

Val His Ala Leu Thr Arg Ile Asn Leu Gly Leu Ser Pro Asp Glu Lys
385                 390                 395                 400

Tyr Glu Leu Asp Leu His Ala Arg Val Arg Arg Asn Pro Arg Gly Ser
                405                 410                 415

Tyr Gln Ile Ala Val Val Gly Leu Lys Gly Gly Ala Gly Lys Thr Thr
            420                 425                 430

Leu Thr Ala Ala Leu Gly Ser Thr Leu Ala Gln Val Arg Ala Asp Arg
        435                 440                 445

Ile Leu Ala Leu Asp Ala Asp Pro Gly Ala Gly Asn Leu Ala Asp Arg
    450                 455                 460

Val Gly Arg Gln Ser Gly Ala Thr Ile Ala Asp Val Leu Ala Glu Lys
465                 470                 475                 480

Glu Leu Ser His Tyr Asn Asp Ile Arg Ala His Thr Ser Val Asn Ala
                485                 490                 495

Val Asn Leu Glu Val Leu Pro Ala Pro Glu Tyr Ser Ser Ala Gln Arg
            500                 505                 510

Ala Leu Ser Asp Ala Asp Trp His Phe Ile Ala Asp Pro Ala Ser Arg
        515                 520                 525
```

Phe Tyr Asn Leu Val Leu Ala Asp Cys Gly Ala Gly Phe Phe Asp Pro
530 535 540

Leu Thr Arg Gly Val Leu Ser Thr Val Ser Gly Val Val Val Val Ala
545 550 555 560

Ser Val Ser Ile Asp Gly Ala Gln Gln Ala Ser Val Ala Leu Asp Trp
565 570 575

Leu Arg Asn Asn Gly Tyr Gln Asp Leu Ala Ser Arg Ala Cys Val Val
580 585 590

Ile Asn His Ile Met Pro Gly Glu Pro Asn Val Ala Val Lys Asp Leu
595 600 605

Val Arg His Phe Glu Gln Gln Val Gln Pro Gly Arg Val Val Val Met
610 615 620

Pro Trp Asp Arg His Ile Ala Ala Gly Thr Glu Ile Ser Leu Asp Leu
625 630 635 640

Leu Asp Pro Ile Tyr Lys Arg Lys Val Leu Glu Leu Ala Ala Ala Leu
645 650 655

Ser Asp Asp Phe Glu Arg Ala Gly Arg Arg
660 665

<210> 641

<211> 511

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3877, H37Rv2.tab 4355007:4356539 forward MW:53981

<400> 641

Leu Ser Ala Pro Ala Val Ala Ala Gly Pro Thr Ala Ala Gly Ala Thr
1 5 10 15

Ala Ala Arg Pro Ala Thr Thr Arg Val Thr Ile Leu Thr Gly Arg Arg
20 25 30

Met Thr Asp Leu Val Leu Pro Ala Ala Val Pro Met Glu Thr Tyr Ile
35 40 45

Asp Asp Thr Val Ala Val Leu Ser Glu Val Leu Glu Asp Thr Pro Ala
50 55 60

Asp Val Leu Gly Gly Phe Asp Phe Thr Ala Gln Gly Val Trp Ala Phe
65 70 75 80

```
Ala Arg Pro Gly Ser Pro Pro Leu Lys Leu Asp Gln Ser Leu Asp Asp
                85                  90                  95

Ala Gly Val Val Asp Gly Ser Leu Leu Thr Leu Val Ser Val Ser Arg
            100                 105                 110

Thr Glu Arg Tyr Arg Pro Leu Val Glu Asp Val Ile Asp Ala Ile Ala
        115                 120                 125

Val Leu Asp Glu Ser Pro Glu Phe Asp Arg Thr Ala Leu Asn Arg Phe
    130                 135                 140

Val Gly Ala Ala Ile Pro Leu Leu Thr Ala Pro Val Ile Gly Met Ala
145                 150                 155                 160

Met Arg Ala Trp Trp Glu Thr Gly Arg Ser Leu Trp Trp Pro Leu Ala
                165                 170                 175

Ile Gly Ile Leu Gly Ile Ala Val Leu Val Gly Ser Phe Val Ala Asn
            180                 185                 190

Arg Phe Tyr Gln Ser Gly His Leu Ala Glu Cys Leu Leu Val Thr Thr
        195                 200                 205

Tyr Leu Leu Ile Ala Thr Ala Ala Ala Leu Ala Val Pro Leu Pro Arg
    210                 215                 220

Gly Val Asn Ser Leu Gly Ala Pro Gln Val Ala Gly Ala Ala Thr Ala
225                 230                 235                 240

Val Leu Phe Leu Thr Leu Met Thr Arg Gly Gly Pro Arg Lys Arg His
                245                 250                 255

Glu Leu Ala Ser Phe Ala Val Ile Thr Ala Ile Ala Val Ile Ala Ala
            260                 265                 270

Ala Ala Ala Phe Gly Tyr Gly Tyr Gln Asp Trp Val Pro Ala Gly Gly
        275                 280                 285

Ile Ala Phe Gly Leu Phe Ile Val Thr Asn Ala Ala Lys Leu Thr Val
    290                 295                 300

Ala Val Ala Arg Ile Ala Leu Pro Pro Ile Pro Val Pro Gly Glu Thr
305                 310                 315                 320

Val Asp Asn Glu Glu Leu Leu Asp Pro Val Ala Thr Pro Glu Ala Thr
                325                 330                 335

Ser Glu Glu Thr Pro Thr Trp Gln Ala Ile Ile Ala Ser Val Pro Ala
            340                 345                 350

Ser Ala Val Arg Leu Thr Glu Arg Ser Lys Leu Ala Lys Gln Leu Leu
        355                 360                 365

Ile Gly Tyr Val Thr Ser Gly Thr Leu Ile Leu Ala Ala Gly Ala Ile
    370                 375                 380

Ala Val Val Val Arg Gly His Phe Phe Val His Ser Leu Val Val Ala
385                 390                 395                 400
```

Gly Leu Ile Thr Thr Val Cys Gly Phe Arg Ser Arg Leu Tyr Ala Glu
405 410 415

Arg Trp Cys Ala Trp Ala Leu Leu Ala Ala Thr Val Ala Ile Pro Thr
420 425 430

Gly Leu Thr Ala Lys Leu Ile Ile Trp Tyr Pro His Tyr Ala Trp Leu
435 440 445

Leu Leu Ser Val Tyr Leu Thr Val Ala Leu Val Ala Leu Val Val Val
450 455 460

Gly Ser Met Ala His Val Arg Arg Val Ser Pro Val Val Lys Arg Thr
465 470 475 480

Leu Glu Leu Ile Asp Gly Ala Met Ile Ala Ala Ile Ile Pro Met Leu
485 490 495

Leu Trp Ile Thr Gly Val Tyr Asp Thr Val Arg Asn Ile Arg Phe
500 505 510

<210> 642

<211> 115

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3880c, H37Rv2.tab 4360202:4360546 reverse MW:12167

<400> 642

Val Ser Met Asp Glu Leu Asp Pro His Val Ala Arg Ala Leu Thr Leu
1 5 10 15

Ala Ala Arg Phe Gln Ser Ala Leu Asp Gly Thr Leu Asn Gln Met Asn
20 25 30

Asn Gly Ser Phe Arg Ala Thr Asp Glu Ala Glu Thr Val Glu Val Thr
35 40 45

Ile Asn Gly His Gln Trp Leu Thr Gly Leu Arg Ile Glu Asp Gly Leu
50 55 60

Leu Lys Lys Leu Gly Ala Glu Ala Val Ala Gln Arg Val Asn Glu Ala
65 70 75 80

Leu His Asn Ala Gln Ala Ala Ala Ser Ala Tyr Asn Asp Ala Ala Gly
85 90 95

Glu Gln Leu Thr Ala Ala Leu Ser Ala Met Ser Arg Ala Met Asn Glu
100 105 110

Gly Met Ala
115

<210> 643

<211> 462

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3882c, H37Rv2.tab 4362035:4363420 reverse MW:50397

<400> 643

Met Arg Asn Pro Leu Gly Leu Arg Phe Ser Thr Gly His Ala Leu Leu
1 5 10 15

Ala Ser Ala Leu Ala Pro Pro Cys Ile Ile Ala Phe Leu Glu Thr Arg
20 25 30

Tyr Trp Trp Ala Gly Ile Ala Leu Ala Ser Leu Gly Val Ile Val Ala
35 40 45

Thr Val Thr Phe Tyr Gly Arg Arg Ile Thr Gly Trp Val Ala Ala Val
50 55 60

Tyr Ala Trp Leu Arg Arg Arg Arg Arg Pro Pro Asp Ser Ser Ser Glu
65 70 75 80

Pro Val Val Gly Ala Thr Val Lys Pro Gly Asp His Val Ala Val Arg
85 90 95

Trp Gln Gly Glu Phe Leu Val Ala Val Ile Glu Leu Ile Pro Arg Pro
100 105 110

Phe Thr Pro Thr Val Ile Val Asp Gly Gln Ala His Thr Asp Asp Met
115 120 125

Leu Asp Thr Gly Leu Val Glu Glu Leu Leu Ser Val His Cys Pro Asp
130 135 140

Leu Glu Ala Asp Ile Val Ser Ala Gly Tyr Arg Val Gly Asn Thr Ala
145 150 155 160

Ala Pro Asp Val Val Ser Leu Tyr Gln Gln Val Ile Gly Thr Asp Pro
165 170 175

Ala Pro Ala Asn Arg Arg Thr Trp Ile Val Leu Arg Ala Asp Pro Glu
180 185 190

Arg Thr Arg Lys Ser Ala Gln Arg Arg Asp Glu Gly Val Ala Gly Leu

195 200 205

Ala Arg Tyr Leu Val Ala Ser Ala Thr Arg Ile Ala Asp Arg Leu Ala
210 215 220

Ser His Gly Val Asp Ala Val Cys Gly Arg Ser Phe Asp Asp Tyr Asp
225 230 235 240

His Ala Thr Asp Ile Gly Phe Val Arg Glu Lys Trp Ser Met Ile Lys
245 250 255

Gly Arg Asp Ala Tyr Thr Ala Ala Tyr Ala Ala Pro Gly Gly Pro Asp
260 265 270

Val Trp Trp Ser Ala Arg Ala Asp His Thr Ile Thr Arg Val Arg Val
275 280 285

Ala Pro Gly Met Ala Pro Gln Ser Thr Val Leu Leu Thr Thr Ala Asp
290 295 300

Lys Pro Lys Thr Pro Arg Gly Phe Ala Arg Leu Phe Gly Gly Gln Arg
305 310 315 320

Pro Ala Leu Gln Gly Gln His Leu Val Ala Asn Arg His Cys Gln Leu
325 330 335

Pro Ile Gly Ser Ala Gly Val Leu Val Gly Glu Thr Val Asn Arg Cys
340 345 350

Pro Val Tyr Met Pro Phe Asp Asp Val Asp Ile Ala Leu Asn Leu Gly
355 360 365

Asp Ala Gln Thr Phe Thr Gln Phe Val Val Arg Ala Ala Ala Ala Gly
370 375 380

Ala Met Val Thr Val Gly Pro Gln Phe Glu Glu Phe Ala Arg Leu Ile
385 390 395 400

Gly Ala His Ile Gly Gln Glu Val Lys Val Ala Trp Pro Asn Ala Thr
405 410 415

Thr Tyr Leu Gly Pro His Pro Gly Ile Asp Arg Val Ile Leu Arg His
420 425 430

Asn Val Ile Gly Thr Pro Arg His Arg Gln Leu Pro Ile Arg Arg Val
435 440 445

Ser Pro Pro Glu Glu Ser Arg Tyr Gln Met Ala Leu Pro Lys
450 455 460

<210> 644

<211> 802

<212> PRT

<213> Mycobacterium tuberculosis and Mycobacterium leprae

<220>

<223> BL;Rv3909, H37Rv2.tab 4394192:4396597 forward MW:83878

<400> 644

Val Thr Ala Leu Gln Leu Gly Trp Ala Ala Leu Ala Arg Val Thr Ser
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Ala Ile Gly Val Val Ala Gly Leu Gly Met Ala Leu Thr Val Pro Ser
20 25 30

Ala Ala Pro His Ala Leu Ala Gly Glu Pro Ser Pro Thr Pro Phe Val
35 40 45

Gln Val Arg Ile Asp Gln Val Thr Pro Asp Val Val Thr Thr Ser Ser
50 55 60

Glu Pro His Val Thr Val Ser Gly Thr Val Thr Asn Thr Gly Asp Arg
65 70 75 80

Pro Val Arg Asp Val Met Val Arg Leu Glu His Ala Ala Ala Val Thr
85 90 95

Ser Ser Thr Ala Leu Arg Thr Ser Leu Asp Gly Gly Thr Asp Gln Tyr
100 105 110

Gln Pro Ala Ala Asp Phe Leu Thr Val Ala Pro Glu Leu Asp Arg Gly
115 120 125

Gln Glu Ala Gly Phe Thr Leu Ser Ala Pro Leu Arg Ser Leu Thr Arg
130 135 140

Pro Ser Leu Ala Val Asn Gln Pro Gly Ile Tyr Pro Val Leu Val Asn
145 150 155 160

Val Asn Gly Thr Pro Asp Tyr Gly Ala Pro Ala Arg Leu Asp Asn Ala
165 170 175

Arg Phe Leu Leu Pro Val Val Gly Val Pro Pro Asp Gln Ala Thr Asp
180 185 190

Phe Gly Ser Ala Val Ala Pro Glu Thr Thr Ala Pro Val Trp Ile Thr
195 200 205

Met Leu Trp Pro Leu Ala Asp Arg Pro Arg Leu Ala Pro Gly Ala Pro
210 215 220

Gly Gly Thr Val Pro Val Arg Leu Val Asp Asp Asp Leu Ala Asn Ser
225 230 235 240

Leu Ala Asn Gly Gly Arg Leu Asp Ile Leu Leu Ser Ala Ala Glu Phe
245 250 255

Ala Thr Asn Arg Glu Val Asp Pro Asp Gly Ala Val Gly Arg Ala Leu
260 265 270

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Cys Leu Ala Ile Asp Pro Asp Leu Leu Ile Thr Val Asn Ala Met Thr
        275                 280                 285

Gly Gly Tyr Val Val Ser Asp Ser Pro Asp Gly Ala Ala Gln Leu Pro
    290                 295                 300

Gly Thr Pro Thr His Pro Gly Thr Gly Gln Ala Ala Ala Ser Ser Trp
305                 310                 315                 320

Leu Asp Arg Leu Arg Thr Leu Val His Arg Thr Cys Val Thr Pro Leu
                325                 330                 335

Pro Phe Ala Gln Ala Asp Leu Asp Ala Leu Gln Arg Val Asn Asp Pro
            340                 345                 350

Arg Leu Ser Ala Ile Ala Thr Ile Ser Pro Ala Asp Ile Val Asp Arg
        355                 360                 365

Ile Leu Asp Val Ser Ser Thr Arg Gly Ala Thr Val Leu Pro Asp Gly
    370                 375                 380

Pro Leu Thr Gly Arg Ala Ile Asn Leu Leu Ser Thr His Gly Asn Thr
385                 390                 395                 400

Val Ala Val Ala Ala Ala Asp Phe Ser Pro Glu Glu Gln Gln Gly Ser
                405                 410                 415

Ser Gln Ile Gly Ser Ala Leu Leu Pro Ala Thr Ala Pro Arg Arg Leu
            420                 425                 430

Ser Pro Arg Val Val Ala Ala Pro Phe Asp Pro Ala Val Gly Ala Ala
        435                 440                 445

Leu Ala Ala Ala Gly Thr Asn Pro Thr Val Pro Thr Tyr Leu Asp Pro
    450                 455                 460

Ser Leu Phe Val Arg Ile Ala His Glu Ser Ile Thr Ala Arg Arg Gln
465                 470                 475                 480

Asp Ala Leu Gly Ala Met Leu Trp Arg Ser Leu Glu Pro Asn Ala Ala
                485                 490                 495

Pro Arg Thr Gln Ile Leu Val Pro Pro Ala Ser Trp Ser Leu Ala Ser
            500                 505                 510

Asp Asp Ala Gln Val Ile Leu Thr Ala Leu Ala Thr Ala Ile Arg Ser
        515                 520                 525

Gly Leu Ala Val Pro Arg Pro Leu Pro Ala Val Ile Ala Asp Ala Ala
    530                 535                 540

Ala Arg Thr Glu Pro Pro Glu Pro Pro Gly Ala Tyr Ser Ala Ala Arg
545                 550                 555                 560

Gly Arg Phe Asn Asp Asp Ile Thr Thr Gln Ile Gly Gly Gln Val Ala
                565                 570                 575

Arg Leu Trp Lys Leu Thr Ser Ala Leu Thr Ile Asp Asp Arg Thr Gly
            580                 585                 590

Leu Thr Gly Val Gln Tyr Thr Ala Pro Leu Arg Glu Asp Met Leu Arg
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595 600 605

Ala Leu Ser Gln Ser Leu Pro Pro Asp Thr Arg Asn Gly Leu Ala Gln
610 615 620

Gln Arg Leu Ala Val Val Gly Lys Thr Ile Asp Asp Leu Phe Gly Ala
625 630 635 640

Val Thr Ile Val Asn Pro Gly Gly Ser Tyr Thr Leu Ala Thr Glu His
645 650 655

Ser Pro Leu Pro Leu Ala Leu His Asn Gly Leu Ala Val Pro Ile Arg
660 665 670

Val Arg Leu Gln Val Asp Ala Pro Pro Gly Met Thr Val Ala Asp Val
675 680 685

Gly Gln Ile Glu Leu Pro Pro Gly Tyr Leu Pro Leu Arg Val Pro Ile
690 695 700

Glu Val Asn Phe Thr Gln Arg Val Ala Val Asp Val Ser Leu Arg Thr
705 710 715 720

Pro Asp Gly Val Ala Leu Gly Glu Pro Val Arg Leu Ser Val His Ser
725 730 735

Asn Ala Tyr Gly Lys Val Leu Phe Ala Ile Thr Leu Ser Ala Ala Ala
740 745 750

Val Leu Val Thr Leu Ala Gly Arg Arg Leu Trp His Arg Phe Arg Gly
755 760 765

Gln Pro Asp Arg Ala Asp Leu Asp Arg Pro Asp Leu Pro Thr Gly Lys
770 775 780

His Ala Pro Gln Arg Arg Ala Val Ala Ser Arg Asp Asp Glu Lys His
785 790 795 800

Arg Val