

VBLT_P0246W0-SeqListing
SEQUENCE LISTING

<110> Vanderbilt University

<120> ANTIBODY-MEDIATED NEUTRALIZATION OF CHIKUNGUNYA VIRUS

<130> VBLT.P0246W0

<150> US 62/147,354

<151> 2015-04-14

<160> 276

<170> PatentIn version 3.5

<210> 1

<211> 423

<212> PRT

<213> Chikungunya virus

<400> 1

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Thr	Lys	Leu	Arg	Tyr	Met	Asp	Asn	His	Ile	Pro	Ala	Asp	Ala	Gly	Arg
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Ala	Gly	Leu	Phe	Val	Arg	Thr	Ser	Ala	Pro	Cys	Thr	Ile	Thr	Gly	Thr
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Phe His His Asp Pro Pro Val Ile Gly Arg Glu Lys Phe His Ser Arg
130 135 140

Pro Gln His Gly Lys Glu Leu Pro Cys Ser Thr Tyr Val Gln Ser Asn
145 150 155 160

Ala Ala Thr Ala Glu Glu Ile Glu Val His Met Pro Pro Asp Thr Pro
165 170 175

Asp Arg Thr Leu Leu Ser Gln Gln Ser Gly Asn Val Lys Ile Thr Val
180 185 190

Asn Ser Gln Thr Val Arg Tyr Lys Cys Asn Cys Gly Gly Ser Asn Glu
195 200 205

Gly Leu Ile Thr Thr Asp Lys Val Ile Asn Asn Cys Lys Val Asp Gln
210 215 220

Cys His Ala Ala Val Thr Asn His Lys Lys Trp Gln Tyr Asn Ser Pro
225 230 235 240

Leu Val Pro Arg Asn Ala Glu Leu Gly Asp Arg Lys Gly Lys Ile His
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Ile Pro Phe Pro Leu Ala Asn Val Thr Cys Met Val Pro Lys Ala Arg
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Asn Pro Thr Val Thr Tyr Gly Lys Asn Gln Val Ile Met Leu Leu Tyr
275 280 285

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Val Pro Thr Glu Gly Leu Glu Val Thr Trp Gly Asn Asn Glu Pro Tyr
325 330 335

Lys Tyr Trp Pro Gln Leu Ser Ala Asn Gly Thr Ala His Gly His Pro
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His Glu Ile Ile Leu Tyr Tyr Tyr Glu Leu Tyr Pro Thr Met Thr Val
355 360 365

Val Val Val Ser Val Ala Ser Phe Ile Leu Leu Ser Met Val Gly Met
370 375 380

Ala Val Gly Met Cys Met Cys Ala Arg Arg Arg Cys Ile Thr Pro Tyr
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VBLT_P0246W0-SeqListing

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atggagctga gcagcctgag ttctgaggac acggccgtgt attattgtgc aacaggaggc	300
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<212> DNA

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<223> Synthetic oligonucleotide

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 atggagctga gcagcctgag atctgacgac acggccgtct attactgtgc gaggggcgcc 300
 cagctatatt acaatgatgg tagtggttac atttttgact actggggcca gggagccctg 360
 gtc 363

<210> 29
 <211> 390
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic oligonucleotide

<400> 29
 cagggtgcagc tgggtgcagtc tgggcctgag gtgaagaagc ctgggacctc agtgaaggtc 60
 tcctgcaagg cttctggatt cagctttatt agctctgctg tgcagtgggt gcgacaggct 120
 cgtggacaac gccttgagtg gataggatgg atcgtcgttg ccagtgctaa cacaaactac 180
 gcacagaagt tccgggaaag agtcaccatt actagggaca tgtccacaaa cacagcctat 240
 atggaaactga ccagcctgag atccgaggac acggccgttt attactgtgc ggagagcac 300
 cggtccccctt gtagtggtgg tgatagctgc tacagtctct actacggtat ggacgtctgg 360
 ggccaaggga ccctggtcac cgtctcctca 390

VBLT_P0246W0-SeqListing

<210> 30
 <211> 354
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic oligonucleotide

<400> 30
 cagggtgcagc tgggtgcagtc tgggggaggc ttggttccgc ctgggggggtc cctgagactg 60
 tcctgtacag cctctggatt caccgttagt aactatggca tgagctgggt ccgccagact 120
 ccagggaagg ggctggagtg ggtctcaact attagtacta gtagtggttag aacattctac 180
 gcagactccg tggagggccg gttcaccatc tccggagaca attccaagaa cacgctgtat 240
 ctgcaaatac acagcctgag agtcgaagac acggccgtat attactgtgc gaaaggcccg 300
 ttcgggggag actttgacta ctggggccag ggaaccctgg tcaccgtctc ctca 354

<210> 31
 <211> 321
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic oligonucleotide

<400> 31
 caggctgtgg tgactcagtc tccagccacc ctgtctttgt ctccagggga aagagccacc 60
 ctctcctgca gggccagtca gagggttgcc atctacttag cctgggtatca acagaaacct 120
 ggccaggctc ccaggctcct catctatgat gcatccaaca gggccactgg catcccagcc 180
 aggttcagtg gcagtgggtc tgggacagac ttcactctca ccatcagcag cctagagcct 240
 gaagattttg cagtttatta ctgtcagcag cgtggcaact ggcagtacac ttttggccag 300
 gggaccaaac tggagatcaa a 321

<210> 32
 <211> 369

VBLT_P0246W0-SeqListing

<212> DNA

<213> Artificial sequence

<220>

<223> Synthetic oligonucleotide

<400> 32

caggtgcagc tgggtgcagtc tgggggaggc ctggtacagc ctggcaggtc cctgacactc	60
tcctgtgcag cctctggatt cacctttgat gtttatgccca tgcactgggt ccggcaagct	120
ccagggaagg gcttggagtg ggtcgcaggc attagttagga atagtggtag cgtaggctat	180
gcggactcta tgaagggccg attcaccatc tccagagaca acgccaagaa ctccctgtat	240
ctgcaaatta acagtctgag agctgaggac acggccttat attactgtgc aaaagcattc	300
tggttcgggg agttatcggg ttacgggtatg gacgtctggg gccaaaggac cctggtcacc	360
gtctcctca	369

<210> 33

<211> 330

<212> DNA

<213> Artificial sequence

<220>

<223> Synthetic oligonucleotide

<400> 33

caggctgtgg tgactcagcc tccctccgcg tccgggtttc ctggacagtc agtcaccatc	60
tcctgcactg gaaccagcag tgacgttggc agttataact atgtctcctg gtaccaacag	120
caccaggca aagccccaa actcataatt tatgcggtca ctaggcggcc ctcaggggtc	180
cctgagcgct tctctggctc caagtctggc aacacggcct ccctgaccgt ctctgggctc	240
caggctgagg atgaggctga ttattactgc acctcatatg caggcaacaa caaggatgtc	300
ttcggaactg ggaccaaggt caccgtccta	330

<210> 34

<211> 357

<212> DNA

<213> Artificial sequence

VBLT_P0246W0-SeqListing

<220>

<223> Synthetic oligonucleotide

<400> 34

caggtgcagc tgggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc	60
tcctgcaagg cttctgggta cagctttaac atctatggta tcagctgggt gcgacaggcc	120
cctggacaag ggcttgagtg gatgggatgg atcagcgctt acaatggtaa cacaaactat	180
gcacagaaac tccagggcag agtcaccatg accacagaca catccacgag cacagcctac	240
atggaactga ggagcctgag atctgacgac acggccgtgt attactgtgc gagaccactt	300
tggggggaat ttactatga tatctggggc caagggaccc tggtcaccgt ctcctca	357

<210> 35

<211> 324

<212> DNA

<213> Artificial sequence

<220>

<223> Synthetic oligonucleotide

<400> 35

caggctgtgg tgactcagtc tccaggcacc ctgtccttgt ctccagggga aagagccacc	60
ctctcttgca gggccagtca gagtgttagc agcgggtact cagcctggta ccagcagaaa	120
cctggccagg ctcccaggct cctcatctat ggtgcatcca aaagggccgc tggcatccca	180
gacaggttca gtggcagtgg gtctgggaca gacttcactc tcaccatcag cagactggag	240
cctgaagatt ttgcagtgtg ttactgtcag ctgtttgcta cctcacctcc gcccttcggc	300
caagggacac gactggagat taaa	324

<210> 36

<211> 399

<212> DNA

<213> Artificial sequence

<220>

<223> Synthetic oligonucleotide

VBLT_P0246W0-SeqListing

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<400> 36
cagggtgcagc tgggtgcagtc tgggggaggc gtgggtccagc ctgggaggtc cctgagactc      60
tcctgtgcag cctctggatt caccttcagt aattatgtta tggagtgggt ccgccaggct      120
ccaggcaagg ggctggagtg ggtggcagtt atatcatatg atggaagcaa taaatactat      180
gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgttgtat      240
ctgcaaatga acagcctgag agctgaggac acggctgtgt attactgtgc gagatcagag      300
tgggagtctt cctatggttc ggggaattat tatacagatt acttctacta ctacgctatg      360
gacgtctggg gcccagggaac cctggtcacc gtctcctca                               399

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<210> 37
<211> 336
<212> DNA
<213> Artificial sequence

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```

<220>
<223> Synthetic oligonucleotide

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<400> 37
caggctgtgg tgactcagtc tccactctcc ctgcccgtca cccctggaga gccggcctcc      60
atctcctgca ggtctaataca gagcctcctg cgtgggtatta gatacaacta tttggattgg      120
tacctgcaga aaccaggga gctctccacag ctctgatct atttgggttc taatcgggcc      180
tccgggggtcc ctgacagggt cagtggcagtc ggatcagcca cagattttac actgaaaatc      240
agcagagtgg aggctgagga tggtgggggt tattactgca tgcaagctct acaaactcct      300
accaccttcg gccaaaggga acgactggag attaaa                               336

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<210> 38
<211> 387
<212> DNA
<213> Artificial sequence

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<220>
<223> Synthetic oligonucleotide

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```

<400> 38
cagggtgcagc tggaggagtc tggtcctacg ctggtgaaac ccacacagac cctcacgctg      60

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VBLT_P0246W0-SeqListing

acctgttcct tctctgggtt ctactcacc actactggag tgactgtggg ctggatccgt	120
cagccccag gaaaggcctt ggagtggctt gcactcattt attgggatga tgataagcgc	180
tacagcccat ctctgaagag caggctcacc atcaccaagg acacctcaa aaaccagggtg	240
gtccttacca tgaccaacat ggaccctgtg gacactgcca catattactg tgcgcactcc	300
accggctact atgatatag taggctatcga gggggcccttg atgcttttgc tgtctggggc	360
caagggaccc tggtcaccgt ctctca	387

<210> 39
 <211> 339
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic oligonucleotide

<400> 39 cagattgtgg tgactcagtt tccagactcc ccggctgtgt ctttgggcga gagggccacc	60
atcaactgca agtccagcca gagtgtttta taccactcca acaataaaaa ctacttagct	120
tggtaccagc agaaaccagg acagcctcct aacctgctca ttactgggc atctgcccga	180
caatccgggg tccctgaccg attcagtggc agcgggtctg ggacagattt cactctcacc	240
atcagcagcc tgcaggctga agatgtggca gtttattact gtcagcaata ttatagtact	300
ccgtacactt ttggccaggg gaccaagctg gagatcaaa	339

<210> 40
 <211> 381
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic oligonucleotide

<400> 40 cagggtgcagc tgggtgcagtc gggcccagga ctggatgaagc cttcggacac cctgtccctc	60
acctgcagtg tctcaagtga cgccctccgc agcaggagtt attactgggg ctgggtccgc	120

VBLT_P0246W0-SeqListing

cagccccccg ggaagggatt ggagtggatt gggactgtct cttatagtgg gggcacctac	180
tacaacccgt ccctccagag tcgagtcacc gtgtcgggtg acacgtccaa gaaccacttc	240
tccttgaggt tgaactctgt gaccgccgca gacgcggctg tttattactg tgcgagatct	300
tatttctatg atggcagtgg ttactactac ctgagctact ttgactcctg gggccaggga	360
accctgggtca ccgtctcctc a	381

<210> 41
 <211> 327
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic oligonucleotide

<400> 41 caggctgtgg tgactcagga gccctcactg actgtgtccc caggagggac agtcactctc	60
acctgtgctt ccagcactgg agcagtcacc agtggtcact atccaaactg gttccagcag	120
aaacctggac aaccacccag ggccctgatt tatagcacag acaacaagca ctccctggacc	180
cctgcccgggt tctcaggctc cctcctaggg gtcaaggctg ccctgacact gtcagatgta	240
cagcctgagg acgaggctga ctattactgc ctgctccatt ttgggtgggt cgtggctctc	300
ggcggagggga ccaagctgac cgtccta	327

<210> 42
 <211> 375
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic oligonucleotide

<400> 42 cagggtgcagc tgggtgcagtc tgggggaggc gtgggtccagc ctgggaggtc cctgagactc	60
tcctgttcaa cgtctggatt caccttcagg atgtatggca tgactgggt cgcaggct	120
ccaggcaagg ggctggagtg ggtggccgtt atttttaacg atggagttaa gaaatattat	180

VBLT_P0246W0-SeqListing

ggagacgccg tgaagggccg attcaccgtc tccagagaca attccaggaa caccctgtat	240
ctggaaatga aaagcctgag agtcgacgac acggctgcct actactgtgc gagagacggg	300
attcctgacc ccgaacgcgg tgactacggg ggcttggact actggggcca gggaaccctg	360
gtcaccgtct cctca	375

<210> 43
 <211> 322
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic oligonucleotide

<400> 43 cagactgtgg tgactcagtc tccatcctcc ctgtctgcat ctgtaggaga cacagtcacc	60
atcacttgcc gggcaagtca gagcattacc agttatttaa actggtatca gcagaaacca	120
ggaaaagccc caaagctcct catctatgct acatccagtt tgcaaagtgg gctccccctca	180
aggttcagtg gcagtggcta tgggacagaa ttcactctca ccatcagtg tctgcaacct	240
gaagattttg caacatacta ctgtcaacag agttacagtt ttcctcgaac gttcggccaa	300
gggaccaagg tggaaatgga ta	322

<210> 44
 <211> 372
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic oligonucleotide

<400> 44 caggtgcagc tgggtgcagtc tgggggaggc ttggtacagc ctggcaggtc cctgagactc	60
tcctgtgcaa cctctggatt catctttgat gattatgcca tgtactgggt ccggcaagct	120
ccagggaagg gcctggagtg ggtctcaggt attagttgga atagtggaaa catagcctat	180
gcggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctccctgtat	240

VBLT_P0246W0-SeqListing

ttggaaatga acagtctgag agctgaggac acggccttgt attactgtgt aaaagatctt	300
tacgggtacg atatTTTTgac tggtaatgga tatgattact ggggccaggg aaccctggtc	360
accgtctcct ca	372

<210> 45
 <211> 337
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic oligonucleotide

<400> 45	
caggctgtgg tgactcagtc ttcactctcc ctgcccgtca cccctggaga gccggcctcc	60
atctcctgca ggtctagtca gagcctcctg caaagtaatg gatacaacta tttggattgg	120
tacctgcaga agccaggga gtctccacag ctctgatct atttgggttc taatcgggcc	180
tccgggggtcc ctgacagggt cagtggcagt ggatcaggca cagattttac actgaaaatc	240
agcagagtgg aggctgagga tgttgggggt tattactgca tgcaagctct acaaactcct	300
ccgacgttcg gccaaaggga caaggtggaa atcaaaa	337

<210> 46
 <211> 390
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic oligonucleotide

<400> 46	
cagggtgcagc tgggtgcagtc tggggctgag gtgaagaagc ctgggtcctc ggtgaaggtc	60
ccctgcaagg cttctggaga caccctcagt tactacggaa tcacttgggt gcgacgggcc	120
cctggacaag ggcttgagt gatgggacag atcatccctt tctttgctac aacaatctcc	180
gcacagaagt tccagggcag actcaccatg accgcggaag aatccacgag cactggctac	240
atggagcgca cattttacat ggacttgagt agccttagac ctgaggacac ggccgtatac	300

VBLT_P0246W0-SeqListing

tactgtgcgg ggggctacta tggttcgggg agttcgggcg actacggttt ggacgtctgg	360
ggccaaggga ccctgggtcac cgtctcctca	390

<210> 47
 <211> 336
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic oligonucleotide

<400> 47	
caggctgtgg tgactcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc	60
tcctgcactg ggagcagctc caacatcggg gcaggttatg atgtaaactg gtaccagcag	120
cttccaggaa cagcccccaa actcctcatc tatggtaaca acaatcggcc ctcaggggctc	180
cctgaccgat tctctggctc caagtctggc acctcagcct ccctggccat cactgggctc	240
caggctgagg atgaggctga ttattactgc cagtcctatg acagcagcct gagtgggttcg	300
ggagtcttcg gaactgggac cgaggtcacc gtccta	336

<210> 48
 <211> 384
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic oligonucleotide

<400> 48	
cagggtgcagc tgggtgcagtc gggcccagga ctgggtgaagc cttcggagac cctgtccctg	60
acgtgcgctg tttctgggtga ctccatcggc agtagaagtt tctactgggg ctggatccgc	120
cagccccag ggaaggggct ggagtggatt ggaagtatct attataatgg gaccacctac	180
tacaagccgt ccctcaagag tcgagtcacc atatccctag acacgtccaa gaaccagttc	240
tccctgaggc tgagctctct gaccgccaca gacacgggtg tctattactg tgcgcgggcg	300
ccaacctact gtagtccttc cagctgcgca gttcactggg acttcaatct ctggggccgt	360

VBLT_P0246W0-SeqListing

ggcaccctgg tcaccgtctc ctca 384

<210> 49
<211> 354
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic oligonucleotide

<400> 49
cagggtgcagc tgggtgcagtc tggagctgag ctgaagaagc ctggggcctc agtgaaggctc 60
tcctgcaagg cttctgggta catatttacc aaatatggta tcagttggct gcgacaggcc 120
cctggacaag ggcttgagtg ggtgggatgg atcagcgcctt acaatgaaaa cacaaactat 180
gcagagaagt tccagggcag agtcaccttg accacagatg catccacgag cacggcctac 240
atggagctga ggaacctgag atctgacgac acggccgtat acttctgtgc gagagaagtc 300
tggttcgcgg agtatattta ctggggccag ggaaccctgg tcaccgtctc ctca 354

<210> 50
<211> 300
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic oligonucleotide

<400> 50
caggctgtgg tgactcagga gccctcactg actgtgtccc caggagggac agtcactctc 60
acctgttctg ccaacagtgg agcagtcacc agtgattact atccaaactg gttccagcag 120
aaacctggac aagcaccagc ggcaactgatt tatagtcaa gcaacaaatt ctcctggacg 180
cctgcccggg tctcaggctc cctccttggg ggcaaagctg ccctgacact gtcaggtgcg 240
cagcctgagg acgaggctga gtattactgc ctggtctact ctggtgatgg tgtggttttc 300

<210> 51
<211> 331

VBLT_P0246W0-SeqListing

<212> DNA

<213> Artificial sequence

<220>

<223> Synthetic oligonucleotide

<400> 51

cagtctgtgg tgactcagcc tgcctccgtg tctgggtctc ctggacagtc gatcaccatc	60
tcctgcactg gaaccagcag tgacgttggg gcttataact atgtctcctg gtaccaacaa	120
cacccaggca aagcccccaa actcgtgatt tatgatgtcg ctaatcggcc ctcagggatt	180
tctgaccgct tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc	240
caggctgagg acgaggctga ttattactgc ggctcatata ccagcgacgt ctcgccggtt	300
ttcagcgggg ggaccaagct gaccgtcctc a	331

<210> 52

<211> 399

<212> DNA

<213> Artificial sequence

<220>

<223> Synthetic oligonucleotide

<400> 52

caggtgcagc tgggtgcagtc tgggtctgag ttgaagaagc ctggggcctc agtgaagctt	60
tcctgcaagg cttctggata caccttcaca agtcatccta tgaattgggt gcgacaggcc	120
cctggacaag ggcttgagtg gatgggatgg atcaacacca agactgggaa cctaacttat	180
gcccagggtc tcacaggacg gtttgtcttc tccttggaca cctctgtcag gacggcgtat	240
ctgcagatca gcggcctaaa ggctgaggac actgccattt attactgtgc gagagatgag	300
tatagtggct acgattcggg aggggtgttc cgtgggttctt ttgacgactt ctacggtatg	360
gacgtctggg gccaaaggac cctggtcacc gtctcctca	399

<210> 53

<211> 126

<212> PRT

<213> Artificial sequence

VBLT_P0246W0-SeqListing

<220>

<223> Synthetic peptide

<400> 53

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Ser Tyr
20 25 30

Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Trp Ile Ser Thr Tyr Lys Gly Tyr Thr Gln Tyr Ala Gln Asn Phe
50 55 60

Gln Gly Arg Val Thr Ile Thr Thr Asp Thr Pro Ala Thr Thr Val Tyr
65 70 75 80

Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

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

Met Asp Val Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120 125

<210> 54

<211> 111

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 54

VBLT_P0246W0-SeqListing

Gln Ala Val Val Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
1 5 10 15

Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Ala Asp
20 25 30

Tyr Asn Val His Trp Tyr Gln Leu Leu Pro Gly Thr Ala Pro Lys Leu
35 40 45

Leu Ile Tyr Gly Asn Thr Asn Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser
85 90 95

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

<210> 55

<211> 119

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 55

Gln Val Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Ser Tyr
20 25 30

Ser Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Pro Glu Trp Met
35 40 45

VBLT_P0246W0-SeqListing

Gly Trp Ile Asp Thr Asn Thr Gly Asn Pro Thr Tyr Ala Gln Asp Phe
50 55 60

Ala Gly Arg Phe Val Phe Ser Leu Asp Thr Ser Val Thr Thr Ala Tyr
65 70 75 80

Leu Gln Ile Ser Ser Leu Lys Ala Gly Asp Thr Ala Val Tyr Tyr Cys
85 90 95

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

Gly Met Asp Val Trp Gly His
115

<210> 56
<211> 111
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 56

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

Arg Val Thr Ile Ser Cys Ser Gly Gly Ser Ser Asn Ile Gly Ser Asn
20 25 30

Pro Val Asn Trp Tyr Gln Met Val Pro Gly Thr Ala Pro Lys Leu Leu
35 40 45

Leu Tyr Thr Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
50 55 60

VBLT_P0246W0-SeqListing

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Asn Gly Leu Gln
65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Val Trp Asp Asp Ser Leu
85 90 95

Ser Gly Arg Trp Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu
100 105 110

<210> 57

<211> 137

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 57

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Arg Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Trp Ile Ser Thr Tyr Asn Gly Asp Thr Asn Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Leu Thr Thr Glu Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80

Met Glu Leu Arg Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asp Phe Glu Phe Pro Gly Asp Cys Ser Gly Gly Ser Cys Tyr
100 105 110

VBLT_P0246W0-SeqListing

Ser Arg Phe Ile Tyr Gln His Asn Asp Met Asp Val Trp Gly His Gly
115 120 125

Thr Leu Val Thr Val Ser Ser Ala Ser
130 135

<210> 58
<211> 110
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 58

Gln Ala Val Val Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln
1 5 10 15

Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn His
20 25 30

Tyr Val Ser Trp Tyr Gln His Leu Pro Gly Thr Ala Pro Lys Leu Leu
35 40 45

Ile Tyr Asp Asn Tyr Lys Arg Pro Ser Val Ile Pro Asp Arg Phe Ser
50 55 60

Ala Ser Lys Ser Gly Ala Ser Ala Thr Leu Gly Ile Ile Gly Leu Gln
65 70 75 80

Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu
85 90 95

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

VBLT_P0246W0-SeqListing

<210> 59
 <211> 127
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic peptide

<400> 59

Gln Val Gln Leu Val Gln Ser Gly Pro Gly Leu Val Lys Pro Ser Asp
 1 5 10 15

Thr Leu Ser Leu Thr Cys Ser Val Ser Ser Asp Ala Leu Arg Ser Arg
 20 25 30

Ser Tyr Tyr Trp Gly Trp Val Arg Gln Pro Pro Gly Lys Gly Leu Glu
 35 40 45

Trp Ile Gly Thr Val Ser Tyr Ser Gly Gly Thr Tyr Tyr Asn Pro Ser
 50 55 60

Leu Gln Ser Arg Val Thr Val Ser Val Asp Thr Ser Lys Asn His Phe
 65 70 75 80

Ser Leu Arg Leu Asn Ser Val Thr Ala Ala Asp Ala Ala Val Tyr Tyr
 85 90 95

Cys Ala Arg Ser Tyr Phe Tyr Asp Gly Ser Gly Tyr Tyr Tyr Leu Ser
 100 105 110

Tyr Phe Asp Ser Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120 125

<210> 60
 <211> 109
 <212> PRT
 <213> Artificial sequence

<220>

VBLT_P0246W0-SeqListing

<223> Synthetic peptide

<400> 60

Gln Ala Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly
1 5 10 15

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

His Tyr Pro Asn Trp Phe Gln Gln Lys Pro Gly Gln Pro Pro Arg Ala
35 40 45

Leu Ile Tyr Ser Thr Asp Asn Lys His Ser Trp Thr Pro Ala Arg Phe
50 55 60

Ser Gly Ser Leu Leu Gly Val Lys Ala Ala Leu Thr Leu Ser Asp Val
65 70 75 80

Gln Pro Glu Asp Glu Ala Asp Tyr Tyr Cys Leu Leu His Phe Gly Gly
85 90 95

Val Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 61

<211> 116

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 61

Gln Val Gln Leu Val Gln Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Val Ser Gly Phe Thr Phe Ser Asn Tyr
20 25 30

VBLT_P0246W0-SeqListing

Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Asp Trp Val
35 40 45

Ala Val Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Val Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Gly Asp Tyr Val Leu Asp Tyr Trp Gly Gln Gly Thr Leu Val
100 105 110

Thr Val Ser Ser
115

<210> 62
<211> 108
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 62

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

Asp Arg Val Thr Ile Ser Cys Arg Ala Ser Gln Ser Ile Pro Ser Tyr
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Val Leu Ile
35 40 45

VBLT_P0246W0-SeqListing

Tyr Ala Thr Ser Thr Leu Glu Ala Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Thr Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Asn Thr Gly Ile
85 90 95

Phe Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 63

<211> 126

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 63

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr Ser Ser Thr Tyr
20 25 30

Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Gly Ser Ile Pro Val Phe Ala Thr Val Asn Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Leu Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Val Tyr
65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Phe Cys
85 90 95

VBLT_P0246W0-SeqListing

Ala Ser Pro Tyr Cys Ser Ser Met Asn Cys Tyr Thr Thr Phe Tyr Tyr
100 105 110

Phe Asp Phe Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120 125

<210> 64
<211> 109
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 64

Gln Ala Val Val Thr Gln Pro Ala Ser Val Phe Gly Phe Pro Gly Gln
1 5 10 15

Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Phe Gly Thr Tyr
20 25 30

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Gly Gln Ala Pro Lys Leu
35 40 45

Met Ile Phe Asp Val Ser Asn Arg Pro Ser Gly Val Ser Asn Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Ser Tyr Tyr Cys Ser Ser Tyr Thr Ser Gly
85 90 95

Ser Thr Leu Tyr Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

VBLT_P0246W0-SeqListing

<210> 65
 <211> 127
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic peptide

<400> 65

Gln Val Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Ser Tyr
 20 25 30

Ser Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Pro Glu Trp Met
 35 40 45

Gly Trp Ile Asp Thr Asn Thr Gly Asn Pro Thr Tyr Ala Gln Asp Phe
 50 55 60

Ala Gly Arg Phe Val Phe Ser Leu Asp Thr Ser Val Thr Thr Ala Tyr
 65 70 75 80

Leu Gln Ile Ser Ser Leu Lys Ala Gly Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

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

Gly Met Asp Val Trp Gly His Gly Thr Leu Val Thr Val Ser Ser
 115 120 125

<210> 66
 <211> 111
 <212> PRT
 <213> Artificial sequence

<220>

VBLT_P0246W0-SeqListing

<223> Synthetic peptide

<400> 66

Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Gly Thr Pro Gly Gln
1 5 10 15

Gly Val Thr Ile Ser Cys Ser Gly Gly Ser Ser Asn Ile Gly Ser Asn
20 25 30

Pro Val Asn Trp Tyr Gln Met Val Pro Gly Thr Ala Pro Lys Leu Leu
35 40 45

Leu Tyr Thr Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Asn Gly Leu Gln
65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Val Trp Asp Asp Ser Leu
85 90 95

Ser Gly Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 67

<211> 123

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 67

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Val Ser Gly Tyr Ile Leu Ser Lys Leu
20 25 30

VBLT_P0246W0-SeqListing

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

Gly Gly Ser Glu Arg Glu Asp Gly Glu Thr Val Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Ile Ser Leu Thr Glu Asp Thr Ser Ile Glu Thr Ala Tyr
65 70 75 80

Met Glu Leu Ser Ser Leu Ser Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Thr Gly Gly Phe Trp Ser Met Ile Gly Gly Asn Gly Val Asp Tyr
100 105 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 68
<211> 107
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 68

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

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Arg Asn Asn
20 25 30

Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Glu Arg Leu Ile
35 40 45

VBLT_P0246W0-SeqListing

Tyr Gly Thr Ser Asn Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln His Asn Ser Tyr Pro Pro
85 90 95

Thr Phe Gly Arg Gly Thr Lys Val Glu Ile Lys
100 105

<210> 69

<211> 126

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 69

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Arg Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Phe Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Ala Ile Thr Tyr Pro Gly Gly Gly Ser Pro Ser Tyr Ala Pro Gln Phe
50 55 60

Gln Gly Arg Leu Thr Met Thr Asp Asp Thr Ser Ala Thr Thr Val Tyr
65 70 75 80

Met Asp Leu Ser Asp Leu Thr Ser Lys Asp Thr Ala Val Tyr Tyr Cys
85 90 95

VBLT_P0246W0-SeqListing

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

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Phe Lys
 115 120 125

<210> 70
 <211> 125
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic peptide

<400> 70

Gln Val Gln Leu Val Gln Ser Gly Gly Arg Val Val Gln Ala Gly Arg
 1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Met Tyr
 20 25 30

Gly Val His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45

Ala Val Ile Trp Asn Asp Gly Ser Lys Glu Tyr Tyr Gly Asp Ser Val
 50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Arg Asn Thr Leu Tyr
 65 70 75 80

Leu Gln Met Asn Ser Leu Arg Val Asp Asp Thr Ala Val Tyr Phe Cys
 85 90 95

Ala Arg Asp Gly Ile Pro Asp Pro Glu Arg Gly Asp Tyr Gly Gly Leu
 100 105 110

VBLT_P0246W0-SeqListing

Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120 125

<210> 71
<211> 107
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 71

Gln Thr Val Val Thr Gln Phe Pro Ser Ser Pro Phe Ala Ser Val Gly
1 5 10 15

Asp Gly Val Thr Ile Thr Cys Arg Ala Arg Gln Ser Ile Ser Ser Tyr
20 25 30

Val Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Ala Thr Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Tyr Gly Thr Asp Phe Thr Leu Thr Ile Ser Gly Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Phe Pro Arg
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105

<210> 72
<211> 127
<212> PRT
<213> Artificial sequence

<220>

VBLT_P0246W0-SeqListing

<223> Synthetic peptide

<400> 72

Gln Val Gln Leu Val Gln Ser Gly Ala Gln Val Lys Lys Pro Gly Ser
1 5 10 15

Ser Val Lys Val Ser Cys Lys Pro Ser Gly Gly Thr Phe Asn Asn Asn
20 25 30

Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Gly Ile Val Pro Asn Phe Gly Thr Pro Thr Tyr Gly Gln Asp Phe
50 55 60

Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Val Phe
65 70 75 80

Leu Glu Leu Thr Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Phe Cys
85 90 95

Ala Arg Gly Arg Thr Ala Val Thr Pro Met Gln Leu Gly Leu Gln Phe
100 105 110

Tyr Phe Asp Phe Trp Gly Arg Gly Thr Leu Val Thr Val Ser Ser
115 120 125

<210> 73

<211> 108

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 73

Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly
1 5 10 15

VBLT_P0246W0-SeqListing

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

Tyr Tyr Pro Asn Trp Phe Gln Gln Lys Pro Gly Gln Ala Pro Arg Ala
35 40 45

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

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Ala
65 70 75 80

Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Leu Val Tyr Ser Gly Asp
85 90 95

Gly Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val
100 105

<210> 74
<211> 119
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 74

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Thr Ser Gly Tyr Thr Phe Thr Asp Asn
20 25 30

Ser Val His Trp Val Arg Gln Ala Pro Gly Gln Gly Phe Glu Trp Met
35 40 45

VBLT_P0246W0-SeqListing

Gly Arg Ile Asn Pro Asn Thr Gly Val Ser Thr Ser Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Thr Tyr
65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Glu Glu Asn Asp Ser Ser Gly Tyr Tyr Leu Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 75
<211> 107
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 75

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

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Thr Tyr
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Ala Ala Ser Ser Leu Glu Ser Gly Val Pro Ser Arg Phe Gly Gly
50 55 60

Ser Arg Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

VBLT_P0246W0-SeqListing

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Arg Thr Pro Trp
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Asp Ile Lys
100 105

<210> 76
<211> 122
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 76

Gln Val Gln Leu Val Gln Ser Gly Pro Thr Leu Val Lys Pro Thr Gln
1 5 10 15

Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Ile Ser
20 25 30

Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
35 40 45

Trp Leu Ala Leu Ile Tyr Trp Asp Asp Asp Lys Arg Tyr Ser Pro Ser
50 55 60

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

Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr
85 90 95

Cys Ala His Ser Met Thr Lys Gly Gly Ala Ile Tyr Gly Gln Ala Tyr
100 105 110

VBLT_P0246W0-SeqListing

Phe Glu Tyr Trp Gly Gln Gly Thr Leu Val
115 120

<210> 77
<211> 80
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 77

Pro Ser Pro Ala Leu Glu Pro Asp Ser Asp Val Gly Gly Tyr Asn Tyr
1 5 10 15

Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu Ile Ile
20 25 30

Tyr Asp Val Thr Asp Arg Pro Ser Gly Val Ser Asn Arg Phe Ser Ala
35 40 45

Ser Lys Ser Ala Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu Gln Ala
50 55 60

Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Thr Ser Ser Ser Thr
65 70 75 80

<210> 78
<211> 121
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 78

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

VBLT_P0246W0-SeqListing

Ser Val Lys Val Ser Cys Lys Val Ser Gly Tyr Thr Leu Thr Glu Leu
20 25 30

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

Gly Gly Phe Glu Pro Glu Asp Gly Glu Thr Ile Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Glu Asp Thr Ser Arg Asp Thr Ala Tyr
65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

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

Asp Tyr Trp Gly Gln Gly Thr Leu Val
115 120

<210> 79

<211> 121

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 79

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Arg Thr Phe Ser Ser Tyr
20 25 30

Val Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

VBLT_P0246W0-SeqListing

Gly Gly Ile Ile Pro Leu Phe Gly Thr Ala Asn Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Ala Tyr
65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Gly Ala Gln Leu Tyr Tyr Asn Asp Gly Ser Gly Tyr Ile Phe
100 105 110

Asp Tyr Trp Gly Gln Gly Ala Leu Val
115 120

<210> 80
<211> 130
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 80

Gln Val Gln Leu Val Gln Ser Gly Pro Glu Val Lys Lys Pro Gly Thr
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Phe Ser Phe Ile Ser Ser
20 25 30

Ala Val Gln Trp Val Arg Gln Ala Arg Gly Gln Arg Leu Glu Trp Ile
35 40 45

Gly Trp Ile Val Val Ala Ser Ala Asn Thr Asn Tyr Ala Gln Lys Phe
50 55 60

VBLT_P0246W0-SeqListing

Arg Glu Arg Val Thr Ile Thr Arg Asp Met Ser Thr Asn Thr Ala Tyr
65 70 75 80

Met Glu Leu Thr Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Ala Glu His Arg Ser Pro Cys Ser Gly Gly Asp Ser Cys Tyr Ser
100 105 110

Leu Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Leu Val Thr Val
115 120 125

Ser Ser
130

<210> 81
<211> 118
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 81

Gln Val Gln Leu Val Gln Ser Gly Gly Gly Leu Val Pro Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Thr Ala Ser Gly Phe Thr Val Ser Asn Tyr
20 25 30

Gly Met Ser Trp Val Arg Gln Thr Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Thr Ile Ser Thr Ser Ser Gly Arg Thr Phe Tyr Ala Asp Ser Val
50 55 60

Glu Gly Arg Phe Thr Ile Ser Gly Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

VBLT_P0246W0-SeqListing

Leu Gln Met Asn Ser Leu Arg Val Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Lys Gly Pro Phe Gly Gly Asp Phe Asp Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 82
<211> 107
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 82

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

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ala Ile Tyr
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
35 40 45

Tyr Asp Ala Ser Asn Arg Ala Thr Gly Ile Pro Ala Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Glu Pro
65 70 75 80

Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Arg Gly Asn Trp Gln Tyr
85 90 95

VBLT_P0246W0-SeqListing

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 83
<211> 123
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 83

Gln Val Gln Leu Val Gln Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
1 5 10 15

Ser Leu Thr Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Val Tyr
20 25 30

Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Gly Ile Ser Trp Asn Ser Gly Ser Val Gly Tyr Ala Asp Ser Met
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65 70 75 80

Leu Gln Ile Asn Ser Leu Arg Ala Glu Asp Thr Ala Leu Tyr Tyr Cys
85 90 95

Ala Lys Ala Phe Trp Phe Gly Glu Leu Ser Gly Tyr Gly Met Asp Val
100 105 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 84
<211> 110

VBLT_P0246W0-SeqListing

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 84

Gln Ala Val Val Thr Gln Pro Pro Ser Ala Ser Gly Phe Pro Gly Gln
1 5 10 15

Ser Val Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Ser Tyr
20 25 30

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu
35 40 45

Ile Ile Tyr Ala Val Thr Arg Arg Pro Ser Gly Val Pro Glu Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65 70 75 80

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

Asn Lys Asp Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu
100 105 110

<210> 85

<211> 119

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 85

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

VBLT_P0246W0-SeqListing

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ser Phe Asn Ile Tyr
20 25 30

Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Leu
50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80

Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Pro Leu Trp Gly Glu Phe Tyr Tyr Asp Ile Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 86
<211> 108
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 86

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

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Gly
20 25 30

VBLT_P0246W0-SeqListing

Tyr Ser Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu
35 40 45

Ile Tyr Gly Ala Ser Lys Arg Ala Ala Gly Ile Pro Asp Arg Phe Ser
50 55 60

Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu
65 70 75 80

Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Leu Phe Ala Thr Ser Pro
85 90 95

Pro Pro Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
100 105

<210> 87
<211> 133
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 87

Gln Val Gln Leu Val Gln Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn Tyr
20 25 30

Val Met Glu Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Val Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

VBLT_P0246W0-SeqListing

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Ser Glu Trp Glu Ser Ser Tyr Gly Ser Gly Asn Tyr Tyr Thr
100 105 110

Asp Tyr Phe Tyr Tyr Tyr Ala Met Asp Val Trp Gly Pro Gly Thr Leu
115 120 125

Val Thr Val Ser Ser
130

<210> 88
<211> 112
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 88

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

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

Ile Arg Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45

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

Asp Arg Phe Ser Gly Ser Gly Ser Ala Thr Asp Phe Thr Leu Lys Ile
65 70 75 80

VBLT_P0246W0-SeqListing

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Ala
85 90 95

Leu Gln Thr Pro Thr Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
100 105 110

<210> 89
<211> 129
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 89

Gln Val Gln Leu Glu Glu Ser Gly Pro Thr Leu Val Lys Pro Thr Gln
1 5 10 15

Thr Leu Thr Leu Thr Cys Ser Phe Ser Gly Phe Ser Leu Thr Thr Thr
20 25 30

Gly Val Thr Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
35 40 45

Trp Leu Ala Leu Ile Tyr Trp Asp Asp Asp Lys Arg Tyr Ser Pro Ser
50 55 60

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

Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr
85 90 95

Cys Ala His Ser Thr Gly Tyr Tyr Asp Ser Ser Gly Tyr Arg Gly Ala
100 105 110

Leu Asp Ala Phe Ala Val Trp Gly Gln Gly Thr Leu Val Thr Val Ser
115 120 125

VBLT_P0246W0-SeqListing

Ser

<210> 90
 <211> 113
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic peptide

<400> 90

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

Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Tyr His
 20 25 30

Ser Asn Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln
 35 40 45

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

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
 65 70 75 80

Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln
 85 90 95

Tyr Tyr Ser Thr Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile
 100 105 110

Lys

VBLT_P0246W0-SeqListing

<210> 91
 <211> 127
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic peptide

<400> 91

Gln Val Gln Leu Val Gln Ser Gly Pro Gly Leu Val Lys Pro Ser Asp
 1 5 10 15

Thr Leu Ser Leu Thr Cys Ser Val Ser Ser Asp Ala Leu Arg Ser Arg
 20 25 30

Ser Tyr Tyr Trp Gly Trp Val Arg Gln Pro Pro Gly Lys Gly Leu Glu
 35 40 45

Trp Ile Gly Thr Val Ser Tyr Ser Gly Gly Thr Tyr Tyr Asn Pro Ser
 50 55 60

Leu Gln Ser Arg Val Thr Val Ser Val Asp Thr Ser Lys Asn His Phe
 65 70 75 80

Ser Leu Arg Leu Asn Ser Val Thr Ala Ala Asp Ala Ala Val Tyr Tyr
 85 90 95

Cys Ala Arg Ser Tyr Phe Tyr Asp Gly Ser Gly Tyr Tyr Tyr Leu Ser
 100 105 110

Tyr Phe Asp Ser Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120 125

<210> 92
 <211> 109
 <212> PRT
 <213> Artificial sequence

<220>

VBLT_P0246W0-SeqListing

<223> Synthetic peptide

<400> 92

Gln Ala Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly
1 5 10 15

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

His Tyr Pro Asn Trp Phe Gln Gln Lys Pro Gly Gln Pro Pro Arg Ala
35 40 45

Leu Ile Tyr Ser Thr Asp Asn Lys His Ser Trp Thr Pro Ala Arg Phe
50 55 60

Ser Gly Ser Leu Leu Gly Val Lys Ala Ala Leu Thr Leu Ser Asp Val
65 70 75 80

Gln Pro Glu Asp Glu Ala Asp Tyr Tyr Cys Leu Leu His Phe Gly Gly
85 90 95

Val Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 93

<211> 125

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 93

Gln Val Gln Leu Val Gln Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15

Ser Leu Arg Leu Ser Cys Ser Thr Ser Gly Phe Thr Phe Arg Met Tyr
20 25 30

VBLT_P0246W0-SeqListing

Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Val Ile Phe Asn Asp Gly Val Lys Lys Tyr Tyr Gly Asp Ala Val
50 55 60

Lys Gly Arg Phe Thr Val Ser Arg Asp Asn Ser Arg Asn Thr Leu Tyr
65 70 75 80

Leu Glu Met Lys Ser Leu Arg Val Asp Asp Thr Ala Ala Tyr Tyr Cys
85 90 95

Ala Arg Asp Gly Ile Pro Asp Pro Glu Arg Gly Asp Tyr Gly Gly Leu
100 105 110

Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120 125

<210> 94
<211> 107
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 94

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

Asp Thr Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Thr Ser Tyr
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

VBLT_P0246W0-SeqListing

Tyr Ala Thr Ser Ser Leu Gln Ser Gly Leu Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Tyr Gly Thr Glu Phe Thr Leu Thr Ile Ser Gly Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Phe Pro Arg
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Met Asp
100 105

<210> 95

<211> 124

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 95

Gln Val Gln Leu Val Gln Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Thr Ser Gly Phe Ile Phe Asp Asp Tyr
20 25 30

Ala Met Tyr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Gly Ile Ser Trp Asn Ser Gly Asn Ile Ala Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65 70 75 80

Leu Glu Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Leu Tyr Tyr Cys
85 90 95

VBLT_P0246W0-SeqListing

Val Lys Asp Leu Tyr Gly Tyr Asp Ile Leu Thr Gly Asn Gly Tyr Asp
100 105 110

Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 96
<211> 112
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 96

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

Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu Gln Ser
20 25 30

Asn Gly Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45

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

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Ala
85 90 95

Leu Gln Thr Pro Pro Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105 110

VBLT_P0246W0-SeqListing

<210> 97
 <211> 130
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic peptide

<400> 97

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1 5 10 15

Ser Val Lys Val Pro Cys Lys Ala Ser Gly Asp Thr Leu Ser Tyr Tyr
 20 25 30

Gly Ile Thr Trp Val Arg Arg Ala Pro Gly Gln Gly Leu Glu Trp Met
 35 40 45

Gly Gln Ile Ile Pro Phe Phe Ala Thr Thr Ile Ser Ala Gln Lys Phe
 50 55 60

Gln Gly Arg Leu Thr Met Thr Ala Glu Glu Ser Thr Ser Thr Gly Tyr
 65 70 75 80

Met Glu Arg Thr Phe Tyr Met Asp Leu Ser Ser Leu Arg Pro Glu Asp
 85 90 95

Thr Ala Val Tyr Tyr Cys Ala Gly Gly Tyr Tyr Gly Ser Gly Ser Ser
 100 105 110

Gly Asp Tyr Gly Leu Asp Val Trp Gly Gln Gly Thr Leu Val Thr Val
 115 120 125

Ser Ser
 130

<210> 98
 <211> 112

VBLT_P0246W0-SeqListing

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 98

Gln Ala Val Val Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
1 5 10 15

Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Ala Gly
20 25 30

Tyr Asp Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu
35 40 45

Leu Ile Tyr Gly Asn Asn Asn Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser
85 90 95

Leu Ser Gly Ser Gly Val Phe Gly Thr Gly Thr Glu Val Thr Val Leu
100 105 110

<210> 99

<211> 128

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 99

Gln Val Gln Leu Val Gln Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
1 5 10 15

VBLT_P0246W0-SeqListing

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

Ser Phe Tyr Trp Gly Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu
35 40 45

Trp Ile Gly Ser Ile Tyr Tyr Asn Gly Thr Thr Tyr Tyr Lys Pro Ser
50 55 60

Leu Lys Ser Arg Val Thr Ile Ser Leu Asp Thr Ser Lys Asn Gln Phe
65 70 75 80

Ser Leu Arg Leu Ser Ser Leu Thr Ala Thr Asp Thr Gly Val Tyr Tyr
85 90 95

Cys Ala Arg Ala Pro Thr Tyr Cys Ser Pro Ser Ser Cys Ala Val His
100 105 110

Trp Tyr Phe Asn Leu Trp Gly Arg Gly Thr Leu Val Thr Val Ser Ser
115 120 125

<210> 100
<211> 118
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 100

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Leu Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ile Phe Thr Lys Tyr
20 25 30

VBLT_P0246W0-SeqListing

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

Gly Trp Ile Ser Ala Tyr Asn Glu Asn Thr Asn Tyr Ala Glu Lys Phe
50 55 60

Gln Gly Arg Val Thr Leu Thr Thr Asp Ala Ser Thr Ser Thr Ala Tyr
65 70 75 80

Met Glu Leu Arg Asn Leu Arg Ser Asp Asp Thr Ala Val Tyr Phe Cys
85 90 95

Ala Arg Glu Val Trp Phe Ala Glu Tyr Ile Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 101

<211> 110

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 101

Gln Ser Val Val Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
1 5 10 15

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

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu
35 40 45

Val Ile Tyr Asp Val Ala Asn Arg Pro Ser Gly Ile Ser Asp Arg Phe
50 55 60

VBLT_P0246W0-SeqListing

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gly Ser Tyr Thr Ser Asp
85 90 95

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

<210> 102
<211> 133
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 102

Gln Val Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser His
20 25 30

Pro Met Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Trp Ile Asn Thr Lys Thr Gly Asn Leu Thr Tyr Ala Gln Gly Phe
50 55 60

Thr Gly Arg Phe Val Phe Ser Leu Asp Thr Ser Val Arg Thr Ala Tyr
65 70 75 80

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

VBLT_P0246W0-SeqListing

Ala Arg Asp Glu Tyr Ser Gly Tyr Asp Ser Val Gly Val Phe Arg Gly
 100 105 110

Ser Phe Asp Asp Phe Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Leu
 115 120 125

Val Thr Val Ser Ser
 130

<210> 103
 <211> 8
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic peptide

<400> 103

Gly Tyr Ser Phe Thr Ser Tyr Gly
 1 5

<210> 104
 <211> 8
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic peptide

<400> 104

Ile Ser Thr Tyr Lys Gly Tyr Thr
 1 5

<210> 105
 <211> 19
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic peptide

VBLT_P0246W0-SeqListing

<400> 105

Ala Arg Val Leu Ser Glu Thr Gly Tyr Phe Tyr Tyr Tyr Tyr Tyr Gly
1 5 10 15

Met Asp Val

<210> 106

<211> 8

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 106

Gly Tyr Ser Phe Thr Ser Tyr Ser
1 5

<210> 107

<211> 8

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 107

Ile Asp Thr Asn Thr Gly Asn Pro
1 5

<210> 108

<211> 20

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 108

VBLT_P0246W0-SeqListing

Ala Thr Tyr Tyr Val Asp Leu Trp Gly Ser Tyr Arg Gln Asp Tyr Tyr
1 5 10 15

Gly Met Asp Val
20

<210> 109
<211> 8
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 109

Gly Tyr Thr Phe Thr Ser Tyr Gly
1 5

<210> 110
<211> 8
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 110

Ile Ser Thr Tyr Asn Gly Asp Thr
1 5

<210> 111
<211> 28
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 111

Ala Arg Asp Phe Glu Phe Pro Gly Asp Cys Ser Gly Gly Ser Cys Tyr
1 5 10 15

VBLT_P0246W0-SeqListing

Ser Arg Phe Ile Tyr Gln His Asn Asp Met Asp Val
20 25

<210> 112
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 112

Ser Asp Ala Leu Arg Ser Arg Ser Tyr Tyr
1 5 10

<210> 113
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 113

Val Ser Tyr Ser Gly Gly Thr
1 5

<210> 114
<211> 19
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 114

Ala Arg Ser Tyr Phe Tyr Asp Gly Ser Gly Tyr Tyr Tyr Leu Ser Tyr
1 5 10 15

Phe Asp Ser

<210> 115
 <211> 8
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic peptide

<400> 115

Gly Phe Thr Phe Ser Asn Tyr Ala
 1 5

<210> 116
 <211> 8
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic peptide

<400> 116

Ile Trp Tyr Asp Gly Ser Asn Lys
 1 5

<210> 117
 <211> 9
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic peptide

<400> 117

Ala Arg Gly Asp Tyr Val Leu Asp Tyr
 1 5

<210> 118
 <211> 8

VBLT_P0246W0-SeqListing

<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 118

Gly Gly Thr Ser Ser Thr Tyr Ala
1 5

<210> 119
<211> 8
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 119

Ser Ile Pro Val Phe Ala Thr Val
1 5

<210> 120
<211> 19
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 120

Ala Ser Pro Tyr Cys Ser Ser Met Asn Cys Tyr Thr Thr Phe Tyr Tyr
1 5 10 15

Phe Asp Phe

<210> 121
<211> 8
<212> PRT
<213> Artificial sequence

VBLT_P0246W0-SeqListing

<220>

<223> Synthetic peptide

<400> 121

Gly Tyr Ser Phe Thr Ser Tyr Ser
1 5

<210> 122

<211> 8

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 122

Ile Asp Thr Asn Thr Gly Asn Pro
1 5

<210> 123

<211> 20

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 123

Ala Thr Tyr Tyr Val Asp Leu Trp Gly Ser Tyr Arg Gln Asp Tyr Tyr
1 5 10 15

Gly Met Asp Val
20

<210> 124

<211> 8

<212> PRT

<213> Artificial sequence

<220>

VBLT_P0246W0-SeqListing

<223> Synthetic peptide

<400> 124

Gly Tyr Ile Leu Ser Lys Leu Ser
1 5

<210> 125

<211> 8

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 125

Ser Glu Arg Glu Asp Gly Glu Thr
1 5

<210> 126

<211> 16

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 126

Ala Thr Gly Gly Phe Trp Ser Met Ile Gly Gly Asn Gly Val Asp Tyr
1 5 10 15

<210> 127

<211> 8

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 127

Gly Tyr Thr Phe Thr Ser Tyr Phe
1 5

VBLT_P0246W0-SeqListing

<210> 128
 <211> 8
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic peptide

<400> 128

Thr Tyr Pro Gly Gly Gly Ser Pro
 1 5

<210> 129
 <211> 15
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic peptide

<400> 129

Ala Arg Gly Ala His Arg Ser Ile Gly Thr Thr Pro Leu Asp Ser
 1 5 10 15

<210> 130
 <211> 8
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic peptide

<400> 130

Gly Phe Thr Phe Ser Met Tyr Gly
 1 5

<210> 131
 <211> 8
 <212> PRT
 <213> Artificial sequence

VBLT_P0246W0-SeqListing

<220>

<223> Synthetic peptide

<400> 131

Ile Trp Asn Asp Gly Ser Lys Glu
1 5

<210> 132

<211> 18

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 132

Ala Arg Asp Gly Ile Pro Asp Pro Glu Arg Gly Asp Tyr Gly Gly Leu
1 5 10 15

Asp Tyr

<210> 133

<211> 8

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 133

Gly Gly Thr Phe Asn Asn Asn Gly
1 5

<210> 134

<211> 8

<212> PRT

<213> Artificial sequence

<220>

VBLT_P0246W0-SeqListing

<223> Synthetic peptide

<400> 134

Ile Val Pro Asn Phe Gly Thr Pro
1 5

<210> 135

<211> 20

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 135

Ala Arg Gly Arg Thr Ala Val Thr Pro Met Gln Leu Gly Leu Gln Phe
1 5 10 15

Tyr Phe Asp Phe
20

<210> 136

<211> 8

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 136

Gly Tyr Thr Phe Thr Asp Asn Ser
1 5

<210> 137

<211> 8

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

VBLT_P0246W0-SeqListing

<400> 137

Ile Asn Pro Asn Thr Gly Val Ser
1 5

<210> 138

<211> 12

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 138

Ala Arg Glu Glu Asn Asp Ser Ser Gly Tyr Tyr Leu
1 5 10

<210> 139

<211> 10

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 139

Gly Phe Ser Leu Ser Ile Ser Gly Val Gly
1 5 10

<210> 140

<211> 7

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 140

Ile Tyr Trp Asp Asp Asp Lys
1 5

VBLT_P0246W0-SeqListing

<210> 141
 <211> 18
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic peptide

<400> 141

Ala	His	Ser	Met	Thr	Lys	Gly	Gly	Ala	Ile	Tyr	Gly	Gln	Ala	Tyr	Phe
1				5				10						15	

Glu Tyr

<210> 142
 <211> 8
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic peptide

<400> 142

Gly	Tyr	Thr	Leu	Thr	Glu	Leu	Ser
1				5			

<210> 143
 <211> 8
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic peptide

<400> 143

Phe	Glu	Pro	Glu	Asp	Gly	Glu	Thr
1				5			

<210> 144
 <211> 18

VBLT_P0246W0-SeqListing

<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 144

Thr	Thr	Asp	Gln	Val	Tyr	Tyr	Arg	Ser	Gly	Ser	Tyr	Ser	Gly	Tyr	Val
1				5					10					15	

Asp Tyr

<210> 145
<211> 8
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 145

Gly	Arg	Thr	Phe	Ser	Ser	Tyr	Val
1				5			

<210> 146
<211> 8
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 146

Ile	Ile	Pro	Leu	Phe	Gly	Thr	Ala
1				5			

<210> 147
<211> 18
<212> PRT
<213> Artificial sequence

VBLT_P0246W0-SeqListing

<220>

<223> Synthetic peptide

<400> 147

Ala	Arg	Gly	Ala	Gln	Leu	Tyr	Tyr	Asn	Asp	Gly	Ser	Gly	Tyr	Ile	Phe
1				5					10					15	

Asp Tyr

<210> 148

<211> 8

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 148

Gly	Phe	Ser	Phe	Ile	Ser	Ser	Ala
1				5			

<210> 149

<211> 8

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 149

Ile	Val	Val	Ala	Ser	Ala	Asn	Thr
1				5			

<210> 150

<211> 23

<212> PRT

<213> Artificial sequence

<220>

VBLT_P0246W0-SeqListing

<223> Synthetic peptide

<400> 150

Ala	Ala	Glu	His	Arg	Ser	Pro	Cys	Ser	Gly	Gly	Asp	Ser	Cys	Tyr	Ser
1				5					10					15	

Leu	Tyr	Tyr	Gly	Met	Asp	Val
			20			

<210> 151

<211> 8

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 151

Gly	Phe	Thr	Val	Ser	Asn	Tyr	Gly
1				5			

<210> 152

<211> 8

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 152

Ile	Ser	Thr	Ser	Ser	Gly	Arg	Thr
1				5			

<210> 153

<211> 11

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

VBLT_P0246W0-SeqListing

<400> 153

Ala Lys Gly Pro Phe Gly Gly Asp Phe Asp Tyr
1 5 10

<210> 154

<211> 8

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 154

Gly Phe Thr Phe Asp Val Tyr Ala
1 5

<210> 155

<211> 8

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 155

Ile Ser Trp Asn Ser Gly Ser Val
1 5

<210> 156

<211> 16

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 156

Ala Lys Ala Phe Trp Phe Gly Glu Leu Ser Gly Tyr Gly Met Asp Val
1 5 10 15

VBLT_P0246W0-SeqListing

<210> 157
 <211> 8
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic peptide

<400> 157

Gly Tyr Ser Phe Asn Ile Tyr Gly
 1 5

<210> 158
 <211> 8
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic peptide

<400> 158

Ile Ser Ala Tyr Asn Gly Asn Thr
 1 5

<210> 159
 <211> 12
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic peptide

<400> 159

Ala Arg Pro Leu Trp Gly Glu Phe Tyr Tyr Asp Ile
 1 5 10

<210> 160
 <211> 8
 <212> PRT
 <213> Artificial sequence

<220>

VBLT_P0246W0-SeqListing

<223> Synthetic peptide

<400> 160

Gly Phe Thr Phe Ser Asn Tyr Val
1 5

<210> 161

<211> 8

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 161

Ile Ser Tyr Asp Gly Ser Asn Lys
1 5

<210> 162

<211> 26

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 162

Ala Arg Ser Glu Trp Glu Ser Ser Tyr Gly Ser Gly Asn Tyr Tyr Thr
1 5 10 15

Asp Tyr Phe Tyr Tyr Tyr Ala Met Asp Val
20 25

<210> 163

<211> 10

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

VBLT_P0246W0-SeqListing

<400> 163

Gly Phe Ser Leu Thr Thr Thr Gly Val Thr
1 5 10

<210> 164

<211> 7

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 164

Ile Tyr Trp Asp Asp Asp Lys
1 5

<210> 165

<211> 21

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 165

Ala His Ser Thr Gly Tyr Tyr Asp Ser Ser Gly Tyr Arg Gly Ala Leu
1 5 10 15

Asp Ala Phe Ala Val
20

<210> 166

<211> 10

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic peptide

<400> 166

VBLT_P0246W0-SeqListing

Ser Asp Ala Leu Arg Ser Arg Ser Tyr Tyr
1 5 10

<210> 167
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 167

Val Ser Tyr Ser Gly Gly Thr
1 5

<210> 168
<211> 19
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 168

Ala Arg Ser Tyr Phe Tyr Asp Gly Ser Gly Tyr Tyr Tyr Leu Ser Tyr
1 5 10 15

Phe Asp Ser

<210> 169
<211> 8
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 169

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VBLT_P0246W0-SeqListing

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Asp Tyr

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VBLT_P0246W0-SeqListing

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Tyr

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VBLT_P0246W0-SeqListing

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VBLT_P0246W0-SeqListing

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Thr Asn Asn
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Asp Asn Tyr
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Ser Thr Asp
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VBLT_P0246W0-SeqListing

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Ala Thr Ser
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VBLT_P0246W0-SeqListing

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VBLT_P0246W0-SeqListing

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VBLT_P0246W0-SeqListing

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VBLT_P0246W0-SeqListing

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Ser Thr Asp
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VBLT_P0246W0-SeqListing

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VBLT_P0246W0-SeqListing

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Gly Ser Tyr Thr Ser Asp Val Ser Pro Val
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<212> DNA

<213> Chikungunya virus

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VBLT_P0246W0-SeqListing

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VBLT_P0246W0-SeqListing

agaccgggct acagcccat ggtactggag atggagcttc tgtcagtcac tttggagcca	120
acgctatcgc ttgattacat cacgtgagag tataaaaccg tcatcccgtc tccgtacgtg	180
aaatgctgcg gtacagcaga gtgcaaggac aagagcctac ctgattacag ctgtaaggtc	240
ttcaccggcg tctaccatt catgtggggc ggcgctact gcttctgcga cactgaaaat	300
acgcaattga gcgaagcaca tgtggagaag tccgaatcat gcaaaacaga atttgcacatca	360
gcatataggg ctcataccgc atccgcatca gctaagctcc gcgtccttta ccaaggaaat	420
aatgttactg tatctgctta tgcaaaccgc gatcatgccg tcacagttaa ggacgctaaa	480
ttcattgtgg ggccaatgtc ttcagcctgg acaccttttg acaataaaat cgtgggtgtac	540
aaaggcgacg tctacaacat ggactacccg cccttcggcg caggaagacc aggacaattt	600
ggcgacatcc aaagtcgcac gcctgagagc gaagacgtct atgctaacac acaactggta	660
ctgcagagac cgtccgcggg tacgggtgcac gtgccgtact ctcaggcacc atctggcttc	720
aagtattggc taaaagaacg aggggctcg ctgcagcaca cagcaccatt tggctgtcaa	780
atagcaacaa acccggtgaag agcgatgaac tgcgccgtag ggaacatgcc tatctccatc	840
gacataccgg acgcggcctt cactaggggtc gtcgacgcgc catctttaac ggacatgtcg	900
tgtgaggtag cagcctgcac ccactcctca gactttgggg gcgtagccat cattaaatat	960
gcagccagca agaaaggcaa gtgtgcgggtg cattcgatga ctaacgccgt cactattcgg	1020
gaagctgaaa tagaagtaga aggggaactct cagttgcaaa tctctttttc gacggcccta	1080
gccagcgccg aattccgcgt acaagtctgt tctacacaag tacactgtgc agccgagtgc	1140
catccaccga aagaccatat agtcaattac ccggcgtcac acaccacctt cgggggtccaa	1200
gacatttccg ttacggcgat gtcattgggtg cagaagatca cgggaggtgt gggactgggtt	1260
gtcgctgttg cagcactgat cctaatacgtg gtgctatgcg tgcgttttag caggcac	1317

<210> 257

<211> 1317

<212> DNA

<213> Chikungunya virus

VBLT_P0246W0-SeqListing

<400> 257

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tacgaacacg taacagtgat cccgaacacg gtgggagtag cgtataagac tctagtcaac      60
agaccgggct acagcccat ggtattggag atggagcttc tgtctgtcac cttggaacca      120
acgctatcgc ttgattacat cacgtgcgag tataaaaccg ttatcccgtc tccgtacgtg      180
aaatgctgcg gtacagcaga gtgtaaggac aagagcctac ctgattacag ctgtaaggct      240
ttcaccggcg tctacccatt catgtggggc ggcgctact gcttctgcga caccgaaaat      300
acgcaattga gcgaagcaca tgtggagaag tccgaatcat gcaaaacaga atttgcata      360
gcatacaggc ctcataccgc atccgcatca gctaagctcc gcgtccttta ccaaggaaat      420
aatatcactg tggctgctta tgcaaacggc gaccatgccg tcacagttaa ggacgctaaa      480
ttcatagtgg ggccaatgtc ttcagcctgg acacctttcg acaataaaat cgtgggtgtac      540
aaaggcgacg tctacaacat ggactacccg cccttcggcg caggaagacc aggacaattt      600
ggcgacatcc aaagtcgcac gcctgagagc gaagacgtct atgctaatac acaactggta      660
ctgcagagac cgtccgcggg tacggtgcac gtgccgtact ctcaggcacc atctggcttc      720
aagtattggc taaaagaacg aggggcgtcg ctgcagcaca cagcaccatt tggctgtcaa      780
atagcaacaa acccggtgaag agcgtatgaac tgcgccgtag ggaacatgcc tatctccatc      840
gacataccgg acgcgccctt taccagggtc gtcgacgcgc catctttaac ggacatgtcg      900
tgtgaggtag cagcctgcac ccattcctca gactttgggg gcgtagccat cattaaatat      960
gcagccagta agaaaggcaa gtgtgcagtg cactcgatga ctaacgccgt cactattcgg     1020
gaagctgaaa tagaagtaga agggaaactct cagttgcaaa tctctttttc gacggcccta     1080
gccagcgccg aatttcgcgt acaagtctgt tctacacaag tacactgtgc agccgagtgc     1140
catccaccga aagaccatat agtcaattac ccggcgtcac acaccaccct cgggggtccaa     1200
gacatttccg ctacggcgat gtcattgggtg cagaagatca cgggaggtgt gggactggtt     1260
gtcgctgttg cagcactgat cctaatactg gtgctatgcg tgcgttttag caggcac       1317

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<210> 258

VBLT_P0246W0-SeqListing

<211> 1317

<212> DNA

<213> Chikungunya virus

<400> 258

tacgaacacg taacagtgat cccgaacacg gtgggagtac cgtataagac tcttgtcaac	60
agaccgggtt acagccccat ggtattggag atggagctac aatcggtcac cttggaacca	120
acactgtcac ttgactacat cacgtgcgag taaaaaactg tcatccccctc cccgtacgtg	180
aagtgtgtgtg gtacagcaga gtgcaaggac aagagcctac cagactacag ctgcaaggtc	240
tttactggag tctacccatt tatgtggggc ggcgctact gcttttgcga cgccgaaaat	300
acgcaattga gcgaggcaca ttagagaaaa tctgaatctt gcaaaacaga gtttgcacgc	360
gcctacagag cccacaccgc atcggcgctc gcgaagctcc gcgtccttta ccaaggaaac	420
aacattactg tagctgccta cgctaacggc gaccatgccg tcacagtaaa ggacgccaag	480
tttgtcgtgg gaccaatgtc ctccgcctgg acaccttttg acaacaaaat cgtgggtgtac	540
aaaggcgacg tctacaacat ggactaccca ctttttggcg caggaagacc aggacaattt	600
ggtgacattc aaagtcgtac accggaaagt aaagacgttt atgccaacac tcagttggta	660
ctacagaggc cagcagcagg cacggtacat gtaccatact ctcaggcacc atctggcttc	720
aagtattggc tgaaggaacg aggagcatcg ctacagcaca cggcaccgtt cggttgccag	780
attgcgacaa acccggttaag agctgtaaat tgcgctgtgg ggaacatacc aatttccatc	840
gacataccgg atgcggcctt tactagggtt gtcgatgcac cctctgtaac ggacatgtca	900
tgcgaagtac cagcctgcac tcactcctcc gactttgggg gcgtcgccat catcaaatat	960
acagctagca agaaaaggtaa atgtgcagta cattcgatga ccaacgccgt taccattcga	1020
gaagccgacg tagaagtaga ggggaattcc cagctgcaaa tatccttctc aacagccttg	1080
gcaagcgccg agtttcgcgt gcaagtgtgc tccacacaag tacactgcgc agccgcatgc	1140
cacctccaa aggaccacat agtcaattac ccagcatcac acaccacct tggggtccag	1200
gatatatcca caacggcaat gtcttgggtg cagaagatta cgggaggagt aggattaatt	1260
gttgctgttg ctgccttaat ttttaattgtg gtgctatgcg tgctgttttag caggcac	1317

VBLT_P0246W0-SeqListing

<210> 259
 <211> 439
 <212> PRT
 <213> Chikungunya virus
 <400> 259

Tyr Glu His Val Thr Val Ile Pro Asn Thr Val Gly Val Pro Tyr Lys
 1 5 10 15

Thr Leu Val Asn Arg Pro Gly Tyr Ser Pro Met Val Leu Glu Met Glu
 20 25 30

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

Cys Glu Tyr Lys Thr Val Ile Pro Ser Pro Tyr Val Lys Cys Cys Gly
 50 55 60

Thr Ala Glu Cys Lys Asp Lys Ser Leu Pro Asp Tyr Ser Cys Lys Val
 65 70 75 80

Phe Thr Gly Val Tyr Pro Phe Met Trp Gly Gly Ala Tyr Cys Phe Cys
 85 90 95

Asp Ala Glu Asn Thr Gln Leu Ser Glu Ala His Val Glu Lys Ser Glu
 100 105 110

Ser Cys Lys Thr Glu Phe Ala Ser Ala Tyr Arg Ala His Thr Ala Ser
 115 120 125

Ala Ser Ala Lys Leu Arg Val Leu Tyr Gln Gly Asn Asn Ile Thr Val
 130 135 140

Ala Ala Tyr Ala Asn Gly Asp His Ala Val Thr Val Lys Asp Ala Lys
 145 150 155 160

VBLT_P0246W0-SeqListing

Phe Val Val Gly Pro Met Ser Ser Ala Trp Thr Pro Phe Asp Asn Lys
165 170 175

Ile Val Val Tyr Lys Gly Asp Val Tyr Asn Met Asp Tyr Pro Pro Phe
180 185 190

Gly Ala Gly Arg Pro Gly Gln Phe Gly Asp Ile Gln Ser Arg Thr Pro
195 200 205

Glu Ser Lys Asp Val Tyr Ala Asn Thr Gln Leu Val Leu Gln Arg Pro
210 215 220

Ala Ala Gly Thr Val His Val Pro Tyr Ser Gln Ala Pro Ser Gly Phe
225 230 235 240

Lys Tyr Trp Leu Lys Glu Arg Gly Ala Ser Leu Gln His Thr Ala Pro
245 250 255

Phe Gly Cys Gln Ile Ala Thr Asn Pro Val Arg Ala Val Asn Cys Ala
260 265 270

Val Gly Asn Ile Pro Ile Ser Ile Asp Ile Pro Asp Ala Ala Phe Thr
275 280 285

Arg Val Val Asp Ala Pro Ser Val Thr Asp Met Ser Cys Glu Val Pro
290 295 300

Ala Cys Thr His Ser Ser Asp Phe Gly Gly Val Ala Ile Ile Lys Tyr
305 310 315 320

Thr Ala Ser Lys Lys Gly Lys Cys Ala Val His Ser Met Thr Asn Ala
325 330 335

Val Thr Ile Arg Glu Ala Asp Val Glu Val Glu Gly Asn Ser Gln Leu
340 345 350

VBLT_P0246W0-SeqListing

Gln Ile Ser Phe Ser Thr Ala Leu Ala Ser Ala Glu Phe Arg Val Gln
355 360 365

Val Cys Ser Thr Gln Val His Cys Ala Ala Ala Cys His Pro Pro Lys
370 375 380

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

Asp Ile Ser Thr Thr Ala Met Ser Trp Val Gln Lys Ile Thr Gly Gly
405 410 415

Val Gly Leu Ile Val Ala Val Ala Ala Leu Ile Leu Ile Val Val Leu
420 425 430

Cys Val Ser Phe Ser Arg His
435

<210> 260
<211> 439
<212> PRT
<213> Chikungunya virus

<400> 260

Tyr Glu His Val Thr Val Ile Pro Asn Thr Val Gly Val Pro Tyr Lys
1 5 10 15

Thr Leu Val Asn Arg Pro Gly Tyr Ser Pro Met Val Leu Glu Met Glu
20 25 30

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

Cys Glu Tyr Lys Thr Val Ile Pro Ser Pro Tyr Val Lys Cys Cys Gly
50 55 60

VBLT_P0246W0-SeqListing

Thr Ala Glu Cys Lys Asp Lys Asn Leu Pro Asp Tyr Ser Cys Lys Val
65 70 75 80

Phe Thr Gly Val Tyr Pro Phe Met Trp Gly Gly Ala Tyr Cys Phe Cys
85 90 95

Asp Ala Glu Asn Thr Gln Leu Ser Glu Ala His Val Glu Lys Ser Glu
100 105 110

Ser Cys Lys Thr Glu Phe Ala Ser Ala Tyr Arg Ala His Thr Ala Ser
115 120 125

Ala Ser Ala Lys Leu Arg Val Leu Tyr Gln Gly Asn Asn Ile Thr Val
130 135 140

Thr Ala Tyr Ala Asn Gly Asp His Ala Val Thr Val Lys Asp Ala Lys
145 150 155 160

Phe Ile Val Gly Pro Met Ser Ser Ala Trp Thr Pro Phe Asp Asn Lys
165 170 175

Ile Val Val Tyr Lys Gly Asp Val Tyr Asn Met Asp Tyr Pro Pro Phe
180 185 190

Gly Ala Gly Arg Pro Gly Gln Phe Gly Asp Ile Gln Ser Arg Thr Pro
195 200 205

Glu Ser Lys Asp Val Tyr Ala Asn Thr Gln Leu Val Leu Gln Arg Pro
210 215 220

Ala Ala Gly Thr Val His Val Pro Tyr Ser Gln Ala Pro Ser Gly Phe
225 230 235 240

Lys Tyr Trp Leu Lys Glu Arg Gly Ala Ser Leu Gln His Thr Ala Pro
245 250 255

VBLT_P0246W0-SeqListing

Phe Gly Cys Gln Ile Ala Thr Asn Pro Val Arg Ala Met Asn Cys Ala
260 265 270

Val Gly Asn Met Pro Ile Ser Ile Asp Ile Pro Asp Ala Ala Phe Thr
275 280 285

Arg Val Val Asp Ala Pro Ser Leu Thr Asp Met Ser Cys Glu Val Pro
290 295 300

Ala Cys Thr His Ser Ser Asp Phe Gly Gly Val Ala Ile Ile Lys Tyr
305 310 315 320

Ala Val Ser Lys Lys Gly Lys Cys Ala Val His Ser Met Thr Asn Ala
325 330 335

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

Gln Ile Ser Phe Ser Thr Ala Leu Ala Ser Ala Glu Phe Arg Val Gln
355 360 365

Val Cys Ser Thr Gln Val His Cys Ala Ala Glu Cys His Pro Pro Lys
370 375 380

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

Asp Ile Ser Ala Thr Ala Met Ser Trp Val Gln Lys Ile Thr Gly Gly
405 410 415

Val Gly Leu Val Val Ala Val Ala Ala Leu Ile Leu Ile Val Val Leu
420 425 430

Cys Val Ser Phe Ser Arg His
435

VBLT_P0246W0-SeqListing

<210> 261
 <211> 439
 <212> PRT
 <213> Chikungunya virus

<400> 261

Tyr Glu His Val Thr Val Ile Pro Asn Thr Val Gly Val Pro Tyr Lys
 1 5 10 15

Thr Leu Val Asn Arg Pro Gly Tyr Ser Pro Met Val Leu Glu Met Glu
 20 25 30

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

Cys Glu Tyr Lys Thr Val Ile Pro Ser Pro Tyr Val Lys Cys Cys Gly
 50 55 60

Thr Ala Glu Cys Lys Asp Lys Asn Leu Pro Asp Tyr Ser Cys Lys Val
 65 70 75 80

Phe Thr Gly Val Tyr Pro Phe Met Trp Gly Gly Ala Tyr Cys Phe Cys
 85 90 95

Asp Ala Glu Asn Thr Gln Leu Ser Glu Ala His Val Glu Lys Ser Glu
 100 105 110

Ser Cys Lys Thr Glu Phe Ala Ser Ala Tyr Arg Ala His Thr Ala Ser
 115 120 125

Ala Ser Ala Lys Leu Arg Val Leu Tyr Gln Gly Asn Asn Ile Thr Val
 130 135 140

Thr Ala Tyr Ala Asn Gly Asp His Ala Val Thr Val Lys Asp Ala Lys
 145 150 155 160

Phe Ile Val Gly Pro Met Ser Ser Ala Trp Thr Pro Phe Asp Asn Lys

VBLT_P0246W0-SeqListing

165

170

175

Ile Val Val Tyr Lys Gly Asp Val Tyr Asn Met Asp Tyr Pro Pro Phe
 180 185 190

Gly Ala Gly Arg Pro Gly Gln Phe Gly Asp Ile Gln Ser Arg Thr Pro
 195 200 205

Glu Ser Lys Asp Val Tyr Ala Asn Thr Gln Leu Val Leu Gln Arg Pro
 210 215 220

Ala Ala Gly Thr Val His Val Pro Tyr Ser Gln Ala Pro Ser Gly Phe
 225 230 235 240

Lys Tyr Trp Leu Lys Glu Arg Gly Ala Ser Leu Gln His Thr Ala Pro
 245 250 255

Phe Gly Cys Gln Ile Ala Thr Asn Pro Val Arg Ala Val Asn Cys Ala
 260 265 270

Val Gly Asn Met Pro Ile Ser Ile Asp Ile Pro Glu Ala Ala Phe Thr
 275 280 285

Arg Val Val Asp Ala Pro Ser Leu Thr Asp Met Ser Cys Glu Val Leu
 290 295 300

Ala Cys Thr His Ser Ser Asp Phe Gly Gly Val Ala Ile Ile Lys Tyr
 305 310 315 320

Ala Ala Ser Lys Lys Gly Lys Cys Ala Val His Ser Met Thr Asn Ala
 325 330 335

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

Gln Ile Ser Phe Ser Thr Ala Leu Ala Ser Ala Glu Phe Arg Val Gln

VBLT_P0246W0-SeqListing

355

360

365

Val Cys Ser Thr Gln Val His Cys Ala Ala Glu Cys His Pro Pro Lys
370 375 380

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

Asp Ile Ser Ala Thr Ala Met Ser Trp Val Gln Lys Ile Thr Gly Gly
405 410 415

Val Gly Leu Val Val Ala Val Ala Ala Leu Ile Leu Ile Val Val Leu
420 425 430

Cys Val Ser Phe Ser Arg His
435

<210> 262
<211> 439
<212> PRT
<213> Chikungunya virus

<400> 262

Tyr Glu His Val Thr Val Ile Pro Asn Thr Val Gly Val Pro Tyr Lys
1 5 10 15

Thr Leu Val Asn Arg Pro Gly Tyr Ser Pro Met Val Leu Glu Met Glu
20 25 30

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

Cys Glu Tyr Lys Thr Val Ile Pro Ser Pro Tyr Val Lys Cys Cys Gly
50 55 60

Thr Ala Glu Cys Lys Asp Lys Asn Leu Pro Asp Tyr Ser Cys Lys Val
65 70 75 80

VBLT_P0246W0-SeqListing

Phe Thr Gly Val Tyr Pro Phe Met Trp Gly Gly Ala Tyr Cys Phe Cys
85 90 95

Asp Ala Glu Asn Thr Gln Leu Ser Glu Ala His Val Glu Lys Ser Glu
100 105 110

Ser Cys Lys Thr Glu Phe Ala Ser Ala Tyr Arg Ala His Thr Ala Ser
115 120 125

Ala Ser Ala Lys Leu Arg Val Leu Tyr Gln Gly Asn Asn Ile Thr Val
130 135 140

Thr Ala Tyr Ala Asn Gly Asp His Ala Val Thr Val Lys Asp Ala Lys
145 150 155 160

Phe Ile Val Gly Pro Met Ser Ser Ala Trp Thr Pro Phe Asp Asn Lys
165 170 175

Ile Val Val Tyr Lys Gly Asp Val Tyr Asn Met Asp Tyr Pro Pro Phe
180 185 190

Gly Ala Gly Arg Pro Gly Gln Phe Gly Asp Ile Gln Ser Arg Thr Pro
195 200 205

Glu Ser Lys Asp Val Tyr Ala Asn Thr Gln Leu Val Leu Gln Arg Pro
210 215 220

Ala Val Gly Thr Val His Val Pro Tyr Ser Gln Ala Pro Ser Gly Phe
225 230 235 240

Lys Tyr Trp Leu Lys Glu Arg Gly Ala Ser Leu Gln His Thr Ala Pro
245 250 255

Phe Gly Cys Gln Ile Ala Thr Asn Pro Val Arg Ala Val Asn Cys Ala
260 265 270

VBLT_P0246W0-SeqListing

Val Gly Asn Met Pro Ile Ser Ile Asp Ile Pro Glu Ala Ala Phe Thr
275 280 285

Arg Val Val Asp Ala Pro Ser Leu Thr Asp Met Ser Cys Glu Val Pro
290 295 300

Ala Cys Thr His Ser Ser Asp Phe Gly Gly Val Ala Ile Ile Lys Tyr
305 310 315 320

Ala Ala Ser Lys Lys Gly Lys Cys Ala Val His Ser Met Thr Asn Ala
325 330 335

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

Gln Ile Ser Phe Ser Thr Ala Leu Ala Ser Ala Glu Phe Arg Val Gln
355 360 365

Val Cys Ser Thr Gln Val His Cys Ala Ala Glu Cys His Pro Pro Lys
370 375 380

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

Asp Ile Ser Ala Thr Ala Met Ser Trp Val Gln Lys Ile Thr Gly Gly
405 410 415

Val Gly Leu Val Val Ala Val Ala Ala Leu Ile Leu Ile Val Val Leu
420 425 430

Cys Val Ser Phe Ser Arg His
435

<210> 263

<211> 439

VBLT_P0246W0-SeqListing

<212> PRT

<213> Chikungunya virus

<400> 263

Tyr Glu His Val Thr Val Ile Pro Asn Thr Val Gly Val Pro Tyr Lys
1 5 10 15

Thr Leu Val Asn Arg Pro Gly Tyr Ser Pro Met Val Leu Glu Met Glu
20 25 30

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

Cys Glu Tyr Lys Thr Val Ile Pro Ser Pro Tyr Val Lys Cys Cys Gly
50 55 60

Thr Ala Glu Cys Lys Asp Lys Ser Leu Pro Asp Tyr Ser Cys Lys Val
65 70 75 80

Phe Thr Gly Val Tyr Pro Phe Met Trp Gly Gly Ala Tyr Cys Phe Cys
85 90 95

Asp Thr Glu Asn Thr Gln Leu Ser Glu Ala His Val Glu Lys Ser Glu
100 105 110

Ser Cys Lys Thr Glu Phe Ala Ser Ala Tyr Arg Ala His Thr Ala Ser
115 120 125

Ala Ser Ala Lys Leu Arg Val Leu Tyr Gln Gly Asn Asn Ile Thr Val
130 135 140

Ala Ala Tyr Ala Asn Gly Asp His Ala Val Thr Val Lys Asp Ala Lys
145 150 155 160

Phe Ile Val Gly Pro Met Ser Ser Ala Trp Thr Pro Phe Asp Asn Lys
165 170 175

VBLT_P0246W0-SeqListing

Ile Val Val Tyr Lys Gly Asp Val Tyr Asn Met Asp Tyr Pro Pro Phe
180 185 190

Gly Ala Gly Arg Pro Gly Gln Phe Gly Asp Ile Gln Ser Arg Thr Pro
195 200 205

Glu Ser Glu Asp Val Tyr Ala Asn Thr Gln Leu Val Leu Gln Arg Pro
210 215 220

Ser Ala Gly Thr Val His Val Pro Tyr Ser Gln Ala Pro Ser Gly Phe
225 230 235 240

Lys Tyr Trp Leu Lys Glu Arg Gly Ala Ser Leu Gln His Thr Ala Pro
245 250 255

Phe Gly Cys Gln Ile Ala Thr Asn Pro Val Arg Ala Met Asn Cys Ala
260 265 270

Val Gly Asn Met Pro Ile Ser Ile Asp Ile Pro Asp Ala Ala Phe Thr
275 280 285

Arg Val Val Asp Ala Pro Ser Leu Thr Asp Met Ser Cys Glu Val Ser
290 295 300

Ala Cys Thr His Ser Ser Asp Phe Gly Gly Val Ala Ile Ile Lys Tyr
305 310 315 320

Ala Ala Ser Lys Lys Gly Lys Cys Ala Val His Ser Met Thr Asn Ala
325 330 335

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

Gln Ile Ser Phe Ser Thr Ala Leu Ala Ser Ala Glu Phe Arg Val Gln
355 360 365

VBLT_P0246W0-SeqListing

Val Cys Ser Thr Gln Val His Cys Ala Ala Glu Cys His Pro Pro Lys
370 375 380

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

Asp Ile Ser Ala Thr Ala Met Ser Trp Val Gln Lys Ile Thr Gly Gly
405 410 415

Val Gly Leu Val Val Ala Val Ala Ala Leu Ile Leu Ile Val Val Leu
420 425 430

Cys Val Ser Phe Ser Arg His
435

<210> 264
<211> 439
<212> PRT
<213> Chikungunya virus

<400> 264

Tyr Glu His Val Thr Val Ile Pro Asn Thr Val Gly Val Pro Tyr Lys
1 5 10 15

Thr Leu Val Asn Arg Pro Gly Tyr Ser Pro Met Val Leu Glu Met Glu
20 25 30

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

Cys Glu Tyr Lys Thr Val Ile Pro Ser Pro Tyr Val Lys Cys Cys Gly
50 55 60

Thr Ala Glu Cys Lys Asp Lys Ser Leu Pro Asp Tyr Ser Cys Lys Val
65 70 75 80

VBLT_P0246W0-SeqListing

Phe Thr Gly Val Tyr Pro Phe Met Trp Gly Gly Ala Tyr Cys Phe Cys
85 90 95

Asp Thr Glu Asn Thr Gln Leu Ser Glu Ala His Val Glu Lys Ser Glu
100 105 110

Ser Cys Lys Thr Glu Phe Ala Ser Ala Tyr Arg Ala His Thr Ala Ser
115 120 125

Ala Ser Ala Lys Leu Arg Val Leu Tyr Gln Gly Asn Asn Val Thr Val
130 135 140

Ser Ala Tyr Ala Asn Gly Asp His Ala Val Thr Val Lys Asp Ala Lys
145 150 155 160

Phe Ile Val Gly Pro Met Ser Ser Ala Trp Thr Pro Phe Asp Asn Lys
165 170 175

Ile Val Val Tyr Lys Gly Asp Val Tyr Asn Met Asp Tyr Pro Pro Phe
180 185 190

Gly Ala Gly Arg Pro Gly Gln Phe Gly Asp Ile Gln Ser Arg Thr Pro
195 200 205

Glu Ser Glu Asp Val Tyr Ala Asn Thr Gln Leu Val Leu Gln Arg Pro
210 215 220

Ser Ala Gly Thr Val His Val Pro Tyr Ser Gln Ala Pro Ser Gly Phe
225 230 235 240

Lys Tyr Trp Leu Lys Glu Arg Gly Ala Ser Leu Gln His Thr Ala Pro
245 250 255

Phe Gly Cys Gln Ile Ala Thr Asn Pro Val Arg Ala Met Asn Cys Ala
260 265 270

VBLT_P0246W0-SeqListing

Val Gly Asn Met Pro Ile Ser Ile Asp Ile Pro Asp Ala Ala Phe Thr
275 280 285

Arg Val Val Asp Ala Pro Ser Leu Thr Asp Met Ser Cys Glu Val Pro
290 295 300

Ala Cys Thr His Ser Ser Asp Phe Gly Gly Val Ala Ile Ile Lys Tyr
305 310 315 320

Ala Ala Ser Lys Lys Gly Lys Cys Ala Val His Ser Met Thr Asn Ala
325 330 335

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

Gln Ile Ser Phe Ser Thr Ala Leu Ala Ser Ala Glu Phe Arg Val Gln
355 360 365

Val Cys Ser Thr Gln Val His Cys Ala Ala Glu Cys His Pro Pro Lys
370 375 380

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

Asp Ile Ser Val Thr Ala Met Ser Trp Val Gln Lys Ile Thr Gly Gly
405 410 415

Val Gly Leu Val Val Ala Val Ala Ala Leu Ile Leu Ile Val Val Leu
420 425 430

Cys Val Ser Phe Ser Arg His
435

<210> 265

<211> 1269

<212> DNA

<213> Chikungunya virus

VBLT_P0246W0-SeqListing

<400> 265
 agtattaagg acaacttcaa tgtctataaa gccataagac cgtacctagc tctactgtccc 60
 gactgtggag aagggcactc gtgccatagt cccgtagcgc tagaacgcat cagaaacgaa 120
 gcgacagacg ggacgctgaa aatccagggtt tccttgcaaa tcggaataaa gacggatgat 180
 agccatgatt ggaccaagct gcgttacatg gacaatcata tgccagcaga cgagagagg 240
 gccaggctat ttgtaagaac gtcagcaccg tgcacgatta ctggaacaat gggacacttc 300
 atcctggccc gatgtccgaa aggagaaact ctgacgggtgg gattcactga cggtaggaag 360
 atcagtcact catgtacgca cccatttcac cacgaccctc ctgtgatagg ccgggaaaaa 420
 tttcattccc gaccgcagca cggtagagaa ctaccttgca gcacgtacgc gcagagcacc 480
 gctgcaactg ccgaggagat agaggtagat atgccccag acaccccaga tcgcacattg 540
 atgtcacaac agtccggtaa tgtaaagatc acagtcaata gtcagacggg gcggtacaag 600
 tgtaattgcg gtgactcaaa tgaaggacta accactacag acaaagtgat taataactgc 660
 aaggttgatc aatgccatgc cgcggtcacc aatcacaaaa aatggcagta taattcccct 720
 ctgggtccgc gtaatgctga actcggggac cgaaaaggaa aagttcacat tccgtttcct 780
 ctggcaaatg tgacatgcag ggtgcctaag gcaaggaacc ccaccgtgac gtacggaaaa 840
 aaccaagtca tcatgtgct gtatcctgac cacccaacgc tcctgtccta ccggaatatg 900
 ggagaagaac caaactatca agaagagtgg gtgacgcata agaaggagat caggttaacc 960
 gtgccgactg aagggctcga ggtcacgtgg ggcaacaacg agccgtacaa gtattggccg 1020
 cagttatcca caaacggtac agcccacggc caccgcgatg agataatttt gtattattat 1080
 gagctgtacc ctactatgac tgtggtagtt gtgtcagtgg cctcgttcgt actcctgtcg 1140
 atggtgggtg tggcagtggg gatgtgcatg tgtgcacgac gcagatgcat tacaccgtac 1200
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<210> 266

VBLT_P0246W0-SeqListing

<211> 1269

<212> DNA

<213> Chikungunya virus

<400> 266

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gaattaacac caggagccac cgttcccctt ctgctcagcc tgctatgttg cgtcagaacg     1260
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VBLT_P0246W0-SeqListing

<210> 267
 <211> 1269
 <212> DNA
 <213> Chikungunya virus

<400> 267
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VBLT_P0246W0-SeqListing

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<210> 268	
<211> 1269	
<212> DNA	
<213> Chikungunya virus	
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gtgccgactg aagggctcga ggtcacgtgg ggcaacaacg agccgtataa gtattggccg	1020
cagttatcta caaacggtac agcccatggc caccgcgatg agataattct gtattattat	1080
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VBLT_P0246W0-SeqListing

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gaactgacac caggagctac cgtccctttc ctgcttagcc taatatgctg catcagaaca	1260
gctaaagcg	1269

<210> 269
 <211> 1269
 <212> DNA
 <213> Chikungunya virus

<400> 269	
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VBLT_P0246W0-SeqListing

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gaactgacac caggagctac cgtccctttc ctgcttagcc taatatgctg catcagaaca	1260
gctaaagcg	1269

<210> 270

<211> 1269

<212> DNA

<213> Chikungunya virus

<400> 270

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gcgacagacg ggacgttgaa aatccaggtt tccttgcaaa tcggaataaa gacggatgat	180
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VBLT_P0246W0-SeqListing

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gaactgacac caggagctac cgtccctttc ctgcttagcc taatatgctg cattagaaca	1260
gctaaagcg	1269

<210> 271
 <211> 423
 <212> PRT
 <213> Chikungunya virus

<400> 271

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Ala	Leu	Glu	Arg	Ile	Arg	Asn	Glu	Ala	Thr	Asp	Gly	Thr	Leu	Lys	Ile
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Gln	Val	Ser	Leu	Gln	Ile	Gly	Ile	Lys	Thr	Asp	Asp	Ser	His	Asp	Trp
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Thr	Lys	Leu	Arg	Tyr	Met	Asp	Ser	His	Thr	Pro	Ala	Asp	Ala	Glu	Arg
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Ala	Gly	Leu	Leu	Val	Arg	Thr	Ser	Ala	Pro	Cys	Thr	Ile	Thr	Gly	Thr
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Met	Gly	His	Phe	Ile	Leu	Ala	Arg	Cys	Pro	Lys	Gly	Glu	Thr	Leu	Thr
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VBLT_P0246W0-SeqListing

Val Gly Phe Thr Asp Ser Arg Lys Ile Ser His Thr Cys Thr His Pro
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Phe His His Glu Pro Pro Val Ile Gly Arg Glu Arg Phe His Ser Arg
130 135 140

Pro Gln His Gly Lys Glu Leu Pro Cys Ser Thr Tyr Val Gln Ser Thr
145 150 155 160

Ala Ala Thr Ala Glu Glu Ile Glu Val His Met Pro Pro Asp Thr Pro
165 170 175

Asp Arg Thr Leu Met Thr Gln Gln Ser Gly Asn Val Lys Ile Thr Val
180 185 190

Asn Gly Gln Thr Val Arg Tyr Lys Cys Asn Cys Gly Gly Ser Asn Glu
195 200 205

Gly Leu Thr Thr Thr Asp Lys Val Ile Asn Asn Cys Lys Ile Asp Gln
210 215 220

Cys His Ala Ala Val Thr Asn His Lys Lys Trp Gln Tyr Asn Ser Pro
225 230 235 240

Leu Val Pro Arg Asn Ala Glu Leu Gly Asp Arg Lys Gly Lys Ile His
245 250 255

Ile Pro Phe Pro Leu Ala Asn Val Thr Cys Arg Val Pro Lys Ala Arg
260 265 270

Asn Pro Thr Val Thr Tyr Gly Lys Asn Gln Val Thr Met Leu Leu Tyr
275 280 285

Pro Asp His Pro Thr Leu Leu Ser Tyr Arg Asn Met Gly Gln Glu Pro
290 295 300

VBLT_P0246W0-SeqListing

Asn Tyr His Glu Glu Trp Val Thr His Lys Lys Glu Val Thr Leu Thr
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Val Pro Thr Glu Gly Leu Glu Val Thr Trp Gly Asn Asn Glu Pro Tyr
325 330 335

Lys Tyr Trp Pro Gln Met Ser Thr Asn Gly Thr Ala His Gly His Pro
340 345 350

His Glu Ile Ile Leu Tyr Tyr Tyr Glu Leu Tyr Pro Thr Met Thr Val
355 360 365

Ile Ile Val Ser Val Ala Ser Phe Val Leu Leu Ser Met Val Gly Thr
370 375 380

Ala Val Gly Met Cys Val Cys Ala Arg Arg Arg Cys Ile Thr Pro Tyr
385 390 395 400

Glu Leu Thr Pro Gly Ala Thr Val Pro Phe Leu Leu Ser Leu Leu Cys
405 410 415

Cys Val Arg Thr Thr Lys Ala
420

<210> 272

<211> 423

<212> PRT

<213> Chikungunya virus

<400> 272

Ser Ile Lys Asp His Phe Asn Val Tyr Lys Ala Thr Arg Pro Tyr Leu
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Ala His Cys Pro Asp Cys Gly Glu Gly His Ser Cys His Ser Pro Val
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VBLT_P0246W0-SeqListing

Ala Leu Glu Arg Ile Arg Asn Glu Ala Thr Asp Gly Thr Leu Lys Ile
35 40 45

Gln Val Ser Leu Gln Ile Gly Ile Lys Thr Asp Asp Ser His Asp Trp
50 55 60

Thr Lys Leu Arg Tyr Met Asp Asn His Met Pro Ala Asp Ala Glu Arg
65 70 75 80

Ala Gly Leu Phe Val Arg Thr Ser Ala Pro Cys Thr Ile Thr Gly Thr
85 90 95

Met Gly His Phe Ile Leu Ala Arg Cys Pro Lys Gly Glu Thr Leu Thr
100 105 110

Ala Gly Phe Thr Asp Gly Arg Lys Ile Ser His Ser Cys Thr His Pro
115 120 125

Phe His His Asp Pro Pro Val Ile Gly Arg Glu Lys Phe His Ser Arg
130 135 140

Pro Gln His Gly Arg Glu Leu Pro Cys Ser Thr Tyr Ala Gln Ser Thr
145 150 155 160

Ala Ala Thr Ala Glu Glu Ile Glu Val His Met Pro Pro Asp Thr Pro
165 170 175

Asp Arg Thr Leu Met Ser Gln Gln Ser Gly Asn Val Lys Ile Thr Val
180 185 190

Asn Ser Gln Thr Val Arg Tyr Lys Cys Asn Cys Gly Asp Ser Ser Glu
195 200 205

Gly Leu Thr Thr Thr Asp Lys Val Ile Asn Asn Cys Lys Val Asp Gln
210 215 220

VBLT_P0246W0-SeqListing

Cys His Ala Ala Val Thr Asn His Lys Lys Trp Gln Tyr Asn Ser Pro
225 230 235 240

Leu Val Pro Arg Asn Ala Glu Phe Gly Asp Arg Lys Gly Lys Val His
245 250 255

Ile Pro Phe Pro Leu Ala Asn Val Thr Cys Arg Val Pro Lys Ala Arg
260 265 270

Asn Pro Thr Val Thr Tyr Gly Lys Asn Gln Val Ile Met Leu Leu Tyr
275 280 285

Pro Asp His Pro Thr Leu Leu Ser Tyr Arg Asn Met Gly Glu Glu Pro
290 295 300

Asn Tyr Gln Glu Glu Trp Val Thr His Lys Lys Glu Ile Arg Leu Thr
305 310 315 320

Val Pro Thr Glu Gly Leu Glu Val Thr Trp Gly Asn Asn Glu Pro Tyr
325 330 335

Lys Tyr Trp Pro Gln Leu Ser Thr Asn Gly Thr Ala His Gly His Pro
340 345 350

His Glu Ile Ile Leu Tyr Tyr Tyr Glu Leu Tyr Pro Thr Met Thr Ala
355 360 365

Val Val Leu Ser Val Ala Ser Phe Ile Leu Leu Ser Met Val Gly Val
370 375 380

Ala Val Gly Met Cys Met Cys Ala Arg Arg Arg Cys Ile Thr Pro Tyr
385 390 395 400

Glu Leu Thr Pro Gly Ala Thr Val Pro Phe Leu Leu Ser Leu Ile Cys
405 410 415

VBLT_P0246W0-SeqListing

Cys Ile Arg Thr Ala Lys Ala
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<210> 273

<211> 423

<212> PRT

<213> Chikungunya virus

<400> 273

Ser Ile Lys Asp Asn Phe Asn Val Tyr Lys Ala Ile Arg Pro Tyr Leu
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Ala His Cys Pro Asp Cys Gly Glu Gly His Ser Cys His Ser Pro Val
20 25 30

Ala Leu Glu Arg Ile Arg Asn Glu Ala Thr Asp Gly Thr Leu Lys Ile
35 40 45

Gln Val Ser Leu Gln Ile Gly Ile Lys Thr Asp Asp Ser His Asp Trp
50 55 60

Thr Lys Leu Arg Tyr Met Asp Asn His Met Pro Ala Asp Ala Glu Arg
65 70 75 80

Ala Arg Leu Phe Val Arg Thr Ser Ala Pro Cys Thr Ile Thr Gly Thr
85 90 95

Met Gly His Phe Ile Leu Ala Arg Cys Pro Lys Gly Glu Thr Leu Thr
100 105 110

Val Gly Phe Thr Asp Gly Arg Lys Ile Ser His Ser Cys Thr His Pro
115 120 125

Phe His His Asp Pro Pro Val Ile Gly Arg Glu Lys Phe His Ser Arg
130 135 140

Pro Gln His Gly Arg Glu Leu Pro Cys Ser Thr Tyr Ala Gln Ser Thr

VBLT_P0246W0-SeqListing

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Asn	Ser	Gln	Thr	Val	Arg	Tyr	Lys	Cys	Asn	Cys	Gly	Asp	Ser	Asn	Glu
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Gly	Leu	Thr	Thr	Thr	Asp	Lys	Val	Ile	Asn	Asn	Cys	Lys	Val	Asp	Gln
	210					215					220				
Cys	His	Ala	Ala	Val	Thr	Asn	His	Lys	Lys	Trp	Gln	Tyr	Asn	Ser	Pro
225					230					235					240
Leu	Val	Pro	Arg	Asn	Ala	Glu	Leu	Gly	Asp	Arg	Lys	Gly	Lys	Val	His
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Ile	Pro	Phe	Pro	Leu	Ala	Asn	Val	Thr	Cys	Arg	Val	Pro	Lys	Ala	Arg
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Asn	Pro	Thr	Val	Thr	Tyr	Gly	Lys	Asn	Gln	Val	Ile	Met	Leu	Leu	Tyr
		275					280					285			
Pro	Asp	His	Pro	Thr	Leu	Leu	Ser	Tyr	Arg	Asn	Met	Gly	Glu	Glu	Pro
	290					295					300				
Asn	Tyr	Gln	Glu	Glu	Trp	Val	Thr	His	Lys	Lys	Glu	Ile	Arg	Leu	Thr
305					310					315					320
Val	Pro	Thr	Glu	Gly	Leu	Glu	Val	Thr	Trp	Gly	Asn	Asn	Glu	Pro	Tyr
				325					330					335	
Lys	Tyr	Trp	Pro	Gln	Leu	Ser	Thr	Asn	Gly	Thr	Ala	His	Gly	His	Pro

VBLT_P0246W0-SeqListing

340

345

350

His Glu Ile Ile Leu Tyr Tyr Tyr Glu Leu Tyr Pro Thr Met Thr Val
 355 360 365

Val Val Val Ser Val Ala Ser Phe Val Leu Leu Ser Met Val Gly Val
 370 375 380

Ala Val Gly Met Cys Met Cys Ala Arg Arg Arg Cys Ile Thr Pro Tyr
 385 390 395 400

Glu Leu Thr Pro Gly Ala Thr Val Pro Phe Leu Leu Ser Leu Ile Cys
 405 410 415

Cys Ile Arg Thr Ala Lys Ala
 420

<210> 274

<211> 423

<212> PRT

<213> Chikungunya virus

<400> 274

Ser Thr Lys Asp Asn Phe Asn Val Tyr Lys Ala Thr Arg Pro Tyr Leu
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Ala His Cys Pro Asp Cys Gly Glu Gly His Ser Cys His Ser Pro Val
 20 25 30

Ala Leu Glu Arg Ile Arg Asn Glu Ala Thr Asp Gly Thr Leu Lys Ile
 35 40 45

Gln Val Ser Leu Gln Ile Gly Ile Gly Thr Asp Asp Ser His Asp Trp
 50 55 60

Thr Lys Leu Arg Tyr Met Asp Asn His Ile Pro Ala Asp Ala Gly Arg
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VBLT_P0246W0-SeqListing

Ala Gly Leu Phe Val Arg Thr Ser Ala Pro Cys Thr Ile Thr Gly Thr
85 90 95

Met Gly His Phe Ile Leu Ala Arg Cys Pro Lys Gly Glu Thr Leu Thr
100 105 110

Val Gly Phe Thr Asp Ser Arg Lys Ile Ser His Ser Cys Thr His Pro
115 120 125

Phe His His Asp Pro Pro Val Ile Gly Arg Glu Lys Phe His Ser Arg
130 135 140

Pro Gln His Gly Lys Glu Leu Pro Cys Ser Thr Tyr Val Gln Ser Asn
145 150 155 160

Ala Ala Thr Ala Glu Glu Ile Glu Val His Met Pro Pro Asp Thr Pro
165 170 175

Asp Arg Thr Leu Leu Ser Gln Gln Ser Gly Asn Val Lys Ile Thr Val
180 185 190

Asn Ser Gln Thr Val Arg Tyr Lys Cys Asn Cys Gly Gly Ser Asn Glu
195 200 205

Gly Leu Ile Thr Thr Asp Lys Val Ile Asn Asn Cys Lys Val Asp Gln
210 215 220

Cys His Ala Ala Val Thr Asn His Lys Lys Trp Gln Tyr Asn Ser Pro
225 230 235 240

Leu Val Pro Arg Asn Ala Glu Leu Gly Asp Arg Lys Gly Lys Ile His
245 250 255

Ile Pro Phe Pro Leu Ala Asn Val Thr Cys Met Val Pro Lys Ala Arg
260 265 270

VBLT_P0246W0-SeqListing

Asn Pro Thr Val Thr Tyr Gly Lys Asn Gln Val Ile Met Leu Leu Tyr
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Pro Asp His Pro Thr Leu Leu Ser Tyr Arg Ser Met Gly Glu Glu Pro
 290 295 300

Asn Tyr Gln Glu Glu Trp Val Thr His Lys Lys Glu Val Val Leu Thr
 305 310 315 320

Val Pro Thr Glu Gly Leu Glu Val Thr Trp Gly Asn Asn Glu Pro Tyr
 325 330 335

Lys Tyr Trp Pro Gln Leu Ser Ala Asn Gly Thr Ala His Gly His Pro
 340 345 350

His Glu Ile Ile Leu Tyr Tyr Tyr Glu Leu Tyr Pro Thr Met Thr Val
 355 360 365

Val Val Val Ser Val Ala Ser Phe Ile Leu Leu Ser Met Val Gly Met
 370 375 380

Ala Val Gly Met Cys Met Cys Ala Arg Arg Arg Cys Ile Thr Pro Tyr
 385 390 395 400

Glu Leu Thr Pro Gly Ala Thr Val Pro Phe Leu Leu Ser Leu Ile Cys
 405 410 415

Cys Ile Arg Thr Ala Lys Ala
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<210> 275
 <211> 423
 <212> PRT
 <213> Chikungunya virus

<400> 275

VBLT_P0246W0-SeqListing

Ser Thr Lys Asp Asn Phe Asn Val Tyr Lys Ala Thr Arg Pro Tyr Leu
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Ala Leu Glu Arg Ile Arg Asn Glu Ala Thr Asp Gly Thr Leu Lys Ile
35 40 45

Gln Val Ser Leu Gln Ile Gly Ile Lys Thr Asp Asp Ser His Asp Trp
50 55 60

Thr Lys Leu Arg Tyr Met Asp Asn His Met Pro Ala Asp Ala Glu Arg
65 70 75 80

Ala Gly Leu Phe Val Arg Thr Ser Ala Pro Cys Thr Ile Thr Gly Thr
85 90 95

Met Gly His Phe Ile Leu Ala Arg Cys Pro Lys Gly Glu Thr Leu Thr
100 105 110

Val Gly Phe Thr Asp Ser Arg Lys Ile Ser His Ser Cys Thr His Pro
115 120 125

Phe His His Asp Pro Pro Val Ile Gly Arg Glu Lys Phe His Ser Arg
130 135 140

Pro Gln His Gly Lys Glu Leu Pro Cys Ser Thr Tyr Val Gln Ser Thr
145 150 155 160

Ala Ala Thr Thr Glu Glu Ile Glu Val His Met Pro Pro Asp Thr Pro
165 170 175

Asp Arg Thr Leu Met Ser Gln Gln Ser Gly Asn Val Lys Ile Thr Val
180 185 190

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Asn Gly Gln Thr Val Arg Tyr Lys Cys Asn Cys Gly Gly Ser Asn Glu
195 200 205

Gly Leu Thr Thr Thr Asp Lys Val Ile Asn Asn Cys Lys Val Asp Gln
210 215 220

Cys His Ala Ala Val Thr Asn His Lys Lys Trp Gln Tyr Asn Ser Pro
225 230 235 240

Leu Val Pro Arg Asn Ala Glu Leu Gly Asp Arg Lys Gly Lys Ile His
245 250 255

Ile Pro Phe Pro Leu Ala Asn Val Thr Cys Arg Val Pro Lys Ala Arg
260 265 270

Asn Pro Thr Val Thr Tyr Gly Lys Asn Gln Val Ile Met Leu Leu Tyr
275 280 285

Pro Asp His Pro Thr Leu Leu Ser Tyr Arg Asn Met Gly Glu Glu Pro
290 295 300

Asn Tyr Gln Glu Glu Trp Val Met His Lys Lys Glu Val Val Leu Thr
305 310 315 320

Val Pro Thr Glu Gly Leu Glu Val Thr Trp Gly Asn Asn Glu Pro Tyr
325 330 335

Lys Tyr Trp Pro Gln Leu Ser Thr Asn Gly Thr Ala His Gly His Pro
340 345 350

His Glu Ile Ile Leu Tyr Tyr Tyr Glu Leu Tyr Pro Thr Met Thr Val
355 360 365

Val Val Val Ser Val Ala Thr Phe Ile Leu Leu Ser Met Val Gly Met
370 375 380

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Ala Val Gly Met Cys Met Cys Ala Arg Arg Arg Cys Ile Thr Pro Tyr
385 390 395 400

Glu Leu Thr Pro Gly Ala Thr Val Pro Phe Leu Leu Ser Leu Ile Cys
405 410 415

Cys Ile Arg Thr Ala Lys Ala
420

<210> 276

<211> 423

<212> PRT

<213> Chikungunya virus

<400> 276

Ser Thr Lys Asp Asn Phe Asn Val Tyr Lys Ala Thr Arg Pro Tyr Leu
1 5 10 15

Ala His Cys Pro Asp Cys Gly Glu Gly His Ser Cys His Ser Pro Val
20 25 30

Ala Leu Glu Arg Ile Arg Asn Glu Ala Thr Asp Gly Thr Leu Lys Ile
35 40 45

Gln Val Ser Leu Gln Ile Gly Ile Lys Thr Asp Asp Ser His Asp Trp
50 55 60

Thr Lys Leu Arg Tyr Met Asp Asn His Met Pro Ala Asp Ala Glu Arg
65 70 75 80

Ala Gly Leu Phe Val Arg Thr Ser Ala Pro Cys Thr Ile Thr Gly Thr
85 90 95

Met Gly His Phe Ile Leu Ala Arg Cys Pro Lys Gly Glu Thr Leu Thr
100 105 110

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Val Gly Phe Thr Asp Ser Arg Lys Ile Ser His Ser Cys Thr His Pro
115 120 125

Phe His His Asp Pro Pro Val Ile Gly Arg Glu Lys Phe His Ser Arg
130 135 140

Pro Gln His Gly Lys Glu Leu Pro Cys Ser Thr Tyr Val Gln Ser Thr
145 150 155 160

Ala Ala Thr Thr Glu Glu Ile Glu Val His Met Pro Pro Asp Thr Pro
165 170 175

Asp Arg Thr Leu Met Ser Gln Gln Ser Gly Asn Val Lys Ile Thr Val
180 185 190

Asn Gly Gln Thr Val Arg Tyr Lys Cys Asn Cys Gly Gly Ser Asn Glu
195 200 205

Gly Leu Thr Thr Thr Asp Lys Val Ile Asn Asn Cys Lys Val Asp Gln
210 215 220

Cys His Ala Ala Val Thr Asn His Lys Lys Trp Gln Tyr Asn Ser Pro
225 230 235 240

Leu Val Pro Arg Asn Ala Glu Leu Gly Asp Arg Lys Gly Lys Ile His
245 250 255

Ile Pro Phe Pro Leu Ala Asn Val Thr Cys Arg Val Pro Lys Ala Arg
260 265 270

Asn Pro Thr Val Thr Tyr Gly Lys Asn Gln Val Ile Met Leu Leu Tyr
275 280 285

Pro Asp His Pro Thr Leu Leu Ser Tyr Arg Asn Met Gly Glu Glu Pro
290 295 300

VBLT_P0246W0-SeqListing

Asn Tyr Gln Glu Glu Trp Val Met His Lys Lys Glu Val Val Leu Thr
 305 310 315 320

Val Pro Thr Glu Gly Leu Glu Val Thr Trp Gly Asn Asn Glu Pro Tyr
 325 330 335

Lys Tyr Trp Pro Gln Leu Ser Thr Asn Gly Thr Ala His Gly His Pro
 340 345 350

His Glu Ile Ile Leu Tyr Tyr Tyr Glu Leu Tyr Pro Thr Met Thr Val
 355 360 365

Val Val Val Ser Val Ala Thr Phe Ile Leu Leu Ser Met Val Gly Met
 370 375 380

Ala Ala Gly Met Cys Met Cys Ala Arg Arg Arg Cys Ile Thr Pro Tyr
 385 390 395 400

Glu Leu Thr Pro Gly Ala Thr Val Pro Phe Leu Leu Ser Leu Ile Cys
 405 410 415

Cys Ile Arg Thr Ala Lys Ala
 420