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<120> Rodents Having Genetically Modified Sodium Channels and Methods of Use Thereof

<130> 36328PCT (10403WO01)

<150> 62/808,957
<151> 2019-02-22

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<170> PatentIn version 3.5

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Asn Met  Asn Thr Glu Glu Leu  Ser Ser Asp Ser Asp  Ser Asp Tyr
    1100                1105                1110

Ser Lys  Glu Arg Arg Asn Arg  Ser Ser Ser Ser Glu  Cys Ser Thr
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Val Asp  Asn Pro Leu Pro Gly  Glu Glu Glu Ala Glu  Ala Glu Pro
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Ile Asn  Ala Asp Glu Pro Glu  Ala Cys Phe Thr Asp  Gly Cys Val
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Arg Arg  Phe Pro Cys Cys Gln  Val Asn Ile Asp Ser  Gly Lys Gly
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Lys Val  Trp Trp Thr Ile Arg  Lys Thr Cys Tyr Arg  Ile Val Glu
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His Ser  Trp Phe Glu Ser Phe  Ile Val Leu Met Ile  Leu Leu Ser
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Ser Gly  Ala Leu Ala Phe Glu  Asp Ile Tyr Ile Glu  Lys Lys Lys
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Thr Ile  Lys Ile Ile Leu Glu  Tyr Ala Asp Lys Ile  Phe Thr Tyr
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Ile Phe  Ile Leu Glu Met Leu  Leu Lys Trp Val Ala  Tyr Gly Tyr
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Lys Thr  Tyr Phe Thr Asn Ala  Trp Cys Trp Leu Asp  Phe Leu Ile
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Val Asp  Val Ser Leu Val Thr  Leu Val Ala Asn Thr  Leu Gly Tyr
    1265                1270                1275

Ser Asp  Leu Gly Pro Ile Lys  Ser Leu Arg Thr Leu  Arg Ala Leu
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Arg Pro  Leu Arg Ala Leu Ser  Arg Phe Glu Gly Met  Arg Val Val
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Val Asn  Ala Leu Ile Gly Ala  Ile Pro Ser Ile Met  Asn Val Leu
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Leu Val  Cys Leu Ile Phe Trp  Leu Ile Phe Ser Ile  Met Gly Val
    1325                1330                1335
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Phe Ala  Leu Met Asn Val Ser  Gly Asn Val Arg Trp  Lys Asn Leu
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Lys Val  Asn Phe Asp Asn Val  Gly Leu Gly Tyr Leu  Ser Leu Leu
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Gln Val  Ala Thr Phe Lys Gly  Trp Met Asp Ile Met  Tyr Ala Ala
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Val Asp  Ser Val Asn Val Asn  Ala Gln Pro Ile Tyr  Glu Tyr Asn
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Leu Tyr  Met Tyr Ile Tyr Phe  Val Ile Phe Ile Ile  Phe Gly Ser
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Asn Gln  Gln Lys Lys Lys Leu  Gly Gly Gln Asp Ile  Phe Met Thr
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Glu Glu  Gln Lys Lys Tyr Tyr  Asn Ala Met Lys Lys  Leu Gly Ser
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Lys Lys  Pro Gln Lys Pro Ile  Pro Arg Pro Gly Asn  Lys Phe Gln
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Leu Ile  Ser Leu Arg His Tyr  Tyr Phe Thr Val Gly  Trp Asn Ile
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Phe Asp  Phe Val Val Val Ile  Leu Ser Ile Val Gly  Met Phe Leu
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Ala Glu  Met Ile Glu Lys Tyr  Phe Val Ser Pro Thr  Leu Phe Arg
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Gly Ala  Lys Gly Ile Arg Thr  Leu Leu Phe Ala Leu  Met Met Ser
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Leu Pro  Ala Leu Phe Asn Ile  Gly Leu Leu Leu Phe  Leu Val Met
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Phe Ile  Tyr Ala Ile Phe Gly  Met Ser Asn Phe Ala  Tyr Val Lys
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Lys Glu  Ala Gly Ile Asn Asp  Met Phe Asn Phe Glu  Thr Phe Gly
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Asn Ser  Met Ile Cys Leu Phe  Gln Ile Thr Thr Ser  Ala Gly Trp
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Asp Gly  Leu Leu Ala Pro Ile  Leu Asn Ser Ala Pro  Pro Asp Cys
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Glu Asn  Phe Ser Val Ala Thr  Glu Glu Ser Thr Glu  Pro Leu Ser
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Glu Asp  Asp Phe Glu Met Phe  Tyr Glu Val Trp Glu  Lys Phe Asp
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Pro Asp  Ala Thr Gln Phe Ile  Glu Phe Cys Lys Leu  Ser Asp Phe
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Ala Ala  Ala Leu Asp Pro Pro  Leu Leu Ile Ala Lys  Pro Asn Lys
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Val Gln  Leu Ile Ala Met Asp  Leu Pro Met Val Ser  Gly Asp Arg
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Ile His  Cys Leu Asp Ile Leu  Phe Ala Phe Thr Lys  Arg Val Leu
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Gly Glu  Ser Gly Glu Met Asp  Ser Leu Arg Ser Gln  Met Glu Glu
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Arg Phe  Met Ser Ala Asn Pro  Ser Lys Val Ser Tyr  Glu Pro Ile
    1865                1870                1875

Thr Thr  Thr Leu Lys Arg Lys  Gln Glu Asp Val Ser  Ala Thr Ile
    1880                1885                1890

Ile Gln  Arg Ala Tyr Arg Arg  Tyr Arg Leu Arg Gln  Asn Val Lys
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Leu Pro  Asn Lys Glu Asp Ile  Val Phe Asp Asn Val  Asn Glu Asn
    1925                1930                1935

Ser Ser  Pro Glu Lys Thr Asp  Ala Thr Ala Ser Thr  Ile Ser Pro
    1940                1945                1950

Pro Ser  Tyr Asp Ser Val Thr  Lys Pro Asp Gln Glu  Lys Tyr Glu
    1955                1960                1965

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    1970                1975                1980

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Glu Asp Lys Ser His Phe Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu
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Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile
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Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp
        355                 360                 365

Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp
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Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr
385                 390                 395                 400

Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu
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Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn
            420                 425                 430

Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln
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Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala
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Ala Ala Ala Ser Ala Glu Ser Arg Asp Phe Ser Gly Ala Gly Gly Ile
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Gly Val Phe Ser Glu Ser Ser Ser Val Ala Ser Lys Leu Ser Ser Lys
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Ser Glu Lys Glu Leu Lys Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu
            500                 505                 510

Gln Ser Gly Glu Glu Glu Lys Asn Asp Arg Val Arg Lys Ser Glu Ser
        515                 520                 525

Glu Asp Ser Ile Arg Arg Lys Gly Phe Arg Phe Ser Leu Glu Gly Ser
    530                 535                 540

Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser Leu Leu
545                 550                 555                 560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Ala Ser
                565                 570                 575

Leu Phe Ser Phe Arg Gly Arg Ala Lys Asp Ile Gly Ser Glu Asn Asp
            580                 585                 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Asp Ser Arg Arg
        595                 600                 605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg His Ser Asn
    610                 615                 620

Val Ser Gln Ala Ser Arg Ala Ser Arg Val Leu Pro Ile Leu Pro Met
625                 630                 635                 640

Asn Gly Lys Met His Ser Ala Val Asp Cys Asn Gly Val Val Ser Leu
                645                 650                 655
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Val Gly Gly Pro Ser Thr Leu Thr Ser Ala Gly Gln Leu Leu Pro Glu
            660                 665                 670

Gly Thr Thr Thr Glu Thr Glu Ile Arg Lys Arg Arg Ser Ser Ser Tyr
        675                 680                 685

His Val Ser Met Asp Leu Leu Glu Asp Pro Thr Ser Arg Gln Arg Ala
    690                 695                 700

Met Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu
705                 710                 715                 720

Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe Ala Asn Met Cys
                725                 730                 735

Leu Ile Trp Asp Cys Cys Lys Pro Trp Leu Lys Val Lys His Leu Val
            740                 745                 750

Asn Leu Val Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
        755                 760                 765

Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr
    770                 775                 780

Glu Gln Phe Ser Ser Val Leu Ser Val Gly Asn Leu Val Phe Thr Gly
785                 790                 795                 800

Ile Phe Thr Ala Glu Met Phe Leu Lys Ile Ile Ala Met Asp Pro Tyr
                805                 810                 815

Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Phe Ile Val Ser
            820                 825                 830

Leu Ser Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser Val
        835                 840                 845

Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
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Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
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Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
                885                 890                 895

Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
            900                 905                 910

Lys Ile Ser Asn Asp Cys Glu Leu Pro Arg Trp His Met His Asp Phe
        915                 920                 925

Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
    930                 935                 940

Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
945                 950                 955                 960

Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn
                965                 970                 975

Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
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Ala Thr Asp Asp Asp Asn Glu Met  Asn Asn Leu Gln Ile  Ala Val Gly
        995                 1000                1005

Arg Met  Gln Lys Gly Ile Asp  Phe Val Lys Arg Lys  Ile Arg Glu
    1010                1015                1020

Phe Ile  Gln Lys Ala Phe Val  Arg Lys Gln Lys Ala  Leu Asp Glu
    1025                1030                1035

Ile Lys  Pro Leu Glu Asp Leu  Asn Asn Lys Lys Asp  Ser Cys Ile
    1040                1045                1050
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Ser Asn  His Thr Thr Ile Glu  Ile Gly Lys Asp Leu  Asn Tyr Leu
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Lys Asp  Gly Asn Gly Thr Thr  Ser Gly Ile Gly Ser  Ser Val Glu
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Lys Tyr  Val Val Asp Glu Ser  Asp Tyr Met Ser Phe  Ile Asn Asn
    1085                1090                1095

Pro Ser  Leu Thr Val Thr Val  Pro Ile Ala Val Gly  Glu Ser Asp
    1100                1105                1110

Phe Glu  Asn Leu Asn Thr Glu  Glu Phe Ser Ser Glu  Ser Asp Met
    1115                1120                1125

Glu Glu  Ser Lys Glu Lys Leu  Asn Ala Thr Ser Ser  Ser Glu Gly
    1130                1135                1140

Ser Thr  Val Asp Ile Gly Ala  Pro Ala Glu Gly Glu  Gln Pro Glu
    1145                1150                1155

Val Glu  Pro Glu Glu Ser Leu  Glu Pro Glu Ala Cys  Phe Thr Glu
    1160                1165                1170

Asp Cys  Val Arg Lys Phe Lys  Cys Cys Gln Ile Ser  Ile Glu Glu
    1175                1180                1185

Gly Lys  Gly Lys Leu Trp Trp  Asn Leu Arg Lys Thr  Cys Tyr Lys
    1190                1195                1200

Ile Val  Glu His Asn Trp Phe  Glu Thr Phe Ile Val  Phe Met Ile
    1205                1210                1215

Leu Leu  Ser Ser Gly Ala Leu  Ala Phe Glu Asp Ile  Tyr Ile Glu
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Gln Arg  Lys Thr Ile Lys Thr  Met Leu Glu Tyr Ala  Asp Lys Val
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Phe Thr  Tyr Ile Phe Ile Leu  Glu Met Leu Leu Lys  Trp Val Ala
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Tyr Gly  Phe Gln Val Tyr Phe  Thr Asn Ala Trp Cys  Trp Leu Asp
    1265                1270                1275

Phe Leu  Ile Val Asp Val Ser  Leu Val Ser Leu Thr  Ala Asn Ala
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Leu Gly  Tyr Ser Glu Leu Gly  Ala Ile Lys Ser Leu  Arg Thr Leu
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Arg Ala  Leu Arg Pro Leu Arg  Ala Leu Ser Arg Phe  Glu Gly Met
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Arg Val  Val Val Asn Ala Leu  Leu Gly Ala Ile Pro  Ser Ile Met
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Asn Val  Leu Leu Val Cys Leu  Ile Phe Trp Leu Ile  Phe Ser Ile
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Met Gly  Val Asn Leu Phe Ala  Gly Lys Phe Tyr His  Cys Ile Asn
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Tyr Thr  Thr Gly Glu Met Phe  Asp Val Ser Val Val  Asn Asn Tyr
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Ser Glu  Cys Lys Ala Leu Ile  Glu Ser Asn Gln Thr  Ala Arg Trp
    1385                1390                1395

Lys Asn  Val Lys Val Asn Phe  Asp Asn Val Gly Leu  Gly Tyr Leu
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Ser Leu  Leu Gln Val Ala Thr  Phe Lys Gly Trp Met  Asp Ile Met
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Tyr Ala  Ala Val Asp Ser Arg  Asn Val Glu Leu Gln  Pro Lys Tyr
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Phe Gly  Ser Phe Phe Thr Leu  Asn Leu Phe Ile Gly  Val Ile Ile
    1460                1465                1470

Asp Asn  Phe Asn Gln Gln Lys  Lys Lys Phe Gly Gly  Gln Asp Ile
    1475                1480                1485

Phe Met  Thr Glu Glu Gln Lys  Lys Tyr Tyr Asn Ala  Met Lys Lys
    1490                1495                1500

Leu Gly  Ser Lys Lys Pro Gln  Lys Pro Ile Pro Arg  Pro Ala Asn
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Lys Phe  Gln Gly Met Val Phe  Asp Phe Val Thr Lys  Gln Val Phe
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Asp Ile  Ser Ile Met Ile Leu  Ile Cys Leu Asn Met  Val Thr Met
    1535                1540                1545

Met Val  Glu Thr Asp Asp Gln  Ser Gln Glu Met Thr  Asn Ile Leu
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Tyr Trp  Ile Asn Leu Val Phe  Ile Val Leu Phe Thr  Gly Glu Cys
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Val Leu  Lys Leu Ile Ser Leu  Arg Tyr Tyr Tyr Phe  Thr Ile Gly
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Trp Asn  Ile Phe Asp Phe Val  Val Val Ile Leu Ser  Ile Val Gly
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Met Phe  Leu Ala Glu Leu Ile  Glu Lys Tyr Phe Val  Ser Pro Thr
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Leu Ile  Lys Gly Ala Lys Gly  Ile Arg Thr Leu Leu  Phe Ala Leu
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Met Met  Ser Leu Pro Ala Leu  Phe Asn Ile Gly Leu  Leu Leu Phe
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Leu Val  Met Phe Ile Tyr Ala  Ile Phe Gly Met Ser  Asn Phe Ala
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Tyr Val  Lys Arg Glu Val Gly  Ile Asp Asp Met Phe  Asn Phe Glu
    1685                1690                1695

Thr Phe  Gly Asn Ser Met Ile  Cys Leu Phe Gln Ile  Thr Thr Ser
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Ala Gly  Trp Asp Gly Leu Leu  Ala Pro Ile Leu Asn  Ser Gly Pro
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Pro Asp  Cys Asp Pro Asp Lys  Asp His Pro Gly Ser  Ser Val Lys
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Gly Asp  Cys Gly Asn Pro Ser  Val Gly Ile Phe Phe  Phe Val Ser
    1745                1750                1755

Tyr Ile  Ile Ile Ser Phe Leu  Val Val Val Asn Met  Tyr Ile Ala
    1760                1765                1770

Val Ile  Leu Glu Asn Phe Ser  Val Ala Thr Glu Glu  Ser Ala Glu
    1775                1780                1785

Pro Leu  Ser Glu Asp Asp Phe  Glu Met Phe Tyr Glu  Val Trp Glu
    1790                1795                1800
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Lys Phe  Asp Pro Asp Ala Thr  Gln Phe Ile Glu Phe  Ala Lys Leu
    1805                1810                1815

Ser Asp  Phe Ala Asp Ala Leu  Asp Pro Pro Leu Leu  Ile Ala Lys
    1820                1825                1830

Pro Asn  Lys Val Gln Leu Ile  Ala Met Asp Leu Pro  Met Val Ser
    1835                1840                1845

Gly Asp  Arg Ile His Cys Leu  Asp Ile Leu Phe Ala  Phe Thr Lys
    1850                1855                1860

Arg Val  Leu Gly Glu Ser Gly  Glu Met Asp Ala Leu  Arg Ile Gln
    1865                1870                1875

Met Glu  Glu Arg Phe Met Ala  Ser Asn Pro Ser Lys  Val Ser Tyr
    1880                1885                1890

Glu Pro  Ile Thr Thr Thr Leu  Lys Arg Lys Gln Glu  Glu Val Ser
    1895                1900                1905

Ala Ile  Ile Ile Gln Arg Ala  Tyr Arg Arg Tyr Leu  Leu Lys Gln
    1910                1915                1920

Lys Val  Lys Lys Val Ser Ser  Ile Tyr Lys Lys Asp  Lys Gly Lys
    1925                1930                1935

Glu Cys  Asp Gly Thr Pro Ile  Lys Glu Asp Thr Leu  Ile Asp Lys
    1940                1945                1950

Leu Asn  Glu Asn Ser Thr Pro  Glu Lys Thr Asp Met  Thr Pro Ser
    1955                1960                1965

Thr Thr  Ser Pro Pro Ser Tyr  Asp Ser Val Thr Lys  Pro Glu Lys
    1970                1975                1980

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ctcgagataa cttcgtataa tgtatgctat acgaagttat gctagtaact ataacggtcc  120

taaggtagcg agctagcagc ttcggttttg atacactgtt tacagcctgc gaaggtgact  180

cactcgtgtt aataaga  197


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<211>  2009
<212>  PRT
<213>  Homo sapiens

<400>  22

Met Glu Gln Thr Val Leu Val Pro Pro Gly Pro Asp Ser Phe Asn Phe
1               5                   10                  15


Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Arg Arg Ile Ala Glu Glu
            20                  25                  30


Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly
        35                  40                  45


Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile
    50                  55                  60


Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu
65                  70                  75                  80


Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Gly
                85                  90                  95


Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
            100                 105                 110


Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser

```
        115                 120                 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe
    130                 135                 140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr
145                 150                 155                 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg
                165                 170                 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp
            180                 185                 190

Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp
        195                 200                 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu
    210                 215                 220

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

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe
                245                 250                 255

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

Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu
        275                 280                 285

Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu
    290                 295                 300

Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp
305                 310                 315                 320
```

```
Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys
                325                 330                 335

Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val
            340                 345                 350

Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe
        355                 360                 365

Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp
    370                 375                 380

Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met
385                 390                 395                 400

Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn
                405                 410                 415

Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala
            420                 425                 430

Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile
        435                 440                 445

Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala
    450                 455                 460

Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser
465                 470                 475                 480

Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
                485                 490                 495

Arg Arg Asn Arg Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly
            500                 505                 510

Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser
```

```
        515                 520                 525

Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr
    530                 535                 540

Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg
545                 550                 555                 560

Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser
                565                 570                 575

Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp
            580                 585                 590

Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Arg Asp Ser Leu
        595                 600                 605

Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln
    610                 615                 620

Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys
625                 630                 635                 640

Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly
                645                 650                 655

Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile
            660                 665                 670

Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu
        675                 680                 685

Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu
    690                 695                 700

Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu
705                 710                 715                 720
```

```
Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro
                725                 730                 735

Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro
            740                 745                 750

Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro
        755                 760                 765

Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe
    770                 775                 780

Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu
785                 790                 795                 800

Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe
                805                 810                 815

Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp
            820                 825                 830

Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly
        835                 840                 845

Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu
    850                 855                 860

Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile
865                 870                 875                 880

Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val
                885                 890                 895

Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe
            900                 905                 910

Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln
```

```
        915                 920                 925

Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val
    930                 935                 940

Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met
945                 950                 955                 960

Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met
                965                 970                 975

Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu
            980                 985                 990

Ser Ser Phe Ser Ala Asp Asn Leu  Ala Ala Thr Asp Asp  Asp Asn Glu
        995                 1000                1005

Met Asn  Asn Leu Gln Ile Ala  Val Asp Arg Met His  Lys Gly Val
    1010                1015                1020

Ala Tyr  Val Lys Arg Lys Ile  Tyr Glu Phe Ile Gln  Gln Ser Phe
    1025                1030                1035

Ile Arg  Lys Gln Lys Ile Leu  Asp Glu Ile Lys Pro  Leu Asp Asp
    1040                1045                1050

Leu Asn  Asn Lys Lys Asp Ser  Cys Met Ser Asn His  Thr Ala Glu
    1055                1060                1065

Ile Gly  Lys Asp Leu Asp Tyr  Leu Lys Asp Val Asn  Gly Thr Thr
    1070                1075                1080

Ser Gly  Ile Gly Thr Gly Ser  Ser Val Glu Lys Tyr  Ile Ile Asp
    1085                1090                1095

Glu Ser  Asp Tyr Met Ser Phe  Ile Asn Asn Pro Ser  Leu Thr Val
    1100                1105                1110
```

```
Thr Val  Pro Ile Ala Val Gly  Glu Ser Asp Phe Glu  Asn Leu Asn
    1115                1120                1125

Thr Glu  Asp Phe Ser Ser Glu  Ser Asp Leu Glu Glu  Ser Lys Glu
    1130                1135                1140

Lys Leu  Asn Glu Ser Ser Ser  Ser Ser Glu Gly Ser  Thr Val Asp
    1145                1150                1155

Ile Gly  Ala Pro Val Glu Glu  Gln Pro Val Val Glu  Pro Glu Glu
    1160                1165                1170

Thr Leu  Glu Pro Glu Ala Cys  Phe Thr Glu Gly Cys  Val Gln Arg
    1175                1180                1185

Phe Lys  Cys Cys Gln Ile Asn  Val Glu Glu Gly Arg  Gly Lys Gln
    1190                1195                1200

Trp Trp  Asn Leu Arg Arg Thr  Cys Phe Arg Ile Val  Glu His Asn
    1205                1210                1215

Trp Phe  Glu Thr Phe Ile Val  Phe Met Ile Leu Leu  Ser Ser Gly
    1220                1225                1230

Ala Leu  Ala Phe Glu Asp Ile  Tyr Ile Asp Gln Arg  Lys Thr Ile
    1235                1240                1245

Lys Thr  Met Leu Glu Tyr Ala  Asp Lys Val Phe Thr  Tyr Ile Phe
    1250                1255                1260

Ile Leu  Glu Met Leu Leu Lys  Trp Val Ala Tyr Gly  Tyr Gln Thr
    1265                1270                1275

Tyr Phe  Thr Asn Ala Trp Cys  Trp Leu Asp Phe Leu  Ile Val Asp
    1280                1285                1290

Val Ser  Leu Val Ser Leu Thr  Ala Asn Ala Leu Gly  Tyr Ser Glu
```

```
    1295                1300                1305

Leu Gly  Ala Ile Lys Ser Leu  Arg Thr Leu Arg Ala  Leu Arg Pro
    1310                1315                1320

Leu Arg  Ala Leu Ser Arg Phe  Glu Gly Met Arg Val  Val Val Asn
    1325                1330                1335

Ala Leu  Leu Gly Ala Ile Pro  Ser Ile Met Asn Val  Leu Leu Val
    1340                1345                1350

Cys Leu  Ile Phe Trp Leu Ile  Phe Ser Ile Met Gly  Val Asn Leu
    1355                1360                1365

Phe Ala  Gly Lys Phe Tyr His  Cys Ile Asn Thr Thr  Thr Gly Asp
    1370                1375                1380

Arg Phe  Asp Ile Glu Asp Val  Asn Asn His Thr Asp  Cys Leu Lys
    1385                1390                1395

Leu Ile  Glu Arg Asn Glu Thr  Ala Arg Trp Lys Asn  Val Lys Val
    1400                1405                1410

Asn Phe  Asp Asn Val Gly Phe  Gly Tyr Leu Ser Leu  Leu Gln Val
    1415                1420                1425

Ala Thr  Phe Lys Gly Trp Met  Asp Ile Met Tyr Ala  Ala Val Asp
    1430                1435                1440

Ser Arg  Asn Val Glu Leu Gln  Pro Lys Tyr Glu Glu  Ser Leu Tyr
    1445                1450                1455

Met Tyr  Leu Tyr Phe Val Ile  Phe Ile Ile Phe Gly  Ser Phe Phe
    1460                1465                1470

Thr Leu  Asn Leu Phe Ile Gly  Val Ile Ile Asp Asn  Phe Asn Gln
    1475                1480                1485
```

```
Gln Lys  Lys Lys Phe Gly Gly  Gln Asp Ile Phe Met  Thr Glu Glu
    1490                1495                1500

Gln Lys  Lys Tyr Tyr Asn Ala  Met Lys Lys Leu Gly  Ser Lys Lys
    1505                1510                1515

Pro Gln  Lys Pro Ile Pro Arg  Pro Gly Asn Lys Phe  Gln Gly Met
    1520                1525                1530

Val Phe  Asp Phe Val Thr Arg  Gln Val Phe Asp Ile  Ser Ile Met
    1535                1540                1545

Ile Leu  Ile Cys Leu Asn Met  Val Thr Met Met Val  Glu Thr Asp
    1550                1555                1560

Asp Gln  Ser Glu Tyr Val Thr  Thr Ile Leu Ser Arg  Ile Asn Leu
    1565                1570                1575

Val Phe  Ile Val Leu Phe Thr  Gly Glu Cys Val Leu  Lys Leu Ile
    1580                1585                1590

Ser Leu  Arg His Tyr Tyr Phe  Thr Ile Gly Trp Asn  Ile Phe Asp
    1595                1600                1605

Phe Val  Val Val Ile Leu Ser  Ile Val Gly Met Phe  Leu Ala Glu
    1610                1615                1620

Leu Ile  Glu Lys Tyr Phe Val  Ser Pro Thr Leu Phe  Arg Val Ile
    1625                1630                1635

Arg Leu  Ala Arg Ile Gly Arg  Ile Leu Arg Leu Ile  Lys Gly Ala
    1640                1645                1650

Lys Gly  Ile Arg Thr Leu Leu  Phe Ala Leu Met Met  Ser Leu Pro
    1655                1660                1665

Ala Leu  Phe Asn Ile Gly Leu  Leu Leu Phe Leu Val  Met Phe Ile
```

```
    1670                1675                1680

Tyr Ala  Ile Phe Gly Met Ser  Asn Phe Ala Tyr Val  Lys Arg Glu
    1685                1690                1695

Val Gly  Ile Asp Asp Met Phe  Asn Phe Glu Thr Phe  Gly Asn Ser
    1700                1705                1710

Met Ile  Cys Leu Phe Gln Ile  Thr Thr Ser Ala Gly  Trp Asp Gly
    1715                1720                1725

Leu Leu  Ala Pro Ile Leu Asn  Ser Lys Pro Pro Asp  Cys Asp Pro
    1730                1735                1740

Asn Lys  Val Asn Pro Gly Ser  Ser Val Lys Gly Asp  Cys Gly Asn
    1745                1750                1755

Pro Ser  Val Gly Ile Phe Phe  Phe Val Ser Tyr Ile  Ile Ile Ser
    1760                1765                1770

Phe Leu  Val Val Val Asn Met  Tyr Ile Ala Val Ile  Leu Glu Asn
    1775                1780                1785

Phe Ser  Val Ala Thr Glu Glu  Ser Ala Glu Pro Leu  Ser Glu Asp
    1790                1795                1800

Asp Phe  Glu Met Phe Tyr Glu  Val Trp Glu Lys Phe  Asp Pro Asp
    1805                1810                1815

Ala Thr  Gln Phe Met Glu Phe  Glu Lys Leu Ser Gln  Phe Ala Ala
    1820                1825                1830

Ala Leu  Glu Pro Pro Leu Asn  Leu Pro Gln Pro Asn  Lys Leu Gln
    1835                1840                1845

Leu Ile  Ala Met Asp Leu Pro  Met Val Ser Gly Asp  Arg Ile His
    1850                1855                1860
```

```
Cys Leu  Asp Ile Leu Phe Ala  Phe Thr Lys Arg Val  Leu Gly Glu
    1865                1870                1875

Ser Gly  Glu Met Asp Ala Leu  Arg Ile Gln Met Glu  Glu Arg Phe
    1880                1885                1890

Met Ala  Ser Asn Pro Ser Lys  Val Ser Tyr Gln Pro  Ile Thr Thr
    1895                1900                1905

Thr Leu  Lys Arg Lys Gln Glu  Glu Val Ser Ala Val  Ile Ile Gln
    1910                1915                1920

Arg Ala  Tyr Arg Arg His Leu  Leu Lys Arg Thr Val  Lys Gln Ala
    1925                1930                1935

Ser Phe  Thr Tyr Asn Lys Asn  Lys Ile Lys Gly Gly  Ala Asn Leu
    1940                1945                1950

Leu Ile  Lys Glu Asp Met Ile  Ile Asp Arg Ile Asn  Glu Asn Ser
    1955                1960                1965

Ile Thr  Glu Lys Thr Asp Leu  Thr Met Ser Thr Ala  Ala Cys Pro
    1970                1975                1980

Pro Ser  Tyr Asp Arg Val Thr  Lys Pro Ile Val Glu  Lys His Glu
    1985                1990                1995

Gln Glu  Gly Lys Asp Glu Lys  Ala Lys Gly Lys
    2000                2005
```

<210>  23
<211>  2000
<212>  PRT
<213>  Homo sapiens

<400>  23

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Met Ala Gln Ala Leu Leu Val Pro Pro Gly Pro Glu Ser Phe Arg Leu
1               5                  10                  15
```

```
Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Lys Arg Ala Ala Glu Glu
            20                  25                  30

Lys Ala Lys Lys Pro Lys Lys Glu Gln Asp Asn Asp Asp Glu Asn Lys
        35                  40                  45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile
    50                  55                  60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu
65                  70                  75                  80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Met Asn Lys Gly
                85                  90                  95

Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
            100                 105                 110

Pro Leu Asn Pro Val Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser
        115                 120                 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe
    130                 135                 140

Met Thr Leu Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr
145                 150                 155                 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala Arg
                165                 170                 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp
            180                 185                 190

Leu Asp Phe Ser Val Ile Val Met Ala Tyr Val Thr Glu Phe Val Ser
        195                 200                 205
```

```
Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu
    210                 215                 220

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

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe
                245                 250                 255

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

Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Ser Asp Ser Ala Phe Glu
        275                 280                 285

Thr Asn Thr Thr Ser Tyr Phe Asn Gly Thr Met Asp Ser Asn Gly Thr
    290                 295                 300

Phe Val Asn Val Thr Met Ser Thr Phe Asn Trp Lys Asp Tyr Ile Gly
305                 310                 315                 320

Asp Asp Ser His Phe Tyr Val Leu Asp Gly Gln Lys Asp Pro Leu Leu
                325                 330                 335

Cys Gly Asn Gly Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile Cys
            340                 345                 350

Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr
        355                 360                 365

Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Tyr
    370                 375                 380

Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr
385                 390                 395                 400

Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Val
                405                 410                 415
```

```
Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln
            420                 425                 430

Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met
        435                 440                 445

Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Val Ala Ala
    450                 455                 460

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

Leu Leu Glu Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala
                485                 490                 495

Lys Glu Trp Arg Asn Arg Arg Lys Lys Arg Arg Gln Arg Glu His Leu
            500                 505                 510

Glu Gly Asn Asn Lys Gly Glu Arg Asp Ser Phe Pro Lys Ser Glu Ser
        515                 520                 525

Glu Asp Ser Val Lys Arg Ser Ser Phe Leu Phe Ser Met Asp Gly Asn
    530                 535                 540

Arg Leu Thr Ser Asp Lys Lys Phe Cys Ser Pro His Gln Ser Leu Leu
545                 550                 555                 560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Lys Thr Ser
                565                 570                 575

Ile Phe Ser Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp
            580                 585                 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Ser Glu Ser Arg Arg
        595                 600                 605
```

```
Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg Asn Ser Asn
    610                 615                 620

Val Ser Gln Ala Ser Met Ser Ser Arg Met Val Pro Gly Leu Pro Ala
625                 630                 635                 640

Asn Gly Lys Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu
                645                 650                 655

Val Gly Gly Pro Ser Ala Leu Thr Ser Pro Thr Gly Gln Leu Pro Pro
            660                 665                 670

Glu Gly Thr Thr Thr Glu Thr Glu Val Arg Lys Arg Arg Leu Ser Ser
        675                 680                 685

Tyr Gln Ile Ser Met Glu Met Leu Glu Asp Ser Ser Gly Arg Gln Arg
    690                 695                 700

Ala Val Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu
705                 710                 715                 720

Glu Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Arg Phe Ala Asn Val
                725                 730                 735

Phe Leu Ile Trp Asp Cys Cys Asp Ala Trp Leu Lys Val Lys His Leu
            740                 745                 750

Val Asn Leu Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile
        755                 760                 765

Cys Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met
    770                 775                 780

Thr Glu Gln Phe Ser Ser Val Leu Thr Val Gly Asn Leu Val Phe Thr
785                 790                 795                 800

Gly Ile Phe Thr Ala Glu Met Val Leu Lys Ile Ile Ala Met Asp Pro
                805                 810                 815
```

```
Tyr Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Ile Ile Val
            820                 825                 830

Ser Leu Ser Leu Met Glu Leu Gly Leu Ser Asn Val Glu Gly Leu Ser
        835                 840                 845

Val Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser
    850                 855                 860

Trp Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly
865                 870                 875                 880

Ala Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe
                885                 890                 895

Ala Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val
            900                 905                 910

Cys Lys Ile Asn Asp Asp Cys Thr Leu Pro Arg Trp His Met Asn Asp
        915                 920                 925

Phe Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp
    930                 935                 940

Ile Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys
945                 950                 955                 960

Leu Ile Val Phe Met Leu Val Met Val Ile Gly Asn Leu Val Val Leu
                965                 970                 975

Asn Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu
            980                 985                 990

Ala Ala Thr Asp Asp Asp Asn Glu  Met Asn Asn Leu Gln  Ile Ala Val
        995                 1000                1005
```

```
Gly Arg  Met Gln Lys Gly Ile  Asp Tyr Val Lys Asn  Lys Met Arg
    1010                1015                1020

Glu Cys  Phe Gln Lys Ala Phe  Phe Arg Lys Pro Lys  Val Ile Glu
    1025                1030                1035

Ile His  Glu Gly Asn Lys Ile  Asp Ser Cys Met Ser  Asn Asn Thr
    1040                1045                1050

Gly Ile  Glu Ile Ser Lys Glu  Leu Asn Tyr Leu Arg  Asp Gly Asn
    1055                1060                1065

Gly Thr  Thr Ser Gly Val Gly  Thr Gly Ser Ser Val  Glu Lys Tyr
    1070                1075                1080

Val Ile  Asp Glu Asn Asp Tyr  Met Ser Phe Ile Asn  Asn Pro Ser
    1085                1090                1095

Leu Thr  Val Thr Val Pro Ile  Ala Val Gly Glu Ser  Asp Phe Glu
    1100                1105                1110

Asn Leu  Asn Thr Glu Glu Phe  Ser Ser Glu Ser Glu  Leu Glu Glu
    1115                1120                1125

Ser Lys  Glu Lys Leu Asn Ala  Thr Ser Ser Ser Glu  Gly Ser Thr
    1130                1135                1140

Val Asp  Val Val Leu Pro Arg  Glu Gly Glu Gln Ala  Glu Thr Glu
    1145                1150                1155

Pro Glu  Glu Asp Leu Lys Pro  Glu Ala Cys Phe Thr  Glu Gly Cys
    1160                1165                1170

Ile Lys  Lys Phe Pro Phe Cys  Gln Val Ser Thr Glu  Glu Gly Lys
    1175                1180                1185

Gly Lys  Ile Trp Trp Asn Leu  Arg Lys Thr Cys Tyr  Ser Ile Val
    1190                1195                1200
```

```
Glu His  Asn Trp Phe Glu Thr  Phe Ile Val Phe Met  Ile Leu Leu
    1205                1210                1215

Ser Ser  Gly Ala Leu Ala Phe  Glu Asp Ile Tyr Ile  Glu Gln Arg
    1220                1225                1230

Lys Thr  Ile Lys Thr Met Leu  Glu Tyr Ala Asp Lys  Val Phe Thr
    1235                1240                1245

Tyr Ile  Phe Ile Leu Glu Met  Leu Leu Lys Trp Val  Ala Tyr Gly
    1250                1255                1260

Phe Gln  Thr Tyr Phe Thr Asn  Ala Trp Cys Trp Leu  Asp Phe Leu
    1265                1270                1275

Ile Val  Asp Val Ser Leu Val  Ser Leu Val Ala Asn  Ala Leu Gly
    1280                1285                1290

Tyr Ser  Glu Leu Gly Ala Ile  Lys Ser Leu Arg Thr  Leu Arg Ala
    1295                1300                1305

Leu Arg  Pro Leu Arg Ala Leu  Ser Arg Phe Glu Gly  Met Arg Val
    1310                1315                1320

Val Val  Asn Ala Leu Val Gly  Ala Ile Pro Ser Ile  Met Asn Val
    1325                1330                1335

Leu Leu  Val Cys Leu Ile Phe  Trp Leu Ile Phe Ser  Ile Met Gly
    1340                1345                1350

Val Asn  Leu Phe Ala Gly Lys  Phe Tyr His Cys Val  Asn Met Thr
    1355                1360                1365

Thr Gly  Asn Met Phe Asp Ile  Ser Asp Val Asn Asn  Leu Ser Asp
    1370                1375                1380
```

```
Cys Gln  Ala Leu Gly Lys Gln  Ala Arg Trp Lys Asn  Val Lys Val
    1385                1390                1395

Asn Phe  Asp Asn Val Gly Ala  Gly Tyr Leu Ala Leu  Leu Gln Val
    1400                1405                1410

Ala Thr  Phe Lys Gly Trp Met  Asp Ile Met Tyr Ala  Ala Val Asp
    1415                1420                1425

Ser Arg  Asp Val Lys Leu Gln  Pro Val Tyr Glu Glu  Asn Leu Tyr
    1430                1435                1440

Met Tyr  Leu Tyr Phe Val Ile  Phe Ile Ile Phe Gly  Ser Phe Phe
    1445                1450                1455

Thr Leu  Asn Leu Phe Ile Gly  Val Ile Ile Asp Asn  Phe Asn Gln
    1460                1465                1470

Gln Lys  Lys Lys Phe Gly Gly  Gln Asp Ile Phe Met  Thr Glu Glu
    1475                1480                1485

Gln Lys  Lys Tyr Tyr Asn Ala  Met Lys Lys Leu Gly  Ser Lys Lys
    1490                1495                1500

Pro Gln  Lys Pro Ile Pro Arg  Pro Ala Asn Lys Phe  Gln Gly Met
    1505                1510                1515

Val Phe  Asp Phe Val Thr Arg  Gln Val Phe Asp Ile  Ser Ile Met
    1520                1525                1530

Ile Leu  Ile Cys Leu Asn Met  Val Thr Met Met Val  Glu Thr Asp
    1535                1540                1545

Asp Gln  Gly Lys Tyr Met Thr  Leu Val Leu Ser Arg  Ile Asn Leu
    1550                1555                1560

Val Phe  Ile Val Leu Phe Thr  Gly Glu Phe Val Leu  Lys Leu Val
    1565                1570                1575
```

```
Ser Leu  Arg His Tyr Tyr Phe  Thr Ile Gly Trp Asn  Ile Phe Asp
    1580                1585                1590

Phe Val  Val Val Ile Leu Ser  Ile Val Gly Met Phe  Leu Ala Glu
    1595                1600                1605

Met Ile  Glu Lys Tyr Phe Val  Ser Pro Thr Leu Phe  Arg Val Ile
    1610                1615                1620

Arg Leu  Ala Arg Ile Gly Arg  Ile Leu Arg Leu Ile  Lys Gly Ala
    1625                1630                1635

Lys Gly  Ile Arg Thr Leu Leu  Phe Ala Leu Met Met  Ser Leu Pro
    1640                1645                1650

Ala Leu  Phe Asn Ile Gly Leu  Leu Leu Phe Leu Val  Met Phe Ile
    1655                1660                1665

Tyr Ala  Ile Phe Gly Met Ser  Asn Phe Ala Tyr Val  Lys Lys Glu
    1670                1675                1680

Ala Gly  Ile Asp Asp Met Phe  Asn Phe Glu Thr Phe  Gly Asn Ser
    1685                1690                1695

Met Ile  Cys Leu Phe Gln Ile  Thr Thr Ser Ala Gly  Trp Asp Gly
    1700                1705                1710

Leu Leu  Ala Pro Ile Leu Asn  Ser Ala Pro Pro Asp  Cys Asp Pro
    1715                1720                1725

Asp Thr  Ile His Pro Gly Ser  Ser Val Lys Gly Asp  Cys Gly Asn
    1730                1735                1740

Pro Ser  Val Gly Ile Phe Phe  Phe Val Ser Tyr Ile  Ile Ile Ser
    1745                1750                1755
```

```
Phe Leu  Val Val Val Asn Met  Tyr Ile Ala Val Ile  Leu Glu Asn
    1760                1765                1770

Phe Ser  Val Ala Thr Glu Glu  Ser Ala Glu Pro Leu  Ser Glu Asp
    1775                1780                1785

Asp Phe  Glu Met Phe Tyr Glu  Val Trp Glu Lys Phe  Asp Pro Asp
    1790                1795                1800

Ala Thr  Gln Phe Ile Glu Phe  Ser Lys Leu Ser Asp  Phe Ala Ala
    1805                1810                1815

Ala Leu  Asp Pro Pro Leu Leu  Ile Ala Lys Pro Asn  Lys Val Gln
    1820                1825                1830

Leu Ile  Ala Met Asp Leu Pro  Met Val Ser Gly Asp  Arg Ile His
    1835                1840                1845

Cys Leu  Asp Ile Leu Phe Ala  Phe Thr Lys Arg Val  Leu Gly Glu
    1850                1855                1860

Ser Gly  Glu Met Asp Ala Leu  Arg Ile Gln Met Glu  Asp Arg Phe
    1865                1870                1875

Met Ala  Ser Asn Pro Ser Lys  Val Ser Tyr Glu Pro  Ile Thr Thr
    1880                1885                1890

Thr Leu  Lys Arg Lys Gln Glu  Glu Val Ser Ala Ala  Ile Ile Gln
    1895                1900                1905

Arg Asn  Phe Arg Cys Tyr Leu  Leu Lys Gln Arg Leu  Lys Asn Ile
    1910                1915                1920

Ser Ser  Asn Tyr Asn Lys Glu  Ala Ile Lys Gly Arg  Ile Asp Leu
    1925                1930                1935

Pro Ile  Lys Gln Asp Met Ile  Ile Asp Lys Leu Asn  Gly Asn Ser
    1940                1945                1950
```

```
Thr Pro  Glu Lys Thr Asp Gly  Ser Ser Ser Thr Thr  Ser Pro Pro
    1955                 1960                 1965


Ser Tyr  Asp Ser Val Thr Lys  Pro Asp Lys Glu Lys  Phe Glu Lys
    1970                 1975                 1980


Asp Lys  Pro Glu Lys Glu Ser  Lys Gly Lys Glu Val  Arg Glu Asn
    1985                 1990                 1995


Gln Lys
    2000
```

<210>  24
<211>  1836
<212>  PRT
<213>  Homo sapiens

<400>  24

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


Leu Arg Pro Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Gln Arg Ala
            20                  25                  30


Val Glu Glu Glu Ala Arg Leu Gln Arg Asn Lys Gln Met Glu Ile Glu
        35                  40                  45


Glu Pro Glu Arg Lys Pro Arg Ser Asp Leu Glu Ala Gly Lys Asn Leu
    50                  55                  60


Pro Met Ile Tyr Gly Asp Pro Pro Pro Glu Val Ile Gly Ile Pro Leu
65                  70                  75                  80


Glu Asp Leu Asp Pro Tyr Tyr Ser Asn Lys Lys Thr Phe Ile Val Leu
                85                  90                  95


Asn Lys Gly Lys Ala Ile Phe Arg Phe Ser Ala Thr Pro Ala Leu Tyr
```

```
            100                 105                 110

Leu Leu Ser Pro Phe Ser Val Val Arg Arg Gly Ala Ile Lys Val Leu
        115                 120                 125

Ile His Ala Leu Phe Ser Met Phe Ile Met Ile Thr Ile Leu Thr Asn
    130                 135                 140

Cys Val Phe Met Thr Met Ser Asp Pro Pro Pro Trp Ser Lys Asn Val
145                 150                 155                 160

Glu Tyr Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile
                165                 170                 175

Leu Ala Arg Gly Phe Cys Val Asp Asp Phe Thr Phe Leu Arg Asp Pro
            180                 185                 190

Trp Asn Trp Leu Asp Phe Ser Val Ile Met Met Ala Tyr Leu Thr Glu
        195                 200                 205

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

Arg Ala Leu Lys Thr Ile Thr Val Ile Pro Gly Leu Lys Thr Ile Val
225                 230                 235                 240

Gly Ala Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu
                245                 250                 255

Thr Val Phe Cys Leu Ser Val Phe Ala Leu Val Gly Leu Gln Leu Phe
            260                 265                 270

Met Gly Asn Leu Arg Gln Lys Cys Val Arg Trp Pro Pro Pro Phe Asn
        275                 280                 285

Asp Thr Asn Thr Thr Trp Tyr Ser Asn Asp Thr Trp Tyr Gly Asn Asp
    290                 295                 300
```

```
Thr Trp Tyr Gly Asn Glu Met Trp Tyr Gly Asn Asp Ser Trp Tyr Ala
305                 310                 315                 320

Asn Asp Thr Trp Asn Ser His Ala Ser Trp Ala Thr Asn Asp Thr Phe
                325                 330                 335

Asp Trp Asp Ala Tyr Ile Ser Asp Glu Gly Asn Phe Tyr Phe Leu Glu
            340                 345                 350

Gly Ser Asn Asp Ala Leu Leu Cys Gly Asn Ser Ser Asp Ala Gly His
        355                 360                 365

Cys Pro Glu Gly Tyr Glu Cys Ile Lys Thr Gly Arg Asn Pro Asn Tyr
    370                 375                 380

Gly Tyr Thr Ser Tyr Asp Thr Phe Ser Trp Ala Phe Leu Ala Leu Phe
385                 390                 395                 400

Arg Leu Met Thr Gln Asp Tyr Trp Glu Asn Leu Phe Gln Leu Thr Leu
                405                 410                 415

Arg Ala Ala Gly Lys Thr Tyr Met Ile Phe Phe Val Val Ile Ile Phe
            420                 425                 430

Leu Gly Ser Phe Tyr Leu Ile Asn Leu Ile Leu Ala Val Val Ala Met
        435                 440                 445

Ala Tyr Ala Glu Gln Asn Glu Ala Thr Leu Ala Glu Asp Lys Glu Lys
    450                 455                 460

Glu Glu Glu Phe Gln Gln Met Leu Glu Lys Phe Lys Lys His Gln Glu
465                 470                 475                 480

Glu Leu Glu Lys Ala Lys Ala Ala Gln Ala Leu Glu Gly Gly Glu Ala
                485                 490                 495

Asp Gly Asp Pro Ala His Gly Lys Asp Cys Asn Gly Ser Leu Asp Thr
```

```
            500                 505                 510

Ser Gln Gly Glu Lys Gly Ala Pro Arg Gln Ser Ser Ser Gly Asp Ser
        515                 520                 525

Gly Ile Ser Asp Ala Met Glu Glu Leu Glu Glu Ala His Gln Lys Cys
    530                 535                 540

Pro Pro Trp Trp Tyr Lys Cys Ala His Lys Val Leu Ile Trp Asn Cys
545                 550                 555                 560

Cys Ala Pro Trp Leu Lys Phe Lys Asn Ile Ile His Leu Ile Val Met
                565                 570                 575

Asp Pro Phe Val Asp Leu Gly Ile Thr Ile Cys Ile Val Leu Asn Thr
            580                 585                 590

Leu Phe Met Ala Met Glu His Tyr Pro Met Thr Glu His Phe Asp Asn
        595                 600                 605

Val Leu Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu
    610                 615                 620

Met Val Leu Lys Leu Ile Ala Met Asp Pro Tyr Glu Tyr Phe Gln Gln
625                 630                 635                 640

Gly Trp Asn Ile Phe Asp Ser Ile Ile Val Thr Leu Ser Leu Val Glu
                645                 650                 655

Leu Gly Leu Ala Asn Val Gln Gly Leu Ser Val Leu Arg Ser Phe Arg
            660                 665                 670

Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met
        675                 680                 685

Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr
    690                 695                 700
```

```
Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln
705                 710                 715                 720


Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys Lys Ile Ala Leu Asp
                725                 730                 735


Cys Asn Leu Pro Arg Trp His Met His Asp Phe Phe His Ser Phe Leu
            740                 745                 750


Ile Val Phe Arg Ile Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp
        755                 760                 765


Cys Met Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Leu Met
    770                 775                 780


Val Met Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu
785                 790                 795                 800


Leu Leu Ser Ser Phe Ser Ala Asp Ser Leu Ala Ala Ser Asp Glu Asp
                805                 810                 815


Gly Glu Met Asn Asn Leu Gln Ile Ala Ile Gly Arg Ile Lys Leu Gly
            820                 825                 830


Ile Gly Phe Ala Lys Ala Phe Leu Leu Gly Leu Leu His Gly Lys Ile
        835                 840                 845


Leu Ser Pro Lys Asp Ile Met Leu Ser Leu Gly Glu Ala Asp Gly Ala
    850                 855                 860


Gly Glu Ala Gly Glu Ala Gly Glu Thr Ala Pro Glu Asp Glu Lys Lys
865                 870                 875                 880


Glu Pro Pro Glu Glu Asp Leu Lys Lys Asp Asn His Ile Leu Asn His
                885                 890                 895


Met Gly Leu Ala Asp Gly Pro Pro Ser Ser Leu Glu Leu Asp His Leu
```

```
            900                 905                 910

Asn Phe Ile Asn Asn Pro Tyr Leu Thr Ile Gln Val Pro Ile Ala Ser
        915                 920                 925

Glu Glu Ser Asp Leu Glu Met Pro Thr Glu Glu Glu Thr Asp Thr Phe
    930                 935                 940

Ser Glu Pro Glu Asp Ser Lys Lys Pro Pro Gln Pro Leu Tyr Asp Gly
945                 950                 955                 960

Asn Ser Ser Val Cys Ser Thr Ala Asp Tyr Lys Pro Pro Glu Glu Asp
                965                 970                 975

Pro Glu Glu Gln Ala Glu Glu Asn Pro Glu Gly Glu Gln Pro Glu Glu
            980                 985                 990

Cys Phe Thr Glu Ala Cys Val Gln  Arg Trp Pro Cys Leu  Tyr Val Asp
        995                 1000                1005

Ile Ser  Gln Gly Arg Gly Lys  Lys Trp Trp Thr Leu  Arg Arg Ala
    1010                1015                1020

Cys Phe  Lys Ile Val Glu His  Asn Trp Phe Glu Thr  Phe Ile Val
    1025                1030                1035

Phe Met  Ile Leu Leu Ser Ser  Gly Ala Leu Ala Phe  Glu Asp Ile
    1040                1045                1050

Tyr Ile  Glu Gln Arg Arg Val  Ile Arg Thr Ile Leu  Glu Tyr Ala
    1055                1060                1065

Asp Lys  Val Phe Thr Tyr Ile  Phe Ile Met Glu Met  Leu Leu Lys
    1070                1075                1080

Trp Val  Ala Tyr Gly Phe Lys  Val Tyr Phe Thr Asn  Ala Trp Cys
    1085                1090                1095
```

```
Trp Leu  Asp Phe Leu Ile Val  Asp Val Ser Ile Ile  Ser Leu Val
    1100                1105                1110

Ala Asn  Trp Leu Gly Tyr Ser  Glu Leu Gly Pro Ile  Lys Ser Leu
    1115                1120                1125

Arg Thr  Leu Arg Ala Leu Arg  Pro Leu Arg Ala Leu  Ser Arg Phe
    1130                1135                1140

Glu Gly  Met Arg Val Val Val  Asn Ala Leu Leu Gly  Ala Ile Pro
    1145                1150                1155

Ser Ile  Met Asn Val Leu Leu  Val Cys Leu Ile Phe  Trp Leu Ile
    1160                1165                1170

Phe Ser  Ile Met Gly Val Asn  Leu Phe Ala Gly Lys  Phe Tyr Tyr
    1175                1180                1185

Cys Ile  Asn Thr Thr Thr Ser  Glu Arg Phe Asp Ile  Ser Glu Val
    1190                1195                1200

Asn Asn  Lys Ser Glu Cys Glu  Ser Leu Met His Thr  Gly Gln Val
    1205                1210                1215

Arg Trp  Leu Asn Val Lys Val  Asn Tyr Asp Asn Val  Gly Leu Gly
    1220                1225                1230

Tyr Leu  Ser Leu Leu Gln Val  Ala Thr Phe Lys Gly  Trp Met Asp
    1235                1240                1245

Ile Met  Tyr Ala Ala Val Asp  Ser Arg Glu Lys Glu  Glu Gln Pro
    1250                1255                1260

Gln Tyr  Glu Val Asn Leu Tyr  Met Tyr Leu Tyr Phe  Val Ile Phe
    1265                1270                1275

Ile Ile  Phe Gly Ser Phe Phe  Thr Leu Asn Leu Phe  Ile Gly Val
```

```
    1280                1285                1290

Ile Ile  Asp Asn Phe Asn Gln  Gln Lys Lys Lys Leu  Gly Gly Lys
    1295                1300                1305

Asp Ile  Phe Met Thr Glu Glu  Gln Lys Lys Tyr Tyr  Asn Ala Met
    1310                1315                1320

Lys Lys  Leu Gly Ser Lys Lys  Pro Gln Lys Pro Ile  Pro Arg Pro
    1325                1330                1335

Gln Asn  Lys Ile Gln Gly Met  Val Tyr Asp Leu Val  Thr Lys Gln
    1340                1345                1350

Ala Phe  Asp Ile Thr Ile Met  Ile Leu Ile Cys Leu  Asn Met Val
    1355                1360                1365

Thr Met  Met Val Glu Thr Asp  Asn Gln Ser Gln Leu  Lys Val Asp
    1370                1375                1380

Ile Leu  Tyr Asn Ile Asn Met  Ile Phe Ile Ile Ile  Phe Thr Gly
    1385                1390                1395

Glu Cys  Val Leu Lys Met Leu  Ala Leu Arg Gln Tyr  Tyr Phe Thr
    1400                1405                1410

Val Gly  Trp Asn Ile Phe Asp  Phe Val Val Val Ile  Leu Ser Ile
    1415                1420                1425

Val Gly  Leu Ala Leu Ser Asp  Leu Ile Gln Lys Tyr  Phe Val Ser
    1430                1435                1440

Pro Thr  Leu Phe Arg Val Ile  Arg Leu Ala Arg Ile  Gly Arg Val
    1445                1450                1455

Leu Arg  Leu Ile Arg Gly Ala  Lys Gly Ile Arg Thr  Leu Leu Phe
    1460                1465                1470
```

```
Ala Leu  Met Met Ser Leu Pro  Ala Leu Phe Asn Ile  Gly Leu Leu
    1475                1480                1485

Leu Phe  Leu Val Met Phe Ile  Tyr Ser Ile Phe Gly  Met Ser Asn
    1490                1495                1500

Phe Ala  Tyr Val Lys Lys Glu  Ser Gly Ile Asp Asp  Met Phe Asn
    1505                1510                1515

Phe Glu  Thr Phe Gly Asn Ser  Ile Ile Cys Leu Phe  Glu Ile Thr
    1520                1525                1530

Thr Ser  Ala Gly Trp Asp Gly  Leu Leu Asn Pro Ile  Leu Asn Ser
    1535                1540                1545

Gly Pro  Pro Asp Cys Asp Pro  Asn Leu Glu Asn Pro  Gly Thr Ser
    1550                1555                1560

Val Lys  Gly Asp Cys Gly Asn  Pro Ser Ile Gly Ile  Cys Phe Phe
    1565                1570                1575

Cys Ser  Tyr Ile Ile Ile Ser  Phe Leu Ile Val Val  Asn Met Tyr
    1580                1585                1590

Ile Ala  Ile Ile Leu Glu Asn  Phe Asn Val Ala Thr  Glu Glu Ser
    1595                1600                1605

Ser Glu  Pro Leu Gly Glu Asp  Asp Phe Glu Met Phe  Tyr Glu Thr
    1610                1615                1620

Trp Glu  Lys Phe Asp Pro Asp  Ala Thr Gln Phe Ile  Ala Tyr Ser
    1625                1630                1635

Arg Leu  Ser Asp Phe Val Asp  Thr Leu Gln Glu Pro  Leu Arg Ile
    1640                1645                1650

Ala Lys  Pro Asn Lys Ile Lys  Leu Ile Thr Leu Asp  Leu Pro Met
```

```
    1655                1660                1665

Val Pro  Gly Asp Lys Ile His  Cys Leu Asp Ile Leu  Phe Ala Leu
    1670                1675                1680

Thr Lys  Glu Val Leu Gly Asp  Ser Gly Glu Met Asp  Ala Leu Lys
    1685                1690                1695

Gln Thr  Met Glu Glu Lys Phe  Met Ala Ala Asn Pro  Ser Lys Val
    1700                1705                1710

Ser Tyr  Glu Pro Ile Thr Thr  Thr Leu Lys Arg Lys  His Glu Glu
    1715                1720                1725

Val Cys  Ala Ile Lys Ile Gln  Arg Ala Tyr Arg Arg  His Leu Leu
    1730                1735                1740

Gln Arg  Ser Met Lys Gln Ala  Ser Tyr Met Tyr Arg  His Ser His
    1745                1750                1755

Asp Gly  Ser Gly Asp Asp Ala  Pro Glu Lys Glu Gly  Leu Leu Ala
    1760                1765                1770

Asn Thr  Met Ser Lys Met Tyr  Gly His Glu Asn Gly  Asn Ser Ser
    1775                1780                1785

Ser Pro  Ser Pro Glu Glu Lys  Gly Glu Ala Gly Asp  Ala Gly Pro
    1790                1795                1800

Thr Met  Gly Leu Met Pro Ile  Ser Pro Ser Asp Thr  Ala Trp Pro
    1805                1810                1815

Pro Ala  Pro Pro Pro Gly Gln  Thr Val Arg Pro Gly  Val Lys Glu
    1820                1825                1830

Ser Leu  Val
    1835
```

<210>  25
<211>  2016
<212>  PRT
<213>  Homo sapiens

<400>  25

```
Met Ala Asn Phe Leu Leu Pro Arg Gly Thr Ser Ser Phe Arg Arg Phe
1               5                  10                  15


Thr Arg Glu Ser Leu Ala Ala Ile Glu Lys Arg Met Ala Glu Lys Gln
            20                  25                  30


Ala Arg Gly Ser Thr Thr Leu Gln Glu Ser Arg Glu Gly Leu Pro Glu
        35                  40                  45


Glu Glu Ala Pro Arg Pro Gln Leu Asp Leu Gln Ala Ser Lys Lys Leu
    50                  55                  60


Pro Asp Leu Tyr Gly Asn Pro Pro Gln Glu Leu Ile Gly Glu Pro Leu
65                  70                  75                  80


Glu Asp Leu Asp Pro Phe Tyr Ser Thr Gln Lys Thr Phe Ile Val Leu
                85                  90                  95


Asn Lys Gly Lys Thr Ile Phe Arg Phe Ser Ala Thr Asn Ala Leu Tyr
            100                 105                 110


Val Leu Ser Pro Phe His Pro Ile Arg Arg Ala Ala Val Lys Ile Leu
        115                 120                 125


Val His Ser Leu Phe Asn Met Leu Ile Met Cys Thr Ile Leu Thr Asn
    130                 135                 140


Cys Val Phe Met Ala Gln His Asp Pro Pro Pro Trp Thr Lys Tyr Val
145                 150                 155                 160


Glu Tyr Thr Phe Thr Ala Ile Tyr Thr Phe Glu Ser Leu Val Lys Ile
                165                 170                 175
```

```
Leu Ala Arg Gly Phe Cys Leu His Ala Phe Thr Phe Leu Arg Asp Pro
            180                 185                 190

Trp Asn Trp Leu Asp Phe Ser Val Ile Ile Met Ala Tyr Thr Thr Glu
        195                 200                 205

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

Arg Ala Leu Lys Thr Ile Ser Val Ile Ser Gly Leu Lys Thr Ile Val
225                 230                 235                 240

Gly Ala Leu Ile Gln Ser Val Lys Lys Leu Ala Asp Val Met Val Leu
                245                 250                 255

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

Met Gly Asn Leu Arg His Lys Cys Val Arg Asn Phe Thr Ala Leu Asn
        275                 280                 285

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

Asp Leu Tyr Leu Ser Asp Pro Glu Asn Tyr Leu Leu Lys Asn Gly Thr
305                 310                 315                 320

Ser Asp Val Leu Leu Cys Gly Asn Ser Ser Asp Ala Gly Thr Cys Pro
                325                 330                 335

Glu Gly Tyr Arg Cys Leu Lys Ala Gly Glu Asn Pro Asp His Gly Tyr
            340                 345                 350

Thr Ser Phe Asp Ser Phe Ala Trp Ala Phe Leu Ala Leu Phe Arg Leu
        355                 360                 365
```

```
Met Thr Gln Asp Cys Trp Glu Arg Leu Tyr Gln Gln Thr Leu Arg Ser
    370                 375                 380

Ala Gly Lys Ile Tyr Met Ile Phe Phe Met Leu Val Ile Phe Leu Gly
385                 390                 395                 400

Ser Phe Tyr Leu Val Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr
                405                 410                 415

Glu Glu Gln Asn Gln Ala Thr Ile Ala Glu Thr Glu Glu Lys Glu Lys
            420                 425                 430

Arg Phe Gln Glu Ala Met Glu Met Leu Lys Lys Glu His Glu Ala Leu
        435                 440                 445

Thr Ile Arg Gly Val Asp Thr Val Ser Arg Ser Ser Leu Glu Met Ser
    450                 455                 460

Pro Leu Ala Pro Val Asn Ser His Glu Arg Arg Ser Lys Arg Arg Lys
465                 470                 475                 480

Arg Met Ser Ser Gly Thr Glu Glu Cys Gly Glu Asp Arg Leu Pro Lys
                485                 490                 495

Ser Asp Ser Glu Asp Gly Pro Arg Ala Met Asn His Leu Ser Leu Thr
            500                 505                 510

Arg Gly Leu Ser Arg Thr Ser Met Lys Pro Arg Ser Ser Arg Gly Ser
        515                 520                 525

Ile Phe Thr Phe Arg Arg Arg Asp Leu Gly Ser Glu Ala Asp Phe Ala
    530                 535                 540

Asp Asp Glu Asn Ser Thr Ala Gly Glu Ser Glu Ser His His Thr Ser
545                 550                 555                 560

Leu Leu Val Pro Trp Pro Leu Arg Arg Thr Ser Ala Gln Gly Gln Pro
                565                 570                 575
```

```
Ser Pro Gly Thr Ser Ala Pro Gly His Ala Leu His Gly Lys Lys Asn
            580                 585                 590

Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Leu Gly Ala Gly Asp
        595                 600                 605

Pro Glu Ala Thr Ser Pro Gly Ser His Leu Leu Arg Pro Val Met Leu
    610                 615                 620

Glu His Pro Pro Asp Thr Thr Thr Pro Ser Glu Glu Pro Gly Gly Pro
625                 630                 635                 640

Gln Met Leu Thr Ser Gln Ala Pro Cys Val Asp Gly Phe Glu Glu Pro
                645                 650                 655

Gly Ala Arg Gln Arg Ala Leu Ser Ala Val Ser Val Leu Thr Ser Ala
            660                 665                 670

Leu Glu Glu Leu Glu Glu Ser Arg His Lys Cys Pro Pro Cys Trp Asn
        675                 680                 685

Arg Leu Ala Gln Arg Tyr Leu Ile Trp Glu Cys Cys Pro Leu Trp Met
    690                 695                 700

Ser Ile Lys Gln Gly Val Lys Leu Val Val Met Asp Pro Phe Thr Asp
705                 710                 715                 720

Leu Thr Ile Thr Met Cys Ile Val Leu Asn Thr Leu Phe Met Ala Leu
                725                 730                 735

Glu His Tyr Asn Met Thr Ser Glu Phe Glu Glu Met Leu Gln Val Gly
            740                 745                 750

Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Thr Phe Lys Ile
        755                 760                 765
```

```
Ile Ala Leu Asp Pro Tyr Tyr Tyr Phe Gln Gln Gly Trp Asn Ile Phe
    770                 775                 780

Asp Ser Ile Ile Val Ile Leu Ser Leu Met Glu Leu Gly Leu Ser Arg
785                 790                 795                 800

Met Ser Asn Leu Ser Val Leu Arg Ser Phe Arg Leu Leu Arg Val Phe
                805                 810                 815

Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Thr Leu Ile Lys Ile Ile
            820                 825                 830

Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val Leu Ala Ile
        835                 840                 845

Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe Gly Lys Asn
    850                 855                 860

Tyr Ser Glu Leu Arg Asp Ser Asp Ser Gly Leu Leu Pro Arg Trp His
865                 870                 875                 880

Met Met Asp Phe Phe His Ala Phe Leu Ile Ile Phe Arg Ile Leu Cys
                885                 890                 895

Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met Glu Val Ser Gly Gln
            900                 905                 910

Ser Leu Cys Leu Leu Val Phe Leu Leu Val Met Val Ile Gly Asn Leu
        915                 920                 925

Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ala
    930                 935                 940

Asp Asn Leu Thr Ala Pro Asp Glu Asp Arg Glu Met Asn Asn Leu Gln
945                 950                 955                 960

Leu Ala Leu Ala Arg Ile Gln Arg Gly Leu Arg Phe Val Lys Arg Thr
                965                 970                 975
```

```
Thr Trp Asp Phe Cys Cys Gly Leu Leu Arg Gln Arg Pro Gln Lys Pro
            980                 985                 990

Ala Ala Leu Ala Ala Gln Gly Gln  Leu Pro Ser Cys Ile  Ala Thr Pro
        995                 1000                1005

Tyr Ser  Pro Pro Pro Pro Glu  Thr Glu Lys Val Pro  Pro Thr Arg
    1010                1015                1020

Lys Glu  Thr Arg Phe Glu Glu  Gly Glu Gln Pro Gly  Gln Gly Thr
    1025                1030                1035

Pro Gly  Asp Pro Glu Pro Val  Cys Val Pro Ile Ala  Val Ala Glu
    1040                1045                1050

Ser Asp  Thr Asp Asp Gln Glu  Glu Asp Glu Glu Asn  Ser Leu Gly
    1055                1060                1065

Thr Glu  Glu Glu Ser Ser Lys  Gln Gln Glu Ser Gln  Pro Val Ser
    1070                1075                1080

Gly Gly  Pro Glu Ala Pro Pro  Asp Ser Arg Thr Trp  Ser Gln Val
    1085                1090                1095

Ser Ala  Thr Ala Ser Ser Glu  Ala Glu Ala Ser Ala  Ser Gln Ala
    1100                1105                1110

Asp Trp  Arg Gln Gln Trp Lys  Ala Glu Pro Gln Ala  Pro Gly Cys
    1115                1120                1125

Gly Glu  Thr Pro Glu Asp Ser  Cys Ser Glu Gly Ser  Thr Ala Asp
    1130                1135                1140

Met Thr  Asn Thr Ala Glu Leu  Leu Glu Gln Ile Pro  Asp Leu Gly
    1145                1150                1155
```

```
Gln Asp  Val Lys Asp Pro Glu  Asp Cys Phe Thr Glu  Gly Cys Val
    1160                1165                1170

Arg Arg  Cys Pro Cys Cys Ala  Val Asp Thr Thr Gln  Ala Pro Gly
    1175                1180                1185

Lys Val  Trp Trp Arg Leu Arg  Lys Thr Cys Tyr His  Ile Val Glu
    1190                1195                1200

His Ser  Trp Phe Glu Thr Phe  Ile Ile Phe Met Ile  Leu Leu Ser
    1205                1210                1215

Ser Gly  Ala Leu Ala Phe Glu  Asp Ile Tyr Leu Glu  Glu Arg Lys
    1220                1225                1230

Thr Ile  Lys Val Leu Leu Glu  Tyr Ala Asp Lys Met  Phe Thr Tyr
    1235                1240                1245

Val Phe  Val Leu Glu Met Leu  Leu Lys Trp Val Ala  Tyr Gly Phe
    1250                1255                1260

Lys Lys  Tyr Phe Thr Asn Ala  Trp Cys Trp Leu Asp  Phe Leu Ile
    1265                1270                1275

Val Asp  Val Ser Leu Val Ser  Leu Val Ala Asn Thr  Leu Gly Phe
    1280                1285                1290

Ala Glu  Met Gly Pro Ile Lys  Ser Leu Arg Thr Leu  Arg Ala Leu
    1295                1300                1305

Arg Pro  Leu Arg Ala Leu Ser  Arg Phe Glu Gly Met  Arg Val Val
    1310                1315                1320

Val Asn  Ala Leu Val Gly Ala  Ile Pro Ser Ile Met  Asn Val Leu
    1325                1330                1335

Leu Val  Cys Leu Ile Phe Trp  Leu Ile Phe Ser Ile  Met Gly Val
    1340                1345                1350
```

```
Asn Leu  Phe Ala Gly Lys Phe  Gly Arg Cys Ile Asn  Gln Thr Glu
    1355                1360                1365

Gly Asp  Leu Pro Leu Asn Tyr  Thr Ile Val Asn Asn  Lys Ser Gln
    1370                1375                1380

Cys Glu  Ser Leu Asn Leu Thr  Gly Glu Leu Tyr Trp  Thr Lys Val
    1385                1390                1395

Lys Val  Asn Phe Asp Asn Val  Gly Ala Gly Tyr Leu  Ala Leu Leu
    1400                1405                1410

Gln Val  Ala Thr Phe Lys Gly  Trp Met Asp Ile Met  Tyr Ala Ala
    1415                1420                1425

Val Asp  Ser Arg Gly Tyr Glu  Glu Gln Pro Gln Trp  Glu Tyr Asn
    1430                1435                1440

Leu Tyr  Met Tyr Ile Tyr Phe  Val Ile Phe Ile Ile  Phe Gly Ser
    1445                1450                1455

Phe Phe  Thr Leu Asn Leu Phe  Ile Gly Val Ile Ile  Asp Asn Phe
    1460                1465                1470

Asn Gln  Gln Lys Lys Lys Leu  Gly Gly Gln Asp Ile  Phe Met Thr
    1475                1480                1485

Glu Glu  Gln Lys Lys Tyr Tyr  Asn Ala Met Lys Lys  Leu Gly Ser
    1490                1495                1500

Lys Lys  Pro Gln Lys Pro Ile  Pro Arg Pro Leu Asn  Lys Tyr Gln
    1505                1510                1515

Gly Phe  Ile Phe Asp Ile Val  Thr Lys Gln Ala Phe  Asp Val Thr
    1520                1525                1530
```

```
Ile Met  Phe Leu Ile Cys Leu  Asn Met Val Thr Met  Met Val Glu
    1535                1540                1545

Thr Asp  Asp Gln Ser Pro Glu  Lys Ile Asn Ile Leu  Ala Lys Ile
    1550                1555                1560

Asn Leu  Leu Phe Val Ala Ile  Phe Thr Gly Glu Cys  Ile Val Lys
    1565                1570                1575

Leu Ala  Ala Leu Arg His Tyr  Tyr Phe Thr Asn Ser  Trp Asn Ile
    1580                1585                1590

Phe Asp  Phe Val Val Val Ile  Leu Ser Ile Val Gly  Thr Val Leu
    1595                1600                1605

Ser Asp  Ile Ile Gln Lys Tyr  Phe Phe Ser Pro Thr  Leu Phe Arg
    1610                1615                1620

Val Ile  Arg Leu Ala Arg Ile  Gly Arg Ile Leu Arg  Leu Ile Arg
    1625                1630                1635

Gly Ala  Lys Gly Ile Arg Thr  Leu Leu Phe Ala Leu  Met Met Ser
    1640                1645                1650

Leu Pro  Ala Leu Phe Asn Ile  Gly Leu Leu Leu Phe  Leu Val Met
    1655                1660                1665

Phe Ile  Tyr Ser Ile Phe Gly  Met Ala Asn Phe Ala  Tyr Val Lys
    1670                1675                1680

Trp Glu  Ala Gly Ile Asp Asp  Met Phe Asn Phe Gln  Thr Phe Ala
    1685                1690                1695

Asn Ser  Met Leu Cys Leu Phe  Gln Ile Thr Thr Ser  Ala Gly Trp
    1700                1705                1710

Asp Gly  Leu Leu Ser Pro Ile  Leu Asn Thr Gly Pro  Pro Tyr Cys
    1715                1720                1725
```

```
Asp Pro  Thr Leu Pro Asn Ser  Asn Gly Ser Arg Gly  Asp Cys Gly
    1730                1735                1740

Ser Pro  Ala Val Gly Ile Leu  Phe Phe Thr Thr Tyr  Ile Ile Ile
    1745                1750                1755

Ser Phe  Leu Ile Val Val Asn  Met Tyr Ile Ala Ile  Ile Leu Glu
    1760                1765                1770

Asn Phe  Ser Val Ala Thr Glu  Glu Ser Thr Glu Pro  Leu Ser Glu
    1775                1780                1785

Asp Asp  Phe Asp Met Phe Tyr  Glu Ile Trp Glu Lys  Phe Asp Pro
    1790                1795                1800

Glu Ala  Thr Gln Phe Ile Glu  Tyr Ser Val Leu Ser  Asp Phe Ala
    1805                1810                1815

Asp Ala  Leu Ser Glu Pro Leu  Arg Ile Ala Lys Pro  Asn Gln Ile
    1820                1825                1830

Ser Leu  Ile Asn Met Asp Leu  Pro Met Val Ser Gly  Asp Arg Ile
    1835                1840                1845

His Cys  Met Asp Ile Leu Phe  Ala Phe Thr Lys Arg  Val Leu Gly
    1850                1855                1860

Glu Ser  Gly Glu Met Asp Ala  Leu Lys Ile Gln Met  Glu Glu Lys
    1865                1870                1875

Phe Met  Ala Ala Asn Pro Ser  Lys Ile Ser Tyr Glu  Pro Ile Thr
    1880                1885                1890

Thr Thr  Leu Arg Arg Lys His  Glu Glu Val Ser Ala  Met Val Ile
    1895                1900                1905
```

```
Gln Arg  Ala Phe Arg Arg His  Leu Leu Gln Arg Ser  Leu Lys His
    1910                1915                1920


Ala Ser  Phe Leu Phe Arg Gln  Gln Ala Gly Ser Gly  Leu Ser Glu
    1925                1930                1935


Glu Asp  Ala Pro Glu Arg Glu  Gly Leu Ile Ala Tyr  Val Met Ser
    1940                1945                1950


Glu Asn  Phe Ser Arg Pro Leu  Gly Pro Pro Ser Ser  Ser Ser Ile
    1955                1960                1965


Ser Ser  Thr Ser Phe Pro Pro  Ser Tyr Asp Ser Val  Thr Arg Ala
    1970                1975                1980


Thr Ser  Asp Asn Leu Gln Val  Arg Gly Ser Asp Tyr  Ser His Ser
    1985                1990                1995


Glu Asp  Leu Ala Asp Phe Pro  Pro Ser Pro Asp Arg  Asp Arg Glu
    2000                2005                2010


Ser Ile  Val
    2015


<210>  26
<211>  1980
<212>  PRT
<213>  Homo sapiens

<400>  26

Met Ala Ala Arg Leu Leu Ala Pro Pro Gly Pro Asp Ser Phe Lys Pro
1               5                  10                  15


Phe Thr Pro Glu Ser Leu Ala Asn Ile Glu Arg Arg Ile Ala Glu Ser
            20                  25                  30


Lys Leu Lys Lys Pro Pro Lys Ala Asp Gly Ser His Arg Glu Asp Asp
        35                  40                  45
```

```
Glu Asp Ser Lys Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Ser
    50                  55                  60

Leu Pro Phe Ile Tyr Gly Asp Ile Pro Gln Gly Leu Val Ala Val Pro
65                  70                  75                  80

Leu Glu Asp Phe Asp Pro Tyr Tyr Leu Thr Gln Lys Thr Phe Val Val
                85                  90                  95

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

Tyr Ile Leu Ser Pro Phe Asn Leu Ile Arg Arg Ile Ala Ile Lys Ile
        115                 120                 125

Leu Ile His Ser Val Phe Ser Met Ile Ile Met Cys Thr Ile Leu Thr
    130                 135                 140

Asn Cys Val Phe Met Thr Phe Ser Asn Pro Pro Asp Trp Ser Lys Asn
145                 150                 155                 160

Val Glu Tyr Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Val Lys
                165                 170                 175

Ile Ile Ala Arg Gly Phe Cys Ile Asp Gly Phe Thr Phe Leu Arg Asp
            180                 185                 190

Pro Trp Asn Trp Leu Asp Phe Ser Val Ile Met Met Ala Tyr Ile Thr
        195                 200                 205

Glu Phe Val Asn Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val
    210                 215                 220

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

Val Gly Ala Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile
```

```
                245                 250                 255

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

Phe Met Gly Asn Leu Arg Asn Lys Cys Val Val Trp Pro Ile Asn Phe
        275                 280                 285

Asn Glu Ser Tyr Leu Glu Asn Gly Thr Lys Gly Phe Asp Trp Glu Glu
    290                 295                 300

Tyr Ile Asn Asn Lys Thr Asn Phe Tyr Thr Val Pro Gly Met Leu Glu
305                 310                 315                 320

Pro Leu Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly
                325                 330                 335

Tyr Gln Cys Met Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser
            340                 345                 350

Phe Asp Thr Phe Ser Trp Ala Phe Leu Ala Leu Phe Arg Leu Met Thr
        355                 360                 365

Gln Asp Tyr Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly
    370                 375                 380

Lys Thr Tyr Met Ile Phe Phe Val Leu Val Ile Phe Val Gly Ser Phe
385                 390                 395                 400

Tyr Leu Val Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu
                405                 410                 415

Gln Asn Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe
            420                 425                 430

Lys Ala Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala
        435                 440                 445
```

```
Ala Ala Met Ala Thr Ser Ala Gly Thr Val Ser Glu Asp Ala Ile Glu
    450                 455                 460

Glu Glu Gly Glu Glu Gly Gly Gly Ser Pro Arg Ser Ser Ser Glu Ile
465                 470                 475                 480

Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu Arg Arg Asn Arg Arg Lys
                485                 490                 495

Lys Arg Lys Gln Lys Glu Leu Ser Glu Gly Glu Glu Lys Gly Asp Pro
            500                 505                 510

Glu Lys Val Phe Lys Ser Glu Ser Glu Asp Gly Met Arg Arg Lys Ala
        515                 520                 525

Phe Arg Leu Pro Asp Asn Arg Ile Gly Arg Lys Phe Ser Ile Met Asn
    530                 535                 540

Gln Ser Leu Leu Ser Ile Pro Gly Ser Pro Phe Leu Ser Arg His Asn
545                 550                 555                 560

Ser Lys Ser Ser Ile Phe Ser Phe Arg Gly Pro Gly Arg Phe Arg Asp
                565                 570                 575

Pro Gly Ser Glu Asn Glu Phe Ala Asp Asp Glu His Ser Thr Val Glu
            580                 585                 590

Glu Ser Glu Gly Arg Arg Asp Ser Leu Phe Ile Pro Ile Arg Ala Arg
        595                 600                 605

Glu Arg Arg Ser Ser Tyr Ser Gly Tyr Ser Gly Tyr Ser Gln Gly Ser
    610                 615                 620

Arg Ser Ser Arg Ile Phe Pro Ser Leu Arg Arg Ser Val Lys Arg Asn
625                 630                 635                 640

Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Ile Gly Gly Pro Gly
```

```
               645                 650                 655

Ser His Ile Gly Gly Arg Leu Leu Pro Glu Ala Thr Thr Glu Val Glu
            660                 665                 670

Ile Lys Lys Lys Gly Pro Gly Ser Leu Leu Val Ser Met Asp Gln Leu
        675                 680                 685

Ala Ser Tyr Gly Arg Lys Asp Arg Ile Asn Ser Ile Met Ser Val Val
    690                 695                 700

Thr Asn Thr Leu Val Glu Glu Leu Glu Glu Ser Gln Arg Lys Cys Pro
705                 710                 715                 720

Pro Cys Trp Tyr Lys Phe Ala Asn Thr Phe Leu Ile Trp Glu Cys His
                725                 730                 735

Pro Tyr Trp Ile Lys Leu Lys Glu Ile Val Asn Leu Ile Val Met Asp
            740                 745                 750

Pro Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu
        755                 760                 765

Phe Met Ala Met Glu His His Pro Met Thr Pro Gln Phe Glu His Val
    770                 775                 780

Leu Ala Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met
785                 790                 795                 800

Phe Leu Lys Leu Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly
                805                 810                 815

Trp Asn Ile Phe Asp Gly Phe Ile Val Ser Leu Ser Leu Met Glu Leu
            820                 825                 830

Ser Leu Ala Asp Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu
        835                 840                 845
```

```
Leu Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu
    850                 855                 860

Ile Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu
865                 870                 875                 880

Val Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu
                885                 890                 895

Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys Lys Ile Asn Gln Asp Cys
            900                 905                 910

Glu Leu Pro Arg Trp His Met His Asp Phe Phe His Ser Phe Leu Ile
        915                 920                 925

Val Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys
    930                 935                 940

Met Glu Val Ala Gly Gln Ala Met Cys Leu Ile Val Phe Met Met Val
945                 950                 955                 960

Met Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu
                965                 970                 975

Leu Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Gly
            980                 985                 990

Glu Met Asn Asn Leu Gln Ile Ser  Val Ile Arg Ile Lys  Lys Gly Val
        995                 1000                1005

Ala Trp  Thr Lys Leu Lys Val  His Ala Phe Met Gln  Ala His Phe
    1010                1015                1020

Lys Gln  Arg Glu Ala Asp Glu  Val Lys Pro Leu Asp  Glu Leu Tyr
    1025                1030                1035

Glu Lys  Lys Ala Asn Cys Ile  Ala Asn His Thr Gly  Ala Asp Ile
```

```
    1040                1045                1050

His Arg  Asn Gly Asp Phe Gln  Lys Asn Gly Asn Gly  Thr Thr Ser
    1055                1060                1065

Gly Ile  Gly Ser Ser Val Glu  Lys Tyr Ile Ile Asp  Glu Asp His
    1070                1075                1080

Met Ser  Phe Ile Asn Asn Pro  Asn Leu Thr Val Arg  Val Pro Ile
    1085                1090                1095

Ala Val  Gly Glu Ser Asp Phe  Glu Asn Leu Asn Thr  Glu Asp Val
    1100                1105                1110

Ser Ser  Glu Ser Asp Pro Glu  Gly Ser Lys Asp Lys  Leu Asp Asp
    1115                1120                1125

Thr Ser  Ser Ser Glu Gly Ser  Thr Ile Asp Ile Lys  Pro Glu Val
    1130                1135                1140

Glu Glu  Val Pro Val Glu Gln  Pro Glu Glu Tyr Leu  Asp Pro Asp
    1145                1150                1155

Ala Cys  Phe Thr Glu Gly Cys  Val Gln Arg Phe Lys  Cys Cys Gln
    1160                1165                1170

Val Asn  Ile Glu Glu Gly Leu  Gly Lys Ser Trp Trp  Ile Leu Arg
    1175                1180                1185

Lys Thr  Cys Phe Leu Ile Val  Glu His Asn Trp Phe  Glu Thr Phe
    1190                1195                1200

Ile Ile  Phe Met Ile Leu Leu  Ser Ser Gly Ala Leu  Ala Phe Glu
    1205                1210                1215

Asp Ile  Tyr Ile Glu Gln Arg  Lys Thr Ile Arg Thr  Ile Leu Glu
    1220                1225                1230
```

```
Tyr Ala  Asp Lys Val Phe Thr  Tyr Ile Phe Ile Leu  Glu Met Leu
    1235                1240                1245

Leu Lys  Trp Thr Ala Tyr Gly  Phe Val Lys Phe Phe  Thr Asn Ala
    1250                1255                1260

Trp Cys  Trp Leu Asp Phe Leu  Ile Val Ala Val Ser  Leu Val Ser
    1265                1270                1275

Leu Ile  Ala Asn Ala Leu Gly  Tyr Ser Glu Leu Gly  Ala Ile Lys
    1280                1285                1290

Ser Leu  Arg Thr Leu Arg Ala  Leu Arg Pro Leu Arg  Ala Leu Ser
    1295                1300                1305

Arg Phe  Glu Gly Met Arg Val  Val Val Asn Ala Leu  Val Gly Ala
    1310                1315                1320

Ile Pro  Ser Ile Met Asn Val  Leu Leu Val Cys Leu  Ile Phe Trp
    1325                1330                1335

Leu Ile  Phe Ser Ile Met Gly  Val Asn Leu Phe Ala  Gly Lys Tyr
    1340                1345                1350

His Tyr  Cys Phe Asn Glu Thr  Ser Glu Ile Arg Phe  Glu Ile Glu
    1355                1360                1365

Asp Val  Asn Asn Lys Thr Glu  Cys Glu Lys Leu Met  Glu Gly Asn
    1370                1375                1380

Asn Thr  Glu Ile Arg Trp Lys  Asn Val Lys Ile Asn  Phe Asp Asn
    1385                1390                1395

Val Gly  Ala Gly Tyr Leu Ala  Leu Leu Gln Val Ala  Thr Phe Lys
    1400                1405                1410

Gly Trp  Met Asp Ile Met Tyr  Ala Ala Val Asp Ser  Arg Lys Pro
```

```
    1415                1420                1425

Asp Glu  Gln Pro Lys Tyr Glu  Asp Asn Ile Tyr Met  Tyr Ile Tyr
    1430                1435                1440

Phe Val  Ile Phe Ile Ile Phe  Gly Ser Phe Phe Thr  Leu Asn Leu
    1445                1450                1455

Phe Ile  Gly Val Ile Ile Asp  Asn Phe Asn Gln Gln  Lys Lys Lys
    1460                1465                1470

Phe Gly  Gly Gln Asp Ile Phe  Met Thr Glu Glu Gln  Lys Lys Tyr
    1475                1480                1485

Tyr Asn  Ala Met Lys Lys Leu  Gly Ser Lys Lys Pro  Gln Lys Pro
    1490                1495                1500

Ile Pro  Arg Pro Leu Asn Lys  Ile Gln Gly Ile Val  Phe Asp Phe
    1505                1510                1515

Val Thr  Gln Gln Ala Phe Asp  Ile Val Ile Met Met  Leu Ile Cys
    1520                1525                1530

Leu Asn  Met Val Thr Met Met  Val Glu Thr Asp Thr  Gln Ser Lys
    1535                1540                1545

Gln Met  Glu Asn Ile Leu Tyr  Trp Ile Asn Leu Val  Phe Val Ile
    1550                1555                1560

Phe Phe  Thr Cys Glu Cys Val  Leu Lys Met Phe Ala  Leu Arg His
    1565                1570                1575

Tyr Tyr  Phe Thr Ile Gly Trp  Asn Ile Phe Asp Phe  Val Val Val
    1580                1585                1590

Ile Leu  Ser Ile Val Gly Met  Phe Leu Ala Asp Ile  Ile Glu Lys
    1595                1600                1605
```

```
Tyr Phe  Val Ser Pro Thr Leu  Phe Arg Val Ile Arg  Leu Ala Arg
    1610                1615                1620

Ile Gly  Arg Ile Leu Arg Leu  Ile Lys Gly Ala Lys  Gly Ile Arg
    1625                1630                1635

Thr Leu  Leu Phe Ala Leu Met  Met Ser Leu Pro Ala  Leu Phe Asn
    1640                1645                1650

Ile Gly  Leu Leu Leu Phe Leu  Val Met Phe Ile Phe  Ser Ile Phe
    1655                1660                1665

Gly Met  Ser Asn Phe Ala Tyr  Val Lys His Glu Ala  Gly Ile Asp
    1670                1675                1680

Asp Met  Phe Asn Phe Glu Thr  Phe Gly Asn Ser Met  Ile Cys Leu
    1685                1690                1695

Phe Gln  Ile Thr Thr Ser Ala  Gly Trp Asp Gly Leu  Leu Leu Pro
    1700                1705                1710

Ile Leu  Asn Arg Pro Pro Asp  Cys Ser Leu Asp Lys  Glu His Pro
    1715                1720                1725

Gly Ser  Gly Phe Lys Gly Asp  Cys Gly Asn Pro Ser  Val Gly Ile
    1730                1735                1740

Phe Phe  Phe Val Ser Tyr Ile  Ile Ile Ser Phe Leu  Ile Val Val
    1745                1750                1755

Asn Met  Tyr Ile Ala Ile Ile  Leu Glu Asn Phe Ser  Val Ala Thr
    1760                1765                1770

Glu Glu  Ser Ala Asp Pro Leu  Ser Glu Asp Asp Phe  Glu Thr Phe
    1775                1780                1785

Tyr Glu  Ile Trp Glu Lys Phe  Asp Pro Asp Ala Thr  Gln Phe Ile
```

```
    1790                1795                1800

Glu Tyr  Cys Lys Leu Ala Asp  Phe Ala Asp Ala Leu  Glu His Pro
    1805                1810                1815

Leu Arg  Val Pro Lys Pro Asn  Thr Ile Glu Leu Ile  Ala Met Asp
    1820                1825                1830

Leu Pro  Met Val Ser Gly Asp  Arg Ile His Cys Leu  Asp Ile Leu
    1835                1840                1845

Phe Ala  Phe Thr Lys Arg Val  Leu Gly Asp Ser Gly  Glu Leu Asp
    1850                1855                1860

Ile Leu  Arg Gln Gln Met Glu  Glu Arg Phe Val Ala  Ser Asn Pro
    1865                1870                1875

Ser Lys  Val Ser Tyr Glu Pro  Ile Thr Thr Thr Leu  Arg Arg Lys
    1880                1885                1890

Gln Glu  Glu Val Ser Ala Val  Val Leu Gln Arg Ala  Tyr Arg Gly
    1895                1900                1905

His Leu  Ala Arg Arg Gly Phe  Ile Cys Lys Lys Thr  Thr Ser Asn
    1910                1915                1920

Lys Leu  Glu Asn Gly Gly Thr  His Arg Glu Lys Lys  Glu Ser Thr
    1925                1930                1935

Pro Ser  Thr Ala Ser Leu Pro  Ser Tyr Asp Ser Val  Thr Lys Pro
    1940                1945                1950

Glu Lys  Glu Lys Gln Gln Arg  Ala Glu Glu Gly Arg  Arg Glu Arg
    1955                1960                1965

Ala Lys  Arg Gln Lys Glu Val  Arg Glu Ser Lys Cys
    1970                1975                1980
```

<210> 27
<211> 1988
<212> PRT
<213> Homo sapiens

<400> 27

```
Met Ala Met Leu Pro Pro Pro Gly Pro Gln Ser Phe Val His Phe Thr
1               5                   10                  15


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


Lys Glu Pro Lys Glu Glu Lys Lys Asp Asp Asp Glu Glu Ala Pro Lys
        35                  40                  45


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


Asp Ile Pro Pro Gly Met Val Ser Glu Pro Leu Glu Asp Leu Asp Pro
65                  70                  75                  80


Tyr Tyr Ala Asp Lys Lys Thr Phe Ile Val Leu Asn Lys Gly Lys Thr
                85                  90                  95


Ile Phe Arg Phe Asn Ala Thr Pro Ala Leu Tyr Met Leu Ser Pro Phe
            100                 105                 110


Ser Pro Leu Arg Arg Ile Ser Ile Lys Ile Leu Val His Ser Leu Phe
        115                 120                 125


Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Ile Phe Met Thr
    130                 135                 140


Met Asn Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr Phe Thr
145                 150                 155                 160


Gly Ile Tyr Thr Phe Glu Ser Leu Val Lys Ile Leu Ala Arg Gly Phe
                165                 170                 175
```

```
Cys Val Gly Glu Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp Leu Asp
            180                 185                 190

Phe Val Val Ile Val Phe Ala Tyr Leu Thr Glu Phe Val Asn Leu Gly
        195                 200                 205

Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu Lys Thr
    210                 215                 220

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

Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe Cys Leu
                245                 250                 255

Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn Leu Lys
            260                 265                 270

His Lys Cys Phe Arg Asn Ser Leu Glu Asn Asn Glu Thr Leu Glu Ser
        275                 280                 285

Ile Met Asn Thr Leu Glu Ser Glu Glu Asp Phe Arg Lys Tyr Phe Tyr
    290                 295                 300

Tyr Leu Glu Gly Ser Lys Asp Ala Leu Leu Cys Gly Phe Ser Thr Asp
305                 310                 315                 320

Ser Gly Gln Cys Pro Glu Gly Tyr Thr Cys Val Lys Ile Gly Arg Asn
                325                 330                 335

Pro Asp Tyr Gly Tyr Thr Ser Phe Asp Thr Phe Ser Trp Ala Phe Leu
            340                 345                 350

Ala Leu Phe Arg Leu Met Thr Gln Asp Tyr Trp Glu Asn Leu Tyr Gln
        355                 360                 365
```

```
Gln Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met Ile Phe Phe Val Val
    370                 375                 380

Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn Leu Ile Leu Ala Val
385                 390                 395                 400

Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala Asn Ile Glu Glu Ala
                405                 410                 415

Lys Gln Lys Glu Leu Glu Phe Gln Gln Met Leu Asp Arg Leu Lys Lys
            420                 425                 430

Glu Gln Glu Glu Ala Glu Ala Ile Ala Ala Ala Ala Ala Glu Tyr Thr
        435                 440                 445

Ser Ile Arg Arg Ser Arg Ile Met Gly Leu Ser Glu Ser Ser Ser Glu
    450                 455                 460

Thr Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu Arg Arg Asn Arg Arg
465                 470                 475                 480

Lys Lys Lys Asn Gln Lys Lys Leu Ser Ser Gly Glu Glu Lys Gly Asp
                485                 490                 495

Ala Glu Lys Leu Ser Lys Ser Glu Ser Glu Asp Ser Ile Arg Arg Lys
            500                 505                 510

Ser Phe His Leu Gly Val Glu Gly His Arg Arg Ala His Glu Lys Arg
        515                 520                 525

Leu Ser Thr Pro Asn Gln Ser Pro Leu Ser Ile Arg Gly Ser Leu Phe
    530                 535                 540

Ser Ala Arg Arg Ser Ser Arg Thr Ser Leu Phe Ser Phe Lys Gly Arg
545                 550                 555                 560

Gly Arg Asp Ile Gly Ser Glu Thr Glu Phe Ala Asp Asp Glu His Ser
                565                 570                 575
```

```
Ile Phe Gly Asp Asn Glu Ser Arg Arg Gly Ser Leu Phe Val Pro His
            580                 585                 590

Arg Pro Gln Glu Arg Arg Ser Ser Asn Ile Ser Gln Ala Ser Arg Ser
        595                 600                 605

Pro Pro Met Leu Pro Val Asn Gly Lys Met His Ser Ala Val Asp Cys
    610                 615                 620

Asn Gly Val Val Ser Leu Val Asp Gly Arg Ser Ala Leu Met Leu Pro
625                 630                 635                 640

Asn Gly Gln Leu Leu Pro Glu Val Ile Ile Asp Lys Ala Thr Ser Asp
                645                 650                 655

Asp Ser Gly Thr Thr Asn Gln Ile His Lys Lys Arg Arg Cys Ser Ser
            660                 665                 670

Tyr Leu Leu Ser Glu Asp Met Leu Asn Asp Pro Asn Leu Arg Gln Arg
        675                 680                 685

Ala Met Ser Arg Ala Ser Ile Leu Thr Asn Thr Val Glu Glu Leu Glu
    690                 695                 700

Glu Ser Arg Gln Lys Cys Pro Pro Trp Trp Tyr Arg Phe Ala His Lys
705                 710                 715                 720

Phe Leu Ile Trp Asn Cys Ser Pro Tyr Trp Ile Lys Phe Lys Lys Cys
                725                 730                 735

Ile Tyr Phe Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile
            740                 745                 750

Cys Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His His Pro Met
        755                 760                 765
```

```
Thr Glu Glu Phe Lys Asn Val Leu Ala Ile Gly Asn Leu Val Phe Thr
    770                 775                 780

Gly Ile Phe Ala Ala Glu Met Val Leu Lys Leu Ile Ala Met Asp Pro
785                 790                 795                 800

Tyr Glu Tyr Phe Gln Val Gly Trp Asn Ile Phe Asp Ser Leu Ile Val
                805                 810                 815

Thr Leu Ser Leu Val Glu Leu Phe Leu Ala Asp Val Glu Gly Leu Ser
            820                 825                 830

Val Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser
        835                 840                 845

Trp Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly
    850                 855                 860

Ala Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe
865                 870                 875                 880

Ala Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val
                885                 890                 895

Cys Lys Ile Asn Asp Asp Cys Thr Leu Pro Arg Trp His Met Asn Asp
            900                 905                 910

Phe Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp
        915                 920                 925

Ile Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Ala Met Cys
    930                 935                 940

Leu Ile Val Tyr Met Met Val Met Val Ile Gly Asn Leu Val Val Leu
945                 950                 955                 960

Asn Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu
                965                 970                 975
```

```
Thr Ala Ile Glu Glu Asp Pro Asp Ala Asn Asn Leu Gln Ile Ala Val
            980                 985                 990


Thr Arg Ile Lys Lys Gly Ile Asn  Tyr Val Lys Gln Thr  Leu Arg Glu
        995                 1000                1005


Phe Ile  Leu Lys Ala Phe Ser  Lys Lys Pro Lys Ile  Ser Arg Glu
    1010                1015                1020


Ile Arg  Gln Ala Glu Asp Leu  Asn Thr Lys Lys Glu  Asn Tyr Ile
    1025                1030                1035


Ser Asn  His Thr Leu Ala Glu  Met Ser Lys Gly His  Asn Phe Leu
    1040                1045                1050


Lys Glu  Lys Asp Lys Ile Ser  Gly Phe Gly Ser Ser  Val Asp Lys
    1055                1060                1065


His Leu  Met Glu Asp Ser Asp  Gly Gln Ser Phe Ile  His Asn Pro
    1070                1075                1080


Ser Leu  Thr Val Thr Val Pro  Ile Ala Pro Gly Glu  Ser Asp Leu
    1085                1090                1095


Glu Asn  Met Asn Ala Glu Glu  Leu Ser Ser Asp Ser  Asp Ser Glu
    1100                1105                1110


Tyr Ser  Lys Val Arg Leu Asn  Arg Ser Ser Ser Ser  Glu Cys Ser
    1115                1120                1125


Thr Val  Asp Asn Pro Leu Pro  Gly Glu Gly Glu Glu  Ala Glu Ala
    1130                1135                1140


Glu Pro  Met Asn Ser Asp Glu  Pro Glu Ala Cys Phe  Thr Asp Gly
    1145                1150                1155
```

```
Cys Val  Trp Arg Phe Ser Cys  Cys Gln Val Asn Ile  Glu Ser Gly
    1160                1165                1170

Lys Gly  Lys Ile Trp Trp Asn  Ile Arg Lys Thr Cys  Tyr Lys Ile
    1175                1180                1185

Val Glu  His Ser Trp Phe Glu  Ser Phe Ile Val Leu  Met Ile Leu
    1190                1195                1200

Leu Ser  Ser Gly Ala Leu Ala  Phe Glu Asp Ile Tyr  Ile Glu Arg
    1205                1210                1215

Lys Lys  Thr Ile Lys Ile Ile  Leu Glu Tyr Ala Asp  Lys Ile Phe
    1220                1225                1230

Thr Tyr  Ile Phe Ile Leu Glu  Met Leu Leu Lys Trp  Ile Ala Tyr
    1235                1240                1245

Gly Tyr  Lys Thr Tyr Phe Thr  Asn Ala Trp Cys Trp  Leu Asp Phe
    1250                1255                1260

Leu Ile  Val Asp Val Ser Leu  Val Thr Leu Val Ala  Asn Thr Leu
    1265                1270                1275

Gly Tyr  Ser Asp Leu Gly Pro  Ile Lys Ser Leu Arg  Thr Leu Arg
    1280                1285                1290

Ala Leu  Arg Pro Leu Arg Ala  Leu Ser Arg Phe Glu  Gly Met Arg
    1295                1300                1305

Val Val  Val Asn Ala Leu Ile  Gly Ala Ile Pro Ser  Ile Met Asn
    1310                1315                1320

Val Leu  Leu Val Cys Leu Ile  Phe Trp Leu Ile Phe  Ser Ile Met
    1325                1330                1335

Gly Val  Asn Leu Phe Ala Gly  Lys Phe Tyr Glu Cys  Ile Asn Thr
    1340                1345                1350
```

```
Thr Asp  Gly Ser Arg Phe Pro  Ala Ser Gln Val Pro  Asn Arg Ser
    1355                1360                1365

Glu Cys  Phe Ala Leu Met Asn  Val Ser Gln Asn Val  Arg Trp Lys
    1370                1375                1380

Asn Leu  Lys Val Asn Phe Asp  Asn Val Gly Leu Gly  Tyr Leu Ser
    1385                1390                1395

Leu Leu  Gln Val Ala Thr Phe  Lys Gly Trp Thr Ile  Ile Met Tyr
    1400                1405                1410

Ala Ala  Val Asp Ser Val Asn  Val Asp Lys Gln Pro  Lys Tyr Glu
    1415                1420                1425

Tyr Ser  Leu Tyr Met Tyr Ile  Tyr Phe Val Val Phe  Ile Ile Phe
    1430                1435                1440

Gly Ser  Phe Phe Thr Leu Asn  Leu Phe Ile Gly Val  Ile Ile Asp
    1445                1450                1455

Asn Phe  Asn Gln Gln Lys Lys  Lys Leu Gly Gly Gln  Asp Ile Phe
    1460                1465                1470

Met Thr  Glu Glu Gln Lys Lys  Tyr Tyr Asn Ala Met  Lys Lys Leu
    1475                1480                1485

Gly Ser  Lys Lys Pro Gln Lys  Pro Ile Pro Arg Pro  Gly Asn Lys
    1490                1495                1500

Ile Gln  Gly Cys Ile Phe Asp  Leu Val Thr Asn Gln  Ala Phe Asp
    1505                1510                1515

Ile Ser  Ile Met Val Leu Ile  Cys Leu Asn Met Val  Thr Met Met
    1520                1525                1530
```

```
Val Glu  Lys Glu Gly Gln Ser  Gln His Met Thr Glu  Val Leu Tyr
    1535                1540                1545

Trp Ile  Asn Val Val Phe Ile  Ile Leu Phe Thr Gly  Glu Cys Val
    1550                1555                1560

Leu Lys  Leu Ile Ser Leu Arg  His Tyr Tyr Phe Thr  Val Gly Trp
    1565                1570                1575

Asn Ile  Phe Asp Phe Val Val  Val Ile Ile Ser Ile  Val Gly Met
    1580                1585                1590

Phe Leu  Ala Asp Leu Ile Glu  Thr Tyr Phe Val Ser  Pro Thr Leu
    1595                1600                1605

Phe Arg  Val Ile Arg Leu Ala  Arg Ile Gly Arg Ile  Leu Arg Leu
    1610                1615                1620

Val Lys  Gly Ala Lys Gly Ile  Arg Thr Leu Leu Phe  Ala Leu Met
    1625                1630                1635

Met Ser  Leu Pro Ala Leu Phe  Asn Ile Gly Leu Leu  Leu Phe Leu
    1640                1645                1650

Val Met  Phe Ile Tyr Ala Ile  Phe Gly Met Ser Asn  Phe Ala Tyr
    1655                1660                1665

Val Lys  Lys Glu Asp Gly Ile  Asn Asp Met Phe Asn  Phe Glu Thr
    1670                1675                1680

Phe Gly  Asn Ser Met Ile Cys  Leu Phe Gln Ile Thr  Thr Ser Ala
    1685                1690                1695

Gly Trp  Asp Gly Leu Leu Ala  Pro Ile Leu Asn Ser  Lys Pro Pro
    1700                1705                1710

Asp Cys  Asp Pro Lys Lys Val  His Pro Gly Ser Ser  Val Glu Gly
    1715                1720                1725
```

```
Asp Cys  Gly Asn Pro Ser Val  Gly Ile Phe Tyr Phe  Val Ser Tyr
    1730                1735                1740

Ile Ile  Ile Ser Phe Leu Val  Val Val Asn Met Tyr  Ile Ala Val
    1745                1750                1755

Ile Leu  Glu Asn Phe Ser Val  Ala Thr Glu Glu Ser  Thr Glu Pro
    1760                1765                1770

Leu Ser  Glu Asp Asp Phe Glu  Met Phe Tyr Glu Val  Trp Glu Lys
    1775                1780                1785

Phe Asp  Pro Asp Ala Thr Gln  Phe Ile Glu Phe Ser  Lys Leu Ser
    1790                1795                1800

Asp Phe  Ala Ala Ala Leu Asp  Pro Pro Leu Leu Ile  Ala Lys Pro
    1805                1810                1815

Asn Lys  Val Gln Leu Ile Ala  Met Asp Leu Pro Met  Val Ser Gly
    1820                1825                1830

Asp Arg  Ile His Cys Leu Asp  Ile Leu Phe Ala Phe  Thr Lys Arg
    1835                1840                1845

Val Leu  Gly Glu Ser Gly Glu  Met Asp Ser Leu Arg  Ser Gln Met
    1850                1855                1860

Glu Glu  Arg Phe Met Ser Ala  Asn Pro Ser Lys Val  Ser Tyr Glu
    1865                1870                1875

Pro Ile  Thr Thr Thr Leu Lys  Arg Lys Gln Glu Asp  Val Ser Ala
    1880                1885                1890

Thr Val  Ile Gln Arg Ala Tyr  Arg Arg Tyr Arg Leu  Arg Gln Asn
    1895                1900                1905
```

```
Val Lys  Asn Ile Ser Ser Ile  Tyr Ile Lys Asp Gly  Asp Arg Asp
    1910                1915                1920


Asp Asp  Leu Leu Asn Lys Lys  Asp Met Ala Phe Asp  Asn Val Asn
    1925                1930                1935


Glu Asn  Ser Ser Pro Glu Lys  Thr Asp Ala Thr Ser  Ser Thr Thr
    1940                1945                1950


Ser Pro  Pro Ser Tyr Asp Ser  Val Thr Lys Pro Asp  Lys Glu Lys
    1955                1960                1965


Tyr Glu  Gln Asp Arg Thr Glu  Lys Glu Asp Lys Gly  Lys Asp Ser
    1970                1975                1980


Lys Glu  Ser Lys Lys
    1985
```

<210>  28
<211>  1988
<212>  PRT
<213>  Homo sapiens

<400>  28

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


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


Lys Glu Pro Lys Glu Glu Lys Lys Asp Asp Asp Glu Glu Ala Pro Lys
        35                  40                  45


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


Asp Ile Pro Pro Gly Met Val Ser Glu Pro Leu Glu Asp Leu Asp Pro
65                  70                  75                  80
```

```
Tyr Tyr Ala Asp Lys Lys Thr Phe Ile Val Leu Asn Lys Gly Lys Thr
                85                  90                  95

Ile Phe Arg Phe Asn Ala Thr Pro Ala Leu Tyr Met Leu Ser Pro Phe
            100                 105                 110

Ser Pro Leu Arg Arg Ile Ser Ile Lys Ile Leu Val His Ser Leu Phe
        115                 120                 125

Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Ile Phe Met Thr
    130                 135                 140

Met Asn Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr Phe Thr
145                 150                 155                 160

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

Cys Val Gly Glu Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp Leu Asp
            180                 185                 190

Phe Val Val Ile Val Phe Ala Tyr Leu Thr Glu Phe Val Asn Leu Gly
        195                 200                 205

Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu Lys Thr
    210                 215                 220

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

Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe Cys Leu
                245                 250                 255

Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn Leu Lys
            260                 265                 270

His Lys Cys Phe Arg Asn Ser Leu Glu Asn Asn Glu Thr Leu Glu Ser
```

```
        275                 280                 285

Ile Met Asn Thr Leu Glu Ser Glu Glu Asp Phe Arg Lys Tyr Phe Tyr
    290                 295                 300

Tyr Leu Glu Gly Ser Lys Asp Ala Leu Leu Cys Gly Phe Ser Thr Asp
305                 310                 315                 320

Ser Gly Gln Cys Pro Glu Gly Tyr Thr Cys Val Lys Ile Gly Arg Asn
                325                 330                 335

Pro Asp Tyr Gly Tyr Thr Ser Phe Asp Thr Phe Ser Trp Ala Phe Leu
            340                 345                 350

Ala Leu Phe Arg Leu Met Thr Gln Asp Tyr Trp Glu Asn Leu Tyr Gln
        355                 360                 365

Gln Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met Ile Phe Phe Val Val
    370                 375                 380

Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn Leu Ile Leu Ala Val
385                 390                 395                 400

Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala Asn Ile Glu Glu Ala
                405                 410                 415

Lys Gln Lys Glu Leu Glu Phe Gln Gln Met Leu Asp Arg Leu Lys Lys
            420                 425                 430

Glu Gln Glu Glu Ala Glu Ala Ile Ala Ala Ala Ala Ala Glu Tyr Thr
        435                 440                 445

Ser Ile Arg Arg Ser Arg Ile Met Gly Leu Ser Glu Ser Ser Ser Glu
    450                 455                 460

Thr Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu Arg Arg Asn Arg Arg
465                 470                 475                 480
```

```
Lys Lys Lys Asn Gln Lys Lys Leu Ser Ser Gly Glu Glu Lys Gly Asp
                485                 490                 495

Ala Glu Lys Leu Ser Lys Ser Glu Ser Glu Asp Ser Ile Arg Arg Lys
            500                 505                 510

Ser Phe His Leu Gly Val Glu Gly His Arg Arg Ala His Glu Lys Arg
        515                 520                 525

Leu Ser Thr Pro Asn Gln Ser Pro Leu Ser Ile Arg Gly Ser Leu Phe
    530                 535                 540

Ser Ala Arg Arg Ser Ser Arg Thr Ser Leu Phe Ser Phe Lys Gly Arg
545                 550                 555                 560

Gly Arg Asp Ile Gly Ser Glu Thr Glu Phe Ala Asp Asp Glu His Ser
                565                 570                 575

Ile Phe Gly Asp Asn Glu Ser Arg Arg Gly Ser Leu Phe Val Pro His
            580                 585                 590

Arg Pro Gln Glu Arg Arg Ser Ser Asn Ile Ser Gln Ala Ser Arg Ser
        595                 600                 605

Pro Pro Met Leu Pro Val Asn Gly Lys Met His Ser Ala Val Asp Cys
    610                 615                 620

Asn Gly Val Val Ser Leu Val Asp Gly Arg Ser Ala Leu Met Leu Pro
625                 630                 635                 640

Asn Gly Gln Leu Leu Pro Glu Val Ile Ile Asp Lys Ala Thr Ser Asp
                645                 650                 655

Asp Ser Gly Thr Thr Asn Gln Ile His Lys Lys Arg Arg Cys Ser Ser
            660                 665                 670

Tyr Leu Leu Ser Glu Asp Met Leu Asn Asp Pro Asn Leu Arg Gln Arg
```

```
        675                 680                 685

Ala Met Ser Arg Ala Ser Ile Leu Thr Asn Thr Val Glu Glu Leu Glu
    690                 695                 700

Glu Ser Arg Gln Lys Cys Pro Pro Trp Trp Tyr Arg Phe Ala His Lys
705                 710                 715                 720

Phe Leu Ile Trp Asn Cys Ser Pro Tyr Trp Ile Lys Phe Lys Lys Cys
                725                 730                 735

Ile Tyr Phe Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile
            740                 745                 750

Cys Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His His Pro Met
        755                 760                 765

Thr Glu Glu Phe Lys Asn Val Leu Ala Ile Gly Asn Leu Val Phe Thr
    770                 775                 780

Gly Ile Phe Ala Ala Glu Met Val Leu Lys Leu Ile Ala Met Asp Pro
785                 790                 795                 800

Tyr Glu Tyr Phe Gln Val Gly Trp Asn Ile Phe Asp Ser Leu Ile Val
                805                 810                 815

Thr Leu Ser Leu Val Glu Leu Phe Leu Ala Asp Val Glu Gly Leu Ser
            820                 825                 830

Val Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser
        835                 840                 845

Trp Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly
    850                 855                 860

Ala Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe
865                 870                 875                 880
```

```
Ala Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val
               885                 890                 895


Cys Lys Ile Asn Asp Asp Cys Thr Leu Pro Arg Trp His Met Asn Asp
            900                 905                 910


Phe Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp
        915                 920                 925


Ile Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Ala Met Cys
    930                 935                 940


Leu Ile Val Tyr Met Met Val Met Val Ile Gly Asn Leu Val Val Leu
945                 950                 955                 960


Asn Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu
               965                 970                 975


Thr Ala Ile Glu Glu Asp Pro Asp Ala Asn Asn Leu Gln Ile Ala Val
            980                 985                 990


Thr Arg Ile Lys Lys Gly Ile Asn  Tyr Val Lys Gln Thr  Leu Arg Glu
        995                 1000                1005


Phe Ile  Leu Lys Ala Phe Ser  Lys Lys Pro Lys Ile  Ser Arg Glu
    1010                1015                1020


Ile Arg  Gln Ala Glu Asp Leu  Asn Thr Lys Lys Glu  Asn Tyr Ile
    1025                1030                1035


Ser Asn  His Thr Leu Ala Glu  Met Ser Lys Gly His  Asn Phe Leu
    1040                1045                1050


Lys Glu  Lys Asp Lys Ile Ser  Gly Phe Gly Ser Ser  Val Asp Lys
    1055                1060                1065


His Leu  Met Glu Asp Ser Asp  Gly Gln Ser Phe Ile  His Asn Pro
```

```
    1070                1075                1080

Ser Leu  Thr Val Thr Val Pro  Ile Ala Pro Gly Glu  Ser Asp Leu
    1085                1090                1095

Glu Asn  Met Asn Ala Glu Glu  Leu Ser Ser Asp Ser  Asp Ser Glu
    1100                1105                1110

Tyr Ser  Lys Val Arg Leu Asn  Arg Ser Ser Ser Ser  Glu Cys Ser
    1115                1120                1125

Thr Val  Asp Asn Pro Leu Pro  Gly Glu Gly Glu Glu  Ala Glu Ala
    1130                1135                1140

Glu Pro  Met Asn Ser Asp Glu  Pro Glu Ala Cys Phe  Thr Asp Gly
    1145                1150                1155

Cys Val  Trp Arg Phe Ser Cys  Cys Gln Val Asn Ile  Glu Ser Gly
    1160                1165                1170

Lys Gly  Lys Ile Trp Trp Asn  Ile Arg Lys Thr Cys  Tyr Lys Ile
    1175                1180                1185

Val Glu  His Ser Trp Phe Glu  Ser Phe Ile Val Leu  Met Ile Leu
    1190                1195                1200

Leu Ser  Ser Gly Ala Leu Ala  Phe Glu Asp Ile Tyr  Ile Glu Arg
    1205                1210                1215

Lys Lys  Thr Ile Lys Ile Ile  Leu Glu Tyr Ala Asp  Lys Ile Phe
    1220                1225                1230

Thr Tyr  Ile Phe Ile Leu Glu  Met Leu Leu Lys Trp  Ile Ala Tyr
    1235                1240                1245

Gly Tyr  Lys Thr Tyr Phe Thr  Asn Ala Trp Cys Trp  Leu Asp Phe
    1250                1255                1260
```

```
Leu Ile  Val Asp Val Ser Leu  Val Thr Leu Val Ala  Asn Thr Leu
    1265                1270                1275

Gly Tyr  Ser Asp Leu Gly Pro  Ile Lys Ser Leu Arg  Thr Leu Arg
    1280                1285                1290

Ala Leu  Arg Pro Leu Arg Ala  Leu Ser Arg Phe Glu  Gly Met Arg
    1295                1300                1305

Val Val  Val Asn Ala Leu Ile  Gly Ala Ile Pro Ser  Ile Met Asn
    1310                1315                1320

Val Leu  Leu Val Cys Leu Ile  Phe Trp Leu Ile Phe  Ser Ile Met
    1325                1330                1335

Gly Val  Asn Leu Phe Ala Gly  Lys Phe Tyr Glu Cys  Ile Asn Thr
    1340                1345                1350

Thr Asp  Gly Ser Arg Phe Pro  Ala Ser Gln Val Pro  Asn Arg Ser
    1355                1360                1365

Glu Cys  Phe Ala Leu Met Asn  Val Ser Gln Asn Val  Arg Trp Lys
    1370                1375                1380

Asn Leu  Lys Val Asn Phe Asp  Asn Val Gly Leu Gly  Tyr Leu Ser
    1385                1390                1395

Leu Leu  Gln Val Ala Thr Phe  Lys Gly Trp Thr Ile  Ile Met Tyr
    1400                1405                1410

Ala Ala  Val Asp Ser Val Asn  Val Asp Lys Gln Pro  Lys Tyr Glu
    1415                1420                1425

Tyr Ser  Leu Tyr Met Tyr Ile  Tyr Phe Val Val Phe  Ile Ile Phe
    1430                1435                1440

Gly Ser  Phe Phe Thr Leu Asn  Leu Phe Ile Gly Val  Ile Ile Asp
```

```
    1445                1450                1455

Asn Phe  Asn Gln Gln Lys Lys  Lys Leu Gly Gly Gln  Asp Ile Phe
    1460                1465                1470

Met Thr  Glu Glu Gln Lys Lys  Tyr Tyr Asn Ala Met  Lys Lys Leu
    1475                1480                1485

Gly Ser  Lys Lys Pro Gln Lys  Pro Ile Pro Arg Pro  Gly Asn Lys
    1490                1495                1500

Ile Gln  Gly Cys Ile Phe Asp  Leu Val Thr Asn Gln  Ala Phe Asp
    1505                1510                1515

Ile Ser  Ile Met Val Leu Ile  Cys Leu Asn Met Val  Thr Met Met
    1520                1525                1530

Val Glu  Lys Glu Gly Gln Ser  Gln His Met Thr Glu  Val Leu Tyr
    1535                1540                1545

Trp Ile  Asn Val Val Phe Ile  Ile Leu Phe Thr Gly  Glu Cys Val
    1550                1555                1560

Leu Lys  Leu Ile Ser Leu Arg  His Tyr Tyr Phe Thr  Val Gly Trp
    1565                1570                1575

Asn Ile  Phe Asp Phe Val Val  Val Ile Ile Ser Ile  Val Gly Met
    1580                1585                1590

Phe Leu  Ala Asp Leu Ile Glu  Thr Tyr Phe Val Ser  Pro Thr Leu
    1595                1600                1605

Phe Arg  Val Ile Arg Leu Ala  Arg Ile Gly Arg Ile  Leu Arg Leu
    1610                1615                1620

Val Lys  Gly Ala Lys Gly Ile  Arg Thr Leu Leu Phe  Ala Leu Met
    1625                1630                1635
```

```
Met Ser  Leu Pro Ala Leu Phe  Asn Ile Gly Leu Leu  Leu Phe Leu
    1640                1645                1650

Val Met  Phe Ile Tyr Ala Ile  Phe Gly Met Ser Asn  Phe Ala Tyr
    1655                1660                1665

Val Lys  Lys Glu Asp Gly Ile  Asn Asp Met Phe Asn  Phe Glu Thr
    1670                1675                1680

Phe Gly  Asn Ser Met Ile Cys  Leu Phe Gln Ile Thr  Thr Ser Ala
    1685                1690                1695

Gly Trp  Asp Gly Leu Leu Ala  Pro Ile Leu Asn Ser  Lys Pro Pro
    1700                1705                1710

Asp Cys  Asp Pro Lys Lys Val  His Pro Gly Ser Ser  Val Glu Gly
    1715                1720                1725

Asp Cys  Gly Asn Pro Ser Val  Gly Ile Phe Tyr Phe  Val Ser Tyr
    1730                1735                1740

Ile Ile  Ile Ser Phe Leu Val  Val Val Asn Met Tyr  Ile Ala Val
    1745                1750                1755

Ile Leu  Glu Asn Phe Ser Val  Ala Thr Glu Glu Ser  Thr Glu Pro
    1760                1765                1770

Leu Ser  Glu Asp Asp Phe Glu  Met Phe Tyr Glu Val  Trp Glu Lys
    1775                1780                1785

Phe Asp  Pro Asp Ala Thr Gln  Phe Ile Glu Phe Ser  Lys Leu Ser
    1790                1795                1800

Asp Phe  Ala Ala Ala Leu Asp  Pro Pro Leu Leu Ile  Ala Lys Pro
    1805                1810                1815

Asn Lys  Val Gln Leu Ile Ala  Met Asp Leu Pro Met  Val Ser Gly
```

```
    1820                1825                1830

Asp Arg  Ile His Cys Leu Asp  Ile Leu Phe Ala Phe  Thr Lys Arg
    1835                1840                1845

Val Leu  Gly Glu Ser Gly Glu  Met Asp Ser Leu Arg  Ser Gln Met
    1850                1855                1860

Glu Glu  Arg Phe Met Ser Ala  Asn Pro Ser Lys Val  Ser Tyr Glu
    1865                1870                1875

Pro Ile  Thr Thr Thr Leu Lys  Arg Lys Gln Glu Asp  Val Ser Ala
    1880                1885                1890

Thr Val  Ile Gln Arg Ala Tyr  Arg Arg Tyr Arg Leu  Arg Gln Asn
    1895                1900                1905

Val Lys  Asn Ile Ser Ser Ile  Tyr Ile Lys Asp Gly  Asp Arg Asp
    1910                1915                1920

Asp Asp  Leu Leu Asn Lys Lys  Asp Met Ala Phe Asp  Asn Val Asn
    1925                1930                1935

Glu Asn  Ser Ser Pro Glu Lys  Thr Asp Ala Thr Ser  Ser Thr Thr
    1940                1945                1950

Ser Pro  Pro Ser Tyr Asp Ser  Val Thr Lys Pro Asp  Lys Glu Lys
    1955                1960                1965

Tyr Glu  Gln Asp Arg Thr Glu  Lys Glu Asp Lys Gly  Lys Asp Ser
    1970                1975                1980

Lys Glu  Ser Lys Lys
    1985
```

<210>  29
<211>  1791
<212>  PRT

<213> Homo sapiens

<400> 29

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Met Asp Asp Arg Cys Tyr Pro Val Ile Phe Pro Asp Glu Arg Asn Phe
1               5                  10                  15


Arg Pro Phe Thr Ser Asp Ser Leu Ala Ala Ile Glu Lys Arg Ile Ala
            20                  25                  30


Ile Gln Lys Glu Lys Lys Lys Ser Lys Asp Gln Thr Gly Glu Val Pro
        35                  40                  45


Gln Pro Arg Pro Gln Leu Asp Leu Lys Ala Ser Arg Lys Leu Pro Lys
    50                  55                  60


Leu Tyr Gly Asp Ile Pro Arg Glu Leu Ile Gly Lys Pro Leu Glu Asp
65                  70                  75                  80


Leu Asp Pro Phe Tyr Arg Asn His Lys Thr Phe Met Val Leu Asn Arg
                85                  90                  95


Lys Arg Thr Ile Tyr Arg Phe Ser Ala Lys His Ala Leu Phe Ile Phe
            100                 105                 110


Gly Pro Phe Asn Ser Ile Arg Ser Leu Ala Ile Arg Val Ser Val His
        115                 120                 125


Ser Leu Phe Ser Met Phe Ile Ile Gly Thr Val Ile Ile Asn Cys Val
    130                 135                 140


Phe Met Ala Thr Gly Pro Ala Lys Asn Ser Asn Ser Asn Asn Thr Asp
145                 150                 155                 160


Ile Ala Glu Cys Val Phe Thr Gly Ile Tyr Ile Phe Glu Ala Leu Ile
                165                 170                 175


Lys Ile Leu Ala Arg Gly Phe Ile Leu Asp Glu Phe Ser Phe Leu Arg
            180                 185                 190
```

```
Asp Pro Trp Asn Trp Leu Asp Ser Ile Val Ile Gly Ile Ala Ile Val
        195                 200                 205

Ser Tyr Ile Pro Gly Ile Thr Ile Lys Leu Leu Pro Leu Arg Thr Phe
    210                 215                 220

Arg Val Phe Arg Ala Leu Lys Ala Ile Ser Val Val Ser Arg Leu Lys
225                 230                 235                 240

Val Ile Val Gly Ala Leu Leu Arg Ser Val Lys Lys Leu Val Asn Val
                245                 250                 255

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

Gln Leu Phe Met Gly Ser Leu Asn Leu Lys Cys Ile Ser Arg Asp Cys
        275                 280                 285

Lys Asn Ile Ser Asn Pro Glu Ala Tyr Asp His Cys Phe Glu Lys Lys
    290                 295                 300

Glu Asn Ser Pro Glu Phe Lys Met Cys Gly Ile Trp Met Gly Asn Ser
305                 310                 315                 320

Ala Cys Ser Ile Gln Tyr Glu Cys Lys His Thr Lys Ile Asn Pro Asp
                325                 330                 335

Tyr Asn Tyr Thr Asn Phe Asp Asn Phe Gly Trp Ser Phe Leu Ala Met
            340                 345                 350

Phe Arg Leu Met Thr Gln Asp Ser Trp Glu Lys Leu Tyr Gln Gln Thr
        355                 360                 365

Leu Arg Thr Thr Gly Leu Tyr Ser Val Phe Phe Phe Ile Val Val Ile
    370                 375                 380
```

```
Phe Leu Gly Ser Phe Tyr Leu Ile Asn Leu Thr Leu Ala Val Val Thr
385                 390                 395                 400

Met Ala Tyr Glu Glu Gln Asn Lys Asn Val Ala Ala Glu Ile Glu Ala
                405                 410                 415

Lys Glu Lys Met Phe Gln Glu Ala Gln Gln Leu Leu Lys Glu Glu Lys
            420                 425                 430

Glu Ala Leu Val Ala Met Gly Ile Asp Arg Ser Ser Leu Thr Ser Leu
        435                 440                 445

Glu Thr Ser Tyr Phe Thr Pro Lys Lys Arg Lys Leu Phe Gly Asn Lys
    450                 455                 460

Lys Arg Lys Ser Phe Phe Leu Arg Glu Ser Gly Lys Asp Gln Pro Pro
465                 470                 475                 480

Gly Ser Asp Ser Asp Glu Asp Cys Gln Lys Lys Pro Gln Leu Leu Glu
                485                 490                 495

Gln Thr Lys Arg Leu Ser Gln Asn Leu Ser Leu Asp His Phe Asp Glu
            500                 505                 510

His Gly Asp Pro Leu Gln Arg Gln Arg Ala Leu Ser Ala Val Ser Ile
        515                 520                 525

Leu Thr Ile Thr Met Lys Glu Gln Glu Lys Ser Gln Glu Pro Cys Leu
    530                 535                 540

Pro Cys Gly Glu Asn Leu Ala Ser Lys Tyr Leu Val Trp Asn Cys Cys
545                 550                 555                 560

Pro Gln Trp Leu Cys Val Lys Lys Val Leu Arg Thr Val Met Thr Asp
                565                 570                 575

Pro Phe Thr Glu Leu Ala Ile Thr Ile Cys Ile Ile Ile Asn Thr Val
            580                 585                 590
```

```
Phe Leu Ala Met Glu His His Lys Met Glu Ala Ser Phe Glu Lys Met
        595                 600                 605

Leu Asn Ile Gly Asn Leu Val Phe Thr Ser Ile Phe Ile Ala Glu Met
    610                 615                 620

Cys Leu Lys Ile Ile Ala Leu Asp Pro Tyr His Tyr Phe Arg Arg Gly
625                 630                 635                 640

Trp Asn Ile Phe Asp Ser Ile Val Ala Leu Leu Ser Phe Ala Asp Val
                645                 650                 655

Met Asn Cys Val Leu Gln Lys Arg Ser Trp Pro Phe Leu Arg Ser Phe
            660                 665                 670

Arg Val Leu Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn
        675                 680                 685

Thr Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Ser Leu
    690                 695                 700

Thr Val Val Leu Val Ile Val Ile Phe Ile Phe Ser Val Val Gly Met
705                 710                 715                 720

Gln Leu Phe Gly Arg Ser Phe Asn Ser Gln Lys Ser Pro Lys Leu Cys
                725                 730                 735

Asn Pro Thr Gly Pro Thr Val Ser Cys Leu Arg His Trp His Met Gly
            740                 745                 750

Asp Phe Trp His Ser Phe Leu Val Val Phe Arg Ile Leu Cys Gly Glu
        755                 760                 765

Trp Ile Glu Asn Met Trp Glu Cys Met Gln Glu Ala Asn Ala Ser Ser
    770                 775                 780
```

```
Ser Leu Cys Val Ile Val Phe Ile Leu Ile Thr Val Ile Gly Lys Leu
785                 790                 795                 800


Val Val Leu Asn Leu Phe Ile Ala Leu Leu Leu Asn Ser Phe Ser Asn
                805                 810                 815


Glu Glu Arg Asn Gly Asn Leu Glu Gly Glu Ala Arg Lys Thr Lys Val
            820                 825                 830


Gln Leu Ala Leu Asp Arg Phe Arg Arg Ala Phe Cys Phe Val Arg His
        835                 840                 845


Thr Leu Glu His Phe Cys His Lys Trp Cys Arg Lys Gln Asn Leu Pro
    850                 855                 860


Gln Gln Lys Glu Val Ala Gly Gly Cys Ala Ala Gln Ser Lys Asp Ile
865                 870                 875                 880


Ile Pro Leu Val Met Glu Met Lys Arg Gly Ser Glu Thr Gln Glu Glu
                885                 890                 895


Leu Gly Ile Leu Thr Ser Val Pro Lys Thr Leu Gly Val Arg His Asp
            900                 905                 910


Trp Thr Trp Leu Ala Pro Leu Ala Glu Glu Glu Asp Asp Val Glu Phe
        915                 920                 925


Ser Gly Glu Asp Asn Ala Gln Arg Ile Thr Gln Pro Glu Pro Glu Gln
    930                 935                 940


Gln Ala Tyr Glu Leu His Gln Glu Asn Lys Lys Pro Thr Ser Gln Arg
945                 950                 955                 960


Val Gln Ser Val Glu Ile Asp Met Phe Ser Glu Asp Glu Pro His Leu
                965                 970                 975


Thr Ile Gln Asp Pro Arg Lys Lys Ser Asp Val Thr Ser Ile Leu Ser
            980                 985                 990
```

```
Glu Cys Ser Thr Ile Asp Leu Gln  Asp Gly Phe Gly Trp  Leu Pro Glu
        995                 1000                1005


Met Val  Pro Lys Lys Gln Pro  Glu Arg Cys Leu Pro  Lys Gly Phe
    1010                1015                1020


Gly Cys  Cys Phe Pro Cys Cys  Ser Val Asp Lys Arg  Lys Pro Pro
    1025                1030                1035


Trp Val  Ile Trp Trp Asn Leu  Arg Lys Thr Cys Tyr  Gln Ile Val
    1040                1045                1050


Lys His  Ser Trp Phe Glu Ser  Phe Ile Ile Phe Val  Ile Leu Leu
    1055                1060                1065


Ser Ser  Gly Ala Leu Ile Phe  Glu Asp Val His Leu  Glu Asn Gln
    1070                1075                1080


Pro Lys  Ile Gln Glu Leu Leu  Asn Cys Thr Asp Ile  Ile Phe Thr
    1085                1090                1095


His Ile  Phe Ile Leu Glu Met  Val Leu Lys Trp Val  Ala Phe Gly
    1100                1105                1110


Phe Gly  Lys Tyr Phe Thr Ser  Ala Trp Cys Cys Leu  Asp Phe Ile
    1115                1120                1125


Ile Val  Ile Val Ser Val Thr  Thr Leu Ile Asn Leu  Met Glu Leu
    1130                1135                1140


Lys Ser  Phe Arg Thr Leu Arg  Ala Leu Arg Pro Leu  Arg Ala Leu
    1145                1150                1155


Ser Gln  Phe Glu Gly Met Lys  Val Val Val Asn Ala  Leu Ile Gly
    1160                1165                1170
```

```
Ala Ile  Pro Ala Ile Leu Asn  Val Leu Leu Val Cys  Leu Ile Phe
    1175                1180                1185

Trp Leu  Val Phe Cys Ile Leu  Gly Val Tyr Phe Phe  Ser Gly Lys
    1190                1195                1200

Phe Gly  Lys Cys Ile Asn Gly  Thr Asp Ser Val Ile  Asn Tyr Thr
    1205                1210                1215

Ile Ile  Thr Asn Lys Ser Gln  Cys Glu Ser Gly Asn  Phe Ser Trp
    1220                1225                1230

Ile Asn  Gln Lys Val Asn Phe  Asp Asn Val Gly Asn  Ala Tyr Leu
    1235                1240                1245

Ala Leu  Leu Gln Val Ala Thr  Phe Lys Gly Trp Met  Asp Ile Ile
    1250                1255                1260

Tyr Ala  Ala Val Asp Ser Thr  Glu Lys Glu Gln Gln  Pro Glu Phe
    1265                1270                1275

Glu Ser  Asn Ser Leu Gly Tyr  Ile Tyr Phe Val Val  Phe Ile Ile
    1280                1285                1290

Phe Gly  Ser Phe Phe Thr Leu  Asn Leu Phe Ile Gly  Val Ile Ile
    1295                1300                1305

Asp Asn  Phe Asn Gln Gln Gln  Lys Lys Leu Gly Gly  Gln Asp Ile
    1310                1315                1320

Phe Met  Thr Glu Glu Gln Lys  Lys Tyr Tyr Asn Ala  Met Lys Lys
    1325                1330                1335

Leu Gly  Ser Lys Lys Pro Gln  Lys Pro Ile Pro Arg  Pro Leu Asn
    1340                1345                1350

Lys Cys  Gln Gly Leu Val Phe  Asp Ile Val Thr Ser  Gln Ile Phe
    1355                1360                1365
```

```
Asp Ile  Ile Ile Ile Ser Leu  Ile Ile Leu Asn Met  Ile Ser Met
    1370                1375                1380

Met Ala  Glu Ser Tyr Asn Gln  Pro Lys Ala Met Lys  Ser Ile Leu
    1385                1390                1395

Asp His  Leu Asn Trp Val Phe  Val Val Ile Phe Thr  Leu Glu Cys
    1400                1405                1410

Leu Ile  Lys Ile Phe Ala Leu  Arg Gln Tyr Tyr Phe  Thr Asn Gly
    1415                1420                1425

Trp Asn  Leu Phe Asp Cys Val  Val Val Leu Leu Ser  Ile Val Ser
    1430                1435                1440

Thr Met  Ile Ser Thr Leu Glu  Asn Gln Glu His Ile  Pro Phe Pro
    1445                1450                1455

Pro Thr  Leu Phe Arg Ile Val  Arg Leu Ala Arg Ile  Gly Arg Ile
    1460                1465                1470

Leu Arg  Leu Val Arg Ala Ala  Arg Gly Ile Arg Thr  Leu Leu Phe
    1475                1480                1485

Ala Leu  Met Met Ser Leu Pro  Ser Leu Phe Asn Ile  Gly Leu Leu
    1490                1495                1500

Leu Phe  Leu Ile Met Phe Ile  Tyr Ala Ile Leu Gly  Met Asn Trp
    1505                1510                1515

Phe Ser  Lys Val Asn Pro Glu  Ser Gly Ile Asp Asp  Ile Phe Asn
    1520                1525                1530

Phe Lys  Thr Phe Ala Ser Ser  Met Leu Cys Leu Phe  Gln Ile Ser
    1535                1540                1545
```

```
Thr Ser  Ala Gly Trp Asp Ser  Leu Leu Ser Pro Met  Leu Arg Ser
    1550                1555                1560

Lys Glu  Ser Cys Asn Ser Ser  Ser Glu Asn Cys His  Leu Pro Gly
    1565                1570                1575

Ile Ala  Thr Ser Tyr Phe Val  Ser Tyr Ile Ile Ile  Ser Phe Leu
    1580                1585                1590

Ile Val  Val Asn Met Tyr Ile  Ala Val Ile Leu Glu  Asn Phe Asn
    1595                1600                1605

Thr Ala  Thr Glu Glu Ser Glu  Asp Pro Leu Gly Glu  Asp Asp Phe
    1610                1615                1620

Asp Ile  Phe Tyr Glu Val Trp  Glu Lys Phe Asp Pro  Glu Ala Thr
    1625                1630                1635

Gln Phe  Ile Lys Tyr Ser Ala  Leu Ser Asp Phe Ala  Asp Ala Leu
    1640                1645                1650

Pro Glu  Pro Leu Arg Val Ala  Lys Pro Asn Lys Tyr  Gln Phe Leu
    1655                1660                1665

Val Met  Asp Leu Pro Met Val  Ser Glu Asp Arg Leu  His Cys Met
    1670                1675                1680

Asp Ile  Leu Phe Ala Phe Thr  Ala Arg Val Leu Gly  Gly Ser Asp
    1685                1690                1695

Gly Leu  Asp Ser Met Lys Ala  Met Met Glu Glu Lys  Phe Met Glu
    1700                1705                1710

Ala Asn  Pro Leu Lys Lys Leu  Tyr Glu Pro Ile Val  Thr Thr Thr
    1715                1720                1725

Lys Arg  Lys Glu Glu Glu Arg  Gly Ala Ala Ile Ile  Gln Lys Ala
    1730                1735                1740
```

```
Phe Arg  Lys Tyr Met Met Lys  Val Thr Lys Gly Asp  Gln Gly Asp
    1745                1750                1755


Gln Asn  Asp Leu Glu Asn Gly  Pro His Ser Pro Leu  Gln Thr Leu
    1760                1765                1770


Cys Asn  Gly Asp Leu Ser Ser  Phe Gly Val Ala Lys  Gly Lys Val
    1775                1780                1785


His Cys  Asp
    1790
```

<210> 30
<211> 1791
<212> PRT
<213> Pan troglodytes

<400> 30

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Met Asp Asp Arg Cys Tyr Pro Val Ile Phe Pro Asp Glu Arg Asn Phe
1               5                   10                  15


Arg Pro Phe Thr Ser Asp Ser Leu Ala Ala Ile Glu Lys Arg Ile Ala
            20                  25                  30


Ile Gln Lys Glu Lys Lys Lys Ser Lys Asp Gln Thr Gly Glu Val Pro
        35                  40                  45


Gln Pro Arg Pro Gln Leu Asp Leu Lys Ala Ser Arg Lys Leu Pro Lys
    50                  55                  60


Leu Tyr Gly Asp Ile Pro Arg Glu Leu Ile Gly Lys Pro Leu Glu Asp
65                  70                  75                  80


Leu Asp Pro Phe Tyr Arg Asn His Lys Thr Phe Met Val Leu Asn Arg
                85                  90                  95


Lys Arg Thr Ile Tyr Arg Phe Ser Ala Lys His Ala Leu Phe Ile Phe
```

```
            100                 105                 110

Gly Pro Phe Asn Ser Ile Arg Ser Leu Ala Ile Arg Val Ser Val His
        115                 120                 125

Ser Leu Phe Ser Met Phe Ile Ile Gly Thr Val Ile Ile Asn Cys Val
    130                 135                 140

Phe Met Ala Thr Gly Pro Ala Lys Asn Ser Asn Ser Asn Asn Thr Asp
145                 150                 155                 160

Ile Ala Glu Cys Val Phe Thr Gly Ile Tyr Ile Phe Glu Ala Leu Ile
                165                 170                 175

Lys Ile Leu Ala Arg Gly Phe Ile Leu Asp Glu Phe Ser Phe Leu Arg
            180                 185                 190

Asp Pro Trp Asn Trp Leu Asp Ser Ile Val Ile Gly Ile Ala Ile Val
        195                 200                 205

Ser Tyr Ile Pro Gly Ile Thr Ile Lys Leu Leu Pro Leu Arg Thr Phe
    210                 215                 220

Arg Val Phe Arg Ala Leu Lys Ala Ile Ser Val Val Ser Arg Leu Lys
225                 230                 235                 240

Val Ile Val Gly Ala Leu Leu Arg Ser Val Lys Lys Leu Val Asn Val
                245                 250                 255

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

Gln Leu Phe Met Gly Ser Leu Asn Leu Lys Cys Ile Ser Arg Asp Cys
        275                 280                 285

Lys Asn Ile Ser Asn Pro Glu Ala Tyr Asp His Cys Phe Glu Lys Lys
    290                 295                 300
```

```
Glu Asn Ser Pro Glu Phe Lys Met Cys Gly Ile Trp Met Gly Asn Ser
305                 310                 315                 320

Ala Cys Ser Ile Gln Tyr Glu Cys Lys His Thr Lys Ile Asn Pro Asp
                325                 330                 335

Tyr Asn Tyr Thr Asn Phe Asp Asn Phe Gly Trp Ser Phe Leu Ala Met
            340                 345                 350

Phe Arg Leu Met Thr Gln Asp Ser Trp Glu Lys Leu Tyr Gln Gln Thr
        355                 360                 365

Leu Arg Thr Thr Gly Leu Tyr Ser Val Phe Phe Phe Ile Val Val Ile
    370                 375                 380

Phe Leu Gly Ser Phe Tyr Leu Ile Asn Leu Thr Leu Ala Val Val Thr
385                 390                 395                 400

Met Ala Tyr Glu Glu Gln Asn Lys Asn Val Ala Ala Glu Ile Glu Ala
                405                 410                 415

Lys Glu Lys Met Phe Gln Glu Ala Gln Gln Leu Leu Lys Glu Glu Lys
            420                 425                 430

Glu Ala Leu Val Ala Met Gly Ile Asp Arg Ser Ser Leu Thr Ser Leu
        435                 440                 445

Glu Thr Ser Tyr Phe Thr Pro Lys Lys Arg Lys Leu Phe Gly Asn Lys
    450                 455                 460

Lys Arg Lys Ser Phe Phe Leu Arg Glu Ser Gly Lys Asp Gln Pro Pro
465                 470                 475                 480

Gly Ser Asp Ser Asp Glu Asp Cys Gln Lys Lys Pro Gln Leu Leu Glu
                485                 490                 495

Gln Thr Lys Arg Leu Ser Gln Asn Leu Ser Leu Asp His Phe Asp Glu
```

```
            500                 505                 510

His Gly Asp Pro Leu Gln Arg Gln Arg Ala Leu Ser Ala Val Ser Ile
        515                 520                 525

Leu Thr Ile Thr Met Lys Glu Gln Glu Lys Ser Gln Glu Pro Cys Leu
    530                 535                 540

Pro Cys Gly Glu Asn Leu Ala Ser Lys Tyr Leu Val Trp Asn Cys Cys
545                 550                 555                 560

Pro Gln Trp Leu Cys Val Lys Lys Val Leu Arg Thr Val Met Thr Asp
                565                 570                 575

Pro Phe Thr Glu Leu Ala Ile Thr Ile Cys Ile Ile Ile Asn Thr Val
            580                 585                 590

Phe Leu Ala Met Glu His His Lys Met Glu Ala Ser Phe Glu Lys Met
        595                 600                 605

Leu Asn Ile Gly Asn Leu Val Phe Thr Ser Ile Phe Ile Ala Glu Met
    610                 615                 620

Cys Leu Lys Ile Ile Ala Leu Asp Pro Tyr His Tyr Phe Arg Arg Gly
625                 630                 635                 640

Trp Asn Ile Phe Asp Ser Ile Val Ala Leu Leu Ser Phe Ala Asp Val
                645                 650                 655

Met Asn Cys Val Leu Gln Lys Arg Ser Trp Pro Phe Leu Arg Ser Phe
            660                 665                 670

Arg Val Leu Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn
        675                 680                 685

Thr Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Ser Leu
    690                 695                 700
```

```
Thr Val Val Leu Val Ile Val Ile Phe Ile Phe Ser Val Val Gly Met
705                 710                 715                 720


Gln Leu Phe Gly Arg Ser Phe Asn Ser Gln Lys Ser Pro Lys Leu Cys
                725                 730                 735


Asn Pro Thr Gly Pro Thr Val Ser Cys Leu Arg His Trp His Met Gly
            740                 745                 750


Asp Phe Trp His Ser Phe Leu Val Val Phe Arg Ile Leu Cys Gly Glu
        755                 760                 765


Trp Ile Glu Asn Met Trp Glu Cys Met Gln Glu Ala Asn Ala Ser Ser
    770                 775                 780


Ser Leu Cys Val Ile Val Phe Ile Leu Ile Thr Val Ile Gly Lys Leu
785                 790                 795                 800


Val Val Leu Asn Leu Phe Ile Ala Leu Leu Leu Asn Ser Phe Ser Asn
                805                 810                 815


Glu Glu Arg Asn Gly Asn Leu Glu Gly Glu Ala Arg Lys Thr Lys Val
            820                 825                 830


Gln Leu Ala Leu Asp Arg Phe Arg Arg Ala Phe Cys Phe Val Arg His
        835                 840                 845


Thr Leu Glu His Phe Cys His Lys Trp Cys Arg Lys Gln Asn Leu Pro
    850                 855                 860


Gln Gln Lys Glu Val Ala Gly Gly Cys Ala Ala Gln Ser Lys Asp Ile
865                 870                 875                 880


Ile Pro Leu Val Met Glu Met Lys Arg Gly Ser Glu Thr Gln Glu Glu
                885                 890                 895


Leu Gly Ile Leu Thr Ser Val Pro Lys Thr Leu Gly Val Arg His Asp
```

```
            900                 905                 910

Trp Thr Trp Leu Ala Pro Leu Ala Glu Glu Glu Asp Asp Val Glu Phe
        915                 920                 925

Ser Gly Glu Asp Asn Ala Gln Arg Ile Thr Gln Pro Glu Pro Glu Gln
    930                 935                 940

Gln Ala Tyr Glu Leu His Gln Glu Asn Lys Lys Pro Thr Ser Gln Arg
945                 950                 955                 960

Val Gln Ser Val Glu Ile Asp Met Phe Ser Glu Asp Glu Pro His Leu
                965                 970                 975

Thr Ile Gln Asp Pro Arg Lys Lys Ser Asp Val Thr Ser Ile Leu Ser
            980                 985                 990

Glu Cys Ser Thr Ile Asp Leu Gln  Asp Gly Phe Gly Trp  Leu Pro Glu
        995                 1000                1005

Met Val  Pro Lys Lys Gln Pro  Glu Arg Cys Leu Pro  Lys Gly Phe
    1010                1015                1020

Gly Cys  Cys Phe Pro Cys Cys  Ser Val Asp Lys Arg  Lys Pro Pro
    1025                1030                1035

Trp Val  Ile Trp Trp Asn Leu  Arg Lys Thr Cys Tyr  Gln Ile Val
    1040                1045                1050

Lys His  Ser Trp Phe Glu Ser  Phe Ile Ile Phe Val  Ile Leu Leu
    1055                1060                1065

Ser Ser  Gly Ala Leu Ile Phe  Glu Asp Val His Leu  Glu Asn Gln
    1070                1075                1080

Pro Lys  Ile Gln Glu Leu Leu  Asn Cys Thr Asp Ile  Ile Phe Thr
    1085                1090                1095
```

```
His Ile  Phe Ile Leu Glu Met  Val Leu Lys Trp Val  Ala Phe Gly
    1100                1105                1110

Phe Gly  Lys Tyr Phe Thr Ser  Ala Trp Cys Cys Leu  Asp Phe Ile
    1115                1120                1125

Ile Val  Ile Val Ser Val Thr  Thr Leu Ile Asn Leu  Met Glu Leu
    1130                1135                1140

Lys Ser  Phe Arg Thr Leu Arg  Ala Leu Arg Pro Leu  Arg Ala Leu
    1145                1150                1155

Ser Gln  Phe Glu Gly Met Lys  Val Val Val Asn Ala  Leu Ile Gly
    1160                1165                1170

Ala Ile  Pro Ala Ile Leu Asn  Val Leu Leu Val Cys  Leu Ile Phe
    1175                1180                1185

Trp Leu  Val Phe Cys Ile Leu  Gly Val Tyr Phe Phe  Ser Gly Lys
    1190                1195                1200

Phe Gly  Lys Cys Ile Asn Gly  Thr Asp Ser Val Ile  Asn Tyr Thr
    1205                1210                1215

Ile Ile  Thr Asn Lys Ser Gln  Cys Glu Ser Gly Asn  Phe Ser Trp
    1220                1225                1230

Ile Asn  Gln Lys Val Asn Phe  Asp Asn Val Gly Asn  Ala Tyr Leu
    1235                1240                1245

Ala Leu  Leu Gln Val Ala Thr  Phe Lys Gly Trp Met  Asp Ile Ile
    1250                1255                1260

Tyr Ala  Ala Val Asp Ser Thr  Glu Lys Glu Gln Gln  Pro Glu Phe
    1265                1270                1275

Glu Ser  Asn Ser Leu Gly Tyr  Ile Tyr Phe Val Val  Phe Ile Ile
```

```
    1280                1285                1290

Phe Gly  Ser Phe Phe Thr Leu  Asn Leu Phe Ile Gly  Val Ile Ile
    1295                1300                1305

Asp Asn  Phe Asn Gln Gln Gln  Lys Lys Leu Gly Gly  Gln Asp Ile
    1310                1315                1320

Phe Met  Thr Glu Glu Gln Lys  Lys Tyr Tyr Asn Ala  Met Lys Lys
    1325                1330                1335

Leu Gly  Ser Lys Lys Pro Gln  Lys Pro Ile Pro Arg  Pro Leu Asn
    1340                1345                1350

Lys Cys  Gln Gly Leu Val Phe  Asp Ile Val Thr Ser  Gln Ile Phe
    1355                1360                1365

Asp Ile  Ile Ile Ile Ser Leu  Ile Ile Leu Asn Met  Ile Ser Met
    1370                1375                1380

Met Ala  Glu Ser Tyr Asn Gln  Pro Lys Ala Met Lys  Ser Ile Leu
    1385                1390                1395

Asp His  Leu Asn Trp Val Phe  Val Val Ile Phe Thr  Leu Glu Cys
    1400                1405                1410

Leu Ile  Lys Ile Phe Ala Leu  Arg Gln Tyr Tyr Phe  Thr Asn Gly
    1415                1420                1425

Trp Asn  Leu Phe Asp Cys Val  Val Val Leu Leu Ser  Ile Val Ser
    1430                1435                1440

Thr Met  Ile Ser Thr Leu Glu  Asn Gln Glu His Ile  Pro Phe Pro
    1445                1450                1455

Pro Thr  Leu Phe Arg Ile Val  Arg Leu Ala Arg Ile  Gly Arg Ile
    1460                1465                1470
```

```
Leu Arg  Leu Val Arg Ala Ala  Arg Gly Ile Arg Thr  Leu Leu Phe
    1475                1480                1485

Ala Leu  Met Met Ser Leu Pro  Ser Leu Phe Asn Ile  Gly Leu Leu
    1490                1495                1500

Leu Phe  Leu Ile Met Phe Ile  Tyr Ala Ile Leu Gly  Met Asn Trp
    1505                1510                1515

Phe Ser  Lys Val Asn Pro Glu  Ser Gly Ile Asp Asp  Ile Phe Asn
    1520                1525                1530

Phe Lys  Thr Phe Ala Ser Ser  Met Leu Cys Leu Phe  Gln Ile Ser
    1535                1540                1545

Thr Ser  Ala Gly Trp Asp Ser  Leu Leu Ser Pro Met  Leu Arg Ser
    1550                1555                1560

Lys Glu  Ser Cys Asn Ser Ser  Ser Glu Asn Cys His  Leu Pro Gly
    1565                1570                1575

Ile Ala  Thr Ser Tyr Phe Val  Ser Tyr Ile Ile Ile  Ser Phe Leu
    1580                1585                1590

Ile Val  Val Asn Met Tyr Ile  Ala Val Ile Leu Glu  Asn Phe Asn
    1595                1600                1605

Thr Ala  Thr Glu Glu Ser Glu  Asp Pro Leu Gly Glu  Asp Asp Phe
    1610                1615                1620

Asp Ile  Phe Tyr Glu Val Trp  Glu Lys Phe Asp Pro  Glu Ala Thr
    1625                1630                1635

Gln Phe  Ile Lys Tyr Ser Ala  Leu Ser Asp Phe Ala  Asp Ala Leu
    1640                1645                1650

Pro Glu  Pro Leu Arg Val Ala  Lys Pro Asn Lys Tyr  Gln Phe Leu
```

```
    1655                1660                1665

Val Met  Asp Leu Pro Met Val  Ser Glu Asp Arg Leu  His Cys Met
    1670                1675                1680

Asp Ile  Leu Phe Ala Phe Thr  Ala Arg Val Leu Gly  Gly Ser Asp
    1685                1690                1695

Gly Leu  Asp Ser Met Lys Ala  Met Met Glu Glu Lys  Phe Met Glu
    1700                1705                1710

Ala Asn  Pro Leu Lys Lys Leu  Tyr Glu Pro Ile Val  Thr Thr Thr
    1715                1720                1725

Lys Arg  Lys Glu Glu Glu Arg  Gly Ala Ala Ile Ile  Gln Lys Ala
    1730                1735                1740

Phe Arg  Lys Tyr Met Met Lys  Val Thr Lys Gly Asp  Gln Gly Asp
    1745                1750                1755

Gln Asn  Asp Leu Glu Asn Gly  Pro His Ser Pro Leu  Gln Thr Leu
    1760                1765                1770

Cys Asn  Gly Asp Leu Ser Ser  Phe Gly Val Ala Lys  Gly Lys Val
    1775                1780                1785

His Cys  Asp
    1790
```

<210>  31
<211>  1988
<212>  PRT
<213>  Macaca mulatta

<400>  31

```
Met Ala Met Leu Pro Pro Pro Gly Pro Gln Ser Phe Val His Phe Thr
1               5                   10                  15
```

```
Lys Gln Ser Leu Ala Leu Ile Glu Gln Arg Ile Ala Glu Arg Lys Ser
            20                  25                  30

Lys Glu Pro Lys Glu Glu Lys Lys Asp Asp Asp Glu Glu Ala Pro Lys
        35                  40                  45

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

Asp Ile Pro Pro Gly Met Val Ser Glu Pro Leu Glu Asp Leu Asp Pro
65                  70                  75                  80

Tyr Tyr Ala Asp Lys Lys Thr Phe Ile Val Leu Asn Lys Gly Lys Thr
                85                  90                  95

Ile Phe Arg Phe Asn Ala Thr Pro Ala Leu Tyr Met Leu Ser Pro Phe
            100                 105                 110

Ser Pro Leu Arg Arg Ile Ser Ile Lys Ile Leu Val His Ser Leu Phe
        115                 120                 125

Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Ile Phe Met Thr
    130                 135                 140

Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr Phe Thr
145                 150                 155                 160

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

Cys Val Gly Glu Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp Leu Asp
            180                 185                 190

Phe Ile Val Ile Val Phe Ala Tyr Leu Thr Glu Phe Val Asn Leu Gly
        195                 200                 205

Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu Lys Thr
    210                 215                 220
```

```
Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu Ile Gln
225                 230                 235                 240

Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe Cys Leu
                245                 250                 255

Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn Leu Lys
            260                 265                 270

His Lys Cys Val Gln Asn Ser Leu Val Asn Asn Glu Thr Leu Glu Ser
        275                 280                 285

Ile Met Asn Thr Leu Glu Ser Glu Glu Asp Phe Arg Lys Tyr Phe Tyr
    290                 295                 300

Tyr Leu Glu Gly Ser Lys Asp Ala Leu Leu Cys Gly Phe Ser Thr Asp
305                 310                 315                 320

Ser Gly Gln Cys Pro Glu Gly Tyr Thr Cys Met Lys Ile Gly Arg Asn
                325                 330                 335

Pro Asp Tyr Gly Tyr Thr Ser Phe Asp Thr Phe Ser Trp Ala Phe Leu
            340                 345                 350

Ala Leu Phe Arg Leu Met Thr Gln Asp Tyr Trp Glu Asn Leu Tyr Gln
        355                 360                 365

Gln Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met Ile Phe Phe Val Val
    370                 375                 380

Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn Leu Ile Leu Ala Val
385                 390                 395                 400

Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala Asn Ile Glu Glu Ala
                405                 410                 415
```

```
Lys Gln Lys Glu Leu Glu Phe Gln Gln Met Leu Asp Arg Leu Lys Lys
            420                 425                 430

Glu Gln Glu Glu Ala Glu Ala Ile Ala Ala Ala Ala Ala Glu Tyr Thr
        435                 440                 445

Ser Ile Arg Arg Ser Arg Ile Met Gly Leu Ser Glu Ser Ser Ser Glu
    450                 455                 460

Thr Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu Arg Arg Asn Arg Arg
465                 470                 475                 480

Lys Lys Lys Asn Gln Lys Lys Leu Ser Ser Gly Glu Glu Lys Gly Asp
                485                 490                 495

Ala Glu Lys Leu Ser Lys Ser Asp Ser Glu Glu Asn Ile Arg Arg Lys
            500                 505                 510

Ser Phe His Leu Gly Val Glu Gly His Arg Arg Ala His Glu Lys Arg
        515                 520                 525

Leu Ser Thr Pro Ser Gln Ser Pro Leu Ser Ile Arg Gly Ser Leu Phe
    530                 535                 540

Ser Ala Arg Arg Ser Ser Arg Thr Ser Leu Phe Ser Phe Lys Gly Arg
545                 550                 555                 560

Gly Arg Asp Ile Gly Ser Glu Thr Glu Phe Ala Asp Asp Glu His Ser
                565                 570                 575

Ile Phe Gly Asp Asn Glu Ser Arg Arg Gly Ser Leu Phe Val Pro His
            580                 585                 590

Arg Pro Gln Glu Arg Arg Ser Ser Asn Ile Ser Gln Ala Ser Arg Ser
        595                 600                 605

Pro Pro Ile Leu Pro Val Asn Gly Lys Met His Ser Ala Val Asp Cys
    610                 615                 620
```

```
Asn Gly Val Val Ser Leu Val Asp Gly Arg Ser Ala Leu Met Leu Pro
625                 630                 635                 640


Asn Gly Gln Leu Leu Pro Glu Val Ile Ile Asp Lys Ala Thr Ser Asp
                645                 650                 655


Asp Ser Gly Thr Thr Asn Gln Ile His Lys Lys Arg Arg Cys Ser Ser
            660                 665                 670


Tyr Leu Leu Ser Glu Asp Met Leu Asn Asp Pro Asn Leu Arg Gln Arg
        675                 680                 685


Ala Met Ser Arg Ala Ser Ile Leu Thr Asn Thr Val Glu Glu Leu Glu
    690                 695                 700


Glu Ser Arg Gln Lys Cys Pro Pro Trp Trp Tyr Arg Phe Ala His Lys
705                 710                 715                 720


Phe Leu Ile Trp Asn Cys Ser Pro Tyr Trp Ile Lys Phe Lys Lys Cys
                725                 730                 735


Ile Tyr Phe Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile
            740                 745                 750


Cys Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His His Pro Met
        755                 760                 765


Thr Glu Glu Phe Lys Asn Val Leu Ala Ile Gly Asn Leu Val Phe Thr
    770                 775                 780


Gly Ile Phe Ala Ala Glu Met Val Leu Lys Leu Ile Ala Met Asp Pro
785                 790                 795                 800


Tyr Glu Tyr Phe Gln Val Gly Trp Asn Ile Phe Asp Ser Leu Ile Val
                805                 810                 815
```

```
Thr Leu Ser Leu Val Glu Leu Phe Leu Ala Asp Val Glu Gly Leu Ser
            820                 825                 830

Val Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser
        835                 840                 845

Trp Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly
    850                 855                 860

Ala Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe
865                 870                 875                 880

Ala Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val
                885                 890                 895

Cys Lys Ile Asn Asp Asp Cys Thr Leu Pro Arg Trp His Met Asn Asp
            900                 905                 910

Phe Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp
        915                 920                 925

Ile Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Ala Met Cys
    930                 935                 940

Leu Ile Val Tyr Met Met Val Met Val Ile Gly Asn Leu Val Val Leu
945                 950                 955                 960

Asn Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu
                965                 970                 975

Thr Ala Ile Glu Glu Asp Pro Asp Ala Asn Asn Leu Gln Ile Ala Val
            980                 985                 990

Thr Arg Ile Lys Lys Gly Ile Asn  Tyr Val Lys Gln Thr  Leu Arg Glu
        995                 1000                1005

Phe Ile  Leu Lys Thr Phe Ser  Lys Lys Pro Lys Ile  Ser Arg Glu
    1010                1015                1020
```

```
Ile Arg  Gln Thr Glu Asp Leu  Asn Thr Lys Lys Glu  Asn Tyr Ile
    1025                1030                1035

Ser Asn  Tyr Thr Leu Ala Glu  Met Ser Lys Gly His  Asn Phe Leu
    1040                1045                1050

Lys Glu  Lys Asp Lys Ile Ser  Gly Phe Gly Ser Cys  Val Asp Lys
    1055                1060                1065

Tyr Leu  Met Glu Asp Ser Asp  Gly Gln Ser Phe Ile  His Asn Pro
    1070                1075                1080

Ser Leu  Thr Val Thr Val Pro  Ile Ala Pro Gly Glu  Ser Asp Leu
    1085                1090                1095

Glu Asn  Met Asn Thr Glu Glu  Leu Ser Ser Asp Ser  Asp Ser Glu
    1100                1105                1110

Tyr Ser  Lys Val Arg Leu Asn  Gln Ser Ser Ser Ser  Glu Cys Ser
    1115                1120                1125

Thr Val  Asp Asn Pro Leu Pro  Gly Glu Gly Glu Glu  Ala Glu Ala
    1130                1135                1140

Glu Pro  Met Asn Ser Asp Glu  Pro Glu Ala Cys Phe  Thr Asp Gly
    1145                1150                1155

Cys Val  Arg Arg Phe Ser Cys  Cys Gln Val Asn Ile  Glu Ser Gly
    1160                1165                1170

Lys Gly  Lys Ile Trp Trp Asn  Ile Arg Lys Thr Cys  Tyr Lys Ile
    1175                1180                1185

Val Glu  His Ser Trp Phe Glu  Ser Phe Ile Val Leu  Met Ile Leu
    1190                1195                1200
```

```
Leu Ser  Ser Gly Ala Leu Ala  Phe Glu Asp Ile Tyr  Ile Glu Arg
    1205                 1210                 1215

Lys Lys  Thr Ile Lys Ile Ile  Leu Glu Tyr Ala Asp  Lys Ile Phe
    1220                 1225                 1230

Thr Tyr  Ile Phe Ile Leu Glu  Met Leu Leu Lys Trp  Ile Ala Tyr
    1235                 1240                 1245

Gly Tyr  Lys Thr Tyr Phe Thr  Asn Ala Trp Cys Trp  Leu Asp Phe
    1250                 1255                 1260

Leu Ile  Val Asp Val Ser Leu  Val Thr Leu Val Ala  Asn Thr Leu
    1265                 1270                 1275

Gly Tyr  Ser Asp Leu Gly Pro  Ile Lys Ser Leu Arg  Thr Leu Arg
    1280                 1285                 1290

Ala Leu  Arg Pro Leu Arg Ala  Leu Ser Arg Phe Glu  Gly Met Arg
    1295                 1300                 1305

Val Val  Val Asn Ala Leu Ile  Gly Ala Ile Pro Ser  Ile Met Asn
    1310                 1315                 1320

Val Leu  Leu Val Cys Leu Ile  Phe Trp Leu Ile Phe  Ser Ile Met
    1325                 1330                 1335

Gly Val  Asn Leu Phe Ala Gly  Lys Phe Tyr Glu Cys  Ile Asn Thr
    1340                 1345                 1350

Thr Asp  Gly Ser Arg Phe Pro  Ala Ser Gln Val Pro  Asn Arg Ser
    1355                 1360                 1365

Glu Cys  Phe Ala Leu Met Asn  Val Ser Gln Asn Val  Arg Trp Lys
    1370                 1375                 1380

Asn Leu  Lys Val Asn Phe Asp  Asn Val Gly Leu Gly  Tyr Leu Ser
    1385                 1390                 1395
```

```
Leu Leu  Gln Val Ala Thr Phe  Lys Gly Trp Thr Ile  Ile Met Tyr
    1400                1405                1410

Ala Ala  Val Asp Ser Val Asn  Val Asp Lys Gln Pro  Lys Tyr Glu
    1415                1420                1425

Tyr Ser  Leu Tyr Met Tyr Ile  Tyr Phe Val Ile Phe  Ile Ile Phe
    1430                1435                1440

Gly Ser  Phe Phe Thr Leu Asn  Leu Phe Ile Gly Val  Ile Ile Asp
    1445                1450                1455

Asn Phe  Asn Gln Gln Lys Lys  Lys Leu Gly Gly Gln  Asp Ile Phe
    1460                1465                1470

Met Thr  Glu Glu Gln Lys Lys  Tyr Tyr Asn Ala Met  Lys Lys Leu
    1475                1480                1485

Gly Ser  Lys Lys Pro Gln Lys  Pro Ile Pro Arg Pro  Gly Asn Lys
    1490                1495                1500

Ile Gln  Gly Cys Ile Phe Asp  Leu Val Thr Asn Gln  Ala Phe Asp
    1505                1510                1515

Ile Ser  Ile Met Val Leu Ile  Cys Leu Asn Met Val  Thr Met Met
    1520                1525                1530

Val Glu  Lys Glu Gly Gln Ser  Pro Tyr Met Thr Asp  Val Leu Tyr
    1535                1540                1545

Trp Ile  Asn Val Val Phe Ile  Ile Leu Phe Thr Gly  Glu Cys Val
    1550                1555                1560

Leu Lys  Leu Ile Ser Leu Arg  Tyr Tyr Tyr Phe Thr  Ile Gly Trp
    1565                1570                1575
```

```
Asn Ile  Phe Asp Phe Val Val  Val Ile Ile Ser Ile  Val Gly Met
    1580                1585                1590

Phe Leu  Ala Asp Leu Ile Glu  Thr Tyr Phe Val Ser  Pro Thr Leu
    1595                1600                1605

Phe Arg  Val Ile Arg Leu Ala  Arg Ile Gly Arg Ile  Leu Arg Leu
    1610                1615                1620

Val Lys  Gly Ala Lys Gly Ile  Arg Thr Leu Leu Phe  Ala Leu Met
    1625                1630                1635

Met Ser  Leu Pro Ala Leu Phe  Asn Ile Gly Leu Leu  Leu Phe Leu
    1640                1645                1650

Val Met  Phe Ile Tyr Ala Ile  Phe Gly Met Ser Asn  Phe Ala Tyr
    1655                1660                1665

Val Lys  Lys Glu Asp Gly Ile  Asn Asp Met Phe Asn  Phe Glu Thr
    1670                1675                1680

Phe Gly  Asn Ser Met Ile Cys  Leu Phe Gln Ile Thr  Thr Ser Ala
    1685                1690                1695

Gly Trp  Asp Gly Leu Leu Ala  Pro Ile Leu Asn Ser  Lys Pro Pro
    1700                1705                1710

Asp Cys  Asp Pro Lys Lys Val  His Pro Gly Ser Ser  Val Glu Gly
    1715                1720                1725

Asp Cys  Gly Asn Pro Ser Val  Gly Ile Phe Tyr Phe  Val Ser Tyr
    1730                1735                1740

Ile Ile  Ile Ser Phe Leu Val  Val Val Asn Met Tyr  Ile Ala Val
    1745                1750                1755

Ile Leu  Glu Asn Phe Ser Val  Ala Thr Glu Glu Ser  Thr Glu Pro
    1760                1765                1770
```

```
Leu Ser  Glu Asp Asp Phe Glu  Met Phe Tyr Glu Val  Trp Glu Lys
    1775                1780                1785

Phe Asp  Pro Asp Ala Thr Gln  Phe Ile Glu Tyr Asn  Lys Leu Ser
    1790                1795                1800

Asp Phe  Ala Ala Ala Leu Asp  Pro Pro Leu Leu Ile  Ala Lys Pro
    1805                1810                1815

Asn Lys  Val Gln Leu Ile Ala  Met Asp Leu Pro Met  Val Ser Gly
    1820                1825                1830

Asp Arg  Ile His Cys Leu Asp  Ile Leu Phe Ala Phe  Thr Lys Arg
    1835                1840                1845

Val Leu  Gly Glu Ser Gly Glu  Met Asp Ser Leu Arg  Ser Gln Met
    1850                1855                1860

Glu Glu  Arg Phe Met Ser Ala  Asn Pro Ser Lys Val  Ser Tyr Glu
    1865                1870                1875

Pro Ile  Thr Thr Thr Leu Lys  Arg Lys Gln Glu Asp  Val Ser Ala
    1880                1885                1890

Thr Val  Ile Gln Arg Ala Tyr  Arg Arg Tyr Arg Leu  Arg Gln Asn
    1895                1900                1905

Val Lys  Asn Ile Ser Ser Ile  Tyr Ile Lys Asp Gly  Asp Arg Asp
    1910                1915                1920

Asp Asp  Leu Leu Asn Lys Lys  Asp Met Ala Phe Asp  Asn Val Asn
    1925                1930                1935

Glu Asn  Ser Ser Pro Glu Lys  Thr Asp Ala Thr Ser  Ser Thr Thr
    1940                1945                1950
```

Ser Pro  Pro Ser Tyr Asp Ser  Val Thr Lys Pro Asp  Lys Glu Lys
    1955                1960                1965

Tyr Glu  Gln Asp Arg Thr Glu  Lys Glu Asp Lys Gly  Lys Asp Ser
    1970                1975                1980

Lys Glu  Ser Lys Lys
    1985

<210>  32
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<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Galeopterus variegatus

<400>  32

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

Lys Gln Ser Leu Ala Leu Ile Glu Gln Arg Ile Ala Glu Gly Lys Thr
            20                  25                  30

Lys Glu Pro Lys Glu Glu Lys Lys Asp Ser Asp Glu Glu Gly Pro Lys
        35                  40                  45

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

Asp Ile Pro Pro Asp Met Val Ser Glu Pro Leu Glu Asp Leu Asp Pro
65                  70                  75                  80

Phe Tyr Ala Asp Lys Lys Thr Phe Ile Val Leu Asn Lys Gly Lys Ala
                85                  90                  95

Ile Phe Arg Phe Asn Ala Thr Pro Ala Leu Tyr Met Leu Ser Pro Phe
            100                 105                 110

```
Ser Pro Leu Arg Arg Ile Ser Ile Lys Ile Leu Val His Ser Phe Phe
        115                 120                 125

Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Ile Phe Met Thr
    130                 135                 140

Leu Ser Thr Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr Phe Thr
145                 150                 155                 160

Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala Arg Gly Phe
                165                 170                 175

Cys Val Gly Glu Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp Leu Asp
            180                 185                 190

Phe Val Val Ile Val Phe Ala Tyr Leu Thr Glu Phe Val Asn Leu Gly
        195                 200                 205

Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu Lys Thr
    210                 215                 220

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

Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe Cys Leu
                245                 250                 255

Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn Leu Lys
            260                 265                 270

His Lys Cys Phe Arg Asn Ser Leu Glu Asn Asn Glu Thr Leu Gln Ser
        275                 280                 285

Ile Ile Glu Thr Leu Glu Thr Glu Glu Asp Tyr Arg Arg Tyr Phe Tyr
    290                 295                 300

Tyr Leu Glu Gly Ser Lys Asp Ala Leu Leu Cys Gly Phe Ser Thr Asp
305                 310                 315                 320
```

```
Ser Gly Gln Cys Pro Glu Gly Tyr Thr Cys Val Lys Ala Gly Arg Asn
                325                 330                 335

Pro Asp Tyr Gly Tyr Thr Ser Phe Asp Thr Phe Ser Trp Ala Phe Leu
            340                 345                 350

Ala Leu Phe Arg Leu Met Thr Gln Asp Tyr Trp Glu Asn Leu Tyr Gln
        355                 360                 365

Gln Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met Ile Phe Phe Val Val
    370                 375                 380

Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn Leu Ile Leu Ala Val
385                 390                 395                 400

Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala Asn Ile Glu Glu Ala
                405                 410                 415

Arg Gln Lys Glu Leu Glu Phe Gln Gln Met Leu Glu Gln Leu Lys Lys
            420                 425                 430

Glu Gln Glu Glu Ala Glu Ala Ile Ala Val Ala Val Ala Glu His Thr
        435                 440                 445

Ser Ile Gly Arg Ser Arg Ile Met Gly Val Ser Glu Ser Ser Ser Glu
    450                 455                 460

Thr Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu Arg Arg Asn Arg Arg
465                 470                 475                 480

Lys Lys Lys Asn Gln Lys Lys Leu Ser Ser Gly Glu Glu Lys Gly Asp
                485                 490                 495

Asp Glu Lys Leu Ser Lys Ser Glu Ser Glu Glu Ser Ile Arg Arg Lys
            500                 505                 510
```

```
Ser Phe Tyr Leu Gly Val Glu Gly His Gly Arg Ala Arg Glu Lys Arg
        515                 520                 525

Leu Ser Thr Pro Asn Gln Ser Pro Leu Ser Ile Arg Gly Ser Leu Phe
    530                 535                 540

Ser Ala Arg Arg Ser Ser Arg Thr Ser Leu Phe Ser Phe Lys Gly Arg
545                 550                 555                 560

Gly Lys Asp Ile Gly Ser Glu Thr Glu Phe Ala Asp Asp Glu His Ser
                565                 570                 575

Ile Phe Gly Asp Asn Glu Ser Arg Arg Gly Ser Leu Phe Val Pro His
            580                 585                 590

Arg Pro Arg Glu Arg Arg Ser Ser Asn Ile Ser Gln Ala Ser Arg Ser
        595                 600                 605

Pro Pro Met Leu Pro Val Asn Gly Lys Met His Ser Ala Val Asp Cys
    610                 615                 620

Asn Gly Val Val Ser Leu Val Asp Gly Pro Ser Ala Leu Met Leu Pro
625                 630                 635                 640

Asn Gly Gln Leu Leu Pro Glu Val Ile Ile Asp Lys Ala Thr Ser Asp
                645                 650                 655

Asp Ser Gly Thr Thr Asn Gln Ile Arg Lys Lys Arg Arg Ser Ser Ser
            660                 665                 670

Tyr Leu Leu Ser Glu Asp Met Leu Asn Asp Pro Asn Leu Arg Gln Arg
        675                 680                 685

Ala Met Ser Arg Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu
    690                 695                 700

Glu Ser Arg Gln Lys Cys Pro Pro Trp Trp Tyr Lys Phe Ala His Thr
705                 710                 715                 720
```

```
Phe Leu Ile Trp Asn Cys Ser Pro Phe Trp Ile Lys Phe Lys Lys Leu
               725                 730                 735

Ile Tyr Phe Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile
            740                 745                 750

Cys Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His His Pro Met
        755                 760                 765

Thr Asn Glu Phe Lys Asn Ala Leu Ala Val Gly Asn Leu Val Phe Thr
    770                 775                 780

Gly Ile Phe Ala Ala Glu Met Val Leu Lys Leu Ile Ala Met Asp Pro
785                 790                 795                 800

Tyr Glu Tyr Phe Gln Val Gly Trp Asn Ile Phe Asp Ser Leu Ile Val
               805                 810                 815

Thr Leu Ser Leu Val Glu Leu Cys Leu Ser Glu Val Glu Gly Leu Ser
            820                 825                 830

Val Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser
        835                 840                 845

Trp Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly
    850                 855                 860

Ala Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe
865                 870                 875                 880

Ala Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val
               885                 890                 895

Cys Lys Ile Ser Asp Asp Cys Thr Leu Pro Arg Trp His Met Thr Asp
            900                 905                 910
```

```
Phe Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp
        915                 920                 925


Ile Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Ala Met Cys
    930                 935                 940


Leu Ile Val Tyr Met Met Val Met Val Ile Gly Asn Leu Val Val Leu
945                 950                 955                 960


Asn Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu
                965                 970                 975


Thr Ala Ile Glu Glu Asp Thr Asp Ala Asn Asn Leu Gln Ile Ala Val
            980                 985                 990


Ala Arg Ile Asn Lys Gly Val Asn  Tyr Met Lys Gln Ser  Leu Arg Glu
        995                 1000                1005


Cys Ile  Leu Lys Ala Phe Ser  Lys Lys Pro Lys Ile  Ser Gly Glu
    1010                1015                1020


Ile Lys  Arg Ala Glu Asn Ile  Asn Ser Lys Lys Glu  Asn Tyr Val
    1025                1030                1035


Ser Asn  Arg Thr Leu Ala Glu  Met Ser Lys Asp His  Ser Phe Tyr
    1040                1045                1050


Lys Glu  Lys Asp Lys Ile Gly  Gly Leu Gly Ser Ser  Met Asp Lys
    1055                1060                1065


Tyr Leu  Met Asp Glu Ser Asp  Tyr Gln Ser Phe Ile  His Asn Pro
    1070                1075                1080


Ser Leu  Thr Val Thr Val Pro  Ile Ala Pro Gly Glu  Ser Asp Leu
    1085                1090                1095


Glu Asn  Met Asn Thr Glu Glu  Leu Ser Ser Asp Ser  Asp Ser Glu
    1100                1105                1110
```

```
Cys Thr  Lys Glu Val Leu Asn  Arg Ser Ser Ser Ser  Glu Cys Ser
    1115                1120                1125

Thr Val  Asp Asn Pro Val Pro  Gly Glu Gly Glu Glu  Ala Glu Ala
    1130                1135                1140

Glu Pro  Val Asn Ser Asp Glu  Pro Glu Ala Cys Phe  Thr Asp Gly
    1145                1150                1155

Cys Val  Arg Arg Phe Pro Cys  Cys Gln Val Asn Ile  Glu Ser Gly
    1160                1165                1170

Lys Gly  Lys Ile Trp Trp Asn  Ile Arg Lys Thr Cys  Tyr Lys Ile
    1175                1180                1185

Val Glu  His Ser Trp Phe Glu  Ser Phe Ile Val Leu  Met Ile Leu
    1190                1195                1200

Leu Ser  Ser Gly Ala Leu Ala  Phe Glu Asp Ile Tyr  Ile Glu Arg
    1205                1210                1215

Lys Lys  Thr Ile Lys Ile Ile  Leu Glu Tyr Ala Asp  Lys Ile Phe
    1220                1225                1230

Thr Tyr  Ile Phe Ile Leu Glu  Met Leu Leu Lys Trp  Val Ala Tyr
    1235                1240                1245

Gly Tyr  Lys Thr Tyr Phe Thr  Asn Ala Trp Cys Trp  Leu Asp Phe
    1250                1255                1260

Leu Ile  Val Asp Val Ser Leu  Val Thr Leu Val Ala  Asn Thr Leu
    1265                1270                1275

Gly Tyr  Ser Asp Leu Gly Pro  Ile Lys Ser Leu Arg  Thr Leu Arg
    1280                1285                1290
```

```
Ala Leu  Arg Pro Leu Arg Ala  Leu Ser Arg Phe Glu  Gly Met Arg
    1295                1300                1305

Val Val  Val Asn Ala Leu Ile  Gly Ala Ile Pro Ser  Ile Met Asn
    1310                1315                1320

Val Leu  Leu Val Cys Leu Ile  Phe Trp Leu Ile Phe  Ser Ile Met
    1325                1330                1335

Gly Val  Asn Leu Phe Ala Gly  Lys Phe Tyr Glu Cys  Ile Asn Thr
    1340                1345                1350

Thr Asp  Gly Ser Arg Phe Pro  Thr Thr Gln Val Ser  Asn Arg Ser
    1355                1360                1365

Asp Cys  Phe Ala Leu Met Asn  Val Ser Gln Asn Val  Arg Trp Lys
    1370                1375                1380

Asn Leu  Lys Val Asn Phe Asp  Asn Val Gly Leu Gly  Tyr Leu Ser
    1385                1390                1395

Leu Leu  Gln Val Ala Thr Phe  Lys Gly Trp Met Asp  Ile Met Tyr
    1400                1405                1410

Ala Ala  Val Asp Ser Val Asn  Val Asp Lys Gln Pro  Lys Tyr Glu
    1415                1420                1425

Tyr Ser  Ile Tyr Met Tyr Ile  Tyr Phe Val Ile Phe  Ile Ile Phe
    1430                1435                1440

Gly Ser  Phe Phe Thr Leu Asn  Leu Phe Ile Gly Val  Ile Ile Asp
    1445                1450                1455

Asn Phe  Asn Gln Gln Lys Lys  Lys Leu Gly Gly Gln  Asp Ile Phe
    1460                1465                1470

Met Thr  Glu Glu Gln Lys Lys  Tyr Tyr Asn Ala Met  Lys Lys Leu
    1475                1480                1485
```

```
Gly Ser  Lys Lys Pro Gln Lys  Pro Ile Pro Arg Pro  Gly Asn Lys
    1490                1495                1500

Phe Gln  Gly Cys Ile Phe Asp  Leu Val Thr Asn Gln  Val Phe Asp
    1505                1510                1515

Ile Thr  Ile Met Val Leu Ile  Cys Leu Asn Met Val  Thr Met Met
    1520                1525                1530

Val Glu  Lys Glu Glu Gln Ser  Gln Tyr Met Val Asp  Val Leu Tyr
    1535                1540                1545

Trp Ile  Asn Val Ala Phe Ile  Ile Leu Phe Thr Gly  Glu Cys Val
    1550                1555                1560

Leu Lys  Leu Ile Ser Leu Arg  His Tyr Tyr Phe Thr  Val Gly Trp
    1565                1570                1575

Asn Ile  Phe Asp Phe Val Val  Val Ile Leu Ser Ile  Val Gly Met
    1580                1585                1590

Phe Leu  Ala Asp Leu Ile Glu  Lys Tyr Phe Val Ser  Pro Thr Leu
    1595                1600                1605

Phe Arg  Val Ile Arg Leu Ala  Arg Ile Gly Arg Ile  Leu Arg Leu
    1610                1615                1620

Ile Lys  Gly Ala Lys Gly Ile  Arg Thr Leu Leu Phe  Ala Leu Met
    1625                1630                1635

Met Ser  Leu Pro Ala Leu Phe  Asn Ile Gly Leu Leu  Leu Phe Leu
    1640                1645                1650

Val Met  Phe Ile Tyr Ala Ile  Phe Gly Met Ser Asn  Phe Ala Tyr
    1655                1660                1665
```

```
Val Lys  Lys Glu Ala Gly Ile  Asn Asp Met Phe Asn  Phe Glu Thr
    1670                1675                1680

Phe Gly  Asn Ser Met Ile Cys  Leu Phe Gln Ile Thr  Thr Ser Ala
    1685                1690                1695

Gly Trp  Asp Gly Leu Leu Ala  Pro Ile Leu Asn Ser  Ala Pro Pro
    1700                1705                1710

Asp Cys  Asp Pro Lys Lys Val  His Pro Gly Ser Ser  Val Glu Gly
    1715                1720                1725

Asp Cys  Gly Asn Pro Ser Val  Gly Ile Phe Tyr Phe  Val Ser Tyr
    1730                1735                1740

Ile Ile  Ile Ser Phe Leu Val  Val Val Asn Met Tyr  Ile Ala Val
    1745                1750                1755

Ile Leu  Glu Asn Phe Ser Val  Ala Thr Glu Glu Ser  Thr Glu Pro
    1760                1765                1770

Leu Gly  Glu Asp Asp Phe Glu  Met Phe Tyr Glu Val  Trp Glu Lys
    1775                1780                1785

Phe Asp  Pro Asp Ala Thr Gln  Phe Ile Glu Tyr Ser  Lys Leu Ser
    1790                1795                1800

Asp Phe  Ala Ala Ala Leu Asp  Pro Pro Leu Leu Ile  Ala Lys Pro
    1805                1810                1815

Asn Lys  Val Gln Leu Ile Ala  Met Asp Leu Pro Met  Val Ser Gly
    1820                1825                1830

Asp Arg  Ile His Cys Leu Asp  Ile Leu Phe Ala Phe  Thr Lys Arg
    1835                1840                1845

Val Leu  Gly Glu Ser Gly Glu  Met Asp Ser Leu Arg  Ser Gln Met
    1850                1855                1860
```

```
Glu Glu  Arg Phe Met Ser Ala  Asn Pro Ser Lys Val  Ser Tyr Glu
    1865                 1870                 1875


Pro Ile  Thr Thr Thr Leu Lys  Arg Lys Gln Glu Asp  Val Ser Ala
    1880                 1885                 1890


Thr Val  Ile Gln Arg Ala Phe  Arg Arg Tyr Arg Leu  Arg Gln Asn
    1895                 1900                 1905


Val Lys  Asn Ile Ser Ser Met  Tyr Ile Lys Asp Gly  Asp Arg Asp
    1910                 1915                 1920


Asp Asp  Leu Pro His Lys Glu  Asp Val Val Phe Gly  Asn Val Asn
    1925                 1930                 1935


Gly Asn  Ser Ser Pro Glu Lys  Thr Asp Ala Thr Pro  Ser Thr Val
    1940                 1945                 1950


Ser Pro  Pro Ser Tyr Asp Ser  Val Thr Met Pro Asp  Lys Glu Lys
    1955                 1960                 1965


Tyr Glu  Lys Asp Lys Thr Glu  Lys Glu Asp Lys Gly  Lys Asp Gly
    1970                 1975                 1980


Lys Glu  Ser Lys Lys
    1985
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<210>  33
<211>  1987
<212>  PRT
<213>  Bos taurus

<400>  33

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


Lys Gln Ser Leu Ala Leu Ile Glu Gln Arg Ile Ala Glu Gly Lys Ala
```

```
            20                  25                  30

Lys Glu Pro Lys Glu Glu Lys Lys Asp Asp Asp Asp Glu Gly Pro Lys
        35                  40                  45

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

Asp Ile Pro Pro Gly Met Val Ser Glu Pro Leu Glu Asp Leu Asp Pro
65                  70                  75                  80

Tyr Tyr Ala Asp Lys Lys Thr Phe Ile Val Leu Asn Lys Gly Lys Ala
                85                  90                  95

Ile Phe Arg Phe Asn Ala Thr Pro Ala Leu Tyr Met Leu Ser Pro Phe
            100                 105                 110

Ser Pro Leu Arg Arg Ile Ser Ile Lys Ile Leu Val His Ala Ala Phe
        115                 120                 125

Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Ile Phe Met Thr
    130                 135                 140

Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr Phe Thr
145                 150                 155                 160

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

Cys Val Gly Glu Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp Leu Asp
            180                 185                 190

Phe Ile Val Ile Val Phe Ala Tyr Leu Thr Glu Phe Val Asn Leu Gly
        195                 200                 205

Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu Lys Thr
    210                 215                 220
```

```
Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu Ile Gln
225                 230                 235                 240


Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe Cys Leu
                245                 250                 255


Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn Leu Lys
            260                 265                 270


His Lys Cys Val Gln Ser Ser Leu Ala Asn Asn Glu Thr Met Glu Asn
        275                 280                 285


Ile Leu Asn Thr Leu Asp Glu Glu Glu Tyr Ala Lys Tyr Phe Tyr Tyr
    290                 295                 300


Leu Glu Gly Ser Lys Asp Ala Leu Leu Cys Gly Phe Ser Ser Asp Ser
305                 310                 315                 320


Gly Gln Cys Pro Glu Gly Tyr Thr Cys Lys Lys Ile Gly Arg Asn Pro
                325                 330                 335


Asp Tyr Gly Tyr Thr Ser Phe Asp Thr Phe Ser Trp Ala Phe Leu Ala
            340                 345                 350


Leu Phe Arg Leu Met Thr Gln Asp Tyr Trp Glu Asn Leu Tyr Gln Gln
        355                 360                 365


Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met Ile Phe Phe Val Val Val
    370                 375                 380


Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn Leu Ile Leu Ala Val Val
385                 390                 395                 400


Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala Asn Ile Glu Glu Ala Arg
                405                 410                 415


Gln Lys Glu Leu Glu Phe Gln Gln Met Leu Asp Arg Leu Lys Lys Glu
```

```
            420                 425                 430

Gln Glu Glu Ala Glu Ala Ile Ala Leu Ala Ala Ala Glu Tyr Thr Ser
        435                 440                 445

Ile Gly Arg Ser Arg Ile Met Gly Leu Ser Glu Ser Ser Ser Glu Thr
    450                 455                 460

Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu Arg Arg Asn Arg Arg Arg
465                 470                 475                 480

Lys Lys Asn Gln Lys Lys Leu Ser Ser Gly Glu Glu Lys Gly Asp Asp
                485                 490                 495

Glu Lys Leu Ser Lys Ser Glu Ser Glu Glu Ser Ile Arg Arg Lys Ser
            500                 505                 510

Phe His Leu Gly Val Glu Gly His Arg Arg Ala Arg Glu Lys Arg Leu
        515                 520                 525

Ser Thr Pro Asn Gln Ser Pro Leu Ser Ile Arg Gly Ser Leu Phe Ser
    530                 535                 540

Ala Arg Arg Ser Ser Arg Thr Ser Leu Phe Ser Phe Lys Gly Arg Gly
545                 550                 555                 560

Arg Asp Ile Gly Ser Glu Thr Glu Phe Ala Asp Asp Glu His Ser Ile
                565                 570                 575

Phe Gly Asp Asn Glu Ser Arg Arg Gly Ser Leu Phe Val Pro His Arg
            580                 585                 590

Pro Arg Glu Arg Arg Ser Ser Asn Ile Ser Gln Ala Ser Arg Ser Pro
        595                 600                 605

Pro Val Leu Pro Val Asn Gly Lys Met His Ser Ala Val Asp Cys Asn
    610                 615                 620
```

```
Gly Val Val Ser Leu Val Asp Gly Pro Ser Ala Leu Met Leu Pro Asn
625                 630                 635                 640


Gly Gln Leu Leu Pro Glu Val Ile Ile Asp Lys Ala Thr Ser Asp Asp
                645                 650                 655


Ser Gly Thr Thr Asn Gln Ile His Lys Lys Arg Arg His Ser Ser Tyr
            660                 665                 670


Leu Leu Ser Glu Asp Met Leu Asn Asp Pro Asn Leu Arg Gln Arg Ala
        675                 680                 685


Met Ser Arg Ala Ser Ile Leu Thr Asn Thr Val Glu Glu Leu Glu Glu
    690                 695                 700


Ser Arg Gln Lys Cys Pro Pro Trp Trp Tyr Arg Phe Ala His Thr Phe
705                 710                 715                 720


Leu Ile Trp Asn Cys Ser Pro Tyr Trp Ile Lys Phe Lys Lys Phe Ile
                725                 730                 735


Tyr Phe Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
            740                 745                 750


Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His His Pro Met Thr
        755                 760                 765


Glu Glu Phe Lys Asn Val Leu Val Val Gly Asn Leu Val Phe Thr Gly
    770                 775                 780


Ile Phe Ala Ala Glu Met Val Leu Lys Leu Ile Ala Met Asp Pro Tyr
785                 790                 795                 800


Glu Tyr Phe Gln Ile Gly Trp Asn Ile Phe Asp Ser Leu Ile Val Thr
                805                 810                 815


Leu Ser Leu Val Glu Leu Phe Leu Ser Asp Val Glu Gly Leu Ser Val
```

```
            820                 825                 830

Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
        835                 840                 845

Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
    850                 855                 860

Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
865                 870                 875                 880

Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
                885                 890                 895

Lys Ile Asn Glu Asp Cys Thr Leu Pro Arg Trp His Met Asn Asp Phe
            900                 905                 910

Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
        915                 920                 925

Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Ala Met Cys Leu
    930                 935                 940

Ile Val Tyr Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn
945                 950                 955                 960

Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Thr
                965                 970                 975

Ala Ile Glu Glu Asp Thr Asp Ala Asn Asn Leu Gln Ile Ala Val Ala
            980                 985                 990

Arg Ile Lys Lys Gly Ile Asn Tyr  Val Lys Gln Thr Leu  Arg Glu Phe
        995                 1000                1005

Val Leu  Lys Ala Phe Ser Lys  Lys Pro Lys Ile Ser  Lys Glu Ile
    1010                1015                1020
```

```
Arg Gln  Thr Glu Asp Leu Asn  Cys Lys Lys Glu Asn  Tyr Ile Ser
    1025                1030                1035

Asn Arg  Thr Leu Ala Glu Met  Ser Lys Asp His Lys  Phe His Lys
    1040                1045                1050

Glu Lys  Asp Lys Thr Ser Gly  Phe Gly Asn Ser Met  Asp Lys Tyr
    1055                1060                1065

Leu Met  Glu Glu Ser Asp Gly  Gln Ser Phe Ile His  Asn Pro Ser
    1070                1075                1080

Leu Thr  Val Thr Val Pro Ile  Ala Pro Gly Glu Ser  Asp Leu Glu
    1085                1090                1095

Ile Met  Asn Thr Glu Glu Leu  Ser Ser Asp Ser Asp  Ser Glu Tyr
    1100                1105                1110

Ser Lys  Gly Arg Leu Asn Gln  Ser Ser Ser Ser Glu  Cys Ser Thr
    1115                1120                1125

Val Asp  Asn Pro Val Pro Gly  Glu Gly Glu Glu Ala  Glu Ala Glu
    1130                1135                1140

Pro Val  Asn Ser Asp Glu Pro  Glu Ala Cys Phe Thr  Asp Gly Cys
    1145                1150                1155

Val Gln  Arg Phe Pro Cys Cys  Gln Val Asn Ile Glu  Ser Gly Lys
    1160                1165                1170

Gly Lys  Ile Trp Trp Asn Ile  Arg Lys Thr Cys Phe  Arg Ile Val
    1175                1180                1185

Glu His  Ser Trp Phe Glu Ser  Phe Ile Val Leu Met  Ile Leu Leu
    1190                1195                1200

Ser Ser  Gly Ala Leu Ala Phe  Glu Asp Ile Tyr Ile  Glu Lys Lys
```

```
    1205                1210                1215

Lys Asn  Ile Lys Ile Ile Leu  Glu Tyr Ala Asp Lys  Ile Phe Thr
    1220                1225                1230

Tyr Ile  Phe Ile Leu Glu Met  Leu Leu Lys Trp Val  Ala Tyr Gly
    1235                1240                1245

Tyr Lys  Thr Tyr Phe Thr Asn  Ala Trp Cys Trp Leu  Asp Phe Leu
    1250                1255                1260

Ile Val  Asp Val Ser Leu Val  Thr Leu Val Ala Asn  Thr Leu Gly
    1265                1270                1275

Tyr Ser  Asp Leu Gly Pro Ile  Lys Ser Leu Arg Thr  Leu Arg Ala
    1280                1285                1290

Leu Arg  Pro Leu Arg Ala Leu  Ser Arg Phe Glu Gly  Met Arg Val
    1295                1300                1305

Val Val  Asn Ala Leu Ile Gly  Ala Ile Pro Ser Ile  Met Asn Val
    1310                1315                1320

Leu Leu  Val Cys Leu Ile Phe  Trp Leu Ile Phe Ser  Ile Met Gly
    1325                1330                1335

Val Asn  Leu Phe Ala Gly Lys  Phe Tyr Glu Cys Ile  Asn Thr Thr
    1340                1345                1350

Asn Gly  Leu Arg Phe Pro Thr  Ser Glu Val Glu Asn  Arg Ser Ala
    1355                1360                1365

Cys Leu  Ala Leu Met Asn Val  Ser Gln Asn Val Arg  Trp Lys Asn
    1370                1375                1380

Leu Lys  Val Asn Phe Asp Asn  Val Gly Leu Gly Tyr  Leu Ser Leu
    1385                1390                1395
```

```
Leu Gln  Val Ala Thr Phe Lys  Gly Trp Met Asp Ile  Met Tyr Ala
    1400                1405                1410

Ala Val  Asp Ser Val Asn Val  Asn Lys Gln Pro Ile  Tyr Glu Tyr
    1415                1420                1425

Ser Leu  Tyr Met Tyr Ile Tyr  Phe Val Ile Phe Ile  Ile Phe Gly
    1430                1435                1440

Ser Phe  Phe Thr Leu Asn Leu  Phe Ile Gly Val Ile  Ile Asp Asn
    1445                1450                1455

Phe Asn  Gln Gln Lys Lys Lys  Leu Gly Gly Gln Asp  Ile Phe Met
    1460                1465                1470

Thr Glu  Glu Gln Lys Lys Tyr  Tyr Asn Ala Met Lys  Lys Leu Gly
    1475                1480                1485

Ser Lys  Lys Pro Gln Lys Pro  Ile Pro Arg Pro Gly  Asn Lys Phe
    1490                1495                1500

Gln Gly  Cys Ile Phe Asp Leu  Val Thr Asn Gln Ala  Phe Asp Ile
    1505                1510                1515

Ala Ile  Met Val Leu Ile Cys  Leu Asn Met Val Thr  Met Met Val
    1520                1525                1530

Glu Lys  Glu Gly Gln Ser Asp  Tyr Val Thr Glu Val  Leu Asn Trp
    1535                1540                1545

Ile Asn  Val Val Phe Ile Ile  Leu Phe Ser Gly Glu  Cys Val Leu
    1550                1555                1560

Lys Leu  Ile Ser Leu Arg Cys  Tyr Tyr Phe Thr Val  Gly Trp Asn
    1565                1570                1575

Ile Phe  Asp Phe Val Val Val  Ile Leu Ser Ile Val  Gly Met Phe
```

```
    1580                1585                1590

Leu Ala  Asp Leu Ile Glu Arg  Tyr Phe Val Ser Pro  Thr Leu Phe
    1595                1600                1605

Arg Val  Ile Arg Leu Ala Arg  Ile Gly Arg Ile Leu  Arg Leu Ile
    1610                1615                1620

Lys Gly  Ala Lys Gly Ile Arg  Thr Leu Leu Phe Ala  Leu Met Met
    1625                1630                1635

Ser Leu  Pro Ala Leu Phe Asn  Ile Gly Leu Leu Leu  Phe Leu Val
    1640                1645                1650

Met Phe  Ile Tyr Ala Ile Phe  Gly Met Ser Asn Phe  Ala Tyr Val
    1655                1660                1665

Lys Lys  Glu Ala Gly Ile Asn  Asp Met Phe Asn Phe  Glu Thr Phe
    1670                1675                1680

Ala Asn  Ser Met Ile Cys Leu  Phe Gln Ile Thr Thr  Ser Ala Gly
    1685                1690                1695

Trp Asp  Gly Leu Leu Ala Pro  Ile Leu Asn Ser Lys  Pro Pro Asp
    1700                1705                1710

Cys Asp  Pro Lys Lys Val His  Pro Gly Ser Ser Val  Glu Gly Asp
    1715                1720                1725

Cys Gly  Asn Pro Ser Val Gly  Ile Phe Tyr Phe Val  Ser Tyr Ile
    1730                1735                1740

Ile Ile  Ser Phe Leu Val Val  Val Asn Met Tyr Ile  Ala Val Ile
    1745                1750                1755

Leu Glu  Asn Phe Ser Val Ala  Thr Glu Glu Ser Thr  Glu Pro Leu
    1760                1765                1770
```

```
Ser Glu  Asp Asp Phe Glu Met  Phe Tyr Glu Val Trp  Glu Lys Phe
    1775                1780                1785

Asp Pro  Asp Ala Thr Gln Phe  Ile Glu Tyr Ser Lys  Leu Ser Asp
    1790                1795                1800

Phe Ala  Ala Ala Leu Asp Pro  Pro Leu Leu Ile Ala  Lys Pro Asn
    1805                1810                1815

Lys Val  Gln Leu Ile Ala Met  Asp Leu Pro Met Val  Ser Gly Asp
    1820                1825                1830

Arg Ile  His Cys Leu Asp Ile  Leu Phe Ala Phe Thr  Lys Arg Val
    1835                1840                1845

Leu Gly  Glu Gly Gly Glu Met  Asp Ser Leu Arg Ser  Gln Met Glu
    1850                1855                1860

Glu Arg  Phe Met Ser Ala Asn  Pro Ser Lys Val Ser  Tyr Glu Pro
    1865                1870                1875

Ile Thr  Thr Thr Leu Lys Arg  Lys Gln Glu Asp Val  Ser Ala Thr
    1880                1885                1890

Val Ile  Gln Arg Ala Tyr Arg  Arg Tyr Arg Leu Arg  Gln Asn Val
    1895                1900                1905

Lys Asn  Ile Ser Ser Ile Tyr  Ile Lys Asp Gly Asp  Arg Asp Asp
    1910                1915                1920

Asp Leu  Pro Asn Lys Glu Asp  Met Val Phe Asp Asn  Val Asn Glu
    1925                1930                1935

Asn Ser  Ser Pro Glu Lys Thr  Gly Ala Thr Pro Ser  Thr Val Ser
    1940                1945                1950

Pro Pro  Ser Tyr Asp Ser Val  Thr Lys Pro Asp Arg  Glu Lys Tyr
```

```
    1955                1960                1965


Glu Lys  Asp Lys Thr Glu Lys  Glu Asp Lys Gly Lys  Asp Gly Lys
    1970                1975                1980


Glu Gly  Lys Lys
    1985


<210>  34
<211>  1987
<212>  PRT
<213>  Ovis aries

<400>  34

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


Lys Gln Ser Leu Ala Leu Ile Glu Gln Arg Ile Ala Glu Gly Lys Ala
            20                  25                  30


Lys Glu Pro Lys Glu Glu Lys Lys Asp Asp Asp Glu Glu Gly Pro Lys
        35                  40                  45


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


Asp Ile Pro Pro Gly Met Val Ser Glu Pro Leu Glu Asp Leu Asp Pro
65                  70                  75                  80


Tyr Tyr Ala Asp Lys Lys Thr Phe Ile Val Leu Asn Lys Gly Lys Ala
                85                  90                  95


Ile Phe Arg Phe Asn Ala Thr Pro Ala Leu Tyr Met Leu Ser Pro Phe
            100                 105                 110


Ser Pro Leu Arg Arg Ile Ser Ile Lys Ile Leu Val His Ala Ala Phe
        115                 120                 125
```

```
Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Ile Phe Met Thr
    130                 135                 140

Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr Phe Thr
145                 150                 155                 160

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

Cys Val Gly Glu Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp Leu Asp
            180                 185                 190

Phe Ile Val Ile Val Phe Ala Tyr Leu Thr Glu Phe Val Asn Leu Gly
        195                 200                 205

Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu Lys Thr
    210                 215                 220

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

Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe Cys Leu
                245                 250                 255

Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn Leu Lys
            260                 265                 270

His Lys Cys Val Gln Thr Ser Leu Ala Asn Asn Glu Thr Ile Glu Asp
        275                 280                 285

Ile Leu Asn Ala Leu Asp Glu Glu Glu Tyr Ala Lys Tyr Phe Tyr Tyr
    290                 295                 300

Leu Glu Gly Ser Lys Asp Ala Leu Leu Cys Gly Phe Ser Thr Asp Ser
305                 310                 315                 320

Gly Gln Cys Pro Glu Gly Tyr Thr Cys Lys Lys Ile Gly Arg Asn Pro
                325                 330                 335
```

```
Asp Tyr Gly Tyr Thr Ser Phe Asp Thr Phe Ser Trp Ala Phe Leu Ala
            340                 345                 350

Leu Phe Arg Leu Met Thr Gln Asp Tyr Trp Glu Asn Leu Tyr Gln Gln
        355                 360                 365

Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met Ile Phe Phe Val Val Val
    370                 375                 380

Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn Leu Ile Leu Ala Val Val
385                 390                 395                 400

Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala Asn Ile Glu Glu Ala Arg
                405                 410                 415

Gln Lys Glu Leu Glu Phe Gln Gln Met Leu Asp Arg Leu Lys Lys Glu
            420                 425                 430

Gln Glu Glu Ala Glu Ala Ile Ala Leu Ala Ala Ala Glu Tyr Thr Ser
        435                 440                 445

Ile Gly Arg Ser Arg Ile Met Gly Leu Ser Glu Ser Ser Ser Glu Thr
    450                 455                 460

Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu Arg Arg Asn Arg Arg Arg
465                 470                 475                 480

Lys Lys Asn Gln Lys Lys Leu Ser Ser Gly Glu Glu Lys Gly Asp Asp
                485                 490                 495

Glu Lys Leu Ser Lys Ser Glu Ser Glu Glu Ser Ile Arg Arg Lys Ser
            500                 505                 510

Phe His Leu Gly Val Glu Gly His Arg Arg Ala Arg Glu Lys Arg Leu
        515                 520                 525
```

```
Ser Thr Pro Asn Gln Ser Pro Leu Ser Ile Arg Gly Ser Leu Phe Ser
    530                 535                 540

Ala Arg Arg Ser Ser Arg Thr Ser Leu Phe Ser Phe Lys Gly Arg Gly
545                 550                 555                 560

Arg Asp Ile Gly Ser Glu Thr Glu Phe Ala Asp Asp Glu His Ser Ile
                565                 570                 575

Phe Gly Asp Asn Glu Ser Arg Arg Gly Ser Leu Phe Val Pro His Arg
            580                 585                 590

Pro Arg Glu Arg Arg Ser Ser Asn Ile Ser Gln Ala Ser Arg Ser Pro
        595                 600                 605

Pro Val Leu Pro Val Asn Gly Lys Met His Ser Ala Val Asp Cys Asn
    610                 615                 620

Gly Val Val Ser Leu Val Asp Gly Pro Ser Ala Leu Met Leu Pro Asn
625                 630                 635                 640

Gly Gln Leu Leu Pro Glu Val Ile Ile Asp Lys Ala Thr Ser Asp Asp
                645                 650                 655

Ser Gly Thr Thr Asn Gln Ile Tyr Lys Lys Arg Arg His Ser Ser Tyr
            660                 665                 670

Leu Leu Ser Glu Asp Met Leu Asn Asp Pro Asn Leu Arg Gln Arg Ala
        675                 680                 685

Met Ser Arg Ala Ser Ile Leu Thr Asn Thr Val Glu Glu Leu Glu Glu
    690                 695                 700

Ser Arg Gln Lys Cys Pro Pro Trp Trp Tyr Arg Phe Ala His Thr Phe
705                 710                 715                 720

Leu Ile Trp Asn Cys Ser Pro Tyr Trp Ile Lys Phe Lys Lys Phe Ile
                725                 730                 735
```

```
Tyr Phe Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
            740                 745                 750

Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His His Pro Met Thr
        755                 760                 765

Glu Glu Phe Lys Asn Val Leu Val Val Gly Asn Leu Val Phe Thr Gly
    770                 775                 780

Ile Phe Ala Ala Glu Met Val Leu Lys Leu Ile Ala Met Asp Pro Tyr
785                 790                 795                 800

Glu Tyr Phe Gln Ile Gly Trp Asn Ile Phe Asp Ser Leu Ile Val Thr
                805                 810                 815

Leu Ser Leu Val Glu Leu Phe Leu Ser Asp Val Glu Gly Leu Ser Val
            820                 825                 830

Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
        835                 840                 845

Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
    850                 855                 860

Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
865                 870                 875                 880

Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
                885                 890                 895

Lys Ile Asn Glu Asp Cys Lys Leu Pro Arg Trp His Met Asn Asp Phe
            900                 905                 910

Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
        915                 920                 925
```

```
Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Ala Met Cys Leu
    930                 935                 940

Ile Val Tyr Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn
945                 950                 955                 960

Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Thr
                965                 970                 975

Ala Ile Glu Glu Asp Thr Asp Ala Asn Asn Leu Gln Ile Ala Val Ala
            980                 985                 990

Arg Ile Lys Thr Gly Ile Asn Tyr  Val Lys Gln Thr Leu  Arg Glu Phe
        995                 1000                1005

Val Leu  Lys Ala Phe Ser Lys  Lys Pro Lys Ile Ser  Lys Glu Ile
    1010                1015                1020

Arg Gln  Thr Glu Asp Leu Asn  Cys Lys Lys Glu Asn  Tyr Ile Ser
    1025                1030                1035

Asn Arg  Thr Leu Ala Glu Met  Ser Lys Asp His Asn  Phe His Lys
    1040                1045                1050

Glu Lys  Asp Lys Thr Ser Gly  Phe Gly Asn Asn Met  Asp Lys Tyr
    1055                1060                1065

Leu Met  Glu Glu Ser Asp Gly  Gln Ser Phe Ile His  Asn Pro Ser
    1070                1075                1080

Leu Thr  Val Thr Val Pro Ile  Ala Pro Gly Glu Ser  Asp Leu Glu
    1085                1090                1095

Ile Met  Asn Thr Glu Glu Leu  Ser Ser Asp Ser Asp  Ser Glu Tyr
    1100                1105                1110

Ser Lys  Gly Arg Leu Asn Gln  Ser Ser Ser Ser Glu  Cys Ser Thr
    1115                1120                1125
```

```
Val Asp  Asn Pro Val Pro Gly  Glu Gly Glu Glu Ala  Glu Ala Glu
    1130                1135                1140

Pro Val  Asn Ser Asp Glu Pro  Glu Ala Cys Phe Thr  Asp Gly Cys
    1145                1150                1155

Val Gln  Arg Phe Pro Cys Cys  Gln Val Asn Ile Glu  Ser Gly Lys
    1160                1165                1170

Gly Lys  Ile Trp Trp Asn Ile  Arg Lys Thr Cys Phe  Arg Ile Val
    1175                1180                1185

Glu His  Ser Trp Phe Glu Ser  Phe Ile Val Leu Met  Ile Leu Leu
    1190                1195                1200

Ser Ser  Gly Ala Leu Ala Phe  Glu Asp Ile Tyr Ile  Glu Lys Lys
    1205                1210                1215

Lys Thr  Ile Lys Ile Ile Leu  Glu Tyr Ala Asp Lys  Ile Phe Thr
    1220                1225                1230

Tyr Ile  Phe Ile Leu Glu Met  Leu Leu Lys Trp Val  Ala Tyr Gly
    1235                1240                1245

Tyr Lys  Thr Tyr Phe Thr Asn  Ala Trp Cys Trp Leu  Asp Phe Leu
    1250                1255                1260

Ile Val  Asp Val Ser Leu Val  Thr Leu Val Ala Asn  Thr Leu Gly
    1265                1270                1275

Tyr Ser  Asp Leu Gly Pro Ile  Lys Ser Leu Arg Thr  Leu Arg Ala
    1280                1285                1290

Leu Arg  Pro Leu Arg Ala Leu  Ser Arg Phe Glu Gly  Met Arg Val
    1295                1300                1305
```

```
Val Val  Asn Ala Leu Ile Gly  Ala Ile Pro Ser Ile  Met Asn Val
    1310                1315                1320

Leu Leu  Val Cys Leu Ile Phe  Trp Leu Ile Phe Ser  Ile Met Gly
    1325                1330                1335

Val Asn  Leu Phe Ala Gly Lys  Phe Tyr Glu Cys Ile  Asn Thr Thr
    1340                1345                1350

Asn Gly  Leu Arg Phe Pro Thr  Asn Glu Val Glu Asn  Arg Ser Ala
    1355                1360                1365

Cys Leu  Ala Leu Met Asn Val  Ser Gln Asn Val Arg  Trp Lys Asn
    1370                1375                1380

Leu Lys  Val Asn Phe Asp Asn  Val Gly Leu Gly Tyr  Leu Ser Leu
    1385                1390                1395

Leu Gln  Val Ala Thr Phe Lys  Gly Trp Met Asp Ile  Met Tyr Ala
    1400                1405                1410

Ala Val  Asp Ser Val Asn Val  Asp Lys Gln Pro Ile  Tyr Glu Tyr
    1415                1420                1425

Ser Leu  Tyr Met Tyr Ile Tyr  Phe Val Ile Phe Ile  Ile Phe Gly
    1430                1435                1440

Ser Phe  Phe Thr Leu Asn Leu  Phe Ile Gly Val Ile  Ile Asp Asn
    1445                1450                1455

Phe Asn  Gln Gln Lys Lys Lys  Leu Gly Gly Gln Asp  Ile Phe Met
    1460                1465                1470

Thr Glu  Glu Gln Lys Lys Tyr  Tyr Asn Ala Met Lys  Lys Leu Gly
    1475                1480                1485

Ser Lys  Lys Pro Gln Lys Pro  Ile Pro Arg Pro Gly  Asn Lys Phe
    1490                1495                1500
```

```
Gln Gly  Cys Ile Phe Asp Leu  Val Thr Asn Gln Ala  Phe Asp Ile
    1505                1510                1515

Ala Ile  Met Val Leu Ile Cys  Leu Asn Met Val Thr  Met Met Val
    1520                1525                1530

Glu Lys  Glu Gly Gln Ser Glu  Tyr Met Thr Glu Val  Leu Tyr Trp
    1535                1540                1545

Ile Asn  Val Val Phe Ile Ile  Leu Phe Ser Gly Glu  Cys Val Leu
    1550                1555                1560

Lys Leu  Ile Ser Leu Arg Cys  Tyr Tyr Phe Thr Val  Gly Trp Asn
    1565                1570                1575

Ile Phe  Asp Phe Val Val Val  Ile Leu Ser Ile Val  Gly Met Phe
    1580                1585                1590

Leu Ala  Asp Leu Ile Glu Arg  Tyr Phe Val Ser Pro  Thr Leu Phe
    1595                1600                1605

Arg Val  Ile Arg Leu Ala Arg  Ile Gly Arg Ile Leu  Arg Leu Ile
    1610                1615                1620

Lys Gly  Ala Lys Gly Ile Arg  Thr Leu Leu Phe Ala  Leu Met Met
    1625                1630                1635

Ser Leu  Pro Ala Leu Phe Asn  Ile Gly Leu Leu Leu  Phe Leu Val
    1640                1645                1650

Met Phe  Ile Tyr Ala Ile Phe  Gly Met Ser Asn Phe  Ala Tyr Val
    1655                1660                1665

Lys Lys  Glu Ala Gly Ile Asn  Asp Met Phe Asn Phe  Glu Thr Phe
    1670                1675                1680
```

```
Gly Asn  Ser Met Ile Cys Leu  Phe Gln Ile Thr Thr  Ser Ala Gly
    1685                1690                1695

Trp Asp  Gly Leu Leu Ala Pro  Ile Leu Asn Ser Ala  Pro Pro Asp
    1700                1705                1710

Cys Asp  Pro Lys Lys Val His  Pro Gly Ser Ser Val  Glu Gly Asp
    1715                1720                1725

Cys Gly  Asn Pro Ser Val Gly  Ile Phe Tyr Phe Val  Ser Tyr Ile
    1730                1735                1740

Ile Ile  Ser Phe Leu Val Val  Val Asn Met Tyr Ile  Ala Val Ile
    1745                1750                1755

Leu Glu  Asn Phe Ser Val Ala  Thr Glu Glu Ser Thr  Glu Pro Leu
    1760                1765                1770

Ser Glu  Asp Asp Phe Glu Met  Phe Tyr Glu Val Trp  Glu Lys Phe
    1775                1780                1785

Asp Pro  Asp Ala Thr Gln Phe  Ile Glu Tyr Ser Lys  Leu Ser Asp
    1790                1795                1800

Phe Ala  Ala Ala Leu Asp Pro  Pro Leu Leu Ile Ala  Lys Pro Asn
    1805                1810                1815

Lys Val  Gln Leu Ile Ala Met  Asp Leu Pro Met Val  Ser Gly Asp
    1820                1825                1830

Arg Ile  His Cys Leu Asp Ile  Leu Phe Ala Phe Thr  Lys Arg Val
    1835                1840                1845

Leu Gly  Glu Gly Gly Glu Met  Asp Ser Leu Arg Ser  Gln Met Glu
    1850                1855                1860

Glu Arg  Phe Met Ser Ala Asn  Pro Ser Lys Val Ser  Tyr Glu Pro
    1865                1870                1875
```

```
Ile Thr  Thr Thr Leu Lys Arg  Lys Gln Glu Asp Val  Ser Ala Thr
    1880                1885                1890


Val Ile  Gln Arg Ala Tyr Arg  Arg Tyr Arg Leu Arg  Gln His Val
    1895                1900                1905


Lys Asn  Ile Ser Ser Ile Tyr  Ile Lys Asp Gly Asp  Arg Asp Asp
    1910                1915                1920


Asp Leu  Pro Asn Lys Glu His  Met Val Phe Asp Asn  Val Asn Glu
    1925                1930                1935


Asn Ser  Ser Pro Glu Lys Thr  Asp Ala Thr Pro Ser  Thr Val Ser
    1940                1945                1950


Pro Pro  Ser Tyr Asp Ser Val  Thr Lys Pro Asp Arg  Glu Lys Tyr
    1955                1960                1965


Glu Lys  Asp Lys Thr Glu Lys  Glu Asp Lys Gly Lys  Asp Gly Lys
    1970                1975                1980


Glu Gly  Lys Lys
    1985
```

<210>  35
<211>  1981
<212>  PRT
<213>  Camelus dromedarius

<400>  35

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


Lys Gln Ser Leu Ala Leu Ile Glu Gln Arg Ile Ala Glu Gly Lys Thr
            20                  25                  30


Lys Glu Pro Lys Glu Glu Lys Lys Asp Asp Asp Glu Glu Gly Pro Lys
```

```
        35                  40                  45

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

Asp Ile Pro Pro Gly Met Val Ser Glu Pro Leu Glu Asp Leu Asp Pro
65                  70                  75                  80

Tyr Tyr Ala Asp Lys Lys Thr Phe Ile Val Leu Asn Lys Gly Lys Ala
                85                  90                  95

Ile Phe Arg Phe Asn Ala Ala Pro Ala Leu Tyr Leu Leu Ser Pro Phe
            100                 105                 110

Asn Pro Leu Arg Arg Ile Ser Ile Lys Ile Leu Val His Ser Leu Phe
        115                 120                 125

Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Ile Phe Met Thr
    130                 135                 140

Leu Ser Ser Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr Phe Thr
145                 150                 155                 160

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

Cys Val Gly Glu Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp Leu Asp
            180                 185                 190

Phe Val Val Ile Val Phe Ala Tyr Leu Thr Glu Phe Val Asn Leu Gly
        195                 200                 205

Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu Lys Thr
    210                 215                 220

Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu Ile Gln
225                 230                 235                 240
```

```
Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe Cys Leu
                245                 250                 255

Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn Leu Lys
            260                 265                 270

His Lys Cys Val Trp Thr Pro Phe Glu Asn Asn Glu Thr Ile Glu Ser
        275                 280                 285

Met Leu Asp Ser Leu Asp Glu Glu Asp Arg Ser Lys Tyr Phe Tyr Tyr
    290                 295                 300

Leu Glu Gly Ser Lys Asp Ala Leu Leu Cys Gly Phe Ser Thr Asp Ser
305                 310                 315                 320

Gly Gln Cys Pro Glu Gly Tyr Thr Cys Met Lys Ile Gly Arg Asn Pro
                325                 330                 335

Asp Tyr Gly Tyr Thr Ser Phe Asp Thr Phe Ser Trp Ala Phe Leu Ala
            340                 345                 350

Leu Phe Arg Leu Met Thr Gln Asp Tyr Trp Glu Asn Leu Tyr Gln Gln
        355                 360                 365

Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met Ile Phe Phe Val Val Val
    370                 375                 380

Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn Leu Ile Leu Ala Val Val
385                 390                 395                 400

Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala Asn Ile Glu Glu Ala Arg
                405                 410                 415

Gln Lys Glu Ile Glu Phe Gln Gln Met Leu Asp His Leu Lys Lys Glu
            420                 425                 430

Gln Glu Glu Ala Glu Ala Ile Ala Met Ala Ala Ala Glu Tyr Thr Ser
```

```
        435                 440                 445

Ile Gly Arg Ser Arg Ile Met Gly Leu Ser Glu Ser Ser Ser Glu Thr
    450                 455                 460

Ser Arg Leu Ser Ser Lys Ser Ala Lys Glu Arg Arg Asn Arg Arg Lys
465                 470                 475                 480

Lys Arg Asn Gln Lys Lys Leu Ser Ser Gly Glu Glu Lys Gly Asp Asp
                485                 490                 495

Glu Lys Leu Ser Lys Ser Glu Ser Glu Glu Asn Ile Arg Arg Lys Ser
            500                 505                 510

Phe Arg Leu Gly Val Glu Gly Pro Trp Arg Ala His Glu Lys Arg Leu
        515                 520                 525

Ser Thr Pro Asn Gln Ser Pro Leu Ser Ile Arg Gly Ser Leu Phe Ser
    530                 535                 540

Ala Arg Arg Ser Ser Arg Thr Ser Leu Phe Ser Phe Lys Gly Arg Gly
545                 550                 555                 560

Lys Asp Ile Gly Ser Glu Thr Glu Phe Ala Asp Asp Glu His Ser Ile
                565                 570                 575

Phe Gly Asp Ser Glu Ser Arg Arg Gly Ser Leu Phe Val Pro His Arg
            580                 585                 590

Pro Arg Glu Arg Arg Ser Ser Ser Ile Ser Gln Ala Ser Arg Ser Pro
        595                 600                 605

Pro Val Leu Pro Val Asn Gly Lys Met His Ser Ala Val Asp Cys Asn
    610                 615                 620

Gly Val Val Ser Leu Val Asp Gly Pro Ala Ala Leu Met Leu Pro Asn
625                 630                 635                 640
```

```
Gly Gln Leu Leu Pro Glu Val Ile Ile Asp Lys Ala Thr Ser Asp Asp
                645                 650                 655

Ser Gly Thr Thr Asn Gln Ile His Lys Lys Arg Arg Pro Ser Ser Tyr
            660                 665                 670

Leu Leu Ser Glu Asp Met Leu Asn Asp Pro Asn Leu Arg Lys Arg Ala
        675                 680                 685

Met Ser Arg Ala Ser Ile Leu Thr Asn Thr Val Glu Glu Leu Glu Glu
    690                 695                 700

Ser Arg Gln Lys Cys Pro Pro Trp Trp Tyr Arg Phe Ala His Thr Phe
705                 710                 715                 720

Leu Ile Trp Asn Cys Ser Pro Tyr Trp Ile Lys Phe Lys Lys Val Ile
                725                 730                 735

Tyr Phe Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
            740                 745                 750

Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His His Pro Met Thr
        755                 760                 765

Asp Glu Phe Lys Asn Val Leu Thr Val Gly Asn Leu Val Phe Thr Gly
    770                 775                 780

Ile Phe Ala Ala Glu Met Val Leu Lys Leu Ile Ala Met Asp Pro Tyr
785                 790                 795                 800

Glu Tyr Phe Gln Val Gly Trp Asn Ile Phe Asp Ser Leu Ile Val Thr
                805                 810                 815

Leu Ser Leu Val Glu Leu Phe Leu Ala Asp Val Glu Gly Leu Ser Val
            820                 825                 830

Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
```

```
        835                 840                 845

Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
    850                 855                 860

Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
865                 870                 875                 880

Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Arg Glu Cys Val Cys
                885                 890                 895

Lys Ile Ser Glu Glu Cys Thr Leu Pro Arg Trp His Met Asn Asp Ser
            900                 905                 910

Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met
        915                 920                 925

Trp Asp Cys Met Glu Val Ala Gly Gln Ala Met Cys Leu Ile Val Tyr
    930                 935                 940

Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu
945                 950                 955                 960

Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Thr Ala Ile Glu
                965                 970                 975

Glu Asp Thr Asp Ala Asn Asn Leu Gln Ile Ala Val Ala Arg Ile Lys
            980                 985                 990

Lys Gly Ile Asn Tyr Val Lys Gln  Thr Leu His Glu Phe  Ile Leu Lys
        995                 1000                1005

Ala Phe  Ser Lys Lys Pro Lys  Val Ser Lys Glu Ile  Arg Arg Ala
    1010                1015                1020

Asp Leu  Asn Cys Lys Lys Glu  Asn Phe Ile Ser Asn  Arg Thr Leu
    1025                1030                1035
```

```
Ala Glu  Met Ser Lys Asp His  His Phe His Lys Glu  Lys Asp Lys
    1040                1045                1050

Thr Ser  Gly Phe Gly Asn Ser  Val Asp Lys Tyr Leu  Met Glu Glu
    1055                1060                1065

Ser Asp  Gly Gln Ser Phe Ile  His Asn Pro Ser Leu  Thr Val Thr
    1070                1075                1080

Val Pro  Ile Ala Pro Gly Glu  Ser Asp Leu Glu Ile  Met Asn Thr
    1085                1090                1095

Glu Glu  Leu Ser Ser Asp Ser  Asp Ser Glu Tyr Ser  Lys Gly Arg
    1100                1105                1110

Leu Asn  Arg Ser Ser Ser Ser  Glu Cys Ser Thr Val  Asp Asn Ala
    1115                1120                1125

Leu Pro  Glu Lys Glu Ala Glu  Ala Glu Pro Val Asn  Pro Asp Glu
    1130                1135                1140

Pro Ala  Ala Cys Phe Thr Asp  Gly Cys Val Arg Arg  Phe Pro Cys
    1145                1150                1155

Cys Gln  Val Asn Ile Glu Ser  Gly Lys Gly Arg Ile  Trp Trp Asn
    1160                1165                1170

Ile Arg  Lys Thr Cys Tyr Arg  Ile Val Glu His Ser  Trp Phe Glu
    1175                1180                1185

Ser Phe  Ile Val Leu Met Ile  Leu Leu Ser Ser Gly  Ala Leu Ala
    1190                1195                1200

Phe Glu  Asp Ile Tyr Ile Glu  Lys Lys Arg Thr Ile  Lys Thr Ile
    1205                1210                1215

Leu Glu  Tyr Ala Asp Lys Ile  Phe Thr Tyr Ile Phe  Ile Leu Glu
```

```
    1220                1225                1230

Met Leu  Leu Lys Trp Val Ala  Tyr Gly Tyr Lys Ile  Tyr Phe Thr
    1235                1240                1245

Asn Ala  Trp Cys Trp Leu Asp  Phe Leu Ile Val Asp  Val Ser Leu
    1250                1255                1260

Val Thr  Leu Val Ala Ala Ala  Phe Gly Tyr Ser Asp  Leu Gly Pro
    1265                1270                1275

Ile Arg  Ser Leu Arg Thr Leu  Arg Ala Leu Arg Pro  Leu Arg Ala
    1280                1285                1290

Leu Ser  Arg Phe Glu Gly Met  Arg Val Val Val Asn  Ala Leu Ile
    1295                1300                1305

Gly Ala  Ile Pro Ser Ile Met  Asn Val Leu Leu Val  Cys Leu Ile
    1310                1315                1320

Phe Trp  Leu Ile Phe Ser Ile  Met Gly Val Asn Leu  Phe Ala Gly
    1325                1330                1335

Lys Phe  Tyr Glu Cys Ile Asn  Thr Thr Asp Gly Ser  Arg Phe His
    1340                1345                1350

Thr Asn  Arg Val Glu Asn Arg  Ser Glu Cys Phe Ala  Leu Met Asn
    1355                1360                1365

Val Ser  Gln Asn Val Arg Trp  Lys Asn Leu Lys Val  Asn Phe Asp
    1370                1375                1380

Asn Val  Gly Leu Gly Tyr Leu  Ser Leu Leu Gln Val  Ala Thr Phe
    1385                1390                1395

Lys Gly  Trp Met Asp Ile Met  Tyr Ala Ala Val Asp  Ser Val Asn
    1400                1405                1410
```

```
Val Asp  Lys Gln Pro Ile Tyr  Glu Tyr Asn Leu Tyr  Met Tyr Ile
    1415                1420                1425

Tyr Phe  Val Ile Phe Ile Ile  Phe Gly Ser Phe Phe  Thr Leu Asn
    1430                1435                1440

Leu Phe  Ile Gly Val Ile Ile  Asp Asn Phe Asn Gln  Gln Lys Lys
    1445                1450                1455

Lys Leu  Gly Gly Gln Asp Ile  Phe Met Thr Glu Glu  Gln Lys Lys
    1460                1465                1470

Tyr Tyr  Asn Ala Met Lys Lys  Leu Gly Ser Lys Lys  Pro Gln Lys
    1475                1480                1485

Pro Ile  Pro Arg Pro Gly Asn  Lys Phe Gln Gly Cys  Ile Phe Asp
    1490                1495                1500

Leu Val  Thr Asn Gln Ala Phe  Asp Ile Thr Ile Met  Val Leu Ile
    1505                1510                1515

Cys Leu  Asn Met Val Thr Met  Met Val Glu Lys Glu  Gly Gln Ser
    1520                1525                1530

Glu Tyr  Met Thr Glu Val Leu  Tyr Trp Ile Asn Val  Val Phe Ile
    1535                1540                1545

Ile Leu  Phe Thr Gly Glu Phe  Val Leu Lys Leu Ile  Ser Leu Arg
    1550                1555                1560

Cys Tyr  Tyr Phe Thr Val Gly  Trp Asn Ile Phe Asp  Phe Val Val
    1565                1570                1575

Val Ile  Leu Ser Ile Val Gly  Met Phe Leu Ala Asp  Leu Ile Glu
    1580                1585                1590

Lys Tyr  Phe Val Ser Pro Thr  Leu Phe Arg Val Ile  Arg Leu Ala
```

```
    1595                1600                1605

Arg Ile  Gly Arg Ile Leu Arg  Leu Ile Lys Gly Ala  Lys Gly Ile
    1610                1615                1620

Arg Thr  Leu Leu Phe Ala Leu  Met Met Ser Leu Pro  Ala Leu Phe
    1625                1630                1635

Asn Ile  Gly Leu Leu Leu Phe  Leu Val Met Phe Ile  Tyr Ala Ile
    1640                1645                1650

Phe Gly  Met Ser Asn Phe Ala  Tyr Val Lys Lys Glu  Ala Gly Ile
    1655                1660                1665

Asn Asp  Met Phe Asn Phe Glu  Thr Phe Gly Asn Ser  Met Ile Cys
    1670                1675                1680

Leu Phe  Gln Ile Thr Thr Ser  Ala Gly Trp Asp Gly  Leu Leu Ala
    1685                1690                1695

Pro Ile  Leu Asn Ser Gly Pro  Pro Asp Cys Asp Pro  Lys Lys Val
    1700                1705                1710

His Pro  Gly Ser Ser Val Glu  Gly Asp Cys Gly Asn  Pro Ser Val
    1715                1720                1725

Gly Ile  Phe Tyr Phe Val Ser  Tyr Ile Ile Ile Ser  Phe Leu Val
    1730                1735                1740

Val Val  Asn Met Tyr Ile Ala  Val Ile Leu Glu Asn  Phe Ser Val
    1745                1750                1755

Ala Thr  Glu Glu Ser Thr Glu  Pro Leu Ser Glu Asp  Asp Phe Glu
    1760                1765                1770

Met Phe  Tyr Glu Val Trp Glu  Lys Phe Asp Pro Asp  Ala Thr Gln
    1775                1780                1785
```

```
Phe Ile  Glu Tyr Ser Lys Leu  Ser Asp Phe Ala Ala  Ala Leu Asp
    1790                1795                1800

Pro Pro  Leu Leu Ile Ala Lys  Pro Asn Lys Val Gln  Leu Ile Ala
    1805                1810                1815

Met Asp  Leu Pro Met Val Ser  Gly Asp Arg Ile His  Cys Leu Asp
    1820                1825                1830

Ile Leu  Phe Ala Phe Thr Lys  Arg Val Leu Gly Glu  Ser Gly Glu
    1835                1840                1845

Met Asp  Ser Leu Arg Leu Gln  Met Glu Glu Arg Phe  Met Ser Ala
    1850                1855                1860

Asn Pro  Ser Lys Val Ser Tyr  Glu Pro Ile Thr Thr  Thr Leu Lys
    1865                1870                1875

Arg Lys  Gln Glu Asp Val Ser  Ala Thr Val Ile Gln  Arg Ala Tyr
    1880                1885                1890

Arg Arg  Tyr Arg Leu Arg Gln  Asn Val Lys Asn Ile  Ser Ser Ile
    1895                1900                1905

Tyr Ile  Lys Asp Gly Gly Lys  Asp Asp Asp Leu Pro  Lys Lys Glu
    1910                1915                1920

Asp Thr  Val Phe Asp Asn Val  Asn Gly Asn Ser Ser  Pro Glu Lys
    1925                1930                1935

Thr Asp  Ala Thr Ser Ser Thr  Thr Ser Pro Pro Ser  Tyr Asp Ser
    1940                1945                1950

Val Thr  Lys Pro Asp Lys Glu  Lys Tyr Glu Lys Asp  Lys Thr Glu
    1955                1960                1965

Lys Glu  Asp Lys Gly Lys Asp  Gly Lys Glu Ser Lys  Lys
```

1970 1975 1980

<210> 36
<211> 1987
<212> PRT
<213> Orcinus orca

<400> 36

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

Lys Gln Ser Leu Ala Leu Ile Glu Gln Arg Ile Ala Glu Gly Lys Thr
20 25 30

Lys Glu Pro Lys Glu Glu Lys Lys Asp Asp Asp Glu Glu Gly Pro Lys
35 40 45

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

Asp Ile Pro Gln Gly Met Val Ser Glu Pro Leu Glu Asp Leu Asp Pro
65 70 75 80

Tyr Tyr Ala Asp Lys Lys Thr Phe Ile Val Leu Asn Lys Gly Lys Ala
85 90 95

Ile Phe Arg Phe Asn Ala Thr Pro Ala Leu Tyr Ile Leu Ser Pro Phe
100 105 110

Ser Pro Leu Arg Arg Ile Ser Ile Lys Ile Leu Val His Ser Ala Phe
115 120 125

Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Ile Phe Met Thr
130 135 140

Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr Phe Thr
145 150 155 160

```
Gly Ile Tyr Thr Phe Glu Ser Leu Val Lys Ile Leu Ala Arg Gly Phe
                165                 170                 175

Cys Val Gly Glu Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp Leu Asp
            180                 185                 190

Phe Ile Val Ile Val Phe Ala Tyr Leu Thr Glu Phe Val Asn Leu Gly
        195                 200                 205

Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu Lys Thr
    210                 215                 220

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

Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe Cys Leu
                245                 250                 255

Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn Leu Lys
            260                 265                 270

Gln Lys Cys Val Arg Thr Leu Leu Glu Asn Asn Glu Thr Ile Glu Ser
        275                 280                 285

Ile Leu Asn Thr Leu Asp Glu Glu Asp Tyr Gly Lys Tyr Phe Tyr Tyr
    290                 295                 300

Leu Glu Gly Ser Lys Asp Ala Leu Leu Cys Gly Phe Ser Thr Asp Ser
305                 310                 315                 320

Gly Gln Cys Pro Glu Gly Tyr Thr Cys Val Lys Val Gly Lys Asn Pro
                325                 330                 335

Asp Tyr Gly Tyr Thr Ser Phe Asp Thr Phe Ser Trp Ala Phe Leu Ala
            340                 345                 350

Leu Phe Arg Leu Met Thr Gln Asp Tyr Trp Glu Asn Leu Tyr Gln Gln
        355                 360                 365
```

```
Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met Ile Phe Phe Val Val Val
    370                 375                 380

Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn Leu Ile Leu Ala Val Val
385                 390                 395                 400

Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala Asn Ile Glu Glu Ala Arg
                405                 410                 415

Gln Lys Glu Leu Glu Phe Gln Gln Met Leu Asp Arg Leu Lys Lys Glu
            420                 425                 430

Gln Glu Glu Ala Glu Ala Ile Ala Met Ala Ala Ala Glu Tyr Thr Ser
        435                 440                 445

Ile Glu Arg Ser Arg Ile Met Gly Leu Ser Glu Ser Ser Ser Glu Thr
    450                 455                 460

Ser Lys Met Ser Ser Lys Ser Ala Lys Glu Arg Arg Asn Arg Arg Lys
465                 470                 475                 480

Lys Asn Asn Gln Lys Lys Leu Ser Ile Gly Glu Glu Lys Gly Asp Asp
                485                 490                 495

Glu Lys Leu Ser Lys Ser Glu Ser Glu Glu Ser Ile Arg Arg Lys Ser
            500                 505                 510

Phe His Leu Gly Val Glu Gly His Arg Arg Ala Arg Glu Lys Arg Phe
        515                 520                 525

Ser Thr Pro Asn Gln Ser Pro Leu Ser Ile His Gly Ser Leu Phe Ser
    530                 535                 540

Ala Arg Arg Ser Ser Arg Thr Ser Leu Phe Ser Phe Lys Gly Arg Gly
545                 550                 555                 560
```

```
Lys Asp Ile Gly Ser Glu Thr Glu Phe Ala Asp Asp Glu His Ser Ile
                565                 570                 575

Phe Gly Asp Asn Glu Ser Arg Arg Gly Ser Leu Phe Val Pro His Arg
            580                 585                 590

Pro Arg Glu Arg Arg Ser Ser Asn Ile Ser Gln Ala Ser Arg Ser Pro
        595                 600                 605

Pro Gly Leu Pro Val Asn Arg Lys Met His Ser Ala Val Asp Cys Asn
    610                 615                 620

Gly Val Val Ser Leu Val Asp Gly Pro Ser Ala Leu Met Leu Pro Asn
625                 630                 635                 640

Gly Gln Leu Leu Pro Glu Val Ile Ile Asp Lys Ala Thr Ser Asp Asp
                645                 650                 655

Ser Gly Thr Asn Asn Gln Ile His Lys Lys Arg Arg Ser Ser Ser Tyr
            660                 665                 670

Leu Leu Ser Glu Asp Met Leu Asn Asp Pro Asn Leu Arg Gln Arg Ala
        675                 680                 685

Met Ser Arg Ala Ser Ile Leu Thr Asn Thr Val Glu Glu Leu Glu Glu
    690                 695                 700

Ser Arg Gln Lys Cys Pro Pro Trp Trp Tyr Arg Phe Ala His Thr Phe
705                 710                 715                 720

Leu Ile Trp Asn Cys Ser Pro Tyr Trp Ile Lys Phe Lys Arg Leu Ile
                725                 730                 735

Tyr Phe Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
            740                 745                 750

Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His His Pro Met Thr
        755                 760                 765
```

```
Asp Glu Phe Lys Asn Val Leu Thr Val Gly Asn Leu Val Phe Thr Gly
    770                 775                 780

Ile Phe Ala Ala Glu Met Val Leu Lys Leu Ile Ala Met Asp Pro Tyr
785                 790                 795                 800

Glu Tyr Phe Gln Val Gly Trp Asn Ile Phe Asp Ser Leu Ile Val Thr
                805                 810                 815

Leu Ser Leu Val Glu Leu Phe Leu Ala Asp Val Glu Gly Leu Ser Val
            820                 825                 830

Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
        835                 840                 845

Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
    850                 855                 860

Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
865                 870                 875                 880

Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
                885                 890                 895

Lys Ile Asn Glu Asp Cys Thr Leu Pro Arg Trp His Met Asn Asp Phe
            900                 905                 910

Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
        915                 920                 925

Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Ala Met Cys Leu
    930                 935                 940

Ile Val Tyr Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn
945                 950                 955                 960
```

```
Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Thr
               965                 970                 975

Ala Ile Glu Glu Asp Thr Asp Ala Asn Asn Leu Gln Thr Ala Val Ala
           980                 985                 990

Arg Ile Lys Lys Gly Ile Asn Tyr  Val Lys Gln Thr Leu  Arg Glu Phe
        995                1000                1005

Phe Leu  Lys Gly Phe Ser Thr  Lys Pro Lys Ile Ser  Lys Glu Ile
    1010                1015                1020

Arg Arg  Thr Glu Asp Leu Asn  Tyr Lys Lys Glu Asn  Tyr Ile Ser
    1025                1030                1035

Asn His  Thr Leu Ala Glu Met  Ser Lys Asp His Asn  Phe His Lys
    1040                1045                1050

Glu Lys  Asp Lys Thr Ser Gly  Phe Gly Asn Ser Met  Asp Lys Tyr
    1055                1060                1065

Leu Val  Glu Glu Ser Asp Gly  Gln Ser Phe Ile His  Asn Ala Ser
    1070                1075                1080

Leu Thr  Val Thr Val Pro Ile  Ala Pro Gly Glu Ser  Asp Leu Glu
    1085                1090                1095

Ile Met  Asn Thr Glu Glu Leu  Ser Ser Asp Ser Asp  Ser Glu Tyr
    1100                1105                1110

Ser Lys  Gly Arg Leu Asn Gly  Ser Ser Ser Ser Glu  Cys Ser Thr
    1115                1120                1125

Val Asp  Asn Pro Val Pro Gly  Glu Gly Glu Glu Ala  Glu Ala Glu
    1130                1135                1140

Pro Val  Asn Ser Asp Glu Pro  Glu Ala Cys Phe Thr  Asp Gly Cys
    1145                1150                1155
```

```
Val Gln  Arg Leu Pro Cys Cys  Gln Val Asn Thr Glu  Ser Gly Lys
    1160                1165                1170

Gly Lys  Ile Trp Trp Asn Ile  Arg Lys Thr Cys Tyr  Arg Ile Val
    1175                1180                1185

Glu His  Ser Trp Phe Glu Ser  Phe Ile Val Leu Met  Ile Leu Leu
    1190                1195                1200

Ser Ser  Gly Ala Leu Ala Phe  Glu Asp Ile Tyr Ile  Glu Lys Lys
    1205                1210                1215

Lys Thr  Ile Lys Ile Ile Leu  Glu Tyr Ala Asp Lys  Ile Phe Thr
    1220                1225                1230

Tyr Ile  Phe Ile Leu Glu Met  Leu Leu Lys Trp Ile  Ala Tyr Gly
    1235                1240                1245

Tyr Lys  Thr Tyr Phe Thr Asn  Ala Trp Cys Trp Leu  Asp Phe Leu
    1250                1255                1260

Ile Val  Asp Val Ser Leu Val  Thr Leu Val Ala Asn  Thr Leu Gly
    1265                1270                1275

Tyr Ser  Asp Leu Gly Pro Ile  Lys Ser Leu Arg Thr  Leu Arg Ala
    1280                1285                1290

Leu Arg  Pro Leu Arg Ala Leu  Ser Arg Phe Glu Gly  Met Arg Val
    1295                1300                1305

Val Val  Asn Ala Leu Ile Gly  Ala Ile Pro Ser Ile  Met Asn Val
    1310                1315                1320

Leu Leu  Val Cys Leu Ile Phe  Trp Leu Ile Phe Ser  Ile Met Gly
    1325                1330                1335
```

```
Val Asn  Leu Phe Ala Gly Lys  Phe Tyr Gln Cys Val  Asn Thr Thr
    1340                1345                1350

Asp Gly  Ser Pro Phe Pro Thr  Ser Glu Val Glu Asn  Arg Ser Glu
    1355                1360                1365

Cys Phe  Ala Leu Met Asn Val  Ser Gln Asn Val Gln  Trp Lys Asn
    1370                1375                1380

Leu Lys  Val Asn Phe Asp Asn  Val Gly Leu Gly Tyr  Leu Ser Leu
    1385                1390                1395

Leu Gln  Val Ala Thr Phe Lys  Gly Trp Met Val Ile  Met Tyr Ala
    1400                1405                1410

Ala Val  Asp Ser Val Asn Val  Asp Arg Gln Pro Ile  Tyr Glu Tyr
    1415                1420                1425

Ser Leu  Tyr Met Tyr Ile Tyr  Phe Val Ile Phe Ile  Ile Phe Gly
    1430                1435                1440

Ser Phe  Phe Thr Leu Asn Leu  Phe Ile Gly Val Ile  Ile Asp Asn
    1445                1450                1455

Phe Asn  Gln Gln Lys Lys Lys  Leu Gly Gly Gln Asp  Ile Phe Met
    1460                1465                1470

Thr Glu  Glu Gln Lys Lys Tyr  Tyr Asn Ala Met Lys  Lys Leu Gly
    1475                1480                1485

Ser Lys  Lys Pro Gln Lys Pro  Ile Pro Arg Pro Gly  Asn Lys Phe
    1490                1495                1500

Gln Gly  Cys Ile Phe Asp Leu  Val Thr Asn Gln Ala  Phe Asp Ile
    1505                1510                1515

Ala Ile  Met Val Leu Ile Cys  Leu Asn Met Val Thr  Met Met Val
    1520                1525                1530
```

```
Glu Lys  Glu Gly Gln Ser Ala  Tyr Met Thr Glu Val  Leu Tyr Trp
    1535                1540                1545

Ile Asn  Val Val Phe Val Ile  Leu Phe Thr Gly Glu  Cys Val Leu
    1550                1555                1560

Lys Leu  Ile Ser Leu Arg Cys  Tyr Tyr Phe Thr Val  Gly Trp Asn
    1565                1570                1575

Ile Phe  Asp Phe Val Val Val  Ile Leu Ser Ile Val  Gly Met Phe
    1580                1585                1590

Leu Ala  Asp Leu Ile Glu Arg  Tyr Phe Val Ser Pro  Thr Leu Phe
    1595                1600                1605

Arg Val  Ile Arg Leu Ala Arg  Ile Gly Arg Ile Leu  Arg Leu Ile
    1610                1615                1620

Lys Gly  Ala Lys Gly Ile Arg  Thr Leu Leu Phe Ala  Leu Met Met
    1625                1630                1635

Ser Leu  Pro Ala Leu Phe Asn  Ile Gly Leu Leu Leu  Phe Leu Val
    1640                1645                1650

Met Phe  Ile Tyr Ala Ile Phe  Gly Met Ser Asn Phe  Ala Tyr Val
    1655                1660                1665

Lys Lys  Glu Ala Gly Ile Asn  Asp Met Phe Asn Phe  Glu Thr Phe
    1670                1675                1680

Gly Asn  Ser Met Ile Cys Leu  Phe Gln Ile Thr Thr  Ser Ala Gly
    1685                1690                1695

Trp Asp  Gly Leu Leu Ala Pro  Ile Leu Asn Ser Ala  Pro Pro Asp
    1700                1705                1710
```

```
Cys Asp  Pro Arg Lys Val His  Pro Gly Ser Ser Val  Glu Gly Asp
    1715                1720                1725

Cys Gly  Asn Pro Ser Val Gly  Ile Phe Tyr Phe Val  Ser Tyr Ile
    1730                1735                1740

Ile Ile  Ser Phe Leu Val Val  Val Asn Met Tyr Ile  Ala Val Ile
    1745                1750                1755

Leu Glu  Asn Phe Ser Val Ala  Thr Glu Glu Ser Thr  Glu Pro Leu
    1760                1765                1770

Ser Glu  Asp Asp Phe Glu Met  Phe Tyr Glu Val Trp  Glu Lys Phe
    1775                1780                1785

Asp Pro  Asp Ala Thr Gln Phe  Ile Glu Tyr Ser Lys  Leu Ser Asp
    1790                1795                1800

Phe Ala  Ala Ala Leu Asp Pro  Pro Leu Leu Val Ala  Lys Pro Asn
    1805                1810                1815

Lys Val  Gln Leu Ile Ala Met  Asp Leu Pro Met Val  Ser Gly Asp
    1820                1825                1830

Arg Ile  His Cys Leu Asp Ile  Leu Phe Ala Phe Thr  Lys Arg Val
    1835                1840                1845

Leu Gly  Glu Ser Gly Glu Met  Asp Ser Leu Arg Ser  Gln Met Glu
    1850                1855                1860

Glu Arg  Phe Met Ser Ala Asn  Pro Ser Lys Val Ser  Tyr Glu Pro
    1865                1870                1875

Ile Thr  Thr Thr Leu Lys Arg  Lys Gln Glu Asp Val  Ser Ala Thr
    1880                1885                1890

Val Ile  Gln Arg Ala Tyr Arg  Arg Tyr Arg Leu Arg  Gln Asn Val
    1895                1900                1905
```

```
Lys Asn  Ile Ser Ser Ile Tyr  Ile Lys Asp Gly Asp  Arg Asp Asp
    1910                1915                1920


Asp Leu  Pro Asn Lys Glu Asp  Met Val Phe Asp Asn  Val Asn Glu
    1925                1930                1935


Asn Ser  Ser Pro Glu Lys Thr  Asp Gly Thr Pro Ser  Thr Ile Ser
    1940                1945                1950


Pro Pro  Ser Tyr Asp Ser Val  Thr Lys Pro Asp Lys  Glu Lys Tyr
    1955                1960                1965


Glu Lys  Asp Lys Thr Glu Lys  Glu Asp Lys Gly Lys  Asp Gly Lys
    1970                1975                1980


Glu Gly  Lys Lys
    1985
```

<210>  37
<211>  1975
<212>  PRT
<213>  Equus caballus

<400>  37

```
Met Ala Met Leu Pro Pro Pro Gly Pro Gln Ser Phe Val Tyr Phe Thr
1               5                   10                  15


Lys Gln Ser Leu Ala Arg Ile Glu Gln Arg Ile Ala Glu Gly Lys Thr
            20                  25                  30


Lys Glu Pro Lys Glu Glu Lys Lys Asp Asp Asp Glu Glu Gly Pro Lys
        35                  40                  45


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


Asp Ile Pro Pro Gly Met Val Ser Glu Pro Leu Glu Asp Leu Asp Pro
```

```
65                  70                  75                  80

Tyr Tyr Ala Asp Lys Lys Thr Phe Ile Val Leu Asn Lys Gly Lys Ala
                85                  90                  95

Ile Phe Arg Phe Asn Ala Thr Pro Ala Leu Tyr Ile Leu Ser Pro Phe
            100                 105                 110

Ser Pro Leu Arg Arg Ile Ser Ile Lys Ile Leu Val His Ser Leu Phe
        115                 120                 125

Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Ile Phe Met Thr
    130                 135                 140

Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr Phe Thr
145                 150                 155                 160

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

Cys Ile Gly Glu Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp Leu Asp
            180                 185                 190

Phe Val Val Ile Val Phe Ala Tyr Leu Thr Glu Phe Val Asn Leu Gly
        195                 200                 205

Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu Lys Thr
    210                 215                 220

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

Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe Cys Leu
                245                 250                 255

Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn Leu Lys
            260                 265                 270
```

```
His Lys Cys Leu Arg Asn Pro Leu Glu Asn Asn Glu Thr Leu Glu Ser
        275                 280                 285

Ile Met Asp Thr Leu Glu Glu Glu Asp Phe Arg Lys Tyr Phe Tyr Tyr
    290                 295                 300

Leu Glu Gly Ser Lys Asp Ala Leu Leu Cys Gly Phe Ser Thr Asp Ser
305                 310                 315                 320

Gly Gln Cys Pro Glu Gly Tyr Ile Cys Val Lys Ala Gly Arg Asn Pro
                325                 330                 335

Asp Tyr Gly Tyr Thr Ser Phe Asp Thr Phe Ser Trp Ala Phe Leu Ala
            340                 345                 350

Leu Phe Arg Leu Met Thr Gln Asp Tyr Trp Glu Asn Leu Tyr Gln Gln
        355                 360                 365

Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met Ile Phe Phe Val Val Val
    370                 375                 380

Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn Leu Ile Leu Ala Val Val
385                 390                 395                 400

Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala Asn Ile Glu Glu Ala Arg
                405                 410                 415

Gln Lys Glu Leu Glu Phe Gln Gln Met Leu Asp Arg Leu Lys Lys Glu
            420                 425                 430

Gln Glu Glu Ala Glu Ala Ile Ala Met Ala Ala Ala Glu Tyr Thr Ser
        435                 440                 445

Ile Gly Arg Ser Arg Ile Met Gly Leu Ser Glu Ser Ser Ser Glu Thr
    450                 455                 460

Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu Arg Arg Asn Arg Arg Arg
```

```
465                 470                 475                 480

Lys Lys Asn Gln Lys Lys Leu Ser Ser Gly Glu Glu Lys Gly Asp Asp
                485                 490                 495

Glu Lys Leu Ser Lys Ser Glu Ser Glu Glu Ser Ile Arg Arg Lys Ser
            500                 505                 510

Phe His Leu Gly Ile Glu Gly His Arg Arg Ala His Glu Lys Arg Leu
        515                 520                 525

Ser Thr Pro Asn Gln Ser Pro Leu Ser Ile Arg Gly Ser Leu Phe Ser
    530                 535                 540

Ala Arg Arg Ser Ser Arg Thr Ser Leu Phe Ser Phe Lys Gly Arg Gly
545                 550                 555                 560

Lys Asp Ile Gly Ser Glu Thr Glu Phe Ala Asp Asp Glu His Ser Ile
                565                 570                 575

Phe Gly Asp Asn Glu Ser Arg Arg Gly Ser Leu Phe Val Pro His Arg
            580                 585                 590

Pro Arg Glu Arg Arg Ser Ser Asn Ile Ser Gln Ala Ser Arg Ser Pro
        595                 600                 605

Pro Met Leu Pro Val Asn Gly Lys Met His Ser Ala Val Asp Cys Asn
    610                 615                 620

Gly Val Val Ser Leu Val Asp Gly Pro Ser Ala Leu Met Leu Pro Asn
625                 630                 635                 640

Gly Gln Leu Leu Pro Glu Gly Thr Thr Asn Gln Ile His Lys Lys Arg
                645                 650                 655

Arg Ser Ser Ser Tyr Leu Leu Ser Glu Asp Met Leu Asn Asp Pro Asn
            660                 665                 670
```

```
Leu Arg Gln Arg Ala Met Ser Arg Ala Ser Ile Leu Thr Asn Thr Val
        675                 680                 685

Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro Trp Trp Tyr Arg
    690                 695                 700

Phe Ala His Thr Phe Leu Ile Trp Asn Cys Ser Pro Tyr Trp Ile Lys
705                 710                 715                 720

Phe Lys Lys Leu Ile His Phe Ile Val Met Asp Pro Phe Val Asp Leu
                725                 730                 735

Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu
            740                 745                 750

His His Pro Met Thr Asp Glu Phe Lys Asn Val Leu Thr Val Gly Asn
        755                 760                 765

Leu Val Phe Thr Gly Ile Phe Ala Ala Glu Met Val Leu Lys Leu Ile
    770                 775                 780

Ala Met Asp Pro Tyr Glu Tyr Phe Gln Val Gly Trp Asn Ile Phe Asp
785                 790                 795                 800

Ser Leu Ile Val Thr Leu Ser Leu Val Glu Leu Phe Leu Ala Asp Val
                805                 810                 815

Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys
            820                 825                 830

Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly
        835                 840                 845

Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile
    850                 855                 860

Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr
```

```
865                 870                 875                 880

Lys Glu Cys Val Cys Lys Ile Asn Glu Asp Cys Glu Leu Pro Arg Trp
                885                 890                 895

His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val Phe Arg Val Leu
            900                 905                 910

Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly
        915                 920                 925

Gln Ala Met Cys Leu Ile Val Tyr Met Met Val Met Val Ile Gly Asn
    930                 935                 940

Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser
945                 950                 955                 960

Ser Asp Asn Leu Thr Ala Ile Glu Glu Asp Thr Asp Thr Asn Asn Leu
                965                 970                 975

Gln Ile Ala Val Thr Arg Ile Lys Lys Gly Ile Asn Tyr Val Lys Gln
            980                 985                 990

Thr Leu Arg Glu Phe Ile Leu Lys  Ala Phe Ser Lys Lys  Pro Lys Ile
        995                 1000                1005

Ser Lys  Glu Ile Arg Arg Ala  Asp Leu Asn Ser Lys  Lys Glu Asn
    1010                1015                1020

Tyr Ile  Ser Asn Arg Thr Leu  Ala Glu Met Ser Lys  Asp His Asn
    1025                1030                1035

Phe His  Lys Asp Lys Asp Lys  Thr Gly Gly Phe Arg  Ser Ser Val
    1040                1045                1050

Asp Lys  Tyr Leu Met Glu Glu  Ser Asp Cys Gln Ser  Phe Ile His
    1055                1060                1065
```

```
Asn Pro  Ser Leu Thr Val Thr  Val Pro Ile Ala Pro  Gly Glu Ser
    1070                1075                1080

Asp Leu  Glu Asn Met Asn Thr  Glu Glu Leu Ser Ser  Asp Ser Glu
    1085                1090                1095

Ser Glu  Tyr Ser Lys Gly Arg  Leu Asn Gln Ser Ser  Ser Ser Glu
    1100                1105                1110

Cys Ser  Thr Val Asp Asn Pro  Leu Pro Gly Glu Gly  Glu Glu Ala
    1115                1120                1125

Glu Ala  Glu Pro Val Asn Ser  Asp Glu Pro Glu Ala  Cys Phe Thr
    1130                1135                1140

Asp Gly  Cys Val Gln Arg Phe  Pro Cys Cys Gln Val  Asn Ile Glu
    1145                1150                1155

Ser Glu  Lys Gly Lys Ile Trp  Trp Asn Ile Arg Lys  Thr Cys Tyr
    1160                1165                1170

Arg Ile  Val Glu His Ser Trp  Phe Glu Ser Phe Ile  Val Leu Met
    1175                1180                1185

Ile Leu  Leu Ser Ser Gly Ala  Leu Ala Phe Glu Asp  Ile Tyr Ile
    1190                1195                1200

Glu Lys  Lys Lys Asn Ile Lys  Ile Ile Leu Glu Tyr  Ala Asp Lys
    1205                1210                1215

Ile Phe  Thr Tyr Val Phe Ile  Leu Glu Met Leu Leu  Lys Trp Val
    1220                1225                1230

Ala Tyr  Gly Tyr Lys Thr Tyr  Phe Thr Asn Ala Trp  Cys Trp Leu
    1235                1240                1245

Asp Phe  Leu Ile Val Asp Val  Ser Leu Val Thr Leu  Val Ala Asn
```

```
    1250                1255                1260

Thr Leu  Gly Tyr Ser Asp Leu  Gly Pro Ile Lys Ser  Leu Arg Thr
    1265                1270                1275

Leu Arg  Ala Leu Arg Pro Leu  Arg Ala Leu Ser Arg  Phe Glu Gly
    1280                1285                1290

Met Arg  Val Val Val Asn Ala  Leu Ile Gly Ala Ile  Pro Ser Ile
    1295                1300                1305

Met Asn  Val Leu Leu Val Cys  Leu Ile Phe Trp Leu  Ile Phe Ser
    1310                1315                1320

Ile Met  Gly Val Asn Leu Phe  Ala Gly Lys Phe Tyr  Gln Cys Val
    1325                1330                1335

Asn Thr  Thr Asp Gly Ser Arg  Phe Leu Thr Asn Glu  Val Gln Asn
    1340                1345                1350

Arg Ser  Asp Cys Phe Ala Leu  Met Asn Val Ser Gln  Asn Val Arg
    1355                1360                1365

Trp Lys  Asn Leu Lys Val Asn  Phe Asp Asn Val Gly  Leu Gly Tyr
    1370                1375                1380

Leu Ser  Leu Leu Gln Val Ala  Thr Phe Lys Gly Trp  Met Asp Ile
    1385                1390                1395

Met Tyr  Ala Ala Val Asp Ser  Val Asn Val Asp Lys  Gln Pro Ile
    1400                1405                1410

Tyr Glu  Tyr Ser Leu Tyr Met  Tyr Ile Tyr Phe Val  Ile Phe Ile
    1415                1420                1425

Ile Phe  Gly Ser Phe Phe Thr  Leu Asn Leu Phe Ile  Gly Val Ile
    1430                1435                1440
```

```
Ile Asp  Asn Phe Asn Gln Gln  Lys Lys Lys Leu Gly  Gly Gln Asp
    1445                1450                1455

Ile Phe  Met Thr Glu Glu Gln  Lys Lys Tyr Tyr Asn  Ala Met Lys
    1460                1465                1470

Lys Leu  Gly Ser Lys Lys Pro  Gln Lys Pro Ile Pro  Arg Pro Gly
    1475                1480                1485

Asn Lys  Phe Gln Gly Cys Ile  Phe Asp Leu Val Thr  Asn Gln Ala
    1490                1495                1500

Phe Asp  Ile Ser Ile Met Val  Leu Ile Cys Leu Asn  Met Val Thr
    1505                1510                1515

Met Met  Val Glu Lys Glu Gly  Gln Ser Asp Tyr Met  Thr Asp Val
    1520                1525                1530

Leu Tyr  Trp Ile Asn Val Val  Phe Ile Ile Leu Phe  Thr Gly Glu
    1535                1540                1545

Cys Val  Leu Lys Leu Val Ser  Leu Arg His Tyr Tyr  Phe Thr Val
    1550                1555                1560

Gly Trp  Asn Ile Phe Asp Phe  Val Val Val Ile Leu  Ser Ile Val
    1565                1570                1575

Gly Met  Phe Leu Ala Asp Leu  Ile Glu Lys Tyr Phe  Val Ser Pro
    1580                1585                1590

Thr Leu  Phe Arg Val Ile Arg  Leu Ala Arg Ile Gly  Arg Ile Leu
    1595                1600                1605

Arg Leu  Ile Lys Gly Ala Lys  Gly Ile Arg Thr Leu  Leu Phe Ala
    1610                1615                1620

Leu Met  Met Ser Leu Pro Ala  Leu Phe Asn Ile Gly  Leu Leu Leu
```

```
    1625                1630                1635

Phe Leu  Val Met Phe Ile Tyr  Ala Ile Phe Gly Met  Ser Asn Phe
    1640                1645                1650

Ala Tyr  Val Lys Lys Glu Ala  Gly Ile Asn Asp Met  Phe Asn Phe
    1655                1660                1665

Glu Thr  Phe Gly Asn Ser Met  Ile Cys Leu Phe Gln  Ile Thr Thr
    1670                1675                1680

Ser Ala  Gly Trp Asp Gly Leu  Leu Ala Pro Ile Leu  Asn Ser Ala
    1685                1690                1695

Pro Pro  Asp Cys Asp Pro Arg  Lys Val His Pro Gly  Ser Ser Val
    1700                1705                1710

Glu Gly  Asp Cys Gly Asn Pro  Ser Val Gly Ile Phe  Tyr Phe Val
    1715                1720                1725

Ser Tyr  Ile Ile Ile Ser Phe  Leu Val Val Val Asn  Met Tyr Ile
    1730                1735                1740

Ala Val  Ile Leu Glu Asn Phe  Ser Val Ala Thr Glu  Glu Ser Thr
    1745                1750                1755

Glu Pro  Leu Ser Glu Asp Asp  Phe Glu Met Phe Tyr  Glu Val Trp
    1760                1765                1770

Glu Lys  Phe Asp Pro Asp Ala  Thr Gln Phe Ile Glu  Phe Ser Lys
    1775                1780                1785

Leu Ser  Asp Phe Ala Ala Ala  Leu Asp Pro Pro Leu  Leu Ile Ala
    1790                1795                1800

Lys Pro  Asn Lys Val Gln Leu  Ile Ala Met Asp Leu  Pro Met Val
    1805                1810                1815
```

```
Ser Gly  Asp Arg Ile His Cys  Leu Asp Ile Leu Phe  Ala Phe Thr
    1820                1825                1830

Lys Arg  Val Leu Gly Glu Ser  Gly Glu Met Asp Ser  Leu Arg Ser
    1835                1840                1845

Gln Met  Glu Glu Arg Phe Met  Ser Ala Asn Pro Ser  Lys Val Ser
    1850                1855                1860

Tyr Glu  Pro Ile Thr Thr Thr  Leu Lys Arg Lys Gln  Glu Asp Val
    1865                1870                1875

Ser Ala  Thr Val Ile Gln Arg  Ala Tyr Arg Arg Tyr  Arg Leu Arg
    1880                1885                1890

Gln Asn  Val Lys Asn Ile Ser  Ser Ile Tyr Ile Lys  Asp Gly Glu
    1895                1900                1905

Arg Asp  Asp Asp Leu Pro Ser  Lys Lys Asp Met Val  Phe Asp Asn
    1910                1915                1920

Val Asn  Glu Asn Ser Ser Thr  Glu Lys Thr Asp Ala  Thr Pro Ser
    1925                1930                1935

Thr Val  Ser Pro Pro Ser Tyr  Asp Ser Val Thr Lys  Pro Asp Lys
    1940                1945                1950

Glu Lys  Tyr Glu Lys Asp Lys  Thr Glu Lys Glu Asp  Lys Glu Lys
    1955                1960                1965

Asp Gly  Lys Glu Ser Lys Lys
    1970                1975
```

<210>  38
<211>  1986
<212>  PRT
<213>  Canis lupus

<400> 38

```
Met Ala Thr Leu Pro Pro Pro Gly Pro Gln Ser Phe Val Tyr Phe Thr
1               5                  10                  15

Lys Gln Ser Leu Ala Leu Ile Glu Gln Arg Ile Ala Glu Gly Lys Thr
            20                  25                  30

Lys Glu Pro Lys Glu Glu Lys Lys Asp Asp Asp Glu Glu Gly Pro Arg
        35                  40                  45

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

Asp Ile Pro Pro Gly Met Val Ser Glu Pro Leu Glu Asp Leu Asp Pro
65                  70                  75                  80

Tyr Tyr Ala Asp Lys Lys Thr Phe Ile Val Leu Asn Lys Gly Lys Ala
                85                  90                  95

Ile Phe Arg Phe Asn Ala Thr Pro Ala Leu Tyr Met Leu Ser Pro Phe
            100                 105                 110

Ser Pro Leu Arg Arg Ile Ser Ile Lys Ile Leu Val His Ser Leu Phe
        115                 120                 125

Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Ile Phe Met Thr
    130                 135                 140

Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr Phe Thr
145                 150                 155                 160

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

Cys Val Gly Glu Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp Leu Asp
            180                 185                 190
```

```
Phe Val Val Ile Val Phe Ala Tyr Leu Thr Glu Phe Val Asn Leu Gly
        195                 200                 205

Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu Lys Thr
    210                 215                 220

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

Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe Cys Leu
                245                 250                 255

Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn Leu Lys
            260                 265                 270

His Lys Cys Leu Arg Asp Pro Leu Asp Asp Asn Glu Thr Leu Thr Ser
        275                 280                 285

Leu Leu Asp Thr Leu Glu Glu Glu Asp Tyr Lys Lys Tyr Phe Tyr Tyr
    290                 295                 300

Leu Glu Gly Ser Lys Asp Ala Leu Leu Cys Gly Leu Ser Thr Asp Ser
305                 310                 315                 320

Gly Gln Cys Pro Glu Gly Tyr Lys Cys Val Lys Ala Gly Arg Asn Pro
                325                 330                 335

Asp Tyr Gly Tyr Thr Ser Phe Asp Thr Phe Ser Trp Ala Phe Leu Ala
            340                 345                 350

Leu Phe Arg Leu Met Thr Gln Asp Tyr Trp Glu Asn Leu Tyr Gln Gln
        355                 360                 365

Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met Ile Phe Phe Val Val Val
    370                 375                 380

Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn Leu Ile Leu Ala Val Val
385                 390                 395                 400
```

```
Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala Asn Ile Glu Glu Ala Arg
               405                 410                 415

Gln Lys Glu Leu Glu Phe Gln Gln Met Leu Asp Arg Leu Lys Lys Glu
            420                 425                 430

Gln Glu Glu Ala Glu Ala Ile Ala Ile Ala Ala Ala Glu Tyr Thr Ser
        435                 440                 445

Ile Gly Arg Ser Arg Met Met Gly Phe Ser Glu Ser Ser Ser Glu Thr
    450                 455                 460

Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu Arg Arg Asn Arg Arg Lys
465                 470                 475                 480

Lys Arg Asn Gln Lys Lys Leu Ser Ser Gly Glu Glu Lys Gly Asp Asn
               485                 490                 495

Glu Lys Leu Ser Lys Ser Glu Ser Glu Glu Ser Ile Arg Arg Gln Ser
            500                 505                 510

Phe His Leu Gly Val Glu Gly His Arg Arg Ala Arg Glu Lys Arg Leu
        515                 520                 525

Ser Thr Pro Asn Gln Ser Pro Leu Ser Ile Arg Gly Ser Leu Phe Ser
    530                 535                 540

Gly Arg Arg Ser Ser Arg Thr Ser Leu Phe Ser Phe Lys Gly Arg Gly
545                 550                 555                 560

Lys Asp Ile Gly Ser Glu Thr Glu Phe Ala Asp Asp Glu His Ser Ile
               565                 570                 575

Phe Gly Asp Ser Glu Ser Arg Arg Gly Ser Leu Phe Val Pro His Arg
            580                 585                 590
```

```
Pro Arg Glu Arg Arg Ser Ser Asn Ile Ser Gln Ala Ser Arg Ser Pro
        595                 600                 605

Pro Val Leu Pro Val Asn Gly Lys Met His Ser Ala Val Asp Cys Asn
    610                 615                 620

Gly Val Val Ser Leu Val Asp Gly Pro Ser Ala Leu Met Leu Pro Asn
625                 630                 635                 640

Gly Gln Leu Leu Pro Glu Val Ile Ile Asp Lys Ala Thr Ser Asp Asp
                645                 650                 655

Ser Gly Thr Thr Asn Gln Ile His Lys Lys Arg Arg Ser Ser Ser Tyr
            660                 665                 670

Leu Leu Ser Glu Asp Met Leu Asn Asp Pro Asn Leu Arg Gln Arg Ala
        675                 680                 685

Met Ser Arg Val Ser Ile Leu Thr Asn Thr Val Glu Glu Leu Glu Glu
    690                 695                 700

Ser Arg Gln Lys Cys Pro Pro Trp Trp Tyr Arg Phe Ala His Thr Phe
705                 710                 715                 720

Leu Ile Trp Asn Cys Ser Pro Tyr Trp Ile Lys Phe Lys Lys Leu Val
                725                 730                 735

Tyr Phe Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
            740                 745                 750

Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His His Pro Met Thr
        755                 760                 765

Asp Glu Phe Lys Asn Val Leu Thr Val Gly Asn Leu Val Phe Thr Gly
    770                 775                 780

Ile Phe Ala Ala Glu Met Val Leu Lys Leu Ile Ala Met Asp Pro Tyr
785                 790                 795                 800
```

```
Glu Tyr Phe Gln Val Gly Trp Asn Ile Phe Asp Ser Leu Ile Val Thr
                805                 810                 815

Leu Ser Leu Val Glu Leu Phe Leu Ala Asp Val Glu Gly Leu Ser Val
            820                 825                 830

Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
        835                 840                 845

Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
    850                 855                 860

Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
865                 870                 875                 880

Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
                885                 890                 895

Lys Ile Asn Glu Asp Cys Thr Leu Pro Arg Trp His Met Asn Asp Phe
            900                 905                 910

Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
        915                 920                 925

Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Ala Met Cys Leu
    930                 935                 940

Ile Val Tyr Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn
945                 950                 955                 960

Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Thr
                965                 970                 975

Ala Ile Glu Glu Asp Thr Asp Ala Asn Asn Leu Gln Ile Ala Val Ala
            980                 985                 990
```

```
Arg Ile Lys Lys Gly Val Asn Tyr  Val Lys Gln Thr Leu  Arg Glu Phe
        995                 1000                1005


Ile Leu  Lys Ala Phe Ser Lys  Lys Pro Lys Ile Ser  Lys Asp Thr
    1010                1015                1020


Arg Arg  Ala Glu Asp Gln Asn  Ser Lys Lys Glu Asn  Cys Ile Ser
    1025                1030                1035


Asn Arg  Thr Leu Ala Glu Met  Asn Lys Asp His Asn  Phe His Lys
    1040                1045                1050


Glu Lys  Glu Lys Ile Ser Gly  Phe Gly Ser Ser Met  Asp Lys Tyr
    1055                1060                1065


Leu Met  Glu Glu Ser Asp Cys  Gln Ser Phe Ile His  Asn Pro Ser
    1070                1075                1080


Leu Thr  Val Thr Val Pro Ile  Ala Pro Gly Glu Ser  Asp Leu Glu
    1085                1090                1095


Asn Met  Asn Thr Glu Glu Leu  Ser Ser Asp Ser Asp  Ser Glu Tyr
    1100                1105                1110


Ser Lys  Gly Arg Leu Asn Arg  Ser Ser Ser Ser Glu  Cys Ser Thr
    1115                1120                1125


Val Asp  Asn Pro Leu Pro Gly  Glu Gly Glu Glu Ala  Glu Ala Glu
    1130                1135                1140


Pro Val  Asn Ser Asp Glu Pro  Glu Ala Cys Phe Thr  Asp Gly Cys
    1145                1150                1155


Val Arg  Arg Phe Pro Cys Cys  Gln Val Asp Ile Glu  Ser Gly Lys
    1160                1165                1170


Gly Lys  Ile Trp Trp Asn Ile  Arg Lys Thr Cys Tyr  Arg Ile Val
    1175                1180                1185
```

```
Glu His  Ser Trp Phe Glu Ser  Phe Ile Val Leu Met  Ile Leu Leu
    1190                1195                1200

Ser Ser  Gly Ala Leu Ala Phe  Glu Asp Ile Tyr Ile  Glu Lys Lys
    1205                1210                1215

Lys Thr  Ile Lys Ile Ile Leu  Glu Tyr Ala Asp Lys  Ile Phe Thr
    1220                1225                1230

Tyr Ile  Phe Ile Leu Glu Met  Leu Leu Lys Trp Val  Ala Tyr Gly
    1235                1240                1245

Tyr Lys  Thr Tyr Phe Thr Asn  Ala Trp Cys Trp Leu  Asp Phe Leu
    1250                1255                1260

Ile Val  Asp Val Ser Leu Val  Thr Leu Val Ala Asn  Thr Leu Gly
    1265                1270                1275

Tyr Ser  Asp Leu Gly Pro Ile  Lys Ser Leu Arg Thr  Leu Arg Ala
    1280                1285                1290

Leu Arg  Pro Leu Arg Ala Leu  Ser Arg Phe Glu Gly  Met Arg Val
    1295                1300                1305

Val Val  Asn Ala Leu Ile Gly  Ala Ile Pro Ser Ile  Met Asn Val
    1310                1315                1320

Leu Leu  Val Cys Leu Ile Phe  Trp Leu Ile Phe Ser  Ile Met Gly
    1325                1330                1335

Val Asn  Leu Phe Ala Gly Lys  Phe Tyr Glu Cys Val  Asn Thr Thr
    1340                1345                1350

Asp Gly  Ser Arg Phe Pro Thr  Asn Leu Val Gln Asn  His Ser Asp
    1355                1360                1365
```

```
Cys Phe  Ala Leu Met Asn Val  Ser Gln Asn Val Arg  Trp Lys Asn
    1370                1375                1380

Leu Lys  Val Asn Phe Asp Asn  Val Gly Leu Gly Tyr  Leu Ser Leu
    1385                1390                1395

Leu Gln  Val Ala Thr Phe Lys  Gly Trp Met Asp Ile  Met Tyr Ala
    1400                1405                1410

Ala Val  Asp Ser Val Asn Val  Asp Lys Gln Pro Ile  Tyr Glu Tyr
    1415                1420                1425

Asn Leu  Tyr Met Tyr Ile Tyr  Phe Val Ile Phe Ile  Ile Phe Gly
    1430                1435                1440

Ser Phe  Phe Thr Leu Asn Leu  Phe Ile Gly Val Ile  Ile Asp Asn
    1445                1450                1455

Phe Asn  Gln Gln Lys Lys Lys  Leu Gly Gly Gln Asp  Ile Phe Met
    1460                1465                1470

Thr Glu  Glu Gln Lys Lys Tyr  Tyr Asn Ala Met Lys  Lys Leu Gly
    1475                1480                1485

Ser Lys  Lys Pro Gln Lys Pro  Ile Pro Arg Pro Gly  Asn Lys Phe
    1490                1495                1500

Gln Gly  Cys Ile Phe Asp Leu  Val Thr Asn Gln Val  Phe Asp Ile
    1505                1510                1515

Thr Ile  Met Val Leu Ile Cys  Leu Asn Met Val Thr  Met Met Val
    1520                1525                1530

Glu Lys  Glu Gly Gln Ser Lys  Tyr Met Thr Asp Val  Leu Tyr Trp
    1535                1540                1545

Ile Asn  Val Val Phe Ile Ile  Leu Phe Thr Gly Glu  Cys Val Leu
    1550                1555                1560
```

```
Lys Leu  Ile Ser Leu Arg His  Tyr Tyr Phe Thr Val  Gly Trp Asn
    1565                1570                1575

Ile Phe  Asp Phe Val Val Val  Ile Leu Ser Ile Val  Gly Met Phe
    1580                1585                1590

Leu Ala  Glu Leu Ile Glu Lys  Tyr Phe Val Ser Pro  Thr Leu Phe
    1595                1600                1605

Arg Val  Ile Arg Leu Ala Arg  Ile Gly Arg Ile Leu  Arg Leu Ile
    1610                1615                1620

Lys Gly  Ala Lys Gly Ile Arg  Thr Leu Leu Phe Ala  Leu Met Met
    1625                1630                1635

Ser Leu  Pro Ala Leu Phe Asn  Ile Gly Leu Leu Leu  Phe Leu Val
    1640                1645                1650

Met Phe  Ile Tyr Ala Ile Phe  Gly Met Ser Asn Phe  Ala Tyr Val
    1655                1660                1665

Lys Lys  Glu Ala Gly Ile Asn  Asp Met Phe Asn Phe  Glu Thr Phe
    1670                1675                1680

Gly Asn  Ser Met Ile Cys Leu  Phe Gln Ile Thr Thr  Ser Ala Gly
    1685                1690                1695

Trp Asp  Gly Leu Leu Ala Pro  Ile Leu Asn Ser Ala  Pro Pro Asp
    1700                1705                1710

Cys Asp  Pro Lys Lys Val His  Pro Gly Ser Ser Val  Glu Gly Asp
    1715                1720                1725

Cys Gly  Asn Pro Ser Val Gly  Ile Phe Tyr Phe Val  Ser Tyr Ile
    1730                1735                1740
```

```
Ile Ile  Ser Phe Leu Val Val  Val Asn Met Tyr Ile  Ala Val Ile
    1745                1750                1755

Leu Glu  Asn Phe Ser Val Ala  Thr Glu Glu Ser Thr  Glu Pro Leu
    1760                1765                1770

Ser Glu  Asp Asp Phe Glu Met  Phe Tyr Glu Val Trp  Glu Lys Phe
    1775                1780                1785

Asp Pro  Asp Ala Thr Gln Phe  Ile Glu Tyr Ser Lys  Leu Ser Asp
    1790                1795                1800

Phe Ala  Ala Ala Leu Asp Pro  Pro Leu Leu Ile Ala  Lys Pro Asn
    1805                1810                1815

Lys Val  Gln Leu Ile Ala Met  Asp Leu Pro Met Val  Ser Gly Asp
    1820                1825                1830

Arg Ile  His Cys Leu Asp Ile  Leu Phe Ala Phe Thr  Lys Arg Val
    1835                1840                1845

Leu Gly  Glu Ser Gly Glu Met  Asp Ser Leu Arg Ser  Gln Met Glu
    1850                1855                1860

Glu Arg  Phe Met Ser Ala Asn  Pro Ser Lys Val Ser  Tyr Glu Pro
    1865                1870                1875

Ile Thr  Thr Thr Leu Lys Arg  Lys Gln Glu Asp Val  Ser Ala Thr
    1880                1885                1890

Val Ile  Gln Arg Ala Tyr Arg  Arg Tyr Arg Leu Arg  Gln Asn Val
    1895                1900                1905

Lys Asn  Ile Ser Ser Ile Tyr  Ile Lys Asp Gly Asp  Arg Asp Asp
    1910                1915                1920

Asp Leu  Pro Asn Lys Glu Asp  Met Val Phe Asp Asn  Ile Glu Asn
    1925                1930                1935
```

```
Ser Ser  Pro Glu Lys Thr Asp  Ala Thr Pro Ser Thr  Val Ser Pro
    1940                1945                1950


Pro Ser  Tyr Asp Ser Val Thr  Lys Pro Asp Lys Glu  Lys Tyr Glu
    1955                1960                1965


Lys Asp  Lys Thr Glu Lys Glu  Asp Lys Gly Lys Asp  Gly Lys Glu
    1970                1975                1980


Ser Lys  Lys
    1985
```

<210>  39
<211>  1984
<212>  PRT
<213>  Rattus norvegicus

<400>  39

```
Met Ala Met Leu Pro Pro Pro Gly Pro Gln Ser Phe Val His Phe Thr
1               5                   10                  15


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


Lys Glu His Lys Asp Glu Lys Lys Asp Asp Glu Glu Glu Gly Pro Lys
        35                  40                  45


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


Asp Ile Pro Pro Gly Met Val Ser Glu Pro Leu Glu Asp Leu Asp Pro
65                  70                  75                  80


Tyr Tyr Ala Asp Lys Lys Thr Phe Ile Val Leu Asn Lys Gly Lys Ala
                85                  90                  95


Ile Phe Arg Phe Asn Ala Thr Pro Ala Leu Tyr Met Leu Ser Pro Phe
```

```
            100                 105                 110

Ser Pro Leu Arg Arg Ile Ser Ile Lys Ile Leu Val His Ser Leu Phe
        115                 120                 125

Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Ile Phe Met Thr
    130                 135                 140

Leu Ser Asn Pro Pro Glu Trp Thr Lys Asn Val Glu Tyr Thr Phe Thr
145                 150                 155                 160

Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala Arg Gly Phe
                165                 170                 175

Cys Val Gly Glu Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp Leu Asp
            180                 185                 190

Phe Val Val Ile Val Phe Ala Tyr Leu Thr Glu Phe Val Asn Leu Gly
        195                 200                 205

Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu Lys Thr
    210                 215                 220

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

Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe Cys Leu
                245                 250                 255

Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn Leu Lys
            260                 265                 270

His Lys Cys Phe Arg Lys Glu Leu Glu Glu Asn Glu Thr Leu Glu Ser
        275                 280                 285

Ile Met Asn Thr Ala Glu Ser Glu Glu Glu Leu Lys Lys Tyr Phe Tyr
    290                 295                 300
```

```
Tyr Leu Glu Gly Ser Lys Asp Ala Leu Leu Cys Gly Phe Ser Thr Asp
305                 310                 315                 320

Ser Gly Gln Cys Pro Glu Gly Tyr Ile Cys Val Lys Ala Gly Arg Asn
                325                 330                 335

Pro Asp Tyr Gly Tyr Thr Ser Phe Asp Thr Phe Ser Trp Ala Phe Leu
            340                 345                 350

Ala Leu Phe Arg Leu Met Thr Gln Asp Tyr Trp Glu Asn Leu Tyr Gln
        355                 360                 365

Gln Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met Ile Phe Phe Val Val
    370                 375                 380

Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn Leu Ile Leu Ala Val
385                 390                 395                 400

Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala Asn Ile Glu Glu Ala
                405                 410                 415

Lys Gln Lys Glu Leu Glu Phe Gln Gln Met Leu Asp Arg Leu Lys Lys
            420                 425                 430

Glu Gln Glu Glu Ala Glu Ala Ile Ala Ala Ala Ala Ala Glu Phe Thr
        435                 440                 445

Ser Ile Gly Arg Ser Arg Ile Met Gly Leu Ser Glu Ser Ser Ser Glu
    450                 455                 460

Thr Ser Arg Leu Ser Ser Lys Ser Ala Lys Glu Arg Arg Asn Arg Arg
465                 470                 475                 480

Lys Lys Lys Lys Gln Lys Met Ser Ser Gly Glu Glu Lys Gly Asp Asp
                485                 490                 495

Glu Lys Leu Ser Lys Ser Gly Ser Glu Glu Ser Ile Arg Lys Lys Ser
```

```
            500                 505                 510

Phe His Leu Gly Val Glu Gly His His Arg Thr Arg Glu Lys Arg Leu
        515                 520                 525

Ser Thr Pro Asn Gln Ser Pro Leu Ser Ile Arg Gly Ser Leu Phe Ser
    530                 535                 540

Ala Arg Arg Ser Ser Arg Thr Ser Leu Phe Ser Phe Lys Gly Arg Gly
545                 550                 555                 560

Arg Asp Leu Gly Ser Glu Thr Glu Phe Ala Asp Asp Glu His Ser Ile
                565                 570                 575

Phe Gly Asp Asn Glu Ser Arg Arg Gly Ser Leu Phe Val Pro His Arg
            580                 585                 590

Pro Arg Glu Arg Arg Ser Ser Asn Ile Ser Gln Ala Ser Arg Ser Pro
        595                 600                 605

Pro Val Leu Pro Val Asn Gly Lys Met His Ser Ala Val Asp Cys Asn
    610                 615                 620

Gly Val Val Ser Leu Val Asp Gly Pro Ser Ala Leu Met Leu Pro Asn
625                 630                 635                 640

Gly Gln Leu Leu Pro Glu Val Ile Ile Asp Lys Ala Thr Ser Asp Asp
                645                 650                 655

Ser Gly Thr Thr Asn Gln Met Arg Lys Lys Arg Leu Ser Ser Ser Tyr
            660                 665                 670

Phe Leu Ser Glu Asp Met Leu Asn Asp Pro His Leu Arg Gln Arg Ala
        675                 680                 685

Met Ser Arg Ala Ser Ile Leu Thr Asn Thr Val Glu Glu Leu Glu Glu
    690                 695                 700
```

```
Ser Arg Gln Lys Cys Pro Pro Trp Trp Tyr Arg Phe Ala His Thr Phe
705                 710                 715                 720


Leu Ile Trp Asn Cys Ser Pro Tyr Trp Ile Lys Phe Lys Lys Leu Ile
                725                 730                 735


Tyr Phe Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
            740                 745                 750


Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His His Pro Met Thr
        755                 760                 765


Glu Glu Phe Lys Asn Val Leu Ala Val Gly Asn Leu Ile Phe Thr Gly
    770                 775                 780


Ile Phe Ala Ala Glu Met Val Leu Lys Leu Ile Ala Met Asp Pro Tyr
785                 790                 795                 800


Glu Tyr Phe Gln Val Gly Trp Asn Ile Phe Asp Ser Leu Ile Val Thr
                805                 810                 815


Leu Ser Leu Ile Glu Leu Phe Leu Ala Asp Val Glu Gly Leu Ser Val
            820                 825                 830


Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
        835                 840                 845


Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
    850                 855                 860


Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
865                 870                 875                 880


Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
                885                 890                 895


Lys Ile Asn Val Asp Cys Lys Leu Pro Arg Trp His Met Asn Asp Phe
```

```
            900                 905                 910

Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
        915                 920                 925

Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
    930                 935                 940

Ile Val Tyr Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn
945                 950                 955                 960

Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Thr
                965                 970                 975

Ala Ile Glu Glu Asp Thr Asp Ala Asn Asn Leu Gln Ile Ala Val Ala
            980                 985                 990

Arg Ile Lys Arg Gly Ile Asn Tyr  Val Lys Gln Thr Leu  Arg Glu Phe
        995                 1000                1005

Ile Leu  Lys Ser Phe Ser Lys  Lys Pro Lys Gly Ser  Lys Asp Thr
    1010                1015                1020

Lys Arg  Thr Ala Asp Pro Asn  Asn Lys Lys Glu Asn  Tyr Ile Ser
    1025                1030                1035

Asn Arg  Thr Leu Ala Glu Met  Ser Lys Asp His Asn  Phe Leu Lys
    1040                1045                1050

Glu Lys  Asp Arg Ile Ser Gly  Tyr Gly Ser Ser Leu  Asp Lys Ser
    1055                1060                1065

Phe Met  Asp Glu Asn Asp Tyr  Gln Ser Phe Ile His  Asn Pro Ser
    1070                1075                1080

Leu Thr  Val Thr Val Pro Ile  Ala Pro Gly Glu Ser  Asp Leu Glu
    1085                1090                1095
```

```
Ile Met  Asn Thr Glu Glu Leu  Ser Ser Asp Ser Asp  Ser Asp Tyr
    1100                1105                1110

Ser Lys  Glu Lys Arg Asn Arg  Ser Ser Ser Ser Glu  Cys Ser Thr
    1115                1120                1125

Val Asp  Asn Pro Leu Pro Gly  Glu Glu Glu Ala Glu  Ala Glu Pro
    1130                1135                1140

Val Asn  Ala Asp Glu Pro Glu  Ala Cys Phe Thr Asp  Gly Cys Val
    1145                1150                1155

Arg Arg  Phe Pro Cys Cys Gln  Val Asn Val Asp Ser  Gly Lys Gly
    1160                1165                1170

Lys Val  Trp Trp Thr Ile Arg  Lys Thr Cys Tyr Arg  Ile Val Glu
    1175                1180                1185

His Ser  Trp Phe Glu Ser Phe  Ile Val Leu Met Ile  Leu Leu Ser
    1190                1195                1200

Ser Gly  Ala Leu Ala Phe Glu  Asp Ile Tyr Ile Glu  Lys Lys Lys
    1205                1210                1215

Thr Ile  Lys Ile Ile Leu Glu  Tyr Ala Asp Lys Ile  Phe Thr Tyr
    1220                1225                1230

Ile Phe  Ile Leu Glu Met Leu  Leu Lys Trp Val Ala  Tyr Gly Tyr
    1235                1240                1245

Lys Thr  Tyr Phe Thr Asn Ala  Trp Cys Trp Leu Asp  Phe Leu Ile
    1250                1255                1260

Val Asp  Val Ser Leu Val Thr  Leu Val Ala Asn Thr  Leu Gly Tyr
    1265                1270                1275

Ser Asp  Leu Gly Pro Ile Lys  Ser Leu Arg Thr Leu  Arg Ala Leu
```

```
    1280                1285                1290

Arg Pro  Leu Arg Ala Leu Ser  Arg Phe Glu Gly Met  Arg Val Val
    1295                1300                1305

Val Asn  Ala Leu Ile Gly Ala  Ile Pro Ser Ile Met  Asn Val Leu
    1310                1315                1320

Leu Val  Cys Leu Ile Phe Trp  Leu Ile Phe Ser Ile  Met Gly Val
    1325                1330                1335

Asn Leu  Phe Ala Gly Lys Phe  Tyr Glu Cys Val Asn  Thr Thr Asp
    1340                1345                1350

Gly Ser  Arg Phe Pro Thr Ser  Gln Val Ala Asn Arg  Ser Glu Cys
    1355                1360                1365

Phe Ala  Leu Met Asn Val Ser  Gly Asn Val Arg Trp  Lys Asn Leu
    1370                1375                1380

Lys Val  Asn Phe Asp Asn Val  Gly Leu Gly Tyr Leu  Ser Leu Leu
    1385                1390                1395

Gln Val  Ala Thr Phe Lys Gly  Trp Met Asp Ile Met  Tyr Ala Ala
    1400                1405                1410

Val Asp  Ser Val Asn Val Asn  Glu Gln Pro Lys Tyr  Glu Tyr Ser
    1415                1420                1425

Leu Tyr  Met Tyr Ile Tyr Phe  Val Ile Phe Ile Ile  Phe Gly Ser
    1430                1435                1440

Phe Phe  Thr Leu Asn Leu Phe  Ile Gly Val Ile Ile  Asp Asn Phe
    1445                1450                1455

Asn Gln  Gln Lys Lys Lys Leu  Gly Gly Gln Asp Ile  Phe Met Thr
    1460                1465                1470
```

```
Glu Glu  Gln Lys Lys Tyr Tyr  Asn Ala Met Lys Lys  Leu Gly Ser
    1475                1480                1485

Lys Lys  Pro Gln Lys Pro Ile  Pro Arg Pro Gly Asn  Lys Phe Gln
    1490                1495                1500

Gly Cys  Ile Phe Asp Leu Val  Thr Asn Gln Ala Phe  Asp Ile Thr
    1505                1510                1515

Ile Met  Val Leu Ile Cys Leu  Asn Met Val Thr Met  Met Val Glu
    1520                1525                1530

Lys Glu  Gly Gln Thr Glu Tyr  Met Asp Tyr Val Leu  His Trp Ile
    1535                1540                1545

Asn Met  Val Phe Ile Ile Leu  Phe Thr Gly Glu Cys  Val Leu Lys
    1550                1555                1560

Leu Ile  Ser Leu Arg His Tyr  Tyr Phe Thr Val Gly  Trp Asn Ile
    1565                1570                1575

Phe Asp  Phe Val Val Val Ile  Leu Ser Ile Val Gly  Met Phe Leu
    1580                1585                1590

Ala Glu  Met Ile Glu Lys Tyr  Phe Val Ser Pro Thr  Leu Phe Arg
    1595                1600                1605

Val Ile  Arg Leu Ala Arg Ile  Gly Arg Ile Leu Arg  Leu Ile Lys
    1610                1615                1620

Gly Ala  Lys Gly Ile Arg Thr  Leu Leu Phe Ala Leu  Met Met Ser
    1625                1630                1635

Leu Pro  Ala Leu Phe Asn Ile  Gly Leu Leu Leu Phe  Leu Val Met
    1640                1645                1650

Phe Ile  Tyr Ala Ile Phe Gly  Met Ser Asn Phe Ala  Tyr Val Lys
```

```
    1655                1660                1665

Lys Glu  Ala Gly Ile Asn Asp  Met Phe Asn Phe Glu  Thr Phe Gly
    1670                1675                1680

Asn Ser  Met Ile Cys Leu Phe  Gln Ile Thr Thr Ser  Ala Gly Trp
    1685                1690                1695

Asp Gly  Leu Leu Ala Pro Ile  Leu Asn Ser Ala Pro  Pro Asp Cys
    1700                1705                1710

Asp Pro  Lys Lys Val His Pro  Gly Ser Ser Val Glu  Gly Asp Cys
    1715                1720                1725

Gly Asn  Pro Ser Val Gly Ile  Phe Tyr Phe Val Ser  Tyr Ile Ile
    1730                1735                1740

Ile Ser  Phe Leu Val Val Val  Asn Met Tyr Ile Ala  Val Ile Leu
    1745                1750                1755

Glu Asn  Phe Ser Val Ala Thr  Glu Glu Ser Thr Glu  Pro Leu Ser
    1760                1765                1770

Glu Asp  Asp Phe Glu Met Phe  Tyr Glu Val Trp Glu  Lys Phe Asp
    1775                1780                1785

Pro Asp  Ala Thr Gln Phe Ile  Glu Phe Cys Lys Leu  Ser Asp Phe
    1790                1795                1800

Ala Ala  Ala Leu Asp Pro Pro  Leu Leu Ile Ala Lys  Pro Asn Lys
    1805                1810                1815

Val Gln  Leu Ile Ala Met Asp  Leu Pro Met Val Ser  Gly Asp Arg
    1820                1825                1830

Ile His  Cys Leu Asp Ile Leu  Phe Ala Phe Thr Lys  Arg Val Leu
    1835                1840                1845
```

```
Gly Glu  Gly Gly Glu Met Asp  Ser Leu Arg Ser Gln  Met Glu Glu
    1850                1855                1860


Arg Phe  Met Ser Ala Asn Pro  Ser Lys Val Ser Tyr  Glu Pro Ile
    1865                1870                1875


Thr Thr  Thr Leu Lys Arg Lys  Gln Glu Glu Val Ser  Ala Thr Ile
    1880                1885                1890


Ile Gln  Arg Ala Tyr Arg Arg  Tyr Arg Leu Arg Gln  His Val Lys
    1895                1900                1905


Asn Ile  Ser Ser Ile Tyr Ile  Lys Asp Gly Asp Arg  Asp Asp Asp
    1910                1915                1920


Leu Pro  Asn Lys Glu Asp Thr  Val Phe Asp Asn Val  Asn Glu Asn
    1925                1930                1935


Ser Ser  Pro Glu Lys Thr Asp  Val Thr Ala Ser Thr  Ile Ser Pro
    1940                1945                1950


Pro Ser  Tyr Asp Ser Val Thr  Lys Pro Asp Gln Glu  Lys Tyr Glu
    1955                1960                1965


Thr Asp  Lys Thr Glu Lys Glu  Asp Lys Glu Lys Asp  Glu Ser Arg
    1970                1975                1980


Lys
```

<210>  40
<211>  1984
<212>  PRT
<213>  Oryctolagus cuniculus

<400>  40

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

```
Lys Gln Ser Leu Ala Leu Ile Glu Gln Arg Ile Ala Glu Gly Lys Thr
            20                  25                  30

Lys Glu Pro Lys Glu Glu Lys Lys Asp Asp His Asp Glu Gly Pro Lys
        35                  40                  45

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

Asp Ile Pro Ala Gly Met Val Ser Glu Pro Leu Glu Asp Leu Asp Pro
65                  70                  75                  80

Tyr Tyr Ala Asp Lys Lys Thr Phe Ile Val Leu Asn Lys Gly Lys Ala
                85                  90                  95

Ile Phe Arg Phe Asn Ala Thr Pro Ala Leu Tyr Ile Leu Ser Pro Phe
            100                 105                 110

Ser Pro Leu Arg Arg Ile Ser Ile Lys Ile Leu Val His Ser Leu Phe
        115                 120                 125

Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Ile Phe Met Thr
    130                 135                 140

Met Asn Asn Pro Ala Glu Trp Thr Lys Asn Val Glu Tyr Thr Phe Thr
145                 150                 155                 160

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

Cys Val Gly Glu Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp Leu Asp
            180                 185                 190

Phe Ile Val Ile Val Phe Ala Tyr Leu Thr Glu Phe Val Asn Leu Gly
        195                 200                 205
```

```
Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu Lys Thr
    210                 215                 220

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

Ser Val Lys Lys Leu Ser Asp Val Ile Ile Leu Thr Val Phe Cys Leu
                245                 250                 255

Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly His Leu Lys
            260                 265                 270

His Lys Cys Leu Arg Lys Ile Glu Asn Glu Thr Leu Glu Ser Ile Met
        275                 280                 285

Ser Ser Ile Glu Ser Glu Glu Asp Tyr Lys Lys Tyr Phe Tyr Tyr Leu
    290                 295                 300

Glu Gly Ser Lys Asp Ala Leu Leu Cys Gly Phe Ser Thr Asp Ser Gly
305                 310                 315                 320

Gln Cys Pro Glu Gly Tyr Tyr Cys Val Lys Ala Gly Arg Asn Pro Asp
                325                 330                 335

Tyr Gly Tyr Thr Ser Phe Asp Thr Phe Ser Trp Ala Phe Leu Ala Leu
            340                 345                 350

Phe Arg Leu Met Thr Gln Asp Tyr Trp Glu Asn Leu Tyr Gln Gln Thr
        355                 360                 365

Leu Arg Ala Ala Gly Lys Thr Tyr Met Ile Phe Phe Val Val Val Ile
    370                 375                 380

Phe Leu Gly Ser Phe Tyr Leu Ile Asn Leu Ile Leu Ala Val Val Ala
385                 390                 395                 400

Met Ala Tyr Glu Glu Gln Asn Gln Ala Asn Ile Glu Glu Ala Lys Gln
                405                 410                 415
```

```
Lys Glu Leu Glu Phe Gln Gln Met Leu Asp Arg Leu Lys Lys Glu Gln
            420                 425                 430

Glu Glu Ala Glu Ala Ile Ala Ala Ala Ala Ala Glu Tyr Thr Ser Ile
        435                 440                 445

Gly Arg Ser Arg Ile Met Gly Leu Ser Glu Ser Ser Ser Glu Thr Ser
    450                 455                 460

Lys Leu Ser Ser Lys Ser Ala Lys Glu Arg Arg Asn Arg Arg Lys Lys
465                 470                 475                 480

Lys Asn Gln Lys Lys Leu Ser Ser Gly Glu Glu Lys Gly Asp Asp Glu
                485                 490                 495

Lys Leu Ser Lys Ser Glu Ser Glu Glu Ser Ile Ser Arg Lys Gln Phe
            500                 505                 510

His Leu Gly Val Glu Gly His Arg Leu Ala Arg Glu Lys Arg Leu Ser
        515                 520                 525

Ala Pro Asn Gln Ser Pro Leu Ser Ile Arg Gly Ser Leu Phe Ser Ala
    530                 535                 540

Arg Arg Ser Ser Arg Thr Ser Leu Phe Ser Phe Lys Gly Arg Gly Lys
545                 550                 555                 560

Asp Ile Gly Ser Glu Thr Glu Phe Ala Asp Asp Glu His Ser Ile Phe
                565                 570                 575

Gly Asp Asn Glu Ser Arg Arg Gly Ser Leu Phe Val Pro Gln Arg Pro
            580                 585                 590

Gln Glu Arg Arg Ser Ser Asn Leu Ser Gln Ala Ser Arg Ser Pro Pro
        595                 600                 605
```

```
Met Leu Gln Met Asn Gly Lys Met His Ser Ala Val Asp Cys Asn Gly
    610                 615                 620

Val Val Ser Leu Val Asp Gly Pro Ser Ala Leu Met Leu Pro Asn Gly
625                 630                 635                 640

Gln Leu Leu Pro Glu Val Ile Ile Asp Lys Ala Thr Ser Asp Asp Ser
                645                 650                 655

Gly Thr Thr Gln Ile Arg Lys Lys Arg Arg Ser Ser Ser Tyr Leu Leu
            660                 665                 670

Ser Glu Asp Met Leu Asn Asp Pro His Leu Arg Gln Arg Ala Met Ser
        675                 680                 685

Arg Ala Ser Ile Leu Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg
    690                 695                 700

Gln Lys Cys Pro Ser Trp Trp Tyr Arg Phe Ala His Thr Phe Leu Ile
705                 710                 715                 720

Trp Asn Cys Ser Pro Phe Trp Ile Lys Phe Lys Lys Phe Ile Tyr Ile
                725                 730                 735

Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val
            740                 745                 750

Leu Asn Thr Leu Phe Met Ala Met Glu His His Pro Met Thr Glu Glu
        755                 760                 765

Phe Lys Asn Val Leu Val Val Gly Asn Leu Val Phe Thr Gly Ile Phe
    770                 775                 780

Ala Ala Glu Met Val Leu Lys Leu Ile Ala Met Asp Pro Tyr Glu Tyr
785                 790                 795                 800

Phe Gln Val Gly Trp Asn Val Phe Asp Ser Leu Ile Val Thr Leu Ser
                805                 810                 815
```

```
Leu Val Glu Leu Phe Leu Ala Asp Val Glu Gly Leu Ser Val Leu Arg
            820                 825                 830

Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr
        835                 840                 845

Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Pro Leu Gly
    850                 855                 860

Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val
865                 870                 875                 880

Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys Lys Ile
                885                 890                 895

Asn Asp Asp Cys Ser Leu Pro Arg Trp His Met Asn Asp Phe Phe His
            900                 905                 910

Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr
        915                 920                 925

Met Trp Asp Cys Met Glu Val Ala Gly Gln Ala Met Cys Leu Ile Val
    930                 935                 940

Tyr Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe
945                 950                 955                 960

Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ser Ala Ile
                965                 970                 975

Glu Glu Asp Thr Asp Ala Asn Asn Leu Gln Ile Ala Val Thr Arg Ile
            980                 985                 990

Lys Lys Gly Ile Asn Tyr Val Lys  Gln Thr Leu Arg Glu  Leu Ile Leu
        995                 1000                1005
```

```
Lys Ala  Phe Ser Lys Lys Pro  Lys Ile Ser Lys Glu  Ile Arg Gln
    1010                1015                1020

Ala Glu  Asp Leu Asn Ser Lys  Lys Glu Asn Tyr Ile  Ser Asn Arg
    1025                1030                1035

Thr Leu  Ala Glu Met Ser Lys  Asp Tyr Asn Phe His  Lys Glu Lys
    1040                1045                1050

Asp Lys  Ile Ser Gly Phe Gly  Ser Ser Met Asp Lys  Tyr Leu Met
    1055                1060                1065

Glu Glu  Ser Asp His Gln Ser  Phe Ile His Asn Pro  Ser Leu Thr
    1070                1075                1080

Val Thr  Val Pro Ile Ala Pro  Gly Glu Ser Asp Leu  Glu Asn Met
    1085                1090                1095

Asn Thr  Glu Glu Leu Ser Ser  Asp Ser Glu Ser Glu  Tyr Ser Lys
    1100                1105                1110

Glu Arg  Leu Asn Arg Ser Ser  Ser Ser Glu Cys Ser  Thr Val Asp
    1115                1120                1125

Asn Ala  Leu Pro Gly Glu Gly  Glu Glu Ala Glu Ala  Glu Pro Val
    1130                1135                1140

Asn Ser  Asp Glu Pro Glu Ala  Cys Phe Thr Asp Gly  Cys Val Arg
    1145                1150                1155

Arg Phe  Pro Cys Cys Gln Val  Ser Ile Glu Ser Gly  Lys Gly Lys
    1160                1165                1170

Ile Trp  Trp Asn Ile Arg Lys  Thr Cys Tyr Arg Ile  Val Glu His
    1175                1180                1185

Ser Trp  Phe Glu Ser Phe Ile  Val Leu Met Ile Leu  Leu Ser Ser
    1190                1195                1200
```

```
Gly Ala  Leu Ala Phe Glu Asp  Ile Tyr Ile Glu Lys  Lys Lys Thr
    1205                1210                1215

Ile Lys  Ile Ile Leu Glu Tyr  Ala Asp Lys Ile Phe  Thr Tyr Ile
    1220                1225                1230

Phe Ile  Leu Glu Met Leu Leu  Lys Trp Val Ala Tyr  Gly Tyr Lys
    1235                1240                1245

Thr Tyr  Phe Thr Asn Ala Trp  Cys Trp Leu Asp Phe  Leu Ile Val
    1250                1255                1260

Asp Val  Ser Leu Val Thr Leu  Val Ala Asn Thr Leu  Gly Tyr Ser
    1265                1270                1275

Asp Leu  Gly Pro Ile Lys Ser  Leu Arg Thr Leu Arg  Ala Leu Arg
    1280                1285                1290

Pro Leu  Arg Ala Leu Ser Arg  Phe Glu Gly Met Arg  Val Val Val
    1295                1300                1305

Asn Ala  Leu Ile Gly Ala Ile  Pro Ser Ile Met Asn  Val Leu Leu
    1310                1315                1320

Val Cys  Leu Ile Phe Trp Leu  Ile Phe Ser Ile Met  Gly Val Asn
    1325                1330                1335

Leu Phe  Ala Gly Lys Phe Tyr  Gln Cys Val Asn Thr  Thr Asp Asp
    1340                1345                1350

Ser Arg  Phe Pro Thr Lys Gln  Val Ser Asn Arg Ser  Glu Cys Phe
    1355                1360                1365

Ala Leu  Met Asn Gly Ser Gln  Asn Val Arg Trp Lys  Asn Leu Lys
    1370                1375                1380
```

```
Val Asn  Phe Asp Asn Val Gly  Leu Arg Tyr Leu Ser  Leu Leu Gln
    1385                1390                1395

Val Ala  Thr Phe Lys Gly Trp  Met Asp Ile Met Tyr  Ala Ala Val
    1400                1405                1410

Asp Ser  Val Asn Val Asp Gln  Gln Pro Ser Tyr Glu  His Asn Leu
    1415                1420                1425

Tyr Met  Tyr Ile Tyr Phe Val  Ile Phe Ile Ile Phe  Gly Ser Phe
    1430                1435                1440

Phe Thr  Leu Asn Leu Phe Ile  Gly Val Ile Ile Asp  Asn Phe Asn
    1445                1450                1455

Gln Gln  Lys Lys Lys Leu Gly  Gly Gln Asp Ile Phe  Met Thr Glu
    1460                1465                1470

Glu Gln  Lys Lys Tyr Tyr Asn  Ala Met Lys Lys Leu  Gly Ser Lys
    1475                1480                1485

Lys Pro  Gln Lys Pro Ile Pro  Arg Pro Gly Asn Lys  Phe Gln Gly
    1490                1495                1500

Cys Ile  Phe Asp Leu Val Thr  Asn Gln Ala Phe Asp  Ile Thr Ile
    1505                1510                1515

Met Ile  Leu Ile Cys Leu Asn  Met Val Thr Met Met  Val Glu Lys
    1520                1525                1530

Glu Gly  Gln Ser Asp Tyr Met  Thr Asp Val Leu Tyr  Trp Ile Asn
    1535                1540                1545

Val Val  Phe Ile Ile Leu Phe  Thr Gly Glu Cys Val  Leu Lys Leu
    1550                1555                1560

Ile Ser  Leu Arg His Tyr Tyr  Phe Thr Ile Gly Trp  Asn Ile Phe
    1565                1570                1575
```

```
Asp Phe  Val Val Val Ile Leu  Ser Ile Val Gly Met  Phe Leu Ala
    1580                1585                1590

Glu Leu  Ile Glu Thr Tyr Phe  Val Ser Pro Thr Leu  Phe Arg Val
    1595                1600                1605

Ile Arg  Leu Ala Arg Ile Gly  Arg Ile Leu Arg Leu  Ile Lys Gly
    1610                1615                1620

Ala Lys  Gly Ile Arg Thr Leu  Leu Phe Ala Leu Met  Met Ser Leu
    1625                1630                1635

Pro Ala  Leu Phe Asn Ile Gly  Leu Leu Leu Phe Leu  Val Met Phe
    1640                1645                1650

Ile Tyr  Ala Ile Phe Gly Met  Ser Asn Phe Ala Tyr  Val Lys Lys
    1655                1660                1665

Glu Ala  Gly Ile Asn Asp Met  Phe Asn Phe Glu Thr  Phe Gly Asn
    1670                1675                1680

Ser Met  Ile Cys Leu Phe Gln  Ile Thr Thr Ser Ala  Gly Trp Asp
    1685                1690                1695

Gly Leu  Leu Ala Pro Ile Leu  Asn Ser Ala Pro Pro  Asp Cys Asp
    1700                1705                1710

Pro Lys  Lys Val His Pro Gly  Ser Ser Thr Glu Gly  Asp Cys Gly
    1715                1720                1725

Ser Pro  Ser Val Gly Ile Phe  Tyr Phe Val Ser Tyr  Ile Ile Ile
    1730                1735                1740

Ser Phe  Leu Val Val Val Asn  Met Tyr Ile Ala Val  Ile Leu Glu
    1745                1750                1755
```

```
Asn Phe  Ser Val Ala Thr Glu  Glu Ser Thr Glu Pro  Leu Ser Glu
    1760                1765                1770

Asp Asp  Phe Glu Met Phe Tyr  Glu Val Trp Glu Lys  Phe Asp Pro
    1775                1780                1785

Asp Ala  Thr Gln Phe Ile Glu  Tyr Ser Lys Leu Ser  Asp Phe Ala
    1790                1795                1800

Ala Ala  Leu Asp Pro Pro Leu  Leu Ile Ala Lys Pro  Asn Lys Val
    1805                1810                1815

Gln Leu  Ile Ala Met Asp Leu  Pro Met Val Ser Gly  Asp Arg Ile
    1820                1825                1830

His Cys  Leu Asp Ile Leu Phe  Ala Phe Thr Lys Arg  Val Leu Gly
    1835                1840                1845

Glu Ser  Gly Glu Met Asp Ser  Leu Arg Ser Gln Met  Glu Glu Arg
    1850                1855                1860

Phe Met  Ser Ala Asn Pro Ser  Lys Val Ser Tyr Glu  Pro Ile Thr
    1865                1870                1875

Thr Thr  Leu Lys Arg Lys Gln  Glu Asp Val Ser Ala  Thr Val Ile
    1880                1885                1890

Gln Arg  Ala Tyr Arg Arg Tyr  Arg Leu Arg Gln Asn  Val Lys Asn
    1895                1900                1905

Ile Ser  Ser Ile Tyr Ile Lys  Glu Gly Asp Lys Asp  Asp Asp Leu
    1910                1915                1920

Pro Asn  Lys Gly Asp Ile Val  Phe Asp Asn Val Asn  Ser Ser Ser
    1925                1930                1935

Pro Glu  Lys Thr Asp Ala Thr  Ala Ser Thr Ile Ser  Pro Pro Ser
    1940                1945                1950
```

```
Tyr Asp  Ser Val Thr Lys Pro  Asp Lys Glu Lys Tyr  Glu Lys Asp
    1955                1960                1965


Lys Thr  Glu Lys Glu Asp Lys  Gly Lys Asp Gly Lys  Glu Thr Lys
    1970                1975                1980


Lys
```

<210>  41
<211>  1984
<212>  PRT
<213>  Gallus gallus

<400>  41

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


Lys Gln Ser Leu Ala Leu Ile Glu Gln Arg Ile Ala Glu Gly Lys Thr
            20                  25                  30


Lys Glu Pro Lys Glu Glu Lys Lys Asp Asp His Asp Glu Gly Pro Lys
        35                  40                  45


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


Asp Ile Pro Ala Gly Met Val Ser Glu Pro Leu Glu Asp Leu Asp Pro
65                  70                  75                  80


Tyr Tyr Ala Asp Lys Lys Thr Phe Ile Val Leu Asn Lys Gly Lys Ala
                85                  90                  95


Ile Phe Arg Phe Asn Ala Thr Pro Ala Leu Tyr Ile Leu Ser Pro Phe
            100                 105                 110


Ser Pro Leu Arg Arg Ile Ser Ile Lys Ile Leu Val His Ser Leu Phe
```

```
        115                 120                 125

Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Ile Phe Met Thr
    130                 135                 140

Met Asn Asn Pro Ala Glu Trp Thr Lys Asn Val Glu Tyr Thr Phe Thr
145                 150                 155                 160

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

Cys Val Gly Glu Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp Leu Asp
            180                 185                 190

Phe Ile Val Ile Val Phe Ala Tyr Leu Thr Glu Phe Val Asn Leu Gly
        195                 200                 205

Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu Lys Thr
    210                 215                 220

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

Ser Val Lys Lys Leu Ser Asp Val Ile Ile Leu Thr Val Phe Cys Leu
                245                 250                 255

Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly His Leu Lys
            260                 265                 270

His Lys Cys Leu Arg Lys Ile Glu Asn Glu Thr Leu Glu Ser Ile Met
        275                 280                 285

Ser Ser Ile Glu Ser Glu Glu Asp Tyr Lys Lys Tyr Phe Tyr Tyr Leu
    290                 295                 300

Glu Gly Ser Lys Asp Ala Leu Leu Cys Gly Phe Ser Thr Asp Ser Gly
305                 310                 315                 320
```

```
Gln Cys Pro Glu Gly Tyr Tyr Cys Val Lys Ala Gly Arg Asn Pro Asp
                325                 330                 335

Tyr Gly Tyr Thr Ser Phe Asp Thr Phe Ser Trp Ala Phe Leu Ala Leu
            340                 345                 350

Phe Arg Leu Met Thr Gln Asp Tyr Trp Glu Asn Leu Tyr Gln Gln Thr
        355                 360                 365

Leu Arg Ala Ala Gly Lys Thr Tyr Met Ile Phe Phe Val Val Val Ile
    370                 375                 380

Phe Leu Gly Ser Phe Tyr Leu Ile Asn Leu Ile Leu Ala Val Val Ala
385                 390                 395                 400

Met Ala Tyr Glu Glu Gln Asn Gln Ala Asn Ile Glu Glu Ala Lys Gln
                405                 410                 415

Lys Glu Leu Glu Phe Gln Gln Met Leu Asp Arg Leu Lys Lys Glu Gln
            420                 425                 430

Glu Glu Ala Glu Ala Ile Ala Ala Ala Ala Ala Glu Tyr Thr Ser Ile
        435                 440                 445

Gly Arg Ser Arg Ile Met Gly Leu Ser Glu Ser Ser Ser Glu Thr Ser
    450                 455                 460

Lys Leu Ser Ser Lys Ser Ala Lys Glu Arg Arg Asn Arg Arg Lys Lys
465                 470                 475                 480

Lys Asn Gln Lys Lys Leu Ser Ser Gly Glu Glu Lys Gly Asp Asp Glu
                485                 490                 495

Lys Leu Ser Lys Ser Glu Ser Glu Glu Ser Ile Ser Arg Lys Gln Phe
            500                 505                 510

His Leu Gly Val Glu Gly His Arg Leu Ala Arg Glu Lys Arg Leu Ser
```

```
        515                 520                 525

Ala Pro Asn Gln Ser Pro Leu Ser Ile Arg Gly Ser Leu Phe Ser Ala
    530                 535                 540

Arg Arg Ser Ser Arg Thr Ser Leu Phe Ser Phe Lys Gly Arg Gly Lys
545                 550                 555                 560

Asp Ile Gly Ser Glu Thr Glu Phe Ala Asp Asp Glu His Ser Ile Phe
                565                 570                 575

Gly Asp Asn Glu Ser Arg Arg Gly Ser Leu Phe Val Pro Gln Arg Pro
            580                 585                 590

Gln Glu Arg Arg Ser Ser Asn Leu Ser Gln Ala Ser Arg Ser Pro Pro
        595                 600                 605

Met Leu Gln Met Asn Gly Lys Met His Ser Ala Val Asp Cys Asn Gly
    610                 615                 620

Val Val Ser Leu Val Asp Gly Pro Ser Ala Leu Met Leu Pro Asn Gly
625                 630                 635                 640

Gln Leu Leu Pro Glu Val Ile Ile Asp Lys Ala Thr Ser Asp Asp Ser
                645                 650                 655

Gly Thr Thr Gln Ile Arg Lys Lys Arg Arg Ser Ser Ser Tyr Leu Leu
            660                 665                 670

Ser Glu Asp Met Leu Asn Asp Pro His Leu Arg Gln Arg Ala Met Ser
        675                 680                 685

Arg Ala Ser Ile Leu Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg
    690                 695                 700

Gln Lys Cys Pro Ser Trp Trp Tyr Arg Phe Ala His Thr Phe Leu Ile
705                 710                 715                 720
```

```
Trp Asn Cys Ser Pro Phe Trp Ile Lys Phe Lys Lys Phe Ile Tyr Ile
                725                 730                 735

Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val
            740                 745                 750

Leu Asn Thr Leu Phe Met Ala Met Glu His His Pro Met Thr Glu Glu
        755                 760                 765

Phe Lys Asn Val Leu Val Val Gly Asn Leu Val Phe Thr Gly Ile Phe
    770                 775                 780

Ala Ala Glu Met Val Leu Lys Leu Ile Ala Met Asp Pro Tyr Glu Tyr
785                 790                 795                 800

Phe Gln Val Gly Trp Asn Val Phe Asp Ser Leu Ile Val Thr Leu Ser
                805                 810                 815

Leu Val Glu Leu Phe Leu Ala Asp Val Glu Gly Leu Ser Val Leu Arg
            820                 825                 830

Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr
        835                 840                 845

Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Pro Leu Gly
    850                 855                 860

Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val
865                 870                 875                 880

Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys Lys Ile
                885                 890                 895

Asn Asp Asp Cys Ser Leu Pro Arg Trp His Met Asn Asp Phe Phe His
            900                 905                 910

Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr
```

```
        915                 920                 925

Met Trp Asp Cys Met Glu Val Ala Gly Gln Ala Met Cys Leu Ile Val
    930                 935                 940

Tyr Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe
945                 950                 955                 960

Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ser Ala Ile
                965                 970                 975

Glu Glu Asp Thr Asp Ala Asn Asn Leu Gln Ile Ala Val Thr Arg Ile
            980                 985                 990

Lys Lys Gly Ile Asn Tyr Val Lys  Gln Thr Leu Arg Glu  Leu Ile Leu
        995                 1000                1005

Lys Ala  Phe Ser Lys Lys Pro  Lys Ile Ser Lys Glu  Ile Arg Gln
    1010                1015                1020

Ala Glu  Asp Leu Asn Ser Lys  Lys Glu Asn Tyr Ile  Ser Asn Arg
    1025                1030                1035

Thr Leu  Ala Glu Met Ser Lys  Asp Tyr Asn Phe His  Lys Glu Lys
    1040                1045                1050

Asp Lys  Ile Ser Gly Phe Gly  Ser Ser Met Asp Lys  Tyr Leu Met
    1055                1060                1065

Glu Glu  Ser Asp His Gln Ser  Phe Ile His Asn Pro  Ser Leu Thr
    1070                1075                1080

Val Thr  Val Pro Ile Ala Pro  Gly Glu Ser Asp Leu  Glu Asn Met
    1085                1090                1095

Asn Thr  Glu Glu Leu Ser Ser  Asp Ser Glu Ser Glu  Tyr Ser Lys
    1100                1105                1110
```

```
Glu Arg  Leu Asn Arg Ser Ser  Ser Ser Glu Cys Ser  Thr Val Asp
    1115                1120                1125

Asn Ala  Leu Pro Gly Glu Gly  Glu Glu Ala Glu Ala  Glu Pro Val
    1130                1135                1140

Asn Ser  Asp Glu Pro Glu Ala  Cys Phe Thr Asp Gly  Cys Val Arg
    1145                1150                1155

Arg Phe  Pro Cys Cys Gln Val  Ser Ile Glu Ser Gly  Lys Gly Lys
    1160                1165                1170

Ile Trp  Trp Asn Ile Arg Lys  Thr Cys Tyr Arg Ile  Val Glu His
    1175                1180                1185

Ser Trp  Phe Glu Ser Phe Ile  Val Leu Met Ile Leu  Leu Ser Ser
    1190                1195                1200

Gly Ala  Leu Ala Phe Glu Asp  Ile Tyr Ile Glu Lys  Lys Lys Thr
    1205                1210                1215

Ile Lys  Ile Ile Leu Glu Tyr  Ala Asp Lys Ile Phe  Thr Tyr Ile
    1220                1225                1230

Phe Ile  Leu Glu Met Leu Leu  Lys Trp Val Ala Tyr  Gly Tyr Lys
    1235                1240                1245

Thr Tyr  Phe Thr Asn Ala Trp  Cys Trp Leu Asp Phe  Leu Ile Val
    1250                1255                1260

Asp Val  Ser Leu Val Thr Leu  Val Ala Asn Thr Leu  Gly Tyr Ser
    1265                1270                1275

Asp Leu  Gly Pro Ile Lys Ser  Leu Arg Thr Leu Arg  Ala Leu Arg
    1280                1285                1290

Pro Leu  Arg Ala Leu Ser Arg  Phe Glu Gly Met Arg  Val Val Val
```

```
    1295                1300                1305

Asn Ala  Leu Ile Gly Ala Ile  Pro Ser Ile Met Asn  Val Leu Leu
    1310                1315                1320

Val Cys  Leu Ile Phe Trp Leu  Ile Phe Ser Ile Met  Gly Val Asn
    1325                1330                1335

Leu Phe  Ala Gly Lys Phe Tyr  Gln Cys Val Asn Thr  Thr Asp Asp
    1340                1345                1350

Ser Arg  Phe Pro Thr Lys Gln  Val Ser Asn Arg Ser  Glu Cys Phe
    1355                1360                1365

Ala Leu  Met Asn Gly Ser Gln  Asn Val Arg Trp Lys  Asn Leu Lys
    1370                1375                1380

Val Asn  Phe Asp Asn Val Gly  Leu Arg Tyr Leu Ser  Leu Leu Gln
    1385                1390                1395

Val Ala  Thr Phe Lys Gly Trp  Met Asp Ile Met Tyr  Ala Ala Val
    1400                1405                1410

Asp Ser  Val Asn Val Asp Gln  Gln Pro Ser Tyr Glu  His Asn Leu
    1415                1420                1425

Tyr Met  Tyr Ile Tyr Phe Val  Ile Phe Ile Ile Phe  Gly Ser Phe
    1430                1435                1440

Phe Thr  Leu Asn Leu Phe Ile  Gly Val Ile Ile Asp  Asn Phe Asn
    1445                1450                1455

Gln Gln  Lys Lys Lys Leu Gly  Gly Gln Asp Ile Phe  Met Thr Glu
    1460                1465                1470

Glu Gln  Lys Lys Tyr Tyr Asn  Ala Met Lys Lys Leu  Gly Ser Lys
    1475                1480                1485
```

```
Lys Pro  Gln Lys Pro Ile Pro  Arg Pro Gly Asn Lys  Phe Gln Gly
    1490                1495                1500

Cys Ile  Phe Asp Leu Val Thr  Asn Gln Ala Phe Asp  Ile Thr Ile
    1505                1510                1515

Met Ile  Leu Ile Cys Leu Asn  Met Val Thr Met Met  Val Glu Lys
    1520                1525                1530

Glu Gly  Gln Ser Asp Tyr Met  Thr Asp Val Leu Tyr  Trp Ile Asn
    1535                1540                1545

Val Val  Phe Ile Ile Leu Phe  Thr Gly Glu Cys Val  Leu Lys Leu
    1550                1555                1560

Ile Ser  Leu Arg His Tyr Tyr  Phe Thr Ile Gly Trp  Asn Ile Phe
    1565                1570                1575

Asp Phe  Val Val Val Ile Leu  Ser Ile Val Gly Met  Phe Leu Ala
    1580                1585                1590

Glu Leu  Ile Glu Thr Tyr Phe  Val Ser Pro Thr Leu  Phe Arg Val
    1595                1600                1605

Ile Arg  Leu Ala Arg Ile Gly  Arg Ile Leu Arg Leu  Ile Lys Gly
    1610                1615                1620

Ala Lys  Gly Ile Arg Thr Leu  Leu Phe Ala Leu Met  Met Ser Leu
    1625                1630                1635

Pro Ala  Leu Phe Asn Ile Gly  Leu Leu Leu Phe Leu  Val Met Phe
    1640                1645                1650

Ile Tyr  Ala Ile Phe Gly Met  Ser Asn Phe Ala Tyr  Val Lys Lys
    1655                1660                1665

Glu Ala  Gly Ile Asn Asp Met  Phe Asn Phe Glu Thr  Phe Gly Asn
```

```
    1670                1675                1680

Ser Met  Ile Cys Leu Phe Gln  Ile Thr Thr Ser Ala  Gly Trp Asp
    1685                1690                1695

Gly Leu  Leu Ala Pro Ile Leu  Asn Ser Ala Pro Pro  Asp Cys Asp
    1700                1705                1710

Pro Lys  Lys Val His Pro Gly  Ser Ser Thr Glu Gly  Asp Cys Gly
    1715                1720                1725

Ser Pro  Ser Val Gly Ile Phe  Tyr Phe Val Ser Tyr  Ile Ile Ile
    1730                1735                1740

Ser Phe  Leu Val Val Val Asn  Met Tyr Ile Ala Val  Ile Leu Glu
    1745                1750                1755

Asn Phe  Ser Val Ala Thr Glu  Glu Ser Thr Glu Pro  Leu Ser Glu
    1760                1765                1770

Asp Asp  Phe Glu Met Phe Tyr  Glu Val Trp Glu Lys  Phe Asp Pro
    1775                1780                1785

Asp Ala  Thr Gln Phe Ile Glu  Tyr Ser Lys Leu Ser  Asp Phe Ala
    1790                1795                1800

Ala Ala  Leu Asp Pro Pro Leu  Leu Ile Ala Lys Pro  Asn Lys Val
    1805                1810                1815

Gln Leu  Ile Ala Met Asp Leu  Pro Met Val Ser Gly  Asp Arg Ile
    1820                1825                1830

His Cys  Leu Asp Ile Leu Phe  Ala Phe Thr Lys Arg  Val Leu Gly
    1835                1840                1845

Glu Ser  Gly Glu Met Asp Ser  Leu Arg Ser Gln Met  Glu Glu Arg
    1850                1855                1860
```

```
Phe Met  Ser Ala Asn Pro Ser  Lys Val Ser Tyr Glu  Pro Ile Thr
    1865                1870                1875


Thr Thr  Leu Lys Arg Lys Gln  Glu Asp Val Ser Ala  Thr Val Ile
    1880                1885                1890


Gln Arg  Ala Tyr Arg Arg Tyr  Arg Leu Arg Gln Asn  Val Lys Asn
    1895                1900                1905


Ile Ser  Ser Ile Tyr Ile Lys  Glu Gly Asp Lys Asp  Asp Asp Leu
    1910                1915                1920


Pro Asn  Lys Gly Asp Ile Val  Phe Asp Asn Val Asn  Ser Ser Ser
    1925                1930                1935


Pro Glu  Lys Thr Asp Ala Thr  Ala Ser Thr Ile Ser  Pro Pro Ser
    1940                1945                1950


Tyr Asp  Ser Val Thr Lys Pro  Asp Lys Glu Lys Tyr  Glu Lys Asp
    1955                1960                1965


Lys Thr  Glu Lys Glu Asp Lys  Gly Lys Asp Gly Lys  Glu Thr Lys
    1970                1975                1980


Lys
```

<210>  42
<211>  1730
<212>  PRT
<213>  Ophiophagus hannah

<400>  42

```
Leu Lys Thr Ile Val Gly Ala Leu Ile Gln Ser Val Lys Lys Leu Ser
1               5                   10                  15


Asp Val Met Ile Leu Thr Leu Phe Cys Leu Ser Val Phe Ala Leu Ile
            20                  25                  30
```

```
Gly Leu Gln Leu Phe Met Gly His Leu Arg His Lys Cys Leu Leu Trp
        35                  40                  45

Pro Leu Ser Asn Thr Ser Tyr Lys Asp Pro Arg Phe Met Glu Tyr Tyr
    50                  55                  60

Asn Gly Thr Glu Leu Met Trp Ser Lys Tyr Ile Glu Asn Lys Glu His
65                  70                  75                  80

Phe Tyr Phe Leu Glu Gly Ala Lys Asp Ala Leu Leu Cys Gly Asn Ser
                85                  90                  95

Thr Asp Ala Gly Gln Cys Pro Glu Gly Tyr Lys Cys Ile Pro Ala Gly
            100                 105                 110

Arg Asn Pro Asp Tyr Gly Tyr Thr Ser Phe Asp Ser Phe Ser Trp Ala
        115                 120                 125

Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Tyr Trp Glu Asn Leu
    130                 135                 140

Tyr Gln Gln Thr Leu Arg Ala Ala Gly Lys Gly Tyr Met Phe Phe Phe
145                 150                 155                 160

Val Val Val Ile Phe Leu Gly Ser Phe Tyr Leu Val Asn Leu Ile Leu
                165                 170                 175

Ala Val Val Ala Met Ala Tyr Asp Glu Gln Asn Gln Ala Thr Ile Glu
            180                 185                 190

Glu Ala Leu Arg Lys Glu Thr Glu Tyr Gln Gln Met Leu Glu His Leu
        195                 200                 205

Lys Arg Gln Gln Glu Glu Ala Gln Ala Leu Ala Ala Ala Val Ala Cys
    210                 215                 220
```

```
Lys Asp Phe Arg Asp Asp Gly Ala Leu Gly Arg Leu Ser Glu Thr Ser
225                 230                 235                 240

Ser Glu Leu Ser Ser Ser Lys Ser Ala Lys Glu Arg Arg Asn Arg Arg
                245                 250                 255

Lys Lys Arg Arg Gln Arg Glu Leu Ser Val Gly Glu Pro Gly Gly Asn
            260                 265                 270

Ser Lys Met Phe Pro Lys Ser Glu Ser Asp Ser Ser Ile Arg Arg Lys
        275                 280                 285

Gly Phe Arg Phe Ser Leu Glu Gly Asn Arg Leu Thr Tyr Glu Asn Arg
    290                 295                 300

Val Ile Ser Pro Tyr Gln Ser Met Leu Phe Pro Thr Arg Arg Asn Ser
305                 310                 315                 320

Arg Ala Ser Phe Ser Ser Phe Lys Gly Pro Thr Ala Glu Gly Ser Ser
                325                 330                 335

Asp Ala Asp Ser Glu His Ser Thr Phe Glu Glu Asn Gly Ser Arg Asn
            340                 345                 350

Gly Ser Tyr Phe Val Val Arg Arg His Ser Asp Arg Arg Ser Ser Asn
        355                 360                 365

Ile Ser Gln Thr Met Phe Pro Met Asn Gly Lys Met Gln Ser Ser Val
    370                 375                 380

Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly Pro Pro Val Leu Leu
385                 390                 395                 400

Ser Pro Thr Gly Gln Leu Leu Pro Glu Val Ile Ile Asp Lys Ala Thr
                405                 410                 415

Thr Asn Asp Asn Gly Thr Ala Ser Glu Met Glu Gly Lys Lys Arg Arg
            420                 425                 430
```

```
Ser Ser Ser Phe Gln Ile Ser Met Asp Leu Leu Glu Asp Pro Thr Ile
        435                 440                 445

Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Ile Thr Asn Thr Met Glu
    450                 455                 460

Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe
465                 470                 475                 480

Ala His Ser Tyr Leu Ile Trp Asn Cys Ser Asp Arg Trp Leu Gln Ile
                485                 490                 495

Lys Arg Ile Ile His Leu Ile Val Met Asp Pro Phe Val Asp Leu Gly
            500                 505                 510

Ile Thr Ile Cys Ile Ile Leu Asn Thr Leu Phe Met Ser Met Glu His
        515                 520                 525

Tyr Pro Ile Asp Asp Ser Phe Ser Gly Val Leu Lys Asn Gly Asn Met
    530                 535                 540

Val Phe Thr Gly Ile Phe Thr Ala Glu Met Val Leu Lys Ile Ile Ala
545                 550                 555                 560

Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Ser
                565                 570                 575

Ile Ile Val Thr Leu Ser Leu Met Glu Leu Gly Leu Gln Asp Val Glu
            580                 585                 590

Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu
        595                 600                 605

Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn
    610                 615                 620
```

```
Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val
625                 630                 635                 640


Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe Gly Lys Asn Tyr Asp
                645                 650                 655


Ser Cys Lys Cys Lys Ile Ser Glu Asp Cys Lys Leu Pro Arg Trp His
            660                 665                 670


Met Asn Asp Phe Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys
        675                 680                 685


Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln
    690                 695                 700


Ala Leu Cys Leu Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu
705                 710                 715                 720


Val Leu Leu Asn Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser
                725                 730                 735


Asp Ser Leu Ala Ala Pro Glu Gln Glu Thr Glu Ala Asn Asn Leu Gln
            740                 745                 750


Ile Ala Ile Ser Arg Ile Gln Arg Gly Ile Asn Tyr Ile Lys Arg Lys
        755                 760                 765


Ile Cys Glu Phe Val Gln Ile Val Phe Leu Gln Lys Cys Lys Gly Thr
    770                 775                 780


Ser Gly Leu Ser Ala Ala Asp Gln Gln Asn Asn Lys Lys Asp Gln Cys
785                 790                 795                 800


Ile Pro Asn His Thr Val Val Glu Ile Asn Gln Thr Phe Gly Tyr Gln
                805                 810                 815


Lys Pro Lys Met Thr Thr Thr Cys Met Asp Asn Ser Asp His Met Ser
            820                 825                 830
```

```
Phe Ile Asn Asn Pro Asn Leu Thr Val Thr Val Pro Ile Ala Val Gly
        835                 840                 845

Glu Ser Asp Phe Glu His Phe Asn Thr Glu Glu Leu Thr Ser Ile Ser
    850                 855                 860

Glu Leu Glu Glu Thr Lys Glu Lys Thr Ser Leu Cys Ser Ser Thr Glu
865                 870                 875                 880

Gly Ser Thr Ile Ile Phe Ala Ser Val Gly Asp Lys Glu Ser Asp Thr
                885                 890                 895

Ala Ala Lys Gly Pro Pro Gln Pro Gln Pro Cys Phe Thr Asp Gly Cys
            900                 905                 910

Val Gln Lys Phe Arg Cys Cys Gln Ile Asn Ile Glu Ser Gly Lys Gly
        915                 920                 925

Lys Cys Trp Trp Asn Leu Arg Lys Thr Cys Phe Lys Ile Val Glu His
    930                 935                 940

Asn Trp Phe Glu Thr Phe Ile Val Phe Met Ile Leu Leu Ser Ser Gly
945                 950                 955                 960

Ala Leu Ala Phe Glu Asp Ile Tyr Ile Glu Gln Arg Lys Thr Ile Lys
                965                 970                 975

Thr Val Leu Glu Tyr Ala Asp Lys Val Phe Thr Tyr Ile Phe Ile Leu
            980                 985                 990

Glu Met Leu Leu Lys Trp Val Ala  Tyr Gly Phe Gln Val  Tyr Phe Thr
        995                 1000                1005

Asn Ala  Trp Cys Trp Leu Asp  Phe Met Ile Val Asp  Val Ser Leu
    1010                1015                1020
```

```
Val Ser  Leu Ile Ala Asn Ala  Leu Asn Tyr Ser Glu  Leu Gly Pro
    1025                1030                1035

Ile Lys  Ser Leu Arg Thr Leu  Arg Ala Leu Arg Pro  Leu Arg Ala
    1040                1045                1050

Leu Ser  Arg Phe Glu Gly Met  Arg Val Val Val Asn  Ala Leu Val
    1055                1060                1065

Gly Ala  Ile Pro Ser Ile Met  Asn Val Leu Leu Val  Cys Leu Ile
    1070                1075                1080

Phe Trp  Leu Ile Phe Ser Ile  Met Gly Val Asn Leu  Phe Ala Gly
    1085                1090                1095

Thr Phe  Phe Glu Cys Val Asn  Lys Thr Asp Gly Val  Arg Ile Ser
    1100                1105                1110

His Leu  Ile Val Pro Phe Lys  Asn Val Cys Glu Thr  Leu Asp Tyr
    1115                1120                1125

Ala Arg  Trp Arg Asn Val Lys  Val Asn Phe Asp Asn  Val Gly Ala
    1130                1135                1140

Gly Tyr  Leu Ser Leu Leu Gln  Val Ala Thr Phe Lys  Gly Trp Met
    1145                1150                1155

Glu Ile  Met Tyr Ala Ala Val  Asp Ser Thr Gly Ile  Glu Lys Gln
    1160                1165                1170

Pro Gln  Tyr Glu His Asn Leu  Tyr Met Tyr Leu Tyr  Phe Val Gly
    1175                1180                1185

Phe Ile  Ile Phe Gly Ser Phe  Phe Thr Leu Asn Leu  Phe Ile Gly
    1190                1195                1200

Val Ile  Ile Asp Asn Phe Asn  Gln Gln Lys Lys Lys  Leu Gly Gly
    1205                1210                1215
```

```
Gln Asp  Ile Phe Met Thr Glu  Glu Gln Lys Lys Tyr  Tyr Asn Ala
    1220                1225                1230

Met Lys  Lys Leu Gly Ser Lys  Lys Pro Gln Lys Pro  Ile Pro Arg
    1235                1240                1245

Pro Ser  Asn Lys Ile Gln Gly  Phe Ile Phe Asp Phe  Val Thr Lys
    1250                1255                1260

Gln Ala  Phe Asp Ile Gly Ile  Met Ile Leu Ile Cys  Leu Asn Met
    1265                1270                1275

Val Thr  Met Met Val Glu Thr  Ala Asp Gln Asp Ser  Ser Val Glu
    1280                1285                1290

Glu Ile  Leu Tyr Trp Ile Asn  Leu Phe Phe Ile Val  Ile Phe Thr
    1295                1300                1305

Gly Glu  Cys Leu Leu Lys Leu  Ile Ala Leu Arg Tyr  Tyr Tyr Phe
    1310                1315                1320

Thr Ile  Gly Trp Asn Ile Phe  Asp Phe Val Val Val  Ile Phe Ser
    1325                1330                1335

Ile Val  Gly Met Cys Leu Ser  Gln Ile Ile Glu Lys  Phe Phe Val
    1340                1345                1350

Ser Pro  Thr Leu Phe Arg Val  Val Arg Leu Ala Arg  Ile Gly Arg
    1355                1360                1365

Val Leu  Arg Leu Ile Lys Gly  Ala Lys Gly Ile Arg  Thr Leu Leu
    1370                1375                1380

Phe Ala  Leu Met Met Ser Leu  Pro Ala Leu Phe Asn  Ile Gly Leu
    1385                1390                1395
```

```
Leu Leu  Phe Leu Val Met Phe  Ile Tyr Ala Ile Phe  Gly Met Ser
    1400                1405                1410

Gln Phe  Ala Tyr Val Lys Lys  Glu Ser Gly Ile Asp  Asp Met Phe
    1415                1420                1425

Asn Phe  Glu Thr Phe Ala Asn  Ser Met Ile Cys Leu  Phe Gln Ile
    1430                1435                1440

Thr Thr  Ser Gly Gly Trp Asn  Tyr Leu Leu Phe Pro  Ile Leu Asn
    1445                1450                1455

Lys Glu  Pro Asp Cys Asp Pro  Lys Lys Val His Pro  Gly Ser Ser
    1460                1465                1470

Val Glu  Gly Asp Cys Gly Asn  Pro Ser Val Gly Ile  Phe Phe Phe
    1475                1480                1485

Val Ser  Tyr Ile Ile Ile Ser  Phe Leu Val Val Val  Asn Met Tyr
    1490                1495                1500

Ile Ala  Val Ile Leu Glu Asn  Phe Ser Val Ala Thr  Glu Glu Ser
    1505                1510                1515

Ala Glu  Pro Leu Gly Glu Asp  Asp Phe Glu Met Phe  Tyr Glu Val
    1520                1525                1530

Trp Glu  Lys Phe Asp Pro Gly  Ala Thr Gln Phe Ile  Glu Phe Ser
    1535                1540                1545

Lys Leu  Phe Asp Phe Ala Ala  Ser Leu Glu Pro Pro  Leu Leu Ile
    1550                1555                1560

Pro Lys  Pro Asn Lys Val Gln  Leu Ile Ala Met Asp  Leu Pro Ile
    1565                1570                1575

Val Ser  Gly Asp Arg Ile His  Cys Leu Asp Ile Leu  Phe Ala Phe
    1580                1585                1590
```

```
Thr Lys  Arg Val Leu Gly Glu  Ser Asp Glu Met Asp  Ala Leu Arg
    1595                1600                1605


Val Gln  Met Glu Asp Arg Phe  Met Ala Ala Asn Pro  Ser Lys Val
    1610                1615                1620


Ser Tyr  Glu Pro Ile Thr Thr  Thr Leu Lys Arg Lys  Leu Glu Glu
    1625                1630                1635


Gln Ser  Ala Lys Val Ile Gln  Arg Ala Phe Arg His  Tyr Arg Leu
    1640                1645                1650


Arg Lys  Pro Val Cys Asn Thr  Ser Tyr Leu Tyr Arg  Asp Gly Asp
    1655                1660                1665


Val Phe  Pro Ser Lys Thr Glu  Met Ala Phe Asp Lys  Leu Ser Leu
    1670                1675                1680


Ser Leu  Thr Leu Glu Lys Thr  Glu Arg Ser Ser Ser  Thr Thr Ser
    1685                1690                1695


Pro Pro  Ser Tyr Asp Ser Val  Thr Lys Pro Asp Lys  Tyr Glu Gln
    1700                1705                1710


Glu Lys  Ser Glu Lys Glu Glu  Lys Gly Lys Asp Asp  Lys Asp Tyr
    1715                1720                1725


Arg Lys
    1730
```

<210>  43
<211>  2005
<212>  PRT
<213>  Pan paniscus

<400>  43

```
Met Ala Gln Ser Val Leu Val Pro Pro Gly Pro Asp Ser Phe Arg Phe
```

```
1               5                   10                  15

Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Gln Arg Ile Ala Glu Glu
            20                  25                  30

Lys Ala Lys Arg Pro Lys Gln Glu Arg Lys Asp Glu Asp Asp Glu Asn
        35                  40                  45

Gly Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Ser Leu Pro Phe
    50                  55                  60

Ile Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Val Pro Leu Glu Asp
65                  70                  75                  80

Leu Asp Pro Phe Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys
                85                  90                  95

Gly Lys Ala Ile Ser Arg Phe Ser Ala Thr Pro Ala Leu Tyr Ile Leu
            100                 105                 110

Thr Pro Phe Asn Pro Ile Arg Lys Leu Ala Ile Lys Ile Leu Val His
        115                 120                 125

Ser Leu Phe Asn Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val
    130                 135                 140

Phe Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr
145                 150                 155                 160

Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala
                165                 170                 175

Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn
            180                 185                 190

Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val
        195                 200                 205
```

```
Asp Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala
    210                 215                 220

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

Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val
                245                 250                 255

Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly
            260                 265                 270

Asn Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Asp Asn Ser Ser Phe
        275                 280                 285

Glu Ile Asn Ile Thr Ser Phe Phe Asn Asn Ser Leu Asp Gly Asn Gly
    290                 295                 300

Thr Thr Phe Asn Arg Thr Val Ser Ile Phe Asn Trp Asp Glu Tyr Ile
305                 310                 315                 320

Glu Asp Lys Ser His Phe Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu
                325                 330                 335

Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile
            340                 345                 350

Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp
        355                 360                 365

Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp
    370                 375                 380

Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr
385                 390                 395                 400

Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu
```

```
                405                 410                 415

Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn
            420                 425                 430

Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln
        435                 440                 445

Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala
    450                 455                 460

Ala Ala Ala Ser Ala Glu Ser Arg Asp Phe Ser Gly Ala Gly Gly Ile
465                 470                 475                 480

Gly Val Phe Ser Glu Ser Ser Ser Val Ala Ser Lys Leu Ser Ser Lys
                485                 490                 495

Ser Glu Lys Glu Leu Lys Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu
            500                 505                 510

Gln Ser Gly Glu Glu Glu Lys Asn Asp Arg Val Arg Lys Ser Glu Ser
        515                 520                 525

Glu Asp Ser Ile Arg Arg Lys Gly Phe Arg Phe Ser Leu Glu Gly Ser
    530                 535                 540

Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser Leu Leu
545                 550                 555                 560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Ala Ser
                565                 570                 575

Leu Phe Ser Phe Arg Gly Arg Ala Lys Asp Ile Gly Ser Glu Asn Asp
            580                 585                 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Asp Ser Arg Arg
        595                 600                 605
```

```
Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg His Ser Asn
    610                 615                 620

Val Ser Gln Ala Ser Arg Ala Ser Arg Val Leu Pro Ile Leu Pro Met
625                 630                 635                 640

Asn Gly Lys Met His Ser Ala Val Asp Cys Asn Gly Val Val Ser Leu
                645                 650                 655

Val Gly Gly Pro Ser Thr Leu Thr Ser Ala Gly Gln Leu Leu Pro Glu
            660                 665                 670

Gly Thr Thr Thr Glu Thr Glu Ile Arg Lys Arg Arg Ser Ser Ser Tyr
        675                 680                 685

His Val Ser Met Asp Leu Leu Glu Asp Pro Thr Ser Arg Gln Arg Ala
    690                 695                 700

Met Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu
705                 710                 715                 720

Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe Ala Asn Met Cys
                725                 730                 735

Leu Ile Trp Asp Cys Cys Lys Pro Trp Leu Lys Val Lys His Leu Val
            740                 745                 750

Asn Leu Val Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
        755                 760                 765

Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr
    770                 775                 780

Glu Gln Phe Ser Ser Val Leu Ser Val Gly Asn Leu Val Phe Thr Gly
785                 790                 795                 800

Ile Phe Thr Ala Glu Met Phe Leu Lys Ile Ile Ala Met Asp Pro Tyr
```

```
                805                 810                 815

Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Phe Ile Val Ser
            820                 825                 830

Leu Ser Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser Val
        835                 840                 845

Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
    850                 855                 860

Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
865                 870                 875                 880

Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
                885                 890                 895

Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
            900                 905                 910

Lys Ile Ser Asn Asp Cys Glu Leu Pro Arg Trp His Met His Asp Phe
        915                 920                 925

Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
    930                 935                 940

Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
945                 950                 955                 960

Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn
                965                 970                 975

Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
            980                 985                 990

Ala Thr Asp Asp Asp Asn Glu Met  Asn Asn Leu Gln Ile  Ala Val Gly
        995                 1000                1005
```

```
Arg Met  Gln Lys Gly Ile Asp  Phe Val Lys Arg Lys  Ile Arg Glu
    1010                1015                1020

Phe Ile  Gln Lys Ala Phe Val  Arg Lys Gln Lys Ala  Leu Asp Glu
    1025                1030                1035

Ile Lys  Pro Leu Glu Asp Leu  Asn Asn Lys Lys Asp  Ser Cys Ile
    1040                1045                1050

Ser Asn  His Thr Thr Ile Glu  Ile Gly Lys Asp Leu  Asn Tyr Leu
    1055                1060                1065

Lys Asp  Gly Asn Gly Thr Thr  Ser Gly Ile Gly Ser  Ser Val Glu
    1070                1075                1080

Lys Tyr  Val Val Asp Glu Ser  Asp Tyr Leu Ser Phe  Ile Asn Asn
    1085                1090                1095

Pro Ser  Leu Thr Val Thr Val  Pro Ile Ala Val Gly  Glu Ser Asp
    1100                1105                1110

Phe Glu  Asn Leu Asn Thr Glu  Glu Phe Ser Ser Glu  Ser Asp Met
    1115                1120                1125

Glu Glu  Ser Lys Glu Lys Leu  Asn Ala Thr Ser Ser  Ser Glu Gly
    1130                1135                1140

Ser Thr  Val Asp Ile Gly Ala  Pro Ala Glu Gly Glu  Gln Pro Glu
    1145                1150                1155

Val Glu  Pro Glu Glu Ser Leu  Glu Pro Glu Ala Cys  Phe Thr Glu
    1160                1165                1170

Asp Cys  Val Arg Lys Phe Lys  Cys Cys Gln Ile Ser  Ile Glu Glu
    1175                1180                1185

Gly Lys  Gly Lys Leu Trp Trp  Asn Leu Arg Lys Thr  Cys Tyr Lys
```

```
    1190                1195                1200

Ile Val  Glu His Asn Trp Phe  Glu Thr Phe Ile Val  Phe Met Ile
    1205                1210                1215

Leu Leu  Ser Ser Gly Ala Leu  Ala Phe Glu Asp Ile  Tyr Ile Glu
    1220                1225                1230

Gln Arg  Lys Thr Ile Lys Thr  Met Leu Glu Tyr Ala  Asp Lys Val
    1235                1240                1245

Phe Thr  Tyr Ile Phe Ile Leu  Glu Met Leu Leu Lys  Trp Val Ala
    1250                1255                1260

Tyr Gly  Phe Gln Val Tyr Phe  Thr Asn Ala Trp Cys  Trp Leu Asp
    1265                1270                1275

Phe Leu  Ile Val Asp Val Ser  Leu Val Ser Leu Thr  Ala Asn Ala
    1280                1285                1290

Leu Gly  Tyr Ser Glu Leu Gly  Ala Ile Lys Ser Leu  Arg Thr Leu
    1295                1300                1305

Arg Ala  Leu Arg Pro Leu Arg  Ala Leu Ser Arg Phe  Glu Gly Met
    1310                1315                1320

Arg Val  Val Val Asn Ala Leu  Leu Gly Ala Ile Pro  Ser Ile Met
    1325                1330                1335

Asn Val  Leu Leu Val Cys Leu  Ile Phe Trp Leu Ile  Phe Ser Ile
    1340                1345                1350

Met Gly  Val Asn Leu Phe Ala  Gly Lys Phe Tyr His  Cys Ile Asn
    1355                1360                1365

Tyr Thr  Thr Gly Glu Met Phe  Asp Val Ser Val Val  Asn Asn Tyr
    1370                1375                1380
```

```
Ser Glu  Cys Lys Ala Leu Ile  Glu Ser Asn Gln Thr  Ala Arg Trp
    1385                1390                1395

Lys Asn  Val Lys Val Asn Phe  Asp Asn Val Gly Leu  Gly Tyr Leu
    1400                1405                1410

Ser Leu  Leu Gln Val Ala Thr  Phe Lys Gly Trp Met  Asp Ile Met
    1415                1420                1425

Tyr Ala  Ala Val Asp Ser Arg  Asn Val Glu Leu Gln  Pro Lys Tyr
    1430                1435                1440

Glu Asp  Asn Leu Tyr Met Tyr  Leu Tyr Phe Val Ile  Phe Ile Ile
    1445                1450                1455

Phe Gly  Ser Phe Phe Thr Leu  Asn Leu Phe Ile Gly  Val Ile Ile
    1460                1465                1470

Asp Asn  Phe Asn Gln Gln Lys  Lys Lys Phe Gly Gly  Gln Asp Ile
    1475                1480                1485

Phe Met  Thr Glu Glu Gln Lys  Lys Tyr Tyr Asn Ala  Met Lys Lys
    1490                1495                1500

Leu Gly  Ser Lys Lys Pro Gln  Lys Pro Ile Pro Arg  Pro Ala Asn
    1505                1510                1515

Lys Phe  Gln Gly Met Val Phe  Asp Phe Val Thr Lys  Gln Val Phe
    1520                1525                1530

Asp Ile  Ser Ile Met Ile Leu  Ile Cys Leu Asn Met  Val Thr Met
    1535                1540                1545

Met Val  Glu Thr Asp Asp Gln  Ser Gln Glu Met Thr  Asn Ile Leu
    1550                1555                1560

Tyr Trp  Ile Asn Leu Val Phe  Ile Val Leu Phe Thr  Gly Glu Cys
```

```
    1565                1570                1575

Val Leu  Lys Leu Ile Ser Leu  Arg Tyr Tyr Tyr Phe  Thr Ile Gly
    1580                1585                1590

Trp Asn  Ile Phe Asp Phe Val  Val Val Ile Leu Ser  Ile Val Gly
    1595                1600                1605

Met Phe  Leu Ala Glu Leu Ile  Glu Lys Tyr Phe Val  Ser Pro Thr
    1610                1615                1620

Leu Phe  Arg Val Ile Arg Leu  Ala Arg Ile Gly Arg  Ile Leu Arg
    1625                1630                1635

Leu Ile  Lys Gly Ala Lys Gly  Ile Arg Thr Leu Leu  Phe Ala Leu
    1640                1645                1650

Met Met  Ser Leu Pro Ala Leu  Phe Asn Ile Gly Leu  Leu Leu Phe
    1655                1660                1665

Leu Val  Met Phe Ile Tyr Ala  Ile Phe Gly Met Ser  Asn Phe Ala
    1670                1675                1680

Tyr Val  Lys Arg Glu Val Gly  Ile Asp Asp Met Phe  Asn Phe Glu
    1685                1690                1695

Thr Phe  Gly Asn Ser Met Ile  Cys Leu Phe Gln Ile  Thr Thr Ser
    1700                1705                1710

Ala Gly  Trp Asp Gly Leu Leu  Ala Pro Ile Leu Asn  Ser Gly Pro
    1715                1720                1725

Pro Asp  Cys Asp Pro Glu Lys  Asp His Pro Gly Ser  Ser Val Lys
    1730                1735                1740

Gly Asp  Cys Gly Asn Pro Ser  Val Gly Ile Phe Phe  Phe Val Ser
    1745                1750                1755
```

```
Tyr Ile  Ile Ile Ser Phe Leu  Val Val Val Asn Met  Tyr Ile Ala
    1760                1765                1770

Val Ile  Leu Glu Asn Phe Ser  Val Ala Thr Glu Glu  Ser Ala Glu
    1775                1780                1785

Pro Leu  Ser Glu Asp Asp Phe  Glu Met Phe Tyr Glu  Val Trp Glu
    1790                1795                1800

Lys Phe  Asp Pro Asp Ala Thr  Gln Phe Ile Glu Phe  Ala Lys Leu
    1805                1810                1815

Ser Asp  Phe Ala Asp Ala Leu  Asp Pro Pro Leu Leu  Ile Ala Lys
    1820                1825                1830

Pro Asn  Lys Val Gln Leu Ile  Ala Met Asp Leu Pro  Met Val Ser
    1835                1840                1845

Gly Asp  Arg Ile His Cys Leu  Asp Ile Leu Phe Ala  Phe Thr Lys
    1850                1855                1860

Arg Val  Leu Gly Glu Ser Gly  Glu Met Asp Ala Leu  Arg Ile Gln
    1865                1870                1875

Met Glu  Glu Arg Phe Met Ala  Ser Asn Pro Ser Lys  Val Ser Tyr
    1880                1885                1890

Glu Pro  Ile Thr Thr Thr Leu  Lys Arg Lys Gln Glu  Glu Val Ser
    1895                1900                1905

Ala Ile  Ile Ile Gln Arg Ala  Tyr Arg Arg Tyr Leu  Leu Lys Gln
    1910                1915                1920

Lys Val  Lys Lys Val Ser Ser  Ile Tyr Lys Lys Asp  Lys Gly Lys
    1925                1930                1935

Glu Cys  Asp Gly Thr Pro Ile  Lys Glu Asp Thr Leu  Ile Asp Lys
```

```
    1940                1945                1950

Leu Asn  Glu Asn Ser Thr Pro  Glu Lys Thr Asp Met  Thr Pro Ser
    1955                1960                1965

Thr Thr  Ser Pro Pro Ser Tyr  Asp Ser Val Thr Lys  Pro Glu Lys
    1970                1975                1980

Glu Lys  Phe Glu Lys Asp Lys  Ser Glu Lys Glu Asp  Lys Gly Lys
    1985                1990                1995

Asp Ile  Arg Glu Ser Lys Lys
    2000                2005
```

<210>  44
<211>  2005
<212>  PRT
<213>  Macaca mulatta

<400>  44

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

Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Gln Arg Ile Ala Glu Glu
            20                  25                  30

Lys Ala Lys Arg Pro Lys Gln Glu Arg Lys Asp Glu Asp Asp Glu Asn
        35                  40                  45

Gly Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Ser Leu Pro Phe
    50                  55                  60

Ile Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Val Pro Leu Glu Asp
65                  70                  75                  80

Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys
                85                  90                  95
```

```
Gly Lys Ala Ile Ser Arg Phe Ser Ala Thr Pro Ala Leu Tyr Ile Leu
            100                 105                 110

Thr Pro Phe Asn Pro Ile Arg Lys Leu Ala Ile Lys Ile Leu Val His
        115                 120                 125

Ser Leu Phe Asn Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val
    130                 135                 140

Phe Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr
145                 150                 155                 160

Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala
                165                 170                 175

Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn
            180                 185                 190

Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val
        195                 200                 205

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

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

Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val
                245                 250                 255

Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly
            260                 265                 270

Asn Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Asp Asn Ser Ser Phe
        275                 280                 285

Glu Ile Asn Ile Thr Ser Phe Phe Asn Asn Ser Leu Asp Gly Asn Gly
    290                 295                 300
```

```
Thr Thr Phe Asn Arg Thr Val Ser Met Phe Asn Trp Asp Glu Tyr Ile
305                 310                 315                 320

Glu Asp Lys Ser His Phe Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu
                325                 330                 335

Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile
            340                 345                 350

Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp
        355                 360                 365

Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp
    370                 375                 380

Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr
385                 390                 395                 400

Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu
                405                 410                 415

Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn
            420                 425                 430

Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln
        435                 440                 445

Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala
    450                 455                 460

Ala Ala Ala Ser Ala Glu Ser Arg Asp Phe Ser Gly Ala Gly Gly Ile
465                 470                 475                 480

Gly Val Phe Ser Glu Ser Ser Ser Val Ala Ser Lys Leu Ser Ser Lys
                485                 490                 495
```

```
Ser Glu Lys Glu Leu Lys Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu
            500                 505                 510

Gln Ser Gly Glu Glu Glu Lys Asn Asp Arg Val Arg Lys Ser Glu Ser
        515                 520                 525

Glu Asp Ser Ile Arg Arg Lys Gly Phe Arg Phe Ser Leu Glu Gly Ser
    530                 535                 540

Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser Leu Leu
545                 550                 555                 560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Ala Ser
                565                 570                 575

Leu Phe Ser Phe Arg Gly Arg Thr Lys Asp Ile Gly Ser Glu Asn Asp
            580                 585                 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Asp Ser Arg Arg
        595                 600                 605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg His Ser Asn
    610                 615                 620

Val Ser Gln Ala Ser Arg Ala Ser Arg Val Leu Pro Ile Leu Pro Met
625                 630                 635                 640

Asn Gly Lys Met His Ser Ala Val Asp Cys Asn Gly Val Val Ser Leu
                645                 650                 655

Val Gly Gly Pro Ser Thr Leu Thr Ser Ala Gly Gln Leu Leu Pro Glu
            660                 665                 670

Gly Thr Thr Thr Glu Thr Glu Ile Arg Lys Arg Arg Ser Ser Ser Tyr
        675                 680                 685

His Val Ser Met Asp Leu Leu Glu Asp Pro Thr Ser Arg Gln Arg Ala
    690                 695                 700
```

```
Met Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu
705                 710                 715                 720


Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe Ala Asn Met Cys
                725                 730                 735


Leu Ile Trp Asp Cys Cys Lys Pro Trp Leu Lys Val Lys His Leu Val
            740                 745                 750


Asn Leu Val Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
        755                 760                 765


Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr
    770                 775                 780


Glu Gln Phe Ser Ser Val Leu Ser Val Gly Asn Leu Val Phe Thr Gly
785                 790                 795                 800


Ile Phe Thr Ala Glu Met Phe Leu Lys Ile Ile Ala Met Asp Pro Tyr
                805                 810                 815


Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Phe Ile Val Ser
            820                 825                 830


Leu Ser Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser Val
        835                 840                 845


Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
    850                 855                 860


Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
865                 870                 875                 880


Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
                885                 890                 895
```

```
Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
            900                 905                 910

Lys Ile Ser Asn Asp Cys Glu Leu Pro Arg Trp His Met His Asp Phe
        915                 920                 925

Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
    930                 935                 940

Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
945                 950                 955                 960

Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn
                965                 970                 975

Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
            980                 985                 990

Ala Thr Asp Asp Asp Asn Glu Met  Asn Asn Leu Gln Ile  Ala Val Gly
        995                 1000                1005

Arg Met  Gln Lys Gly Ile Asp  Phe Val Lys Arg Lys  Ile Arg Glu
    1010                1015                1020

Phe Ile  Gln Lys Ala Phe Val  Arg Lys Gln Lys Ala  Leu Asp Glu
    1025                1030                1035

Ile Lys  Pro Leu Glu Asp Leu  Asn Asn Lys Lys Asp  Ser Cys Ile
    1040                1045                1050

Ser Asn  His Thr Thr Ile Glu  Ile Gly Lys Asp Leu  Asn Tyr Leu
    1055                1060                1065

Lys Asp  Gly Asn Gly Thr Thr  Ser Gly Ile Gly Ser  Ser Val Glu
    1070                1075                1080

Lys Tyr  Val Val Asp Glu Ser  Asp Tyr Met Ser Phe  Ile Asn Asn
    1085                1090                1095
```

```
Pro Ser  Leu Thr Val Thr Val  Pro Ile Ala Val Gly  Glu Ser Asp
    1100                1105                1110

Phe Glu  Asn Leu Asn Thr Glu  Glu Phe Ser Ser Glu  Ser Asp Met
    1115                1120                1125

Glu Glu  Ser Lys Glu Lys Leu  Asn Ala Thr Ser Ser  Ser Glu Gly
    1130                1135                1140

Ser Thr  Val Asp Ile Gly Ala  Pro Ala Glu Gly Glu  Gln Pro Glu
    1145                1150                1155

Val Glu  Pro Glu Glu Ser Leu  Glu Pro Glu Ala Cys  Phe Thr Glu
    1160                1165                1170

Asp Cys  Val Arg Lys Phe Lys  Cys Cys Gln Ile Ser  Ile Glu Glu
    1175                1180                1185

Gly Lys  Gly Lys Leu Trp Trp  Asn Leu Arg Lys Thr  Cys Tyr Lys
    1190                1195                1200

Ile Val  Glu His Asn Trp Phe  Glu Thr Phe Ile Val  Phe Met Ile
    1205                1210                1215

Leu Leu  Ser Ser Gly Ala Leu  Ala Phe Glu Asp Ile  Tyr Ile Glu
    1220                1225                1230

Gln Arg  Lys Thr Ile Lys Thr  Met Leu Glu Tyr Ala  Asp Lys Val
    1235                1240                1245

Phe Thr  Tyr Ile Phe Ile Leu  Glu Met Leu Leu Lys  Trp Val Ala
    1250                1255                1260

Tyr Gly  Phe Gln Val Tyr Phe  Thr Asn Ala Trp Cys  Trp Leu Asp
    1265                1270                1275
```

```
Phe Leu  Ile Val Asp Val Ser  Leu Val Ser Leu Thr  Ala Asn Ala
    1280                1285                1290

Leu Gly  Tyr Ser Glu Leu Gly  Ala Ile Lys Ser Leu  Arg Thr Leu
    1295                1300                1305

Arg Ala  Leu Arg Pro Leu Arg  Ala Leu Ser Arg Phe  Glu Gly Met
    1310                1315                1320

Arg Val  Val Val Asn Ala Leu  Leu Gly Ala Ile Pro  Ser Ile Met
    1325                1330                1335

Asn Val  Leu Leu Val Cys Leu  Ile Phe Trp Leu Ile  Phe Ser Ile
    1340                1345                1350

Met Gly  Val Asn Leu Phe Ala  Gly Lys Phe Tyr His  Cys Ile Asn
    1355                1360                1365

Tyr Thr  Thr Gly Glu Met Phe  Asp Val Ser Val Val  Asn Asn Tyr
    1370                1375                1380

Ser Glu  Cys Lys Ala Leu Ile  Glu Ser Asn Gln Thr  Ala Arg Trp
    1385                1390                1395

Lys Asn  Val Lys Val Asn Phe  Asp Asn Val Gly Leu  Gly Tyr Leu
    1400                1405                1410

Ser Leu  Leu Gln Val Ala Thr  Phe Lys Gly Trp Met  Asp Ile Met
    1415                1420                1425

Tyr Ala  Ala Val Asp Ser Arg  Asn Val Glu Leu Gln  Pro Lys Tyr
    1430                1435                1440

Glu Asp  Asn Leu Tyr Met Tyr  Leu Tyr Phe Val Ile  Phe Ile Ile
    1445                1450                1455

Phe Gly  Ser Phe Phe Thr Leu  Asn Leu Phe Ile Gly  Val Ile Ile
    1460                1465                1470
```

```
Asp Asn  Phe Asn Gln Gln Lys  Lys Lys Phe Gly Gly  Gln Asp Ile
    1475                1480                1485

Phe Met  Thr Glu Glu Gln Lys  Lys Tyr Tyr Asn Ala  Met Lys Lys
    1490                1495                1500

Leu Gly  Ser Lys Lys Pro Gln  Lys Pro Ile Pro Arg  Pro Ala Asn
    1505                1510                1515

Lys Phe  Gln Gly Met Val Phe  Asp Phe Val Thr Lys  Gln Val Phe
    1520                1525                1530

Asp Ile  Ser Ile Met Ile Leu  Ile Cys Leu Asn Met  Val Thr Met
    1535                1540                1545

Met Val  Glu Thr Asp Asp Gln  Ser Gln Glu Met Thr  Asn Ile Leu
    1550                1555                1560

Tyr Trp  Ile Asn Leu Val Phe  Ile Val Leu Phe Thr  Gly Glu Cys
    1565                1570                1575

Val Leu  Lys Leu Ile Ser Leu  Arg Tyr Tyr Tyr Phe  Thr Ile Gly
    1580                1585                1590

Trp Asn  Ile Phe Asp Phe Val  Val Val Ile Leu Ser  Ile Val Gly
    1595                1600                1605

Met Phe  Leu Ala Glu Leu Ile  Glu Lys Tyr Phe Val  Ser Pro Thr
    1610                1615                1620

Leu Phe  Arg Val Ile Arg Leu  Ala Arg Ile Gly Arg  Ile Leu Arg
    1625                1630                1635

Leu Ile  Lys Gly Ala Lys Gly  Ile Arg Thr Leu Leu  Phe Ala Leu
    1640                1645                1650
```

```
Met Met  Ser Leu Pro Ala Leu  Phe Asn Ile Gly Leu  Leu Leu Phe
    1655                1660                1665

Leu Val  Met Phe Ile Tyr Ala  Ile Phe Gly Met Ser  Asn Phe Ala
    1670                1675                1680

Tyr Val  Lys Arg Glu Val Gly  Ile Asp Asp Met Phe  Asn Phe Glu
    1685                1690                1695

Thr Phe  Gly Asn Ser Met Ile  Cys Leu Phe Gln Ile  Thr Thr Ser
    1700                1705                1710

Ala Gly  Trp Asp Gly Leu Leu  Ala Pro Ile Leu Asn  Ser Gly Pro
    1715                1720                1725

Pro Asp  Cys Asp Pro Glu Lys  Asp His Pro Gly Ser  Ser Val Lys
    1730                1735                1740

Gly Asp  Cys Gly Asn Pro Ser  Val Gly Ile Phe Phe  Phe Val Ser
    1745                1750                1755

Tyr Ile  Ile Ile Ser Phe Leu  Val Val Val Asn Met  Tyr Ile Ala
    1760                1765                1770

Val Ile  Leu Glu Asn Phe Ser  Val Ala Thr Glu Glu  Ser Ala Glu
    1775                1780                1785

Pro Leu  Ser Glu Asp Asp Phe  Glu Met Phe Tyr Glu  Val Trp Glu
    1790                1795                1800

Lys Phe  Asp Pro Asp Ala Thr  Gln Phe Ile Glu Phe  Ala Lys Leu
    1805                1810                1815

Ser Asp  Phe Ala Asp Ala Leu  Asp Pro Pro Leu Leu  Ile Ala Lys
    1820                1825                1830

Pro Asn  Lys Val Gln Leu Ile  Ala Met Asp Leu Pro  Met Val Ser
    1835                1840                1845
```

```
Gly Asp  Arg Ile His Cys Leu  Asp Ile Leu Phe Ala  Phe Thr Lys
    1850                1855                1860

Arg Val  Leu Gly Glu Ser Gly  Glu Met Asp Ala Leu  Arg Ile Gln
    1865                1870                1875

Met Glu  Glu Arg Phe Met Ala  Ser Asn Pro Ser Lys  Val Ser Tyr
    1880                1885                1890

Glu Pro  Ile Thr Thr Thr Leu  Lys Arg Lys Gln Glu  Glu Val Ser
    1895                1900                1905

Ala Ile  Ile Ile Gln Arg Ala  Tyr Arg Arg Tyr Leu  Leu Lys Gln
    1910                1915                1920

Lys Val  Lys Lys Val Ser Ser  Ile Tyr Lys Lys Asp  Lys Gly Lys
    1925                1930                1935

Glu Cys  Asp Gly Thr Pro Ile  Lys Glu Asp Thr Leu  Ile Asp Lys
    1940                1945                1950

Leu Asn  Glu Asn Ser Thr Pro  Glu Lys Thr Asp Met  Thr Pro Ser
    1955                1960                1965

Thr Thr  Ser Pro Pro Ser Tyr  Asp Ser Val Thr Lys  Pro Glu Lys
    1970                1975                1980

Glu Lys  Phe Glu Lys Asp Lys  Ser Glu Lys Glu Asp  Lys Gly Lys
    1985                1990                1995

Asp Ile  Arg Glu Ser Lys Lys
    2000                2005
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<213>  Artificial Sequence

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<223>  Galeopterus variegates

<400>  45

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Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu Asp Pro Tyr Tyr Ile
1               5                  10                  15


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


Phe Ser Ala Thr Pro Ala Leu Tyr Ile Leu Thr Pro Phe Asn Pro Ile
        35                  40                  45


Arg Lys Leu Ala Ile Lys Ile Leu Val His Ser Leu Phe Asn Val Leu
    50                  55                  60


Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe Met Thr Met Ser Asn
65                  70                  75                  80


Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr Phe Thr Gly Ile Tyr
                85                  90                  95


Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala Arg Gly Phe Cys Leu Glu
            100                 105                 110


Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp Leu Asp Phe Thr Val
        115                 120                 125


Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp Leu Gly Asn Val Ser
    130                 135                 140


Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu Lys Thr Ile Ser Val
145                 150                 155                 160


Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu Ile Gln Ser Val Lys
                165                 170                 175
```

```
Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe Cys Leu Ser Val Phe
            180                 185                 190

Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn Leu Arg Asn Lys Cys
        195                 200                 205

Leu Gln Trp Pro Pro Asp Asn Ser Ser Phe Glu Ile Asn Ile Thr Ser
    210                 215                 220

Phe Phe Asn Asn Ser Leu Asp Gly Asn Gly Thr Thr Phe Asn Arg Thr
225                 230                 235                 240

Val Ser Met Phe Asn Trp Asp Glu Tyr Ile Glu Asp Glu Ser His Phe
                245                 250                 255

Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu Leu Cys Gly Asn Ser Ser
            260                 265                 270

Asp Ala Gly Gln Cys Pro Glu Gly Tyr Val Cys Val Lys Ala Gly Arg
        275                 280                 285

Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe Ser Trp Ala Phe
    290                 295                 300

Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp Glu Asn Leu Tyr
305                 310                 315                 320

Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met Ile Phe Phe Val
                325                 330                 335

Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn Leu Ile Leu Ala
            340                 345                 350

Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala Thr Leu Glu Glu
        355                 360                 365

Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Leu Glu Gln Leu Lys
    370                 375                 380
```

```
Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala Ala Ala Ala Ser Ala Glu
385                 390                 395                 400

Ser Arg Asp Phe Ser Gly Ala Gly Gly Ile Gly Val Phe Ser Glu Ser
                405                 410                 415

Ser Ser Val Ala Ser Lys Leu Ser Ser Lys Ser Glu Lys Glu Leu Lys
            420                 425                 430

Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu Gln Ser Gly Glu Glu Glu
        435                 440                 445

Lys Glu Asp Gly Val Arg Lys Ser Glu Ser Glu Asp Ser Ile Arg Arg
    450                 455                 460

Lys Gly Phe Arg Phe Ser Leu Glu Gly Ser Arg Leu Thr Tyr Glu Lys
465                 470                 475                 480

Arg Phe Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg Gly Ser Leu
                485                 490                 495

Phe Ser Pro Arg Arg Asn Ser Arg Ala Ser Leu Phe Ser Phe Arg Gly
            500                 505                 510

Arg Ala Lys Asp Ile Gly Ser Glu Asn Asp Phe Ala Asp Asp Glu His
        515                 520                 525

Ser Thr Phe Glu Asp Asn Asp Ser Arg Arg Asp Ser Leu Phe Val Pro
    530                 535                 540

His Arg His Gly Glu Arg Arg His Ser Asn Val Ser Gln Ala Ser Arg
545                 550                 555                 560

Ala Ser Arg Leu Leu Pro Thr Leu Pro Met Asn Gly Lys Met His Ser
                565                 570                 575
```

```
Ala Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly Pro Ser Pro
            580                 585                 590

Ala Gly Gln Leu Leu Pro Glu Gly Thr Thr Thr Glu Thr Glu Ile Arg
        595                 600                 605

Lys Arg Arg Ser Ser Ser Tyr His Val Ser Met Asp Leu Leu Glu Asp
    610                 615                 620

Pro Thr Ser Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu Thr Asn
625                 630                 635                 640

Thr Met Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro Cys Trp
                645                 650                 655

Tyr Lys Phe Ala Asn Met Cys Leu Ile Trp Asp Cys Cys Lys Pro Trp
            660                 665                 670

Leu Lys Val Lys Arg Leu Val Asn Leu Val Val Met Asp Pro Phe Val
        675                 680                 685

Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe Met Ala
    690                 695                 700

Met Glu His Tyr Pro Met Thr Glu Gln Phe Ser Ser Val Leu Ser Val
705                 710                 715                 720

Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe Leu Lys
                725                 730                 735

Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp Asn Ile
            740                 745                 750

Phe Asp Gly Phe Ile Val Ser Leu Ser Leu Met Glu Leu Gly Leu Ala
        755                 760                 765

Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu Arg Val
    770                 775                 780
```

```
Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile Lys Ile
785                 790                 795                 800

Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val Leu Ala
                805                 810                 815

Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe Gly Lys
            820                 825                 830

Ser Tyr Lys Glu Cys Val Cys Lys Ile Ser Asn Asp Cys Glu Leu Pro
        835                 840                 845

Arg Trp His Met His Asp Phe Phe His Ser Phe Leu Ile Val Phe Arg
    850                 855                 860

Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met Glu Val
865                 870                 875                 880

Ala Gly Gln Thr Met Cys Leu Thr Val Phe Met Met Val Met Val Ile
                885                 890                 895

Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu Ser Ser
            900                 905                 910

Phe Ser Ser Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu Met Asn
        915                 920                 925

Asn Leu Gln Ile Ala Val Gly Arg Met Gln Lys Gly Ile Asp Phe Val
    930                 935                 940

Lys Arg Lys Ile Arg Glu Phe Ile Gln Lys Ala Phe Val Arg Lys Gln
945                 950                 955                 960

Lys Ala Leu Asp Glu Ile Lys Pro Leu Glu Asp Leu Asn Asn Lys Lys
                965                 970                 975
```

```
Asp Ser Cys Ile Ser Asn His Thr Thr Ile Glu Ile Gly Lys Asp Leu
            980                 985                 990


Asn Tyr Leu Lys Asp Gly Asn Gly  Thr Thr Ser Gly Ile  Gly Ser Ser
        995                 1000                1005


Val Glu  Lys Tyr Val Val Asp  Glu Ser Asp Tyr Met  Ser Phe Ile
    1010                1015                1020


Asn Asn  Pro Ser Leu Thr Val  Thr Val Pro Ile Ala  Leu Gly Glu
    1025                1030                1035


Ser Asp  Phe Glu Asn Leu Asn  Thr Glu Glu Phe Ser  Ser Glu Ser
    1040                1045                1050


Asp Met  Glu Glu Ser Lys Glu  Lys Leu Asn Ala Thr  Ser Ser Ser
    1055                1060                1065


Glu Gly  Ser Thr Val Asp Ile  Gly Ala Pro Ala Glu  Gly Glu Gln
    1070                1075                1080


Pro Glu  Val Glu Pro Glu Glu  Ser Leu Glu Pro Glu  Ala Cys Phe
    1085                1090                1095


Thr Glu  Asp Cys Val Arg Lys  Phe Lys Cys Cys Gln  Ile Ser Ile
    1100                1105                1110


Glu Glu  Gly Lys Gly Lys Leu  Trp Trp Asn Leu Arg  Lys Thr Cys
    1115                1120                1125


Tyr Lys  Ile Val Glu His Asn  Trp Phe Glu Thr Phe  Ile Val Phe
    1130                1135                1140


Met Ile  Leu Leu Ser Ser Gly  Ala Leu Ala Phe Glu  Asp Ile Tyr
    1145                1150                1155


Ile Glu  Gln Arg Lys Thr Ile  Lys Thr Met Leu Glu  Tyr Ala Asp
    1160                1165                1170
```

```
Lys Val  Phe Thr Tyr Ile Phe  Ile Leu Glu Met Leu  Leu Lys Trp
    1175                1180                1185

Val Ala  Tyr Gly Phe Gln Met  Tyr Phe Thr Asn Ala  Trp Cys Trp
    1190                1195                1200

Leu Asp  Phe Leu Ile Val Asp  Val Ser Leu Val Ser  Leu Thr Ala
    1205                1210                1215

Asn Ala  Leu Gly Tyr Ser Glu  Leu Gly Ala Ile Lys  Ser Leu Arg
    1220                1225                1230

Thr Leu  Arg Ala Leu Arg Pro  Leu Arg Ala Leu Ser  Arg Phe Glu
    1235                1240                1245

Gly Met  Arg Val Val Val Asn  Ala Leu Leu Gly Ala  Ile Pro Ser
    1250                1255                1260

Ile Met  Asn Val Leu Leu Val  Cys Leu Ile Phe Trp  Leu Ile Phe
    1265                1270                1275

Ser Ile  Met Gly Val Asn Leu  Phe Ala Gly Lys Phe  Tyr His Cys
    1280                1285                1290

Ile Asn  Tyr Thr Thr Gly Glu  Met Phe Asp Val Ser  Val Val Asn
    1295                1300                1305

Asn Tyr  Ser Glu Cys Lys Ala  Leu Ile Glu Ser Asn  Gln Thr Ala
    1310                1315                1320

Arg Trp  Lys Asn Val Lys Val  Asn Phe Asp Asn Val  Gly Leu Gly
    1325                1330                1335

Tyr Leu  Ser Leu Leu Gln Val  Ala Thr Phe Lys Gly  Trp Met Asp
    1340                1345                1350
```

```
Ile Met  Tyr Ala Ala Val Asp  Ser Arg Asn Val Glu  Leu Gln Pro
    1355                1360                1365

Lys Tyr  Glu Asp Asn Leu Tyr  Met Tyr Leu Tyr Phe  Val Ile Phe
    1370                1375                1380

Ile Ile  Phe Gly Ser Phe Phe  Thr Leu Asn Leu Phe  Ile Gly Val
    1385                1390                1395

Ile Ile  Asp Asn Phe Asn Gln  Gln Lys Lys Lys Phe  Gly Gly Gln
    1400                1405                1410

Asp Ile  Phe Met Thr Glu Glu  Gln Lys Lys Tyr Tyr  Asn Ala Met
    1415                1420                1425

Lys Lys  Leu Gly Ser Lys Lys  Pro Gln Lys Pro Ile  Pro Arg Pro
    1430                1435                1440

Ala Asn  Lys Phe Gln Gly Met  Val Phe Asp Phe Val  Thr Lys Gln
    1445                1450                1455

Val Phe  Asp Ile Ser Ile Met  Ile Leu Ile Cys Leu  Asn Met Val
    1460                1465                1470

Thr Met  Met Val Glu Thr Asp  Asp Gln Ser Gln Glu  Met Thr Asn
    1475                1480                1485

Ile Leu  Tyr Trp Ile Asn Leu  Val Phe Ile Val Leu  Phe Thr Gly
    1490                1495                1500

Glu Cys  Val Leu Lys Leu Ile  Ser Leu Arg Tyr Tyr  Tyr Phe Thr
    1505                1510                1515

Ile Gly  Trp Asn Ile Phe Asp  Phe Val Val Val Ile  Leu Ser Ile
    1520                1525                1530

Val Gly  Met Phe Leu Ala Glu  Leu Ile Glu Lys Tyr  Phe Val Ser
    1535                1540                1545
```

```
Pro Thr  Leu Phe Arg Val Ile  Arg Leu Ala Arg Ile  Gly Arg Ile
    1550                1555                1560

Leu Arg  Leu Ile Lys Gly Ala  Lys Gly Ile Arg Thr  Leu Leu Phe
    1565                1570                1575

Ala Leu  Met Met Ser Leu Pro  Ala Leu Phe Asn Ile  Gly Leu Leu
    1580                1585                1590

Leu Phe  Leu Val Met Phe Ile  Tyr Ala Ile Phe Gly  Met Ser Asn
    1595                1600                1605

Phe Ala  Tyr Val Lys Arg Glu  Val Gly Ile Asp Asp  Met Phe Asn
    1610                1615                1620

Phe Glu  Thr Phe Gly Asn Ser  Met Ile Cys Leu Phe  Gln Ile Thr
    1625                1630                1635

Thr Ser  Ala Gly Trp Asp Gly  Leu Leu Ala Pro Ile  Leu Asn Ser
    1640                1645                1650

Gly Pro  Pro Asp Cys Asp Pro  Glu Lys Asp His Pro  Gly Ser Ser
    1655                1660                1665

Val Lys  Gly Asp Cys Gly Asn  Pro Ser Val Gly Ile  Phe Phe Phe
    1670                1675                1680

Val Ser  Tyr Ile Ile Ile Ser  Phe Leu Val Val Val  Asn Met Tyr
    1685                1690                1695

Ile Ala  Val Ile Leu Glu Asn  Phe Ser Val Ala Thr  Glu Glu Ser
    1700                1705                1710

Ala Glu  Pro Leu Ser Glu Asp  Asp Phe Glu Met Phe  Tyr Glu Val
    1715                1720                1725
```

```
Trp Glu  Lys Phe Asp Pro Asp  Ala Thr Gln Phe Ile  Glu Phe Ala
    1730                1735                1740

Lys Leu  Ser Asp Phe Ala Asp  Ala Leu Asp Pro Pro  Leu Leu Ile
    1745                1750                1755

Ala Lys  Pro Asn Lys Val Gln  Leu Ile Ala Met Asp  Leu Pro Met
    1760                1765                1770

Val Ser  Gly Asp Arg Ile His  Cys Leu Asp Ile Leu  Phe Ala Phe
    1775                1780                1785

Thr Lys  Arg Val Leu Gly Glu  Ser Gly Glu Met Asp  Ala Leu Arg
    1790                1795                1800

Ile Gln  Met Glu Glu Arg Phe  Met Ala Ser Asn Pro  Ser Lys Val
    1805                1810                1815

Ser Tyr  Glu Pro Ile Thr Thr  Thr Leu Lys Arg Lys  Gln Glu Glu
    1820                1825                1830

Val Ser  Ala Ile Ile Ile Gln  Arg Ala Tyr Arg Arg  Tyr Leu Leu
    1835                1840                1845

Lys Gln  Lys Val Lys Lys Val  Ser Ser Ile Tyr Lys  Lys Asp Lys
    1850                1855                1860

Gly Lys  Glu Cys Asp Gly Thr  Pro Ile Lys Glu Asp  Thr Leu Ile
    1865                1870                1875

Asp Lys  Leu Asn Glu Asn Ser  Thr Pro Glu Lys Thr  Asp Met Thr
    1880                1885                1890

Pro Ser  Thr Thr Ser Pro Pro  Ser Tyr Asp Ser Val  Thr Lys Pro
    1895                1900                1905

Glu Lys  Glu Lys Phe Glu Lys  Asp Lys Ser Glu Lys  Glu Asp Lys
    1910                1915                1920
```

```
Gly Lys  Asp Ile Arg Glu Ser  Lys Lys
    1925                1930


<210>  46
<211>  2006
<212>  PRT
<213>  Bos taurus

<400>  46

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


Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Gln Arg Ile Ala Glu Glu
            20                  25                  30


Lys Ala Lys Arg Pro Lys Gln Glu Arg Lys Asp Glu Asp Asp Glu Ser
        35                  40                  45


Gly Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Ser Leu Pro Phe
    50                  55                  60


Ile Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp
65                  70                  75                  80


Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys
                85                  90                  95


Gly Lys Ala Ile Ser Arg Phe Ser Ala Thr Pro Ala Leu Tyr Ile Leu
            100                 105                 110


Thr Pro Phe Asn Pro Ile Arg Lys Leu Ala Ile Lys Ile Leu Val His
        115                 120                 125


Ser Leu Phe Asn Val Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val
    130                 135                 140


Phe Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr
```

```
145                 150                 155                 160

Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala
                165                 170                 175

Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn
            180                 185                 190

Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val
        195                 200                 205

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

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

Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val
                245                 250                 255

Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly
            260                 265                 270

Asn Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Asp Asn Ser Ser Phe
        275                 280                 285

Glu Leu Asn Ile Thr Ser Phe Phe Asn Asn Ser Leu Asp Gly Asn Gly
    290                 295                 300

Thr Thr Phe Asn Arg Thr Val Ser Met Phe Asn Trp Asp Glu Tyr Ile
305                 310                 315                 320

Glu Asp Lys Ser His Phe Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu
                325                 330                 335

Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile
            340                 345                 350
```

```
Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp
        355                 360                 365

Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp
    370                 375                 380

Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr
385                 390                 395                 400

Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu
                405                 410                 415

Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn
            420                 425                 430

Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln
        435                 440                 445

Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala
    450                 455                 460

Ala Ala Ala Ser Ala Glu Ser Arg Glu Phe Ser Gly Ala Gly Gly Ile
465                 470                 475                 480

Gly Val Phe Ser Glu Ser Ser Ser Val Ala Ser Lys Leu Ser Ser Lys
                485                 490                 495

Ser Glu Lys Glu Leu Lys Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu
            500                 505                 510

Gln Ser Gly Glu Glu Glu Lys Glu Asp Gly Val Arg Lys Ser Glu Ser
        515                 520                 525

Glu Asp Ser Ile Arg Arg Lys Gly Phe Arg Phe Ser Leu Glu Gly Ser
    530                 535                 540

Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser Leu Leu
```

```
545                 550                 555                 560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Ala Ser
                565                 570                 575

Leu Phe Ser Phe Arg Gly Arg Ala Lys Asp Ile Gly Ser Glu Asn Asp
            580                 585                 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Asp Ser Arg Arg
        595                 600                 605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg His Ser Asn
    610                 615                 620

Val Ser Gln Ala Ser Arg Ala Ser Arg Val Leu Pro Ile Leu Pro Met
625                 630                 635                 640

Asn Gly Lys Met His Ser Ala Val Asp Cys Asn Gly Val Val Ser Leu
                645                 650                 655

Val Gly Gly Pro Ser Ala Leu Thr Ser Pro Ala Gly Gln Leu Leu Pro
            660                 665                 670

Glu Gly Thr Thr Thr Glu Thr Glu Ile Arg Lys Arg Arg Ser Ser Ser
        675                 680                 685

Tyr His Val Ser Met Asp Leu Leu Glu Asp Pro Thr Ala Arg Gln Arg
    690                 695                 700

Ala Met Ser Met Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu
705                 710                 715                 720

Glu Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe Ala Asn Met
                725                 730                 735

Cys Leu Ile Trp Asp Cys Cys Lys Pro Trp Leu Lys Val Lys His Val
            740                 745                 750
```

```
Val Asn Leu Val Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile
        755                 760                 765

Cys Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met
    770                 775                 780

Thr Glu Gln Phe Ser Ser Val Leu Ser Val Gly Asn Leu Val Phe Thr
785                 790                 795                 800

Gly Ile Phe Thr Ala Glu Met Phe Leu Lys Ile Ile Ala Met Asp Pro
                805                 810                 815

Tyr Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Leu Ile Val
            820                 825                 830

Ser Leu Ser Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser
        835                 840                 845

Val Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser
    850                 855                 860

Trp Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly
865                 870                 875                 880

Ala Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe
                885                 890                 895

Ala Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val
            900                 905                 910

Cys Lys Ile Ser Asn Asp Cys Glu Leu Pro Arg Trp His Met His Asp
        915                 920                 925

Phe Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp
    930                 935                 940

Ile Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys
```

```
945                 950                 955                 960

Leu Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu
                965                 970                 975

Asn Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu
            980                 985                 990

Ala Ala Thr Asp Asp Asp Asn Glu  Met Asn Asn Leu Gln  Ile Ala Val
        995                 1000                1005

Gly Arg  Met Gln Lys Gly Ile  Asp Phe Val Lys Arg  Lys Ile Arg
    1010                1015                1020

Glu Phe  Ile Gln Lys Ala Phe  Val Arg Lys Gln Lys  Ala Leu Asp
    1025                1030                1035

Glu Ile  Lys Pro Leu Glu Asp  Leu Asn Asn Lys Lys  Asp Ser Cys
    1040                1045                1050

Ile Ser  Asn His Thr Thr Ile  Glu Ile Gly Lys Asp  Leu Asn Tyr
    1055                1060                1065

Leu Lys  Asp Gly Asn Gly Thr  Thr Ser Gly Ile Gly  Ser Ser Val
    1070                1075                1080

Glu Lys  Tyr Val Val Asp Glu  Ser Asp Tyr Met Ser  Phe Ile Asn
    1085                1090                1095

Asn Pro  Ser Leu Thr Val Thr  Val Pro Ile Ala Val  Gly Glu Ser
    1100                1105                1110

Asp Phe  Glu Asn Leu Asn Thr  Glu Glu Phe Ser Ser  Glu Ser Asp
    1115                1120                1125

Met Glu  Glu Ser Lys Glu Lys  Leu Asn Ala Thr Ser  Ser Ser Glu
    1130                1135                1140
```

```
Gly Ser  Thr Val Asp Ile Gly  Ala Pro Ala Glu Gly  Glu Gln Pro
    1145                1150                1155

Glu Ala  Glu Pro Glu Glu Ser  Leu Glu Pro Glu Ala  Cys Phe Thr
    1160                1165                1170

Glu Asp  Cys Val Arg Lys Phe  Lys Cys Cys Gln Ile  Ser Ile Glu
    1175                1180                1185

Glu Gly  Lys Gly Lys Leu Trp  Trp Asn Leu Arg Lys  Thr Cys Tyr
    1190                1195                1200

Lys Ile  Val Glu His Asn Trp  Phe Glu Thr Phe Ile  Val Phe Met
    1205                1210                1215

Ile Leu  Val Ser Ser Gly Ala  Leu Ala Phe Glu Asp  Ile Tyr Ile
    1220                1225                1230

Glu Gln  Arg Lys Thr Ile Lys  Thr Met Leu Glu Tyr  Ala Asp Lys
    1235                1240                1245

Val Phe  Thr Tyr Ile Phe Ile  Leu Glu Met Leu Leu  Lys Trp Val
    1250                1255                1260

Ala Tyr  Gly Phe Gln Val Tyr  Phe Thr Asn Ala Trp  Cys Trp Leu
    1265                1270                1275

Asp Phe  Leu Ile Val Asp Val  Ser Leu Val Ser Leu  Thr Ala Asn
    1280                1285                1290

Ala Leu  Gly Tyr Ser Glu Leu  Gly Ala Ile Lys Ser  Leu Arg Thr
    1295                1300                1305

Leu Arg  Ala Leu Arg Pro Leu  Arg Ala Leu Ser Arg  Phe Glu Gly
    1310                1315                1320

Met Arg  Val Val Val Asn Ala  Leu Leu Gly Ala Ile  Pro Ser Ile
```

```
    1325                1330                1335

Met Asn  Val Leu Leu Val Cys  Leu Ile Phe Trp Leu  Ile Phe Ser
    1340                1345                1350

Ile Met  Gly Val Asn Leu Phe  Ala Gly Lys Phe Tyr  His Cys Ile
    1355                1360                1365

Asn Tyr  Thr Thr Gly Glu Met  Phe Asp Val Ser Val  Val Asn Asn
    1370                1375                1380

Tyr Ser  Glu Cys Lys Ala Leu  Ile Asp Ser Asn Gln  Thr Ala Arg
    1385                1390                1395

Trp Lys  Asn Val Lys Val Asn  Phe Asp Asn Val Gly  Leu Gly Tyr
    1400                1405                1410

Leu Ser  Leu Leu Gln Val Ala  Thr Phe Lys Gly Trp  Met Asp Ile
    1415                1420                1425

Met Tyr  Ala Ala Val Asp Ser  Arg Asn Val Glu Leu  Gln Pro Lys
    1430                1435                1440

Tyr Glu  Asp Asn Leu Tyr Met  Tyr Leu Tyr Phe Val  Ile Phe Ile
    1445                1450                1455

Ile Phe  Gly Ser Phe Phe Thr  Leu Asn Leu Phe Ile  Gly Val Ile
    1460                1465                1470

Ile Asp  Asn Phe Asn Gln Gln  Lys Lys Lys Phe Gly  Gly Gln Asp
    1475                1480                1485

Ile Phe  Met Thr Glu Glu Gln  Lys Lys Tyr Tyr Asn  Ala Met Lys
    1490                1495                1500

Lys Leu  Gly Ser Lys Lys Pro  Gln Lys Pro Ile Pro  Arg Pro Ala
    1505                1510                1515
```

```
Asn Lys  Phe Gln Gly Met Val  Phe Asp Phe Val Thr  Lys Gln Val
    1520                1525                1530

Phe Asp  Ile Ser Ile Met Ile  Leu Ile Cys Leu Asn  Met Val Thr
    1535                1540                1545

Met Met  Val Glu Thr Asp Asp  Gln Ser Gln Glu Met  Thr Asn Ile
    1550                1555                1560

Leu Tyr  Trp Ile Asn Leu Val  Phe Ile Val Leu Phe  Thr Gly Glu
    1565                1570                1575

Cys Val  Leu Lys Leu Ile Ser  Leu Arg Tyr Tyr Tyr  Phe Thr Ile
    1580                1585                1590

Gly Trp  Asn Ile Phe Asp Phe  Val Val Val Ile Leu  Ser Ile Val
    1595                1600                1605

Gly Met  Phe Leu Ala Glu Leu  Ile Glu Lys Tyr Phe  Val Ser Pro
    1610                1615                1620

Thr Leu  Phe Arg Val Ile Arg  Leu Ala Arg Ile Gly  Arg Ile Leu
    1625                1630                1635

Arg Leu  Ile Lys Gly Ala Lys  Gly Ile Arg Thr Leu  Leu Phe Ala
    1640                1645                1650

Leu Met  Met Ser Leu Pro Ala  Leu Phe Asn Ile Gly  Leu Leu Leu
    1655                1660                1665

Phe Leu  Val Met Phe Ile Tyr  Ala Ile Phe Gly Met  Ser Asn Phe
    1670                1675                1680

Ala Tyr  Val Lys Arg Glu Val  Gly Ile Asp Asp Met  Phe Asn Phe
    1685                1690                1695

Glu Thr  Phe Gly Asn Ser Met  Ile Cys Leu Phe Gln  Ile Thr Thr
```

```
    1700                1705                1710

Ser Ala  Gly Trp Asp Gly Leu  Leu Ala Pro Ile Leu  Asn Ser Gly
    1715                1720                1725

Pro Pro  Asp Cys Asp Pro Glu  Lys Asp His Pro Gly  Ser Ser Val
    1730                1735                1740

Lys Gly  Asp Cys Gly Asn Pro  Ser Val Gly Ile Phe  Phe Phe Val
    1745                1750                1755

Ser Tyr  Ile Ile Ile Ser Phe  Leu Val Val Val Asn  Met Tyr Ile
    1760                1765                1770

Ala Val  Ile Leu Glu Asn Phe  Ser Val Ala Thr Glu  Glu Ser Ala
    1775                1780                1785

Glu Pro  Leu Ser Glu Asp Asp  Phe Glu Met Phe Tyr  Glu Val Trp
    1790                1795                1800

Glu Lys  Phe Asp Pro Asp Ala  Thr Gln Phe Ile Glu  Phe Ser Lys
    1805                1810                1815

Leu Ser  Asp Phe Ala Ala Ala  Leu Asp Pro Pro Leu  Leu Ile Ala
    1820                1825                1830

Lys Pro  Asn Lys Val Gln Leu  Ile Ala Met Asp Leu  Pro Met Val
    1835                1840                1845

Ser Gly  Asp Arg Ile His Cys  Leu Asp Ile Leu Phe  Ala Phe Thr
    1850                1855                1860

Lys Arg  Val Leu Gly Glu Ser  Gly Glu Met Asp Ala  Leu Arg Ile
    1865                1870                1875

Gln Met  Glu Glu Arg Phe Met  Ala Ser Asn Pro Ser  Lys Val Ser
    1880                1885                1890
```

```
Tyr Glu  Pro Ile Thr Thr Thr  Leu Lys Arg Lys Gln  Glu Glu Val
    1895                1900                1905


Ser Ala  Ile Val Ile Gln Arg  Ala Tyr Arg Arg Tyr  Leu Leu Lys
    1910                1915                1920


Gln Lys  Val Lys Lys Val Ser  Cys Ile Tyr Lys Lys  Asp Lys Gly
    1925                1930                1935


Lys Glu  Gly Glu Gly Thr Pro  Ile Lys Glu Asp Ile  Leu Ile Asp
    1940                1945                1950


Lys Leu  Asn Glu Asn Ser Thr  Pro Glu Lys Thr Asp  Met Thr Pro
    1955                1960                1965


Ser Thr  Thr Ser Pro Pro Ser  Tyr Asp Ser Val Thr  Lys Pro Glu
    1970                1975                1980


Lys Glu  Lys Phe Glu Lys Asp  Lys Ser Glu Lys Glu  Asp Lys Gly
    1985                1990                1995


Lys Asp  Ile Arg Glu Ser Lys  Lys
    2000                2005


<210>  47
<211>  2006
<212>  PRT
<213>  Ovis aries

<400>  47

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


Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Gln Arg Ile Ala Glu Glu
            20                  25                  30


Lys Ala Lys Arg Pro Lys Gln Glu Arg Lys Asp Glu Asp Asp Glu Ser
        35                  40                  45
```

```
Gly Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Ser Leu Pro Phe
    50                  55                  60

Ile Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp
65                  70                  75                  80

Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys
                85                  90                  95

Gly Lys Ala Ile Ser Arg Phe Ser Ala Thr Pro Ala Leu Tyr Ile Leu
            100                 105                 110

Thr Pro Phe Asn Pro Ile Arg Lys Leu Ala Ile Lys Ile Leu Val His
        115                 120                 125

Ser Leu Phe Asn Val Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val
    130                 135                 140

Phe Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr
145                 150                 155                 160

Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala
                165                 170                 175

Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn
            180                 185                 190

Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val
        195                 200                 205

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

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

```
Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val
                245                 250                 255

Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly
            260                 265                 270

Asn Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Asp Asn Ser Ser Phe
        275                 280                 285

Glu Leu Asn Ile Thr Ser Phe Phe Asn Asn Ser Leu Asp Gly Asn Gly
    290                 295                 300

Thr Thr Phe Asn Arg Thr Val Ser Met Phe Asn Trp Asp Glu Tyr Ile
305                 310                 315                 320

Glu Asp Lys Ser His Phe Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu
                325                 330                 335

Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile
            340                 345                 350

Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp
        355                 360                 365

Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp
    370                 375                 380

Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr
385                 390                 395                 400

Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu
                405                 410                 415

Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn
            420                 425                 430

Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln
        435                 440                 445
```

```
Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala
    450                 455                 460

Ala Ala Ala Ser Ala Glu Ser Arg Asp Phe Ser Gly Ala Gly Gly Ile
465                 470                 475                 480

Gly Val Phe Ser Glu Ser Ser Ser Val Ala Ser Lys Leu Ser Ser Lys
                485                 490                 495

Ser Glu Lys Glu Leu Lys Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu
            500                 505                 510

Gln Ser Gly Glu Glu Glu Lys Glu Asp Gly Val His Lys Ser Glu Ser
        515                 520                 525

Glu Asp Ser Ile Arg Arg Lys Gly Phe Arg Phe Ser Leu Glu Gly Ser
    530                 535                 540

Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser Leu Leu
545                 550                 555                 560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Ala Ser
                565                 570                 575

Leu Phe Ser Phe Arg Gly Arg Ala Lys Asp Ile Gly Ser Glu Asn Asp
            580                 585                 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Asp Ser Arg Arg
        595                 600                 605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg His Ser Asn
    610                 615                 620

Val Ser Gln Ala Ser Arg Ala Ser Arg Val Leu Pro Ile Leu Pro Met
625                 630                 635                 640
```

```
Asn Gly Lys Met His Ser Ala Val Asp Cys Asn Gly Val Val Ser Leu
                645                 650                 655

Val Gly Gly Pro Ser Ala Leu Thr Ser Pro Ala Gly Gln Leu Leu Pro
            660                 665                 670

Glu Gly Thr Thr Thr Glu Thr Glu Ile Arg Lys Arg Arg Ser Ser Ser
        675                 680                 685

Tyr His Val Ser Met Asp Leu Leu Glu Asp Pro Thr Ala Arg Gln Arg
    690                 695                 700

Ala Met Ser Met Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu
705                 710                 715                 720

Glu Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe Ala Asn Met
                725                 730                 735

Cys Leu Ile Trp Asp Cys Cys Lys Pro Trp Leu Lys Val Lys His Val
            740                 745                 750

Val Asn Leu Val Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile
        755                 760                 765

Cys Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met
    770                 775                 780

Thr Glu Gln Phe Ser Ser Val Leu Ser Val Gly Asn Leu Val Phe Thr
785                 790                 795                 800

Gly Ile Phe Thr Ala Glu Met Phe Leu Lys Ile Ile Ala Met Asp Pro
                805                 810                 815

Tyr Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Leu Ile Val
            820                 825                 830

Ser Leu Ser Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser
        835                 840                 845
```

```
Val Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser
    850                 855                 860

Trp Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly
865                 870                 875                 880

Ala Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe
                885                 890                 895

Ala Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val
            900                 905                 910

Cys Lys Ile Ser Asn Asp Cys Glu Leu Pro Arg Trp His Met His Asp
        915                 920                 925

Phe Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp
    930                 935                 940

Ile Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys
945                 950                 955                 960

Leu Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu
                965                 970                 975

Asn Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu
            980                 985                 990

Ala Ala Thr Asp Asp Asp Asn Glu  Met Asn Asn Leu Gln  Ile Ala Val
        995                 1000                1005

Gly Arg  Met Gln Lys Gly Ile  Asp Phe Val Lys Arg  Lys Ile Arg
    1010                1015                1020

Glu Phe  Ile Gln Lys Ala Phe  Val Arg Lys Gln Lys  Ala Leu Asp
    1025                1030                1035
```

```
Glu Ile  Lys Pro Leu Glu Asp  Leu Asn Asn Lys Lys  Asp Ser Cys
    1040                1045                1050

Ile Ser  Asn His Thr Thr Ile  Glu Ile Gly Lys Asp  Leu Asn Tyr
    1055                1060                1065

Leu Lys  Asp Gly Asn Gly Thr  Thr Ser Gly Ile Gly  Ser Ser Val
    1070                1075                1080

Glu Lys  Tyr Val Val Asp Glu  Ser Asp Tyr Met Ser  Phe Ile Asn
    1085                1090                1095

Asn Pro  Ser Leu Thr Val Thr  Val Pro Ile Ala Val  Gly Glu Ser
    1100                1105                1110

Asp Phe  Glu Asn Leu Asn Thr  Glu Glu Phe Ser Ser  Glu Ser Asp
    1115                1120                1125

Met Glu  Glu Ser Lys Glu Lys  Leu Asn Ala Thr Ser  Ser Ser Glu
    1130                1135                1140

Gly Ser  Thr Val Asp Ile Gly  Ala Pro Ala Glu Gly  Glu Gln Pro
    1145                1150                1155

Glu Ala  Glu Pro Glu Glu Ser  Leu Glu Pro Glu Ala  Cys Phe Thr
    1160                1165                1170

Glu Asp  Cys Val Arg Lys Phe  Lys Cys Cys Gln Ile  Ser Ile Glu
    1175                1180                1185

Glu Gly  Lys Gly Lys Leu Trp  Trp Asn Leu Arg Lys  Thr Cys Tyr
    1190                1195                1200

Lys Ile  Val Glu His Asn Trp  Phe Glu Thr Phe Ile  Val Phe Met
    1205                1210                1215

Ile Leu  Val Ser Ser Gly Ala  Leu Ala Phe Glu Asp  Ile Tyr Ile
    1220                1225                1230
```

```
Glu Gln  Arg Lys Thr Ile Lys  Thr Met Leu Glu Tyr  Ala Asp Lys
    1235                1240                1245

Val Phe  Thr Tyr Ile Phe Ile  Leu Glu Met Leu Leu  Lys Trp Val
    1250                1255                1260

Ala Tyr  Gly Phe Gln Val Tyr  Phe Thr Asn Ala Trp  Cys Trp Leu
    1265                1270                1275

Asp Phe  Leu Ile Val Asp Val  Ser Leu Val Ser Leu  Thr Ala Asn
    1280                1285                1290

Ala Leu  Gly Tyr Ser Glu Leu  Gly Ala Ile Lys Ser  Leu Arg Thr
    1295                1300                1305

Leu Arg  Ala Leu Arg Pro Leu  Arg Ala Leu Ser Arg  Phe Glu Gly
    1310                1315                1320

Met Arg  Val Val Val Asn Ala  Leu Leu Gly Ala Ile  Pro Ser Ile
    1325                1330                1335

Met Asn  Val Leu Leu Val Cys  Leu Ile Phe Trp Leu  Ile Phe Ser
    1340                1345                1350

Ile Met  Gly Val Asn Leu Phe  Ala Gly Lys Phe Tyr  His Cys Ile
    1355                1360                1365

Asn Tyr  Thr Thr Gly Glu Met  Phe Asp Val Ser Val  Val Asn Asn
    1370                1375                1380

Tyr Ser  Glu Cys Lys Ala Leu  Ile Asp Ser Asn Gln  Thr Ala Arg
    1385                1390                1395

Trp Lys  Asn Val Lys Val Asn  Phe Asp Asn Val Gly  Leu Gly Tyr
    1400                1405                1410
```

```
Leu Ser  Leu Leu Gln Val Ala  Thr Phe Lys Gly Trp  Met Asp Ile
    1415                 1420                 1425

Met Tyr  Ala Ala Val Asp Ser  Arg Asn Val Glu Leu  Gln Pro Lys
    1430                 1435                 1440

Tyr Glu  Asp Asn Leu Tyr Met  Tyr Leu Tyr Phe Val  Ile Phe Ile
    1445                 1450                 1455

Ile Phe  Gly Ser Phe Phe Thr  Leu Asn Leu Phe Ile  Gly Val Ile
    1460                 1465                 1470

Ile Asp  Asn Phe Asn Gln Gln  Lys Lys Lys Phe Gly  Gly Gln Asp
    1475                 1480                 1485

Ile Phe  Met Thr Glu Glu Gln  Lys Lys Tyr Tyr Asn  Ala Met Lys
    1490                 1495                 1500

Lys Leu  Gly Ser Lys Lys Pro  Gln Lys Pro Ile Pro  Arg Pro Ala
    1505                 1510                 1515

Asn Lys  Phe Gln Gly Met Val  Phe Asp Phe Val Thr  Lys Gln Val
    1520                 1525                 1530

Phe Asp  Ile Ser Ile Met Ile  Leu Ile Cys Leu Asn  Met Val Thr
    1535                 1540                 1545

Met Met  Val Glu Thr Asp Asp  Gln Ser Gln Glu Met  Thr Asn Ile
    1550                 1555                 1560

Leu Tyr  Trp Ile Asn Leu Val  Phe Ile Val Leu Phe  Thr Gly Glu
    1565                 1570                 1575

Cys Val  Leu Lys Leu Ile Ser  Leu Arg Tyr Tyr Tyr  Phe Thr Ile
    1580                 1585                 1590

Gly Trp  Asn Ile Phe Asp Phe  Val Val Val Ile Leu  Ser Ile Val
    1595                 1600                 1605
```

```
Gly Met  Phe Leu Ala Glu Leu  Ile Glu Lys Tyr Phe  Val Ser Pro
    1610                1615                1620

Thr Leu  Phe Arg Val Ile Arg  Leu Ala Arg Ile Gly  Arg Ile Leu
    1625                1630                1635

Arg Leu  Ile Lys Gly Ala Lys  Gly Ile Arg Thr Leu  Leu Phe Ala
    1640                1645                1650

Leu Met  Met Ser Leu Pro Ala  Leu Phe Asn Ile Gly  Leu Leu Leu
    1655                1660                1665

Phe Leu  Val Met Phe Ile Tyr  Ala Ile Phe Gly Met  Ser Asn Phe
    1670                1675                1680

Ala Tyr  Val Lys Arg Glu Val  Gly Ile Asp Asp Met  Phe Asn Phe
    1685                1690                1695

Glu Thr  Phe Gly Asn Ser Met  Ile Cys Leu Phe Gln  Ile Thr Thr
    1700                1705                1710

Ser Ala  Gly Trp Asp Gly Leu  Leu Ala Pro Ile Leu  Asn Ser Gly
    1715                1720                1725

Pro Pro  Asp Cys Asp Pro Glu  Lys Asp His Pro Gly  Ser Ser Val
    1730                1735                1740

Lys Gly  Asp Cys Gly Asn Pro  Ser Val Gly Ile Phe  Phe Phe Val
    1745                1750                1755

Ser Tyr  Ile Ile Ile Ser Phe  Leu Val Val Val Asn  Met Tyr Ile
    1760                1765                1770

Ala Val  Ile Leu Glu Asn Phe  Ser Val Ala Thr Glu  Glu Ser Ala
    1775                1780                1785
```

```
Glu Pro  Leu Ser Glu Asp Asp  Phe Glu Met Phe Tyr  Glu Val Trp
    1790                 1795                 1800

Glu Lys  Phe Asp Pro Asp Ala  Thr Gln Phe Ile Glu  Phe Ser Lys
    1805                 1810                 1815

Leu Ser  Asp Phe Ala Ala Ala  Leu Asp Pro Pro Leu  Leu Ile Ala
    1820                 1825                 1830

Lys Pro  Asn Lys Val Gln Leu  Ile Ala Met Asp Leu  Pro Met Val
    1835                 1840                 1845

Ser Gly  Asp Arg Ile His Cys  Leu Asp Ile Leu Phe  Ala Phe Thr
    1850                 1855                 1860

Lys Arg  Val Leu Gly Glu Ser  Gly Glu Met Asp Ala  Leu Arg Ile
    1865                 1870                 1875

Gln Met  Glu Glu Arg Phe Met  Ala Ser Asn Pro Ser  Lys Val Ser
    1880                 1885                 1890

Tyr Glu  Pro Ile Thr Thr Thr  Leu Lys Arg Lys Gln  Glu Glu Val
    1895                 1900                 1905

Ser Ala  Ile Val Ile Gln Arg  Ala Tyr Arg Arg Tyr  Leu Leu Lys
    1910                 1915                 1920

Gln Lys  Val Lys Lys Val Ser  Cys Ile Tyr Lys Lys  Asp Lys Gly
    1925                 1930                 1935

Lys Glu  Gly Glu Gly Thr Pro  Ile Lys Glu Asp Ile  Leu Ile Asp
    1940                 1945                 1950

Lys Leu  Asn Glu Asn Ser Thr  Pro Glu Lys Thr Asp  Met Thr Pro
    1955                 1960                 1965

Ser Thr  Thr Ser Pro Pro Ser  Tyr Asp Ser Val Thr  Lys Pro Glu
    1970                 1975                 1980
```

```
Lys Glu  Lys Phe Glu Lys Asp  Lys Ser Glu Lys Glu  Asp Lys Gly
    1985                1990                1995


Lys Asp  Ile Arg Glu Ser Lys  Lys
    2000                2005
```

<210>  48
<211>  2006
<212>  PRT
<213>  Camelus dromedarius

<400>  48

```
Met Ala Gln Ser Val Leu Val Pro Pro Gly Pro Asp Ser Phe Arg Phe
1               5                   10                  15


Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Gln Arg Ile Ala Glu Glu
            20                  25                  30


Lys Ala Lys Arg Pro Lys Gln Glu Arg Lys Asp Glu Asp Asp Glu Asn
        35                  40                  45


Gly Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Ser Leu Pro Phe
    50                  55                  60


Ile Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp
65                  70                  75                  80


Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys
                85                  90                  95


Gly Lys Ala Ile Ser Arg Phe Ser Ala Thr Pro Ala Leu Tyr Ile Leu
            100                 105                 110


Thr Pro Phe Asn Pro Ile Arg Lys Leu Ala Ile Lys Ile Leu Val His
        115                 120                 125


Ser Leu Phe Asn Val Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val
```

```
    130                 135                 140

Phe Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr
145                 150                 155                 160

Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala
                165                 170                 175

Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn
            180                 185                 190

Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val
        195                 200                 205

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

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

Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val
                245                 250                 255

Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly
            260                 265                 270

Asn Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Asp Asn Ser Ser Leu
        275                 280                 285

Glu Ile Asn Ile Thr Ser Phe Phe Asn Asn Ser Leu Asp Gly Asn Gly
    290                 295                 300

Thr Thr Phe Asn Arg Thr Val Ser Met Phe Asn Trp Asp Asp Tyr Ile
305                 310                 315                 320

Glu Asp Lys Ser His Phe Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu
                325                 330                 335
```

```
Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile
            340                 345                 350

Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp
        355                 360                 365

Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp
    370                 375                 380

Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr
385                 390                 395                 400

Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu
                405                 410                 415

Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn
            420                 425                 430

Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln
        435                 440                 445

Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala
    450                 455                 460

Ala Ala Ala Ser Ala Glu Ser Arg Asp Phe Ser Gly Ala Gly Gly Ile
465                 470                 475                 480

Gly Val Phe Ser Glu Ser Ser Ser Val Ala Ser Lys Leu Ser Ser Lys
                485                 490                 495

Ser Glu Lys Glu Leu Lys Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu
            500                 505                 510

Gln Ser Gly Glu Glu Glu Lys Glu Asp Gly Val His Lys Ser Glu Ser
        515                 520                 525

Glu Asp Ser Ile Arg Arg Lys Gly Phe Arg Phe Ser Leu Glu Gly Ser
```

```
    530                 535                 540

Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser Leu Leu
545                 550                 555                 560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Ala Ser
                565                 570                 575

Leu Phe Ser Phe Arg Gly Arg Ala Lys Asp Ile Gly Ser Glu Asn Asp
            580                 585                 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Asp Ser Arg Arg
        595                 600                 605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg His Ser Asn
    610                 615                 620

Val Ser Gln Ala Ser Arg Ala Ser Arg Val Leu Pro Ile Leu Pro Met
625                 630                 635                 640

Asn Gly Lys Met His Ser Ala Val Asp Cys Asn Gly Val Val Ser Leu
                645                 650                 655

Val Gly Gly Pro Ser Ala Leu Thr Ser Pro Ala Gly Gln Leu Leu Pro
            660                 665                 670

Glu Gly Thr Thr Thr Glu Thr Glu Ile Arg Lys Arg Arg Ser Ser Ser
        675                 680                 685

Tyr His Val Ser Met Asp Leu Leu Glu Asp Pro Thr Ala Arg Gln Arg
    690                 695                 700

Ala Met Ser Met Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu
705                 710                 715                 720

Glu Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe Ala Asn Thr
                725                 730                 735
```

```
Cys Leu Ile Trp Asp Cys Cys Lys Pro Trp Leu Lys Val Lys His Leu
            740                 745                 750

Val Asn Leu Val Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile
        755                 760                 765

Cys Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met
    770                 775                 780

Thr Glu Gln Phe Ser Ser Val Leu Ser Val Gly Asn Leu Val Phe Thr
785                 790                 795                 800

Gly Ile Phe Thr Ala Glu Met Phe Leu Lys Ile Ile Ala Met Asp Pro
                805                 810                 815

Tyr Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Leu Ile Val
            820                 825                 830

Ser Leu Ser Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser
        835                 840                 845

Val Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser
    850                 855                 860

Trp Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly
865                 870                 875                 880

Ala Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe
                885                 890                 895

Ala Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val
            900                 905                 910

Cys Lys Ile Ser Asn Asp Cys Glu Leu Pro Arg Trp His Met His Asp
        915                 920                 925

Phe Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp
```

```
    930                 935                 940

Ile Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys
945                 950                 955                 960

Leu Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu
                965                 970                 975

Asn Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu
            980                 985                 990

Ala Ala Thr Asp Asp Asp Asn Glu  Met Asn Asn Leu Gln  Ile Ala Val
        995                 1000                1005

Gly Arg  Met Gln Lys Gly Ile  Asp Tyr Val Lys Arg  Lys Ile Arg
    1010                1015                1020

Glu Phe  Ile Gln Lys Ala Phe  Val Arg Lys Gln Lys  Ala Leu Asp
    1025                1030                1035

Glu Ile  Lys Pro Leu Glu Asp  Leu Asn Asn Lys Lys  Asp Ser Cys
    1040                1045                1050

Ile Ser  Asn His Thr Thr Ile  Glu Ile Gly Lys Asp  Leu Asn Tyr
    1055                1060                1065

Leu Lys  Asp Gly Asn Gly Thr  Thr Ser Gly Ile Gly  Ser Ser Val
    1070                1075                1080

Glu Lys  Tyr Val Val Asp Glu  Ser Asp Tyr Met Ser  Phe Ile Asn
    1085                1090                1095

Asn Pro  Ser Leu Thr Val Thr  Val Pro Ile Ala Val  Gly Glu Ser
    1100                1105                1110

Asp Phe  Glu Asn Leu Asn Thr  Glu Glu Phe Ser Ser  Glu Ser Asp
    1115                1120                1125
```

```
Met Glu  Glu Ser Lys Glu Lys  Leu Asn Ala Thr Ser  Ser Ser Glu
    1130                1135                1140

Gly Ser  Thr Val Asp Ile Gly  Ala Pro Ala Glu Gly  Glu Gln Pro
    1145                1150                1155

Glu Val  Glu Pro Glu Glu Ser  Leu Glu Pro Glu Ala  Cys Phe Thr
    1160                1165                1170

Glu Asp  Cys Val Arg Lys Phe  Lys Cys Cys Gln Ile  Ser Ile Glu
    1175                1180                1185

Glu Gly  Lys Gly Lys Leu Trp  Trp Asn Val Arg Lys  Thr Cys Tyr
    1190                1195                1200

Lys Ile  Val Glu His Asn Trp  Phe Glu Thr Phe Ile  Val Phe Met
    1205                1210                1215

Ile Leu  Leu Ser Ser Gly Ala  Leu Ala Phe Glu Asp  Ile Tyr Ile
    1220                1225                1230

Glu Gln  Arg Lys Thr Ile Lys  Thr Met Leu Glu Tyr  Ala Asp Lys
    1235                1240                1245

Val Phe  Thr Tyr Ile Phe Ile  Leu Glu Met Leu Leu  Lys Trp Val
    1250                1255                1260

Ala Tyr  Gly Phe Gln Val Tyr  Phe Thr Asn Ala Trp  Cys Trp Leu
    1265                1270                1275

Asp Phe  Leu Ile Val Asp Val  Ser Leu Val Ser Leu  Thr Ala Asn
    1280                1285                1290

Ala Leu  Gly Tyr Ser Glu Leu  Gly Ala Ile Lys Ser  Leu Arg Thr
    1295                1300                1305

Leu Arg  Ala Leu Arg Pro Leu  Arg Ala Leu Ser Arg  Phe Glu Gly
```

```
    1310                1315                1320

Met Arg  Val Val Val Asn Ala  Leu Leu Gly Ala Ile  Pro Ser Ile
    1325                1330                1335

Met Asn  Val Leu Leu Val Cys  Leu Ile Phe Trp Leu  Ile Phe Ser
    1340                1345                1350

Ile Met  Gly Val Asn Leu Phe  Ala Gly Lys Phe Tyr  His Cys Ile
    1355                1360                1365

Asn Tyr  Thr Thr Gly Glu Met  Phe Asp Val Ser Val  Val Asn Asn
    1370                1375                1380

Tyr Ser  Glu Cys Lys Ala Leu  Ile Glu Ser Asn Gln  Thr Ala Arg
    1385                1390                1395

Trp Lys  Asn Val Lys Val Asn  Phe Asp Asn Val Gly  Leu Gly Tyr
    1400                1405                1410

Leu Ser  Leu Leu Gln Val Ala  Thr Phe Lys Gly Trp  Met Asp Ile
    1415                1420                1425

Met Tyr  Ala Ala Val Asp Ser  Arg Asn Val Glu Leu  Gln Pro Lys
    1430                1435                1440

Tyr Glu  Asp Asn Leu Tyr Met  Tyr Leu Tyr Phe Val  Ile Phe Ile
    1445                1450                1455

Ile Phe  Gly Ser Phe Phe Thr  Leu Asn Leu Phe Ile  Gly Val Ile
    1460                1465                1470

Ile Asp  Asn Phe Asn Gln Gln  Lys Lys Lys Phe Gly  Gly Gln Asp
    1475                1480                1485

Ile Phe  Met Thr Glu Glu Gln  Lys Lys Tyr Tyr Asn  Ala Met Lys
    1490                1495                1500
```

```
Lys Leu  Gly Ser Lys Lys Pro  Gln Lys Pro Ile Pro  Arg Pro Ala
    1505                1510                1515

Asn Lys  Phe Gln Gly Met Val  Phe Asp Phe Val Thr  Lys Gln Val
    1520                1525                1530

Phe Asp  Ile Ser Ile Met Ile  Leu Ile Cys Leu Asn  Met Val Thr
    1535                1540                1545

Met Met  Val Glu Thr Asp Asp  Gln Ser Gln Glu Met  Thr Asn Ile
    1550                1555                1560

Leu Tyr  Trp Ile Asn Leu Val  Phe Ile Val Leu Phe  Thr Gly Glu
    1565                1570                1575

Cys Val  Leu Lys Leu Ile Ser  Leu Arg Tyr Tyr Tyr  Phe Thr Ile
    1580                1585                1590

Gly Trp  Asn Ile Phe Asp Phe  Val Val Val Ile Leu  Ser Ile Val
    1595                1600                1605

Gly Met  Phe Leu Ala Glu Leu  Ile Glu Lys Tyr Phe  Val Ser Pro
    1610                1615                1620

Thr Leu  Phe Arg Val Ile Arg  Leu Ala Arg Ile Gly  Arg Ile Leu
    1625                1630                1635

Arg Leu  Ile Lys Gly Ala Lys  Gly Ile Arg Thr Leu  Leu Phe Ala
    1640                1645                1650

Leu Met  Met Ser Leu Pro Ala  Leu Phe Asn Ile Gly  Leu Leu Leu
    1655                1660                1665

Phe Leu  Val Met Phe Ile Tyr  Ala Ile Phe Gly Met  Ser Asn Phe
    1670                1675                1680

Ala Tyr  Val Lys Arg Glu Val  Gly Ile Asp Asp Met  Phe Asn Phe
```

```
    1685                1690                1695

Glu Thr  Phe Gly Asn Ser Met  Ile Cys Leu Phe Gln  Ile Thr Thr
    1700                1705                1710

Ser Ala  Gly Trp Asp Gly Leu  Leu Ala Pro Ile Leu  Asn Ser Gly
    1715                1720                1725

Pro Pro  Asp Cys Asp Pro Glu  Lys Asp His Pro Gly  Ser Ser Val
    1730                1735                1740

Lys Gly  Asp Cys Gly Asn Pro  Ser Val Gly Ile Phe  Phe Phe Val
    1745                1750                1755

Ser Tyr  Ile Ile Ile Ser Phe  Leu Val Val Val Asn  Met Tyr Ile
    1760                1765                1770

Ala Val  Ile Leu Glu Asn Phe  Ser Val Ala Thr Glu  Glu Ser Ala
    1775                1780                1785

Glu Pro  Leu Ser Glu Asp Asp  Phe Glu Met Phe Tyr  Glu Val Trp
    1790                1795                1800

Glu Lys  Phe Asp Pro Asp Ala  Thr Gln Phe Ile Glu  Phe Ser Lys
    1805                1810                1815

Leu Ser  Asp Phe Ala Ala Ala  Leu Asp Pro Pro Leu  Leu Ile Ala
    1820                1825                1830

Lys Pro  Asn Lys Val Gln Leu  Ile Ala Met Asp Leu  Pro Met Val
    1835                1840                1845

Ser Gly  Asp Arg Ile His Cys  Leu Asp Ile Leu Phe  Ala Phe Thr
    1850                1855                1860

Lys Arg  Val Leu Gly Glu Ser  Gly Glu Met Asp Ala  Leu Arg Ile
    1865                1870                1875
```

```
Gln Met  Glu Glu Arg Phe Met  Ala Ser Asn Pro Ser  Lys Val Ser
    1880                1885                1890


Tyr Glu  Pro Ile Thr Thr Thr  Leu Lys Arg Lys Gln  Glu Glu Val
    1895                1900                1905


Ser Ala  Ile Val Ile Gln Arg  Ala Tyr Arg Arg Tyr  Leu Leu Lys
    1910                1915                1920


Gln Lys  Val Lys Lys Val Ser  Cys Ile Tyr Lys Lys  Asp Lys Gly
    1925                1930                1935


Lys Glu  Gly Asp Gly Thr Pro  Ile Lys Glu Asp Thr  Leu Ile Asp
    1940                1945                1950


Lys Leu  Asn Glu Asn Ser Thr  Pro Glu Lys Thr Asp  Gly Thr Pro
    1955                1960                1965


Ser Thr  Thr Ser Pro Pro Ser  Tyr Asp Ser Val Thr  Lys Pro Glu
    1970                1975                1980


Lys Glu  Lys Phe Glu Lys Asp  Lys Ser Glu Lys Glu  Asp Lys Gly
    1985                1990                1995


Lys Asp  Ile Arg Glu Ser Lys  Lys
    2000                2005
```

<210>  49
<211>  2006
<212>  PRT
<213>  Orcinus orca

<400>  49

```
Met Ala Gln Ser Val Leu Val Pro Pro Gly Pro Asp Ser Phe Arg Phe
1               5                   10                  15


Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Gln Arg Ile Ala Glu Glu
            20                  25                  30
```

```
Lys Ala Lys Arg Pro Lys Gln Glu Arg Lys Asp Glu Asp Asp Glu Asn
        35                  40                  45

Gly Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Ser Leu Pro Phe
    50                  55                  60

Ile Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp
65                  70                  75                  80

Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys
                85                  90                  95

Gly Lys Ala Ile Ser Arg Phe Ser Ala Thr Pro Ala Leu Tyr Ile Leu
            100                 105                 110

Thr Pro Phe Asn Pro Ile Arg Lys Leu Ala Ile Lys Ile Leu Val His
        115                 120                 125

Ser Leu Phe Asn Val Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val
    130                 135                 140

Phe Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr
145                 150                 155                 160

Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala
                165                 170                 175

Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn
            180                 185                 190

Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val
        195                 200                 205

Asp Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala
    210                 215                 220
```

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

Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val
                245                 250                 255

Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly
            260                 265                 270

Asn Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Asp Asn Ser Ser Phe
        275                 280                 285

Glu Ile Asn Ile Thr Ser Phe Phe Asn Asn Ser Leu Asp Gly Asn Gly
    290                 295                 300

Thr Thr Phe Asn Arg Thr Val Ser Met Phe Asn Trp Asp Glu Tyr Ile
305                 310                 315                 320

Glu Asp Lys Ser His Phe Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu
                325                 330                 335

Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile
            340                 345                 350

Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp
        355                 360                 365

Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp
    370                 375                 380

Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr
385                 390                 395                 400

Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu
                405                 410                 415

Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn
            420                 425                 430
```

```
Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln
        435                 440                 445

Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala
    450                 455                 460

Ala Ala Ala Ser Ala Glu Ser Arg Asp Phe Ser Gly Ala Gly Gly Ile
465                 470                 475                 480

Gly Val Phe Ser Glu Ser Ser Ser Val Ala Ser Lys Leu Ser Ser Lys
                485                 490                 495

Ser Glu Lys Glu Leu Lys Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu
            500                 505                 510

Gln Ser Gly Glu Glu Glu Lys Glu Asp Gly Val His Lys Ser Glu Ser
        515                 520                 525

Glu Asp Ser Ile Arg Arg Lys Gly Phe Arg Phe Ser Leu Glu Gly Ser
    530                 535                 540

Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser Leu Leu
545                 550                 555                 560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Ala Ser
                565                 570                 575

Leu Phe Ser Phe Arg Gly Arg Ala Lys Asp Ile Gly Ser Glu Asn Asp
            580                 585                 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Asp Ser Arg Arg
        595                 600                 605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg Pro Ser Asn
    610                 615                 620
```

```
Val Ser Gln Ala Ser Arg Ala Ser Arg Val Leu Pro Val Leu Pro Val
625                 630                 635                 640


Asn Gly Lys Met His Ser Ala Val Asp Cys Asn Gly Val Val Ser Leu
                645                 650                 655


Val Gly Gly Pro Ser Ala Leu Thr Ser Pro Ala Gly Gln Leu Leu Pro
            660                 665                 670


Glu Gly Thr Thr Thr Glu Thr Glu Ile Arg Lys Arg Arg Ser Ser Ser
        675                 680                 685


Tyr His Val Ser Met Asp Leu Leu Glu Asp Pro Thr Ala Lys Gln Arg
    690                 695                 700


Ala Thr Ser Met Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu
705                 710                 715                 720


Glu Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe Ala Asn Met
                725                 730                 735


Cys Leu Ile Trp Asp Cys Cys Lys Pro Trp Leu Lys Val Lys His Leu
            740                 745                 750


Val Asn Leu Val Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile
        755                 760                 765


Cys Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met
    770                 775                 780


Thr Glu Gln Phe Ser Ser Val Leu Ser Val Gly Asn Leu Val Phe Thr
785                 790                 795                 800


Gly Ile Phe Thr Ala Glu Met Phe Leu Lys Ile Ile Ala Met Asp Pro
                805                 810                 815


Tyr Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Leu Ile Val
            820                 825                 830
```

```
Ser Leu Ser Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser
        835                 840                 845

Val Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser
    850                 855                 860

Trp Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly
865                 870                 875                 880

Ala Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe
                885                 890                 895

Ala Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val
            900                 905                 910

Cys Lys Ile Ser Asn Asp Cys Glu Leu Pro Arg Trp His Met His Asp
        915                 920                 925

Phe Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp
    930                 935                 940

Ile Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys
945                 950                 955                 960

Leu Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu
                965                 970                 975

Asn Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu
            980                 985                 990

Ala Ala Thr Asp Asp Asp Asn Glu  Met Asn Asn Leu Gln  Ile Ala Val
        995                 1000                1005

Gly Arg  Met Gln Lys Gly Ile  Asp Tyr Val Lys Arg  Lys Ile Arg
    1010                1015                1020
```

```
Glu Phe  Ile Gln Lys Ala Phe  Val Arg Lys Gln Lys  Ala Leu Asp
    1025                1030                1035

Glu Ile  Lys Pro Leu Glu Asp  Leu Asn Asn Lys Lys  Asp Ser Cys
    1040                1045                1050

Ile Ser  Asn His Thr Thr Ile  Glu Ile Gly Lys Asp  Leu Asn Tyr
    1055                1060                1065

Leu Lys  Asp Gly Asn Gly Thr  Thr Ser Gly Ile Gly  Ser Ser Val
    1070                1075                1080

Glu Lys  Tyr Val Val Asp Glu  Ser Asp Tyr Met Ser  Phe Ile Asn
    1085                1090                1095

Asn Pro  Ser Leu Thr Val Thr  Val Pro Ile Ala Val  Gly Glu Ser
    1100                1105                1110

Asp Phe  Glu Asn Leu Asn Thr  Glu Glu Phe Ser Ser  Glu Ser Asp
    1115                1120                1125

Met Glu  Glu Ser Lys Glu Lys  Leu Asn Ala Thr Ser  Ser Ser Glu
    1130                1135                1140

Gly Ser  Thr Val Asp Ile Gly  Ala Pro Ala Glu Gly  Glu Gln Pro
    1145                1150                1155

Glu Val  Glu Pro Glu Glu Ser  Leu Glu Pro Glu Ala  Cys Phe Thr
    1160                1165                1170

Glu Asp  Cys Val Arg Lys Phe  Lys Cys Cys Gln Ile  Ser Ile Glu
    1175                1180                1185

Glu Gly  Lys Gly Lys Leu Trp  Trp Asn Leu Arg Lys  Thr Cys Tyr
    1190                1195                1200

Lys Ile  Val Glu His Asn Trp  Phe Glu Thr Phe Ile  Val Phe Met
    1205                1210                1215
```

```
Ile Leu  Leu Ser Ser Gly Ala  Leu Ala Phe Glu Asp  Ile Tyr Ile
    1220                1225                1230

Glu Gln  Arg Lys Thr Ile Lys  Thr Met Leu Glu Tyr  Ala Asp Lys
    1235                1240                1245

Val Phe  Thr Tyr Ile Phe Ile  Leu Glu Met Leu Leu  Lys Trp Val
    1250                1255                1260

Ala Tyr  Gly Phe Gln Val Tyr  Phe Thr Asn Ala Trp  Cys Trp Leu
    1265                1270                1275

Asp Phe  Leu Ile Val Asp Val  Ser Leu Val Ser Leu  Thr Ala Asn
    1280                1285                1290

Ala Leu  Gly Tyr Ser Glu Leu  Gly Ala Ile Lys Ser  Leu Arg Thr
    1295                1300                1305

Leu Arg  Ala Leu Arg Pro Leu  Arg Ala Leu Ser Arg  Phe Glu Gly
    1310                1315                1320

Met Arg  Val Val Val Asn Ala  Leu Leu Gly Ala Ile  Pro Ser Ile
    1325                1330                1335

Met Asn  Val Leu Leu Val Cys  Leu Ile Phe Trp Leu  Ile Phe Ser
    1340                1345                1350

Ile Met  Gly Val Asn Leu Phe  Ala Gly Lys Phe Tyr  His Cys Ile
    1355                1360                1365

Asn Tyr  Thr Thr Gly Glu Met  Phe Asp Val Ser Val  Val Asn Asn
    1370                1375                1380

Tyr Ser  Glu Cys Lys Ala Leu  Ile Glu Ser Asn Gln  Thr Ala Arg
    1385                1390                1395
```

```
Trp Lys  Asn Val Lys Val Asn  Phe Asp Asn Val Gly  Leu Gly Tyr
    1400                1405                1410

Leu Ser  Leu Leu Gln Val Ala  Thr Phe Lys Gly Trp  Met Asp Ile
    1415                1420                1425

Met Tyr  Ala Ala Val Asp Ser  Arg Asn Val Glu Leu  Gln Pro Lys
    1430                1435                1440

Tyr Glu  Asp Asn Leu Tyr Met  Tyr Leu Tyr Phe Val  Ile Phe Ile
    1445                1450                1455

Ile Phe  Gly Ser Phe Phe Thr  Leu Asn Leu Phe Ile  Gly Val Ile
    1460                1465                1470

Ile Asp  Asn Phe Asn Gln Gln  Lys Lys Lys Phe Gly  Gly Gln Asp
    1475                1480                1485

Ile Phe  Met Thr Glu Glu Gln  Lys Lys Tyr Tyr Asn  Ala Met Lys
    1490                1495                1500

Lys Leu  Gly Ser Lys Lys Pro  Gln Lys Pro Ile Pro  Arg Pro Ala
    1505                1510                1515

Asn Lys  Phe Gln Gly Met Val  Phe Asp Phe Val Thr  Lys Gln Val
    1520                1525                1530

Phe Asp  Ile Ser Ile Met Ile  Leu Ile Cys Leu Asn  Met Val Thr
    1535                1540                1545

Met Met  Val Glu Thr Asp Asp  Gln Ser Gln Glu Met  Thr Asn Ile
    1550                1555                1560

Leu Tyr  Trp Ile Asn Leu Val  Phe Ile Val Leu Phe  Thr Gly Glu
    1565                1570                1575

Cys Val  Leu Lys Leu Ile Ser  Leu Arg Tyr Tyr Tyr  Phe Thr Ile
    1580                1585                1590
```

```
Gly Trp  Asn Ile Phe Asp Phe  Val Val Val Ile Leu  Ser Ile Val
    1595                1600                1605

Gly Met  Phe Leu Ala Glu Leu  Ile Glu Lys Tyr Phe  Val Ser Pro
    1610                1615                1620

Thr Leu  Phe Arg Val Ile Arg  Leu Ala Arg Ile Gly  Arg Ile Leu
    1625                1630                1635

Arg Leu  Ile Lys Gly Ala Lys  Gly Ile Arg Thr Leu  Leu Phe Ala
    1640                1645                1650

Leu Met  Met Ser Leu Pro Ala  Leu Phe Asn Ile Gly  Leu Leu Leu
    1655                1660                1665

Phe Leu  Val Met Phe Ile Tyr  Ala Ile Phe Gly Met  Ser Asn Phe
    1670                1675                1680

Ala Tyr  Val Lys Arg Glu Val  Gly Ile Asp Asp Met  Phe Asn Phe
    1685                1690                1695

Glu Thr  Phe Gly Asn Ser Met  Ile Cys Leu Phe Gln  Ile Thr Thr
    1700                1705                1710

Ser Ala  Gly Trp Asp Gly Leu  Leu Ala Pro Ile Leu  Asn Ser Gly
    1715                1720                1725

Pro Pro  Asp Cys Asp Pro Glu  Lys Asp His Pro Gly  Ser Ser Val
    1730                1735                1740

Lys Gly  Asp Cys Gly Asn Pro  Ser Val Gly Ile Phe  Phe Phe Val
    1745                1750                1755

Ser Tyr  Ile Ile Ile Ser Phe  Leu Val Val Val Asn  Met Tyr Ile
    1760                1765                1770
```

```
Ala Val  Ile Leu Glu Asn Phe  Ser Val Ala Thr Glu  Glu Ser Ala
    1775                1780                1785

Glu Pro  Leu Ser Glu Asp Asp  Phe Glu Met Phe Tyr  Glu Val Trp
    1790                1795                1800

Glu Lys  Phe Asp Pro Asp Ala  Thr Gln Phe Ile Glu  Phe Ser Lys
    1805                1810                1815

Leu Ser  Asp Phe Ala Ala Ala  Leu Asp Pro Pro Leu  Leu Ile Ala
    1820                1825                1830

Lys Pro  Asn Lys Val Gln Leu  Ile Ala Met Asp Leu  Pro Met Val
    1835                1840                1845

Ser Gly  Asp Arg Ile His Cys  Leu Asp Ile Leu Phe  Ala Phe Thr
    1850                1855                1860

Lys Arg  Val Leu Gly Glu Ser  Gly Glu Met Asp Ala  Leu Arg Ile
    1865                1870                1875

Gln Met  Glu Glu Arg Phe Met  Ala Ser Asn Pro Ser  Lys Val Ser
    1880                1885                1890

Tyr Glu  Pro Ile Thr Thr Thr  Leu Lys Arg Lys Gln  Glu Glu Val
    1895                1900                1905

Ser Ala  Ile Val Ile Gln Arg  Ala Tyr Arg Arg Tyr  Leu Leu Lys
    1910                1915                1920

Gln Lys  Val Lys Lys Val Ser  Cys Ile Tyr Lys Lys  Asp Lys Gly
    1925                1930                1935

Lys Glu  Ala Asp Gly Thr Pro  Ile Lys Glu Asp Ile  Leu Thr Asp
    1940                1945                1950

Lys Leu  Asn Glu Asn Ser Thr  Pro Glu Lys Thr Asp  Val Thr Pro
    1955                1960                1965
```

```
Ser Thr  Thr Ser Pro Pro Ser  Tyr Asp Ser Val Thr  Lys Pro Glu
    1970                1975                1980


Lys Glu  Lys Phe Glu Lys Asp  Lys Ser Glu Lys Glu  Asp Lys Gly
    1985                1990                1995


Lys Asp  Ile Arg Glu Ser Lys  Lys
    2000                2005
```

<210>  50
<211>  2006
<212>  PRT
<213>  Equus caballus

<400>  50

```
Met Ala Gln Ser Val Leu Val Pro Pro Gly Pro Asp Ser Phe Arg Phe
1               5                   10                  15


Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Gln Arg Ile Ala Glu Glu
            20                  25                  30


Lys Ala Lys Arg Pro Lys Gln Glu Arg Lys Asp Glu Asp Asp Glu Asn
        35                  40                  45


Gly Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Ser Leu Pro Phe
    50                  55                  60


Ile Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp
65                  70                  75                  80


Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys
                85                  90                  95


Gly Lys Ala Ile Ser Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu
            100                 105                 110


Thr Pro Phe Asn Pro Ile Arg Lys Leu Ala Ile Lys Ile Leu Val His
```

```
        115                 120                 125

Ser Leu Phe Asn Val Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val
    130                 135                 140

Phe Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr
145                 150                 155                 160

Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala
                165                 170                 175

Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn
            180                 185                 190

Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val
        195                 200                 205

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

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

Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val
                245                 250                 255

Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly
            260                 265                 270

Asn Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Asp Asn Ser Ser Phe
        275                 280                 285

Glu Ile Asn Ile Thr Ser Phe Phe Asn Asn Ser Leu Asp Gly Asn Gly
    290                 295                 300

Thr Ile Phe Asn Arg Thr Val Ser Met Phe Asn Trp Asp Asp Tyr Ile
305                 310                 315                 320
```

```
Glu Asp Lys Ser His Phe Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu
                325                 330                 335

Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile
            340                 345                 350

Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp
        355                 360                 365

Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp
    370                 375                 380

Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr
385                 390                 395                 400

Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu
                405                 410                 415

Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn
            420                 425                 430

Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln
        435                 440                 445

Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala
    450                 455                 460

Ala Ala Ala Ser Ala Glu Ser Arg Asp Phe Ser Gly Ala Gly Gly Val
465                 470                 475                 480

Gly Val Phe Ser Glu Ser Ser Ser Val Ala Ser Lys Leu Ser Ser Lys
                485                 490                 495

Ser Glu Lys Glu Leu Lys Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu
            500                 505                 510

Gln Ser Gly Glu Glu Glu Lys Glu Asp Gly Val Arg Lys Ser Glu Ser
```

```
        515                 520                 525

Glu Asp Ser Ile Arg Arg Lys Gly Phe Arg Phe Ser Leu Glu Gly Ser
    530                 535                 540

Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser Leu Leu
545                 550                 555                 560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Ala Ser
                565                 570                 575

Leu Phe Ser Phe Arg Gly Arg Ala Lys Asp Ile Gly Ser Glu Asn Asp
            580                 585                 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Asp Ser Arg Arg
        595                 600                 605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg His Ser Asn
    610                 615                 620

Val Ser Gln Ala Ser Arg Ala Ser Arg Val Leu Pro Ile Leu Pro Met
625                 630                 635                 640

Asn Gly Lys Met His Ser Ala Val Asp Cys Asn Gly Val Val Ser Leu
                645                 650                 655

Val Gly Gly Pro Ser Ala Leu Thr Ser Pro Ala Gly Gln Leu Leu Pro
            660                 665                 670

Glu Gly Thr Thr Thr Glu Thr Glu Ile Arg Lys Arg Arg Ser Ser Ser
        675                 680                 685

Tyr His Val Ser Met Asp Leu Leu Glu Asp Pro Thr Ala Arg Gln Arg
    690                 695                 700

Ala Met Ser Met Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu
705                 710                 715                 720
```

```
Glu Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe Ala Asn Met
                725                 730                 735

Cys Leu Ile Trp Asp Cys Cys Lys Pro Trp Leu Lys Val Lys His Leu
            740                 745                 750

Val Asn Leu Val Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile
        755                 760                 765

Cys Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met
    770                 775                 780

Thr Glu Gln Phe Ser Ser Val Leu Ser Val Gly Asn Leu Val Phe Thr
785                 790                 795                 800

Gly Ile Phe Thr Ala Glu Met Phe Leu Lys Ile Ile Ala Met Asp Pro
                805                 810                 815

Tyr Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Phe Ile Val
            820                 825                 830

Ser Leu Ser Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser
        835                 840                 845

Val Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser
    850                 855                 860

Trp Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly
865                 870                 875                 880

Ala Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe
                885                 890                 895

Ala Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val
            900                 905                 910

Cys Lys Ile Ser Asn Asp Cys Glu Leu Pro Arg Trp His Met His Asp
```

```
        915                 920                 925

Phe Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp
    930                 935                 940

Ile Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys
945                 950                 955                 960

Leu Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu
                965                 970                 975

Asn Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu
            980                 985                 990

Ala Ala Thr Asp Asp Asp Asn Glu  Met Asn Asn Leu Gln  Ile Ala Val
        995                 1000                1005

Gly Arg  Met Gln Lys Gly Ile  Asp Tyr Val Lys Arg  Lys Leu Arg
    1010                1015                1020

Glu Phe  Ile Gln Lys Ala Phe  Val Arg Lys Gln Lys  Ala Leu Asp
    1025                1030                1035

Glu Ile  Lys Pro Leu Glu Asp  Leu Asn Asn Lys Lys  Asp Ser Cys
    1040                1045                1050

Ile Ser  Asn His Thr Thr Ile  Glu Ile Gly Lys Asp  Leu Asn Tyr
    1055                1060                1065

Leu Lys  Asp Gly Asn Gly Thr  Thr Ser Gly Ile Gly  Ser Ser Val
    1070                1075                1080

Glu Lys  Tyr Val Val Asp Glu  Ser Asp Tyr Met Ser  Phe Ile Asn
    1085                1090                1095

Asn Pro  Ser Leu Thr Val Thr  Val Pro Ile Ala Val  Gly Glu Ser
    1100                1105                1110
```

```
Asp Phe  Glu Asn Leu Asn Thr  Glu Glu Phe Ser Ser  Glu Ser Asp
    1115                1120                1125

Met Glu  Glu Ser Lys Glu Lys  Leu Asn Ala Thr Ser  Ser Ser Glu
    1130                1135                1140

Gly Ser  Thr Val Asp Ile Gly  Ala Pro Ala Glu Gly  Glu Gln Pro
    1145                1150                1155

Glu Ala  Glu Pro Glu Glu Ser  Leu Glu Pro Glu Ala  Cys Phe Thr
    1160                1165                1170

Glu Asp  Cys Val Arg Lys Phe  Lys Cys Cys Gln Ile  Ser Ile Glu
    1175                1180                1185

Glu Gly  Lys Gly Lys Leu Trp  Trp Asn Val Arg Lys  Thr Cys Tyr
    1190                1195                1200

Lys Ile  Val Glu His Asn Trp  Phe Glu Thr Phe Ile  Val Phe Met
    1205                1210                1215

Ile Leu  Leu Ser Ser Gly Ala  Leu Ala Phe Glu Asp  Ile Tyr Ile
    1220                1225                1230

Glu Gln  Arg Lys Thr Ile Lys  Thr Met Leu Glu Tyr  Ala Asp Lys
    1235                1240                1245

Val Phe  Thr Tyr Ile Phe Ile  Leu Glu Met Leu Leu  Lys Trp Val
    1250                1255                1260

Ala Tyr  Gly Phe Gln Val Tyr  Phe Thr Asn Ala Trp  Cys Trp Leu
    1265                1270                1275

Asp Phe  Leu Ile Val Asp Val  Ser Leu Val Ser Leu  Thr Ala Asn
    1280                1285                1290

Ala Leu  Gly Tyr Ser Glu Leu  Gly Ala Ile Lys Ser  Leu Arg Thr
```

```
    1295                1300                1305

Leu Arg  Ala Leu Arg Pro Leu  Arg Ala Leu Ser Arg  Phe Glu Gly
    1310                1315                1320

Met Arg  Val Val Val Asn Ala  Leu Leu Gly Ala Ile  Pro Ser Ile
    1325                1330                1335

Met Asn  Val Leu Leu Val Cys  Leu Ile Phe Trp Leu  Ile Phe Ser
    1340                1345                1350

Ile Met  Gly Val Asn Leu Phe  Ala Gly Lys Phe Tyr  His Cys Ile
    1355                1360                1365

Asn Tyr  Thr Thr Gly Glu Met  Phe Asp Val Ser Val  Val Asn Asn
    1370                1375                1380

Tyr Ser  Glu Cys Lys Ala Leu  Ile Glu Ser Asn Gln  Thr Ala Arg
    1385                1390                1395

Trp Lys  Asn Val Lys Val Asn  Phe Asp Asn Val Gly  Leu Gly Tyr
    1400                1405                1410

Leu Ser  Leu Leu Gln Val Ala  Thr Phe Lys Gly Trp  Met Asp Ile
    1415                1420                1425

Met Tyr  Ala Ala Val Asp Ser  Arg Asn Val Glu Leu  Gln Pro Lys
    1430                1435                1440

Tyr Glu  Asp Asn Leu Tyr Met  Tyr Leu Tyr Phe Val  Ile Phe Ile
    1445                1450                1455

Ile Phe  Gly Ser Phe Phe Thr  Leu Asn Leu Phe Ile  Gly Val Ile
    1460                1465                1470

Ile Asp  Asn Phe Asn Gln Gln  Lys Lys Lys Phe Gly  Gly Gln Asp
    1475                1480                1485
```

```
Ile Phe  Met Thr Glu Glu Gln  Lys Lys Tyr Tyr Asn  Ala Met Lys
    1490                1495                1500

Lys Leu  Gly Ser Lys Lys Pro  Gln Lys Pro Ile Pro  Arg Pro Ala
    1505                1510                1515

Asn Lys  Phe Gln Gly Met Val  Phe Asp Phe Val Thr  Lys Gln Val
    1520                1525                1530

Phe Asp  Ile Ser Ile Met Ile  Leu Ile Cys Leu Asn  Met Val Thr
    1535                1540                1545

Met Met  Val Glu Thr Asp Asp  Gln Ser Gln Glu Met  Thr Asn Ile
    1550                1555                1560

Leu Tyr  Trp Ile Asn Leu Val  Phe Ile Val Leu Phe  Thr Gly Glu
    1565                1570                1575

Cys Val  Leu Lys Leu Ile Ser  Leu Arg Tyr Tyr Tyr  Phe Thr Ile
    1580                1585                1590

Gly Trp  Asn Ile Phe Asp Phe  Val Val Val Ile Leu  Ser Ile Val
    1595                1600                1605

Gly Met  Phe Leu Ala Glu Leu  Ile Glu Lys Tyr Phe  Val Ser Pro
    1610                1615                1620

Thr Leu  Phe Arg Val Ile Arg  Leu Ala Arg Ile Gly  Arg Ile Leu
    1625                1630                1635

Arg Leu  Ile Lys Gly Ala Lys  Gly Ile Arg Thr Leu  Leu Phe Ala
    1640                1645                1650

Leu Met  Met Ser Leu Pro Ala  Leu Phe Asn Ile Gly  Leu Leu Leu
    1655                1660                1665

Phe Leu  Val Met Phe Ile Tyr  Ala Ile Phe Gly Met  Ser Asn Phe
```

```
    1670                1675                1680

Ala Tyr  Val Lys Arg Glu Val  Gly Ile Asp Asp Met  Phe Asn Phe
    1685                1690                1695

Glu Thr  Phe Gly Asn Ser Met  Ile Cys Leu Phe Gln  Ile Thr Thr
    1700                1705                1710

Ser Ala  Gly Trp Asp Gly Leu  Leu Ala Pro Ile Leu  Asn Ser Gly
    1715                1720                1725

Pro Pro  Asp Cys Asp Pro Glu  Lys Asp His Pro Gly  Ser Ser Val
    1730                1735                1740

Lys Gly  Asp Cys Gly Asn Pro  Ser Val Gly Ile Phe  Phe Phe Val
    1745                1750                1755

Ser Tyr  Ile Ile Ile Ser Phe  Leu Val Val Val Asn  Met Tyr Ile
    1760                1765                1770

Ala Val  Ile Leu Glu Asn Phe  Ser Val Ala Thr Glu  Glu Ser Ala
    1775                1780                1785

Glu Pro  Leu Ser Glu Asp Asp  Phe Glu Met Phe Tyr  Glu Val Trp
    1790                1795                1800

Glu Lys  Phe Asp Pro Asp Ala  Thr Gln Phe Ile Glu  Phe Ser Lys
    1805                1810                1815

Leu Ser  Asp Phe Ala Ala Ala  Leu Asp Pro Pro Leu  Leu Ile Ala
    1820                1825                1830

Lys Pro  Asn Lys Val Gln Leu  Ile Ala Met Asp Leu  Pro Met Val
    1835                1840                1845

Ser Gly  Asp Arg Ile His Cys  Leu Asp Ile Leu Phe  Ala Phe Thr
    1850                1855                1860
```

```
Lys Arg  Val Leu Gly Glu Ser  Gly Glu Met Asp Ala  Leu Arg Ile
    1865                1870                1875


Gln Met  Glu Glu Arg Phe Met  Ala Ser Asn Pro Ser  Lys Val Ser
    1880                1885                1890


Tyr Glu  Pro Ile Thr Thr Thr  Leu Lys Arg Lys Gln  Glu Glu Val
    1895                1900                1905


Ser Ala  Ile Val Ile Gln Arg  Ala Tyr Arg Arg Tyr  Leu Leu Lys
    1910                1915                1920


Gln Lys  Val Lys Lys Val Ser  Cys Ile Tyr Lys Lys  Asp Lys Val
    1925                1930                1935


Lys Glu  Gly Asp Gly Thr Pro  Ile Lys Glu Asp Ile  Leu Ile Asp
    1940                1945                1950


Lys Leu  Asn Glu Asn Ser Thr  Pro Glu Lys Thr Asp  Val Thr Pro
    1955                1960                1965


Ser Thr  Thr Ser Pro Pro Ser  Tyr Asp Ser Val Thr  Lys Pro Glu
    1970                1975                1980


Lys Glu  Lys Phe Glu Lys Asp  Lys Ser Glu Lys Glu  Asp Lys Gly
    1985                1990                1995


Lys Asp  Ile Arg Glu Ser Lys  Lys
    2000                2005
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<210>  51
<211>  2006
<212>  PRT
<213>  Mus musculus

<400>  51

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Met Ala Gln Ser Val Leu Val Pro Pro Gly Pro Asp Ser Phe Arg Phe
1               5                  10                  15
```

```
Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Gln Arg Ile Ala Glu Glu
            20                  25                  30

Lys Ala Lys Arg Pro Lys Gln Glu Arg Lys Asp Glu Asp Asp Glu Asn
        35                  40                  45

Gly Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Ser Leu Pro Phe
    50                  55                  60

Ile Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp
65                  70                  75                  80

Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys
                85                  90                  95

Gly Lys Ala Ile Ser Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu
            100                 105                 110

Thr Pro Phe Asn Pro Ile Arg Lys Leu Ala Ile Lys Ile Leu Val His
        115                 120                 125

Ser Leu Phe Asn Val Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val
    130                 135                 140

Phe Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr
145                 150                 155                 160

Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala
                165                 170                 175

Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn
            180                 185                 190

Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val
        195                 200                 205
```

```
Asn Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala
    210                 215                 220

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

Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val
                245                 250                 255

Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly
            260                 265                 270

Asn Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Asp Asn Ser Thr Phe
        275                 280                 285

Glu Ile Asn Ile Thr Ser Phe Phe Asn Asn Ser Leu Asp Trp Asn Gly
    290                 295                 300

Thr Ala Phe Asn Arg Thr Met Asn Met Phe Asn Trp Asp Glu Tyr Ile
305                 310                 315                 320

Glu Asp Lys Ser His Phe Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu
                325                 330                 335

Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile
            340                 345                 350

Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp
        355                 360                 365

Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp
    370                 375                 380

Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr
385                 390                 395                 400

Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu
                405                 410                 415
```

```
Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn
            420                 425                 430

Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln
        435                 440                 445

Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala
    450                 455                 460

Ala Ala Ala Ser Ala Glu Ser Arg Asp Phe Ser Gly Ala Gly Gly Ile
465                 470                 475                 480

Gly Val Phe Ser Glu Ser Ser Ser Val Ala Ser Lys Leu Ser Ser Lys
                485                 490                 495

Ser Glu Lys Glu Leu Lys Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu
            500                 505                 510

Gln Ala Gly Glu Glu Glu Lys Glu Asp Ala Val Arg Lys Ser Ala Ser
        515                 520                 525

Glu Asp Ser Ile Arg Lys Lys Gly Phe Arg Phe Ser Leu Glu Gly Ser
    530                 535                 540

Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser Leu Leu
545                 550                 555                 560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Ala Ser
                565                 570                 575

Leu Phe Ser Phe Lys Gly Arg Val Lys Asp Ile Gly Ser Glu Asn Asp
            580                 585                 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Asp Ser Arg Arg
        595                 600                 605
```

```
Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg Pro Ser Asn
    610                 615                 620

Val Ser Gln Ala Ser Arg Ala Ser Arg Gly Ile Pro Thr Leu Pro Met
625                 630                 635                 640

Asn Gly Lys Met His Ser Ala Val Asp Cys Asn Gly Val Val Ser Leu
                645                 650                 655

Val Gly Gly Pro Ser Ala Leu Thr Ser Pro Val Gly Gln Leu Leu Pro
            660                 665                 670

Glu Gly Thr Thr Thr Glu Thr Glu Ile Arg Lys Arg Arg Ser Ser Ser
        675                 680                 685

Tyr His Val Ser Met Asp Leu Leu Glu Asp Pro Thr Ser Arg Gln Arg
    690                 695                 700

Ala Met Ser Met Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu
705                 710                 715                 720

Glu Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe Ala Asn Met
                725                 730                 735

Cys Leu Ile Trp Asp Cys Cys Lys Pro Trp Leu Lys Val Lys His Val
            740                 745                 750

Val Asn Leu Val Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile
        755                 760                 765

Cys Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met
    770                 775                 780

Thr Glu Gln Phe Ser Ser Val Leu Ser Val Gly Asn Leu Val Phe Thr
785                 790                 795                 800

Gly Ile Phe Thr Ala Glu Met Phe Leu Lys Ile Ile Ala Met Asp Pro
                805                 810                 815
```

```
Tyr Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Phe Ile Val
            820                 825                 830

Ser Leu Ser Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser
        835                 840                 845

Val Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser
    850                 855                 860

Trp Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly
865                 870                 875                 880

Ala Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe
                885                 890                 895

Ala Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val
            900                 905                 910

Cys Lys Ile Ser Asn Asp Cys Glu Leu Pro Arg Trp His Met His Asp
        915                 920                 925

Phe Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp
    930                 935                 940

Ile Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys
945                 950                 955                 960

Leu Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu
                965                 970                 975

Asn Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu
            980                 985                 990

Ala Ala Thr Asp Asp Asp Asn Glu  Met Asn Asn Leu Gln  Ile Ala Val
        995                 1000                1005
```

```
Gly Arg  Met Gln Lys Gly Ile  Asp Phe Val Lys Arg  Lys Ile Arg
    1010                1015                1020

Glu Phe  Ile Gln Lys Ala Phe  Val Arg Lys Gln Lys  Ala Leu Asp
    1025                1030                1035

Glu Ile  Lys Pro Leu Glu Asp  Leu Asn Asn Lys Lys  Asp Ser Cys
    1040                1045                1050

Ile Ser  Asn His Thr Thr Ile  Glu Ile Gly Lys Asp  Leu Asn Tyr
    1055                1060                1065

Leu Lys  Asp Gly Asn Gly Thr  Thr Ser Gly Ile Gly  Ser Ser Val
    1070                1075                1080

Glu Lys  Tyr Val Val Asp Glu  Ser Asp Tyr Met Ser  Phe Ile Asn
    1085                1090                1095

Asn Pro  Ser Leu Thr Val Thr  Val Pro Ile Ala Val  Gly Glu Ser
    1100                1105                1110

Asp Phe  Glu Asn Leu Asn Thr  Glu Glu Phe Ser Ser  Glu Ser Asp
    1115                1120                1125

Met Glu  Glu Ser Lys Glu Lys  Leu Asn Ala Thr Ser  Ser Ser Glu
    1130                1135                1140

Gly Ser  Thr Val Asp Ile Gly  Ala Pro Ala Glu Gly  Glu Gln Pro
    1145                1150                1155

Glu Ala  Glu Pro Glu Glu Ser  Leu Glu Pro Glu Ala  Cys Phe Thr
    1160                1165                1170

Glu Asp  Cys Val Arg Lys Phe  Lys Cys Cys Gln Ile  Ser Ile Glu
    1175                1180                1185

Glu Gly  Lys Gly Lys Leu Trp  Trp Asn Leu Arg Lys  Thr Cys Tyr
    1190                1195                1200
```

```
Lys Ile  Val Glu His Asn Trp  Phe Glu Thr Phe Ile  Val Phe Met
    1205                1210                1215

Ile Leu  Leu Ser Ser Gly Ala  Leu Ala Phe Glu Asp  Ile Tyr Ile
    1220                1225                1230

Glu Gln  Arg Lys Thr Ile Lys  Thr Met Leu Glu Tyr  Ala Asp Lys
    1235                1240                1245

Val Phe  Thr Tyr Ile Phe Ile  Leu Glu Met Leu Leu  Lys Trp Val
    1250                1255                1260

Ala Tyr  Gly Phe Gln Met Tyr  Phe Thr Asn Ala Trp  Cys Trp Leu
    1265                1270                1275

Asp Phe  Leu Ile Val Asp Val  Ser Leu Val Ser Leu  Thr Ala Asn
    1280                1285                1290

Ala Leu  Gly Tyr Ser Glu Leu  Gly Ala Ile Lys Ser  Leu Arg Thr
    1295                1300                1305

Leu Arg  Ala Leu Arg Pro Leu  Arg Ala Leu Ser Arg  Phe Glu Gly
    1310                1315                1320

Met Arg  Val Val Val Asn Ala  Leu Leu Gly Ala Ile  Pro Ser Ile
    1325                1330                1335

Met Asn  Val Leu Leu Val Cys  Leu Ile Phe Trp Leu  Ile Phe Ser
    1340                1345                1350

Ile Met  Gly Val Asn Leu Phe  Ala Gly Lys Phe Tyr  His Cys Ile
    1355                1360                1365

Asn Tyr  Thr Thr Gly Glu Met  Phe Asp Val Ser Val  Val Asn Asn
    1370                1375                1380
```

```
Tyr Ser  Glu Cys Gln Ala Leu  Ile Glu Ser Asn Gln  Thr Ala Arg
    1385                1390                1395

Trp Lys  Asn Val Lys Val Asn  Phe Asp Asn Val Gly  Leu Gly Tyr
    1400                1405                1410

Leu Ser  Leu Leu Gln Val Ala  Thr Phe Lys Gly Trp  Met Asp Ile
    1415                1420                1425

Met Tyr  Ala Ala Val Asp Ser  Arg Asn Val Glu Leu  Gln Pro Lys
    1430                1435                1440

Tyr Glu  Asp Asn Leu Tyr Met  Tyr Leu Tyr Phe Val  Ile Phe Ile
    1445                1450                1455

Ile Phe  Gly Ser Phe Phe Thr  Leu Asn Leu Phe Ile  Gly Val Ile
    1460                1465                1470

Ile Asp  Asn Phe Asn Gln Gln  Lys Lys Lys Phe Gly  Gly Gln Asp
    1475                1480                1485

Ile Phe  Met Thr Glu Glu Gln  Lys Lys Tyr Tyr Asn  Ala Met Lys
    1490                1495                1500

Lys Leu  Gly Ser Lys Lys Pro  Gln Lys Pro Ile Pro  Arg Pro Ala
    1505                1510                1515

Asn Lys  Phe Gln Gly Met Val  Phe Asp Phe Val Thr  Lys Gln Val
    1520                1525                1530

Phe Asp  Ile Ser Ile Met Ile  Leu Ile Cys Leu Asn  Met Val Thr
    1535                1540                1545

Met Met  Val Glu Thr Asp Asp  Gln Ser Gln Glu Met  Thr Asn Ile
    1550                1555                1560

Leu Tyr  Trp Ile Asn Leu Val  Phe Ile Val Leu Phe  Thr Gly Glu
    1565                1570                1575
```

```
Cys Val  Leu Lys Leu Ile Ser  Leu Arg His Tyr Tyr  Phe Thr Ile
    1580                1585                1590

Gly Trp  Asn Ile Phe Asp Phe  Val Val Val Ile Leu  Ser Ile Val
    1595                1600                1605

Gly Met  Phe Leu Ala Glu Leu  Ile Glu Lys Tyr Phe  Val Ser Pro
    1610                1615                1620

Thr Leu  Phe Arg Val Ile Arg  Leu Ala Arg Ile Gly  Arg Ile Leu
    1625                1630                1635

Arg Leu  Ile Lys Gly Ala Lys  Gly Ile Arg Thr Leu  Leu Phe Ala
    1640                1645                1650

Leu Met  Met Ser Leu Pro Ala  Leu Phe Asn Ile Gly  Leu Leu Leu
    1655                1660                1665

Phe Leu  Val Met Phe Ile Tyr  Ala Ile Phe Gly Met  Ser Asn Phe
    1670                1675                1680

Ala Tyr  Val Lys Arg Glu Val  Gly Ile Asp Asp Met  Phe Asn Phe
    1685                1690                1695

Glu Thr  Phe Gly Asn Ser Met  Ile Cys Leu Phe Gln  Ile Thr Thr
    1700                1705                1710

Ser Ala  Gly Trp Asp Gly Leu  Leu Ala Pro Ile Leu  Asn Ser Gly
    1715                1720                1725

Pro Pro  Asp Cys Asp Pro Glu  Lys Asp His Pro Gly  Ser Ser Val
    1730                1735                1740

Lys Gly  Asp Cys Gly Asn Pro  Ser Val Gly Ile Phe  Phe Phe Val
    1745                1750                1755
```

```
Ser Tyr  Ile Ile Ile Ser Phe  Leu Val Val Val Asn  Met Tyr Ile
    1760                1765                1770

Ala Val  Ile Leu Glu Asn Phe  Ser Val Ala Thr Glu  Glu Ser Ala
    1775                1780                1785

Glu Pro  Leu Ser Glu Asp Asp  Phe Glu Met Phe Tyr  Glu Val Trp
    1790                1795                1800

Glu Lys  Phe Asp Pro Asp Ala  Thr Gln Phe Ile Glu  Phe Cys Lys
    1805                1810                1815

Leu Ser  Asp Phe Ala Ala Ala  Leu Asp Pro Pro Leu  Leu Ile Ala
    1820                1825                1830

Lys Pro  Asn Lys Val Gln Leu  Ile Ala Met Asp Leu  Pro Met Val
    1835                1840                1845

Ser Gly  Asp Arg Ile His Cys  Leu Asp Ile Leu Phe  Ala Phe Thr
    1850                1855                1860

Lys Arg  Val Leu Gly Glu Ser  Gly Glu Met Asp Ala  Leu Arg Ile
    1865                1870                1875

Gln Met  Glu Glu Arg Phe Met  Ala Ser Asn Pro Ser  Lys Val Ser
    1880                1885                1890

Tyr Glu  Pro Ile Thr Thr Thr  Leu Lys Arg Lys Gln  Glu Glu Val
    1895                1900                1905

Ser Ala  Ile Val Ile Gln Arg  Ala Tyr Arg Arg Tyr  Leu Leu Lys
    1910                1915                1920

Gln Lys  Val Lys Lys Val Ser  Ser Ile Tyr Lys Lys  Asp Lys Gly
    1925                1930                1935

Lys Glu  Asp Glu Gly Thr Pro  Ile Lys Glu Asp Ile  Ile Thr Asp
    1940                1945                1950
```

```
Lys Leu  Asn Glu Asn Ser Thr  Pro Glu Lys Thr Asp  Val Thr Pro
    1955                1960                1965


Ser Thr  Thr Ser Pro Pro Ser  Tyr Asp Ser Val Thr  Lys Pro Glu
    1970                1975                1980


Lys Glu  Lys Phe Glu Lys Asp  Lys Ser Glu Lys Glu  Asp Lys Gly
    1985                1990                1995


Lys Asp  Ile Arg Glu Ser Lys  Lys
    2000                2005
```

<210>  52
<211>  2005
<212>  PRT
<213>  Rattus norvegicus

<400>  52

```
Met Ala Arg Ser Val Leu Val Pro Pro Gly Pro Asp Ser Phe Arg Phe
1               5                   10                  15


Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Gln Arg Ile Ala Glu Glu
            20                  25                  30


Lys Ala Lys Arg Pro Lys Gln Glu Arg Lys Asp Glu Asp Asp Glu Asn
        35                  40                  45


Gly Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Ser Leu Pro Phe
    50                  55                  60


Ile Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp
65                  70                  75                  80


Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys
                85                  90                  95


Gly Lys Ala Ile Ser Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu
```

```
            100                 105                 110

Thr Pro Phe Asn Pro Ile Arg Lys Leu Ala Ile Lys Ile Leu Val His
        115                 120                 125

Ser Leu Phe Asn Val Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val
    130                 135                 140

Phe Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr
145                 150                 155                 160

Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala
                165                 170                 175

Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asn Pro Trp Asn
            180                 185                 190

Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val
        195                 200                 205

Asn Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala
    210                 215                 220

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

Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val
                245                 250                 255

Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly
            260                 265                 270

Asn Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Asp Asn Ser Thr Phe
        275                 280                 285

Glu Ile Asn Ile Thr Ser Phe Phe Asn Asn Ser Leu Asp Trp Asn Gly
    290                 295                 300
```

```
Thr Ala Phe Asn Arg Thr Val Asn Met Phe Asn Trp Asp Glu Tyr Ile
305                 310                 315                 320

Glu Asp Lys Ser His Phe Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu
                325                 330                 335

Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile
            340                 345                 350

Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp
        355                 360                 365

Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp
    370                 375                 380

Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr
385                 390                 395                 400

Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu
                405                 410                 415

Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn
            420                 425                 430

Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln
        435                 440                 445

Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala
    450                 455                 460

Ala Ala Ala Ser Ala Glu Ser Arg Asp Phe Ser Gly Ala Gly Gly Ile
465                 470                 475                 480

Gly Val Phe Ser Glu Ser Ser Ser Val Ala Ser Lys Leu Ser Ser Lys
                485                 490                 495

Ser Glu Lys Glu Leu Lys Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu
```

```
            500                 505                 510

Gln Ala Gly Glu Glu Glu Lys Glu Asp Ala Val Arg Lys Ser Ala Ser
        515                 520                 525

Glu Asp Ser Ile Arg Lys Lys Gly Phe Gln Phe Ser Leu Glu Gly Ser
    530                 535                 540

Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser Leu Leu
545                 550                 555                 560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Ala Ser
                565                 570                 575

Leu Phe Asn Phe Lys Gly Arg Val Lys Asp Ile Gly Ser Glu Asn Asp
            580                 585                 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Asp Ser Arg Arg
        595                 600                 605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg Pro Ser Asn
    610                 615                 620

Val Ser Gln Ala Ser Arg Ala Ser Arg Gly Ile Pro Thr Leu Pro Met
625                 630                 635                 640

Asn Gly Lys Met His Ser Ala Val Asp Cys Asn Gly Val Val Ser Leu
                645                 650                 655

Val Gly Gly Pro Ser Ala Leu Thr Ser Pro Val Gly Gln Leu Leu Pro
            660                 665                 670

Glu Gly Thr Thr Thr Glu Thr Glu Ile Arg Lys Arg Arg Ser Ser Ser
        675                 680                 685

Tyr His Val Ser Met Asp Leu Leu Glu Asp Pro Ser Arg Gln Arg Ala
    690                 695                 700
```

```
Met Ser Met Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu
705                 710                 715                 720


Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe Ala Asn Met Cys
                725                 730                 735


Leu Ile Trp Asp Cys Cys Lys Pro Trp Leu Lys Val Lys His Val Val
            740                 745                 750


Asn Leu Val Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
        755                 760                 765


Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr
    770                 775                 780


Glu Gln Phe Ser Ser Val Leu Ser Val Gly Asn Leu Val Phe Thr Gly
785                 790                 795                 800


Ile Phe Thr Ala Glu Met Phe Leu Lys Ile Ile Ala Met Asp Pro Tyr
                805                 810                 815


Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Phe Ile Val Ser
            820                 825                 830


Leu Ser Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser Val
        835                 840                 845


Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
    850                 855                 860


Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
865                 870                 875                 880


Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
                885                 890                 895


Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
```

```
            900                 905                 910

Lys Ile Ser Asn Asp Cys Glu Leu Pro Arg Trp His Met His His Phe
        915                 920                 925

Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
    930                 935                 940

Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
945                 950                 955                 960

Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn
                965                 970                 975

Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
            980                 985                 990

Ala Thr Asp Asp Asp Asn Glu Met  Asn Asn Leu Gln Ile  Ala Val Gly
        995                 1000                1005

Arg Met  Gln Lys Gly Ile Asp  Phe Val Lys Arg Lys  Ile Arg Glu
    1010                1015                1020

Phe Ile  Gln Lys Ala Phe Val  Arg Lys Gln Lys Ala  Leu Asp Glu
    1025                1030                1035

Ile Lys  Pro Leu Glu Asp Leu  Asn Asn Lys Lys Asp  Ser Cys Ile
    1040                1045                1050

Ser Asn  His Thr Thr Ile Glu  Ile Gly Lys Asp Leu  Asn Tyr Leu
    1055                1060                1065

Lys Asp  Gly Asn Gly Thr Thr  Ser Gly Ile Gly Ser  Ser Val Glu
    1070                1075                1080

Lys Tyr  Val Val Asp Glu Ser  Asp Tyr Met Ser Phe  Ile Asn Asn
    1085                1090                1095
```

```
Pro Ser  Leu Thr Val Thr Val  Pro Ile Ala Leu Gly  Glu Ser Asp
    1100                1105                1110

Phe Glu  Asn Leu Asn Thr Glu  Glu Phe Ser Ser Glu  Ser Asp Met
    1115                1120                1125

Glu Glu  Ser Lys Glu Lys Leu  Asn Ala Thr Ser Ser  Ser Glu Gly
    1130                1135                1140

Ser Thr  Val Asp Ile Gly Ala  Pro Ala Glu Gly Glu  Gln Pro Glu
    1145                1150                1155

Ala Glu  Pro Glu Glu Ser Leu  Glu Pro Glu Ala Cys  Phe Thr Glu
    1160                1165                1170

Asp Cys  Val Arg Lys Phe Lys  Cys Cys Gln Ile Ser  Ile Glu Glu
    1175                1180                1185

Gly Lys  Gly Lys Leu Trp Trp  Asn Leu Arg Lys Thr  Cys Tyr Lys
    1190                1195                1200

Ile Val  Glu His Asn Trp Phe  Glu Thr Phe Ile Val  Phe Met Ile
    1205                1210                1215

Leu Leu  Ser Ser Gly Ala Leu  Ala Phe Glu Asp Ile  Tyr Ile Glu
    1220                1225                1230

Gln Arg  Lys Thr Ile Lys Thr  Met Leu Glu Tyr Ala  Asp Lys Val
    1235                1240                1245

Phe Thr  Tyr Ile Phe Ile Leu  Glu Met Leu Leu Lys  Trp Val Ala
    1250                1255                1260

Tyr Gly  Phe Gln Met Tyr Phe  Thr Asn Ala Trp Cys  Trp Leu Asp
    1265                1270                1275

Phe Leu  Ile Val Asp Val Ser  Leu Val Ser Leu Thr  Ala Asn Ala
```

```
    1280                1285                1290

Leu Gly  Tyr Ser Glu Leu Gly  Ala Ile Lys Ser Leu  Arg Thr Leu
    1295                1300                1305

Arg Ala  Leu Arg Pro Leu Arg  Ala Leu Ser Arg Phe  Glu Gly Met
    1310                1315                1320

Arg Val  Val Val Asn Ala Leu  Leu Gly Ala Ile Pro  Ser Ile Met
    1325                1330                1335

Asn Val  Leu Leu Val Cys Leu  Ile Phe Trp Leu Ile  Phe Ser Ile
    1340                1345                1350

Met Gly  Val Asn Leu Phe Ala  Gly Lys Phe Tyr His  Cys Ile Asn
    1355                1360                1365

Tyr Thr  Thr Gly Glu Met Phe  Asp Val Ser Val Val  Asn Asn Tyr
    1370                1375                1380

Ser Glu  Cys Gln Ala Leu Ile  Glu Ser Asn Gln Thr  Ala Arg Trp
    1385                1390                1395

Lys Asn  Val Lys Val Asn Phe  Asp Asn Val Gly Leu  Gly Tyr Leu
    1400                1405                1410

Ser Leu  Leu Gln Val Ala Thr  Phe Lys Gly Trp Met  Asp Ile Met
    1415                1420                1425

Tyr Ala  Ala Val Asp Ser Arg  Asn Val Glu Leu Gln  Pro Lys Tyr
    1430                1435                1440

Glu Asp  Asn Leu Tyr Met Tyr  Leu Tyr Phe Val Ile  Phe Ile Ile
    1445                1450                1455

Phe Gly  Ser Phe Phe Thr Leu  Asn Leu Phe Ile Gly  Val Ile Ile
    1460                1465                1470
```

```
Asp Asn  Phe Asn Gln Gln Lys  Lys Lys Phe Gly Gly  Gln Asp Ile
    1475                1480                1485

Phe Met  Thr Glu Glu Gln Lys  Lys Tyr Tyr Asn Ala  Met Lys Lys
    1490                1495                1500

Leu Gly  Ser Lys Lys Pro Gln  Lys Pro Ile Pro Arg  Pro Ala Asn
    1505                1510                1515

Lys Phe  Gln Gly Met Val Phe  Asp Phe Val Thr Lys  Gln Val Phe
    1520                1525                1530

Asp Ile  Ser Ile Met Ile Leu  Ile Cys Leu Asn Met  Val Thr Met
    1535                1540                1545

Met Val  Glu Thr Asp Asp Gln  Ser Gln Glu Met Thr  Asn Ile Leu
    1550                1555                1560

Tyr Trp  Ile Asn Leu Val Phe  Ile Val Leu Phe Thr  Gly Glu Cys
    1565                1570                1575

Val Leu  Lys Leu Ile Ser Leu  Arg His Tyr Tyr Phe  Thr Ile Gly
    1580                1585                1590

Trp Asn  Ile Phe Asp Phe Val  Val Val Ile Leu Ser  Ile Val Gly
    1595                1600                1605

Met Phe  Leu Ala Glu Leu Ile  Glu Lys Tyr Phe Val  Ser Pro Thr
    1610                1615                1620

Leu Phe  Arg Val Ile Arg Leu  Ala Arg Ile Gly Arg  Ile Leu Arg
    1625                1630                1635

Leu Ile  Lys Gly Ala Lys Gly  Ile Arg Thr Leu Leu  Phe Ala Leu
    1640                1645                1650

Met Met  Ser Leu Pro Ala Leu  Phe Asn Ile Gly Leu  Leu Leu Phe
```

```
    1655                1660                1665

Leu Val  Met Phe Ile Tyr Ala  Ile Phe Gly Met Ser  Asn Phe Ala
    1670                1675                1680

Tyr Val  Lys Arg Glu Val Gly  Ile Asp Asp Met Phe  Asn Phe Glu
    1685                1690                1695

Thr Phe  Gly Asn Ser Met Ile  Cys Leu Phe Gln Ile  Thr Thr Ser
    1700                1705                1710

Ala Gly  Trp Asp Gly Leu Leu  Ala Pro Ile Leu Asn  Ser Gly Pro
    1715                1720                1725

Pro Asp  Cys Asp Pro Glu Lys  Asp His Pro Gly Ser  Ser Val Lys
    1730                1735                1740

Gly Asp  Cys Gly Asn Pro Ser  Val Gly Ile Phe Phe  Phe Val Ser
    1745                1750                1755

Tyr Ile  Ile Ile Ser Phe Leu  Val Val Val Asn Met  Tyr Ile Ala
    1760                1765                1770

Val Ile  Leu Glu Asn Phe Ser  Val Ala Thr Glu Glu  Ser Ala Glu
    1775                1780                1785

Pro Leu  Ser Glu Asp Asp Phe  Glu Met Phe Tyr Glu  Val Trp Glu
    1790                1795                1800

Lys Phe  Asp Pro Asp Ala Thr  Gln Phe Ile Glu Phe  Cys Lys Leu
    1805                1810                1815

Ser Asp  Phe Ala Ala Ala Leu  Asp Pro Pro Leu Leu  Ile Ala Lys
    1820                1825                1830

Pro Asn  Lys Val Gln Leu Ile  Ala Met Asp Leu Pro  Met Val Ser
    1835                1840                1845
```

```
Gly Asp  Arg Ile His Cys Leu  Asp Ile Leu Phe Ala  Phe Thr Lys
    1850                1855                1860


Arg Val  Leu Gly Glu Ser Gly  Glu Met Asp Ala Leu  Arg Ile Gln
    1865                1870                1875


Met Glu  Glu Arg Phe Met Ala  Ser Asn Pro Ser Lys  Val Ser Tyr
    1880                1885                1890


Glu Pro  Ile Thr Thr Thr Leu  Lys Arg Lys Gln Glu  Glu Val Ser
    1895                1900                1905


Ala Ile  Val Ile Gln Arg Ala  Tyr Arg Arg Tyr Leu  Leu Lys Gln
    1910                1915                1920


Lys Val  Lys Lys Val Ser Ser  Ile Tyr Lys Lys Asp  Lys Gly Lys
    1925                1930                1935


Glu Asp  Glu Gly Thr Pro Ile  Lys Glu Asp Ile Ile  Thr Asp Lys
    1940                1945                1950


Leu Asn  Glu Asn Ser Thr Pro  Glu Lys Thr Asp Val  Thr Pro Ser
    1955                1960                1965


Thr Thr  Ser Pro Pro Ser Tyr  Asp Ser Val Thr Lys  Pro Glu Lys
    1970                1975                1980


Glu Lys  Phe Glu Lys Asp Lys  Ser Glu Lys Glu Asp  Lys Gly Lys
    1985                1990                1995


Asp Ile  Arg Glu Ser Lys Lys
    2000                2005
```

<210>  53
<211>  2021
<212>  PRT
<213>  Oryctolagus cuniculus

<400> 53

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

Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Gln Arg Ile Ala Glu Glu
            20                  25                  30

Lys Ala Lys Arg Pro Lys Gln Glu Arg Lys Asp Glu Asp Asp Glu Asn
        35                  40                  45

Gly Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Ser Leu Pro Phe
    50                  55                  60

Ile Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp
65                  70                  75                  80

Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys
                85                  90                  95

Gly Lys Ala Ile Ser Arg Phe Ser Ala Thr Pro Ala Leu Tyr Ile Leu
            100                 105                 110

Thr Pro Phe Asn Pro Ile Arg Lys Leu Ala Ile Lys Ile Leu Val His
        115                 120                 125

Ser Leu Phe Asn Val Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val
    130                 135                 140

Phe Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr
145                 150                 155                 160

Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala
                165                 170                 175

Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn
            180                 185                 190
```

```
Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val
        195                 200                 205

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

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

Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val
                245                 250                 255

Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly
            260                 265                 270

Asn Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Asp Asn Ser Ser Phe
        275                 280                 285

Glu Ile Asn Val Thr Ser Phe Phe Asn Asn Ser Leu Asp Gly Asn Gly
    290                 295                 300

Thr Thr Phe Asn Arg Thr Met Ser Ile Phe Asn Trp Asp Glu Tyr Ile
305                 310                 315                 320

Glu Asp Lys Ser His Phe Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu
                325                 330                 335

Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile
            340                 345                 350

Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp
        355                 360                 365

Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp
    370                 375                 380

Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr
385                 390                 395                 400
```

```
Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu
                405                 410                 415

Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn
            420                 425                 430

Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln
        435                 440                 445

Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala
    450                 455                 460

Ala Ala Ala Ser Ala Glu Ser Arg Glu Phe Ser Gly Ala Gly Gly Val
465                 470                 475                 480

Gly Val Phe Ser Glu Ser Ser Ser Val Ala Ser Lys Leu Ser Ser Lys
                485                 490                 495

Ser Glu Lys Glu Leu Lys Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu
            500                 505                 510

Gln Ser Gly Glu Glu Glu Lys Glu Asp Gly Val Arg Lys Ser Glu Ser
        515                 520                 525

Glu Asp Ser Ile Arg Arg Lys Gly Phe Arg Phe Ser Leu Glu Gly Ser
    530                 535                 540

Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser Leu Leu
545                 550                 555                 560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Ala Ser
                565                 570                 575

Leu Phe Ser Phe Arg Gly Arg Thr Lys Asp Val Gly Ser Glu Asn Asp
            580                 585                 590
```

```
Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Asp Ser Arg Arg
        595                 600                 605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg His Ser Asn
    610                 615                 620

Val Ser Gln Ala Ser Arg Thr Ser Arg Val Leu Pro Ile Leu Pro Met
625                 630                 635                 640

Asn Gly Lys Met His Ser Ala Val Asp Cys Asn Gly Val Val Ser Leu
                645                 650                 655

Val Gly Gly Pro Ser Ala Leu Thr Ser Pro Thr Gly Gln Leu Leu Pro
            660                 665                 670

Glu Gly Thr Thr Thr Glu Thr Glu Ile Arg Lys Arg Arg Ser Ser Ser
        675                 680                 685

Tyr His Val Ser Met Asp Leu Leu Glu Asp Pro Thr Ser Arg Gln Arg
    690                 695                 700

Ala Met Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu
705                 710                 715                 720

Glu Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe Ala Asn Met
                725                 730                 735

Cys Leu Ile Trp Asp Cys Cys Lys Pro Trp Leu Lys Val Lys His Leu
            740                 745                 750

Val Asn Leu Val Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile
        755                 760                 765

Cys Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met
    770                 775                 780

Thr Glu Gln Phe Ser Ser Val Leu Ser Val Gly Asn Leu Val Phe Thr
785                 790                 795                 800
```

```
Gly Ile Phe Thr Ala Glu Met Phe Leu Lys Ile Ile Ala Met Asp Pro
                805                 810                 815

Tyr Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Phe Ile Val
            820                 825                 830

Ser Leu Ser Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser
        835                 840                 845

Val Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser
    850                 855                 860

Trp Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly
865                 870                 875                 880

Ala Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe
                885                 890                 895

Ala Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val
            900                 905                 910

Cys Lys Ile Ser Asn Asp Cys Glu Leu Pro Arg Trp His Met His Asp
        915                 920                 925

Phe Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp
    930                 935                 940

Ile Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys
945                 950                 955                 960

Leu Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu
                965                 970                 975

Asn Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu
            980                 985                 990
```

```
Ala Ala Thr Asp Asp Asp Asn Glu  Met Asn Asn Leu Gln  Ile Ala Val
        995                 1000                1005


Gly Arg  Met Gln Lys Gly Ile  Asp Phe Val Lys Arg  Lys Ile Arg
    1010                1015                1020


Glu Phe  Ile Gln Lys Ala Phe  Val Arg Lys Gln Lys  Ala Leu Asp
    1025                1030                1035


Glu Ile  Lys Pro Leu Glu Asp  Leu Asn Asn Lys Lys  Asp Ser Cys
    1040                1045                1050


Ile Ser  Asn His Thr Thr Ile  Glu Ile Gly Lys Asp  Leu Asn Tyr
    1055                1060                1065


Leu Lys  Asp Gly Asn Gly Thr  Thr Ser Gly Ile Gly  Ser Ser Val
    1070                1075                1080


Glu Lys  Tyr Val Val Asp Glu  Ser Asp Tyr Met Ser  Phe Ile Asn
    1085                1090                1095


Asn Pro  Ser Leu Thr Val Thr  Val Pro Ile Ala Val  Gly Glu Ser
    1100                1105                1110


Asp Phe  Glu Asn Leu Asn Thr  Glu Glu Phe Ser Ser  Glu Ser Asp
    1115                1120                1125


Met Glu  Glu Ser Lys Glu Ile  Lys Glu Asp Ile Glu  Thr Leu Ser
    1130                1135                1140


Cys Gly  Ile Asp Phe Gln Lys  Leu Asn Ala Thr Ser  Ser Ser Glu
    1145                1150                1155


Gly Ser  Thr Val Asp Ile Gly  Ala Pro Ala Glu Gly  Glu Gln Pro
    1160                1165                1170


Glu Ala  Glu Pro Glu Glu Ser  Leu Glu Pro Glu Ala  Cys Phe Thr
    1175                1180                1185
```

```
Glu Asp  Cys Val Arg Lys Phe  Lys Cys Cys Gln Ile  Ser Ile Glu
    1190                1195                1200

Glu Gly  Lys Gly Lys Leu Trp  Trp Asn Leu Arg Lys  Thr Cys Tyr
    1205                1210                1215

Lys Ile  Val Glu His Asn Trp  Phe Glu Thr Phe Ile  Val Phe Met
    1220                1225                1230

Ile Leu  Leu Ser Ser Gly Ala  Leu Ala Phe Glu Asp  Ile Tyr Ile
    1235                1240                1245

Glu Gln  Arg Lys Thr Ile Lys  Thr Met Leu Glu Tyr  Ala Asp Lys
    1250                1255                1260

Val Phe  Thr Tyr Ile Phe Ile  Leu Glu Met Leu Leu  Lys Trp Val
    1265                1270                1275

Ala Tyr  Gly Phe Gln Met Tyr  Phe Thr Asn Ala Trp  Cys Trp Leu
    1280                1285                1290

Asp Phe  Leu Ile Val Asp Val  Ser Leu Val Ser Leu  Thr Ala Asn
    1295                1300                1305

Ala Leu  Gly Tyr Ser Glu Leu  Gly Ala Ile Lys Ser  Leu Arg Thr
    1310                1315                1320

Leu Arg  Ala Leu Arg Pro Leu  Arg Ala Leu Ser Arg  Phe Glu Gly
    1325                1330                1335

Met Arg  Val Val Val Asn Ala  Leu Leu Gly Ala Ile  Pro Ser Ile
    1340                1345                1350

Met Asn  Val Leu Leu Val Cys  Leu Ile Phe Trp Leu  Ile Phe Ser
    1355                1360                1365
```

```
Ile Met  Gly Val Asn Leu Phe  Ala Gly Lys Phe Tyr  His Cys Ile
    1370                1375                1380

Asn Phe  Thr Thr Gly Glu Met  Phe Asp Val Ser Val  Val Asn Asn
    1385                1390                1395

Tyr Ser  Glu Cys Lys Ala Leu  Ile Glu Ser Asn Gln  Thr Ala Arg
    1400                1405                1410

Trp Lys  Asn Val Lys Val Asn  Phe Asp Asn Val Gly  Leu Gly Tyr
    1415                1420                1425

Leu Ser  Leu Leu Gln Val Ala  Thr Phe Lys Gly Trp  Met Asp Ile
    1430                1435                1440

Met Tyr  Ala Ala Val Asp Ser  Arg Asn Val Glu Leu  Gln Pro Lys
    1445                1450                1455

Tyr Glu  Asp Asn Leu Tyr Met  Tyr Leu Tyr Phe Val  Ile Phe Ile
    1460                1465                1470

Ile Phe  Gly Ser Phe Phe Thr  Leu Asn Leu Phe Ile  Gly Val Ile
    1475                1480                1485

Ile Asp  Asn Phe Asn Gln Gln  Lys Lys Lys Phe Gly  Gly Gln Asp
    1490                1495                1500

Ile Phe  Met Thr Glu Glu Gln  Lys Lys Tyr Tyr Asn  Ala Met Lys
    1505                1510                1515

Lys Leu  Gly Ser Lys Lys Pro  Gln Lys Pro Ile Pro  Arg Pro Ala
    1520                1525                1530

Asn Lys  Phe Gln Gly Met Val  Phe Asp Phe Val Thr  Lys Gln Val
    1535                1540                1545

Phe Asp  Ile Ser Ile Met Ile  Leu Ile Cys Leu Asn  Met Val Thr
    1550                1555                1560
```

```
Met Met  Val Glu Thr Asp Asp  Gln Ser Gln Glu Met  Thr Asn Ile
    1565                1570                1575

Leu Tyr  Trp Ile Asn Leu Val  Phe Ile Val Leu Phe  Thr Gly Glu
    1580                1585                1590

Cys Val  Leu Lys Leu Ile Ser  Leu Arg Tyr Tyr Tyr  Phe Thr Ile
    1595                1600                1605

Gly Trp  Asn Ile Phe Asp Phe  Val Val Val Ile Leu  Ser Ile Val
    1610                1615                1620

Gly Met  Phe Leu Ala Glu Leu  Ile Glu Lys Tyr Phe  Val Ser Pro
    1625                1630                1635

Thr Leu  Phe Arg Val Ile Arg  Leu Ala Arg Ile Gly  Arg Ile Leu
    1640                1645                1650

Arg Leu  Ile Lys Gly Ala Lys  Gly Ile Arg Thr Leu  Leu Phe Ala
    1655                1660                1665

Leu Met  Met Ser Leu Pro Ala  Leu Phe Asn Ile Gly  Leu Leu Leu
    1670                1675                1680

Phe Leu  Val Met Phe Ile Tyr  Ala Ile Phe Gly Met  Ser Asn Phe
    1685                1690                1695

Ala Tyr  Val Lys Arg Glu Val  Gly Ile Asp Asp Met  Phe Asn Phe
    1700                1705                1710

Glu Thr  Phe Gly Asn Ser Met  Ile Cys Leu Phe Gln  Ile Thr Thr
    1715                1720                1725

Ser Ala  Gly Trp Asp Gly Leu  Leu Ala Pro Ile Leu  Asn Ser Gly
    1730                1735                1740
```

```
Pro Pro  Asp Cys Asp Pro Glu  Lys Asp His Pro Gly  Ser Ser Val
    1745                1750                1755

Lys Gly  Asp Cys Gly Asn Pro  Ser Val Gly Ile Phe  Phe Phe Val
    1760                1765                1770

Ser Tyr  Ile Ile Ile Ser Phe  Leu Val Val Val Asn  Met Tyr Ile
    1775                1780                1785

Ala Val  Ile Leu Glu Asn Phe  Ser Val Ala Thr Glu  Glu Ser Ala
    1790                1795                1800

Glu Pro  Leu Ser Glu Asp Asp  Phe Glu Met Phe Tyr  Glu Val Trp
    1805                1810                1815

Glu Lys  Phe Asp Pro Asp Ala  Thr Gln Phe Ile Glu  Phe Ser Lys
    1820                1825                1830

Leu Ser  Asp Phe Ala Ala Ala  Leu Asp Pro Pro Leu  Leu Ile Ala
    1835                1840                1845

Lys Pro  Asn Lys Val Gln Leu  Ile Ala Met Asp Leu  Pro Met Val
    1850                1855                1860

Ser Gly  Asp Arg Ile His Cys  Leu Asp Ile Leu Phe  Ala Phe Thr
    1865                1870                1875

Lys Arg  Val Leu Gly Glu Ser  Gly Glu Met Asp Ala  Leu Arg Ile
    1880                1885                1890

Gln Met  Glu Glu Arg Phe Met  Ala Ser Asn Pro Ser  Lys Val Ser
    1895                1900                1905

Tyr Glu  Pro Ile Thr Thr Thr  Leu Lys Arg Lys Gln  Glu Glu Val
    1910                1915                1920

Ser Ala  Ile Val Ile Gln Arg  Ala Tyr Arg Arg Tyr  Leu Leu Lys
    1925                1930                1935
```

```
Gln Lys  Val Lys Lys Val Ser  Ser Ile Tyr Lys Lys  Asp Lys Gly
    1940                1945                1950


Lys Glu  Gly Asp Gly Thr Pro  Ile Lys Glu Asp Ile  Leu Ile Asp
    1955                1960                1965


Lys Leu  Asn Glu Asn Ser Thr  Pro Glu Lys Thr Asp  Met Thr Pro
    1970                1975                1980


Ser Thr  Thr Ser Pro Pro Ser  Tyr Asp Ser Val Thr  Lys Pro Glu
    1985                1990                1995


Lys Glu  Lys Phe Glu Lys Asp  Lys Ser Glu Lys Glu  Asp Lys Gly
    2000                2005                2010


Lys Asp  Ser Arg Glu Ser Lys  Lys
    2015                2020
```

<210>  54
<211>  2006
<212>  PRT
<213>  Gallus gallus

<400>  54

```
Met Ala Gln Ser Val Leu Val Pro Pro Gly Pro Asp Ser Phe Arg Tyr
1               5                   10                  15


Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Gln Arg Ile Asn Glu Glu
            20                  25                  30


Lys Ala Lys Lys Ser Lys Gln Glu Arg Lys Asp Asp Asp Asp Glu Asp
        35                  40                  45


Gly Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Thr Leu Pro Phe
    50                  55                  60


Ile Tyr Gly Asp Ile Pro Pro Gly Met Val Ser Glu Pro Leu Glu Asp
```

```
65                  70                  75                  80

Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys
                85                  90                  95

Gly Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Met Leu
            100                 105                 110

Thr Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His
        115                 120                 125

Ser Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val
    130                 135                 140

Phe Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr
145                 150                 155                 160

Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala
                165                 170                 175

Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn
            180                 185                 190

Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val
        195                 200                 205

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

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

Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val
                245                 250                 255

Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly
            260                 265                 270
```

```
Asn Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Asp Asn Ser Thr Phe
        275                 280                 285

Glu Thr Thr Val Ile Thr Tyr Phe Asn Ser Ser Ile Gly Glu Asn Gly
    290                 295                 300

Thr Phe Ile Asn Thr Thr Met Thr Ile Phe Asn Trp Asp Glu Tyr Ile
305                 310                 315                 320

Glu Asp Glu Asn His Phe Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu
                325                 330                 335

Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile
            340                 345                 350

Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp
        355                 360                 365

Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp
    370                 375                 380

Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr
385                 390                 395                 400

Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu
                405                 410                 415

Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn
            420                 425                 430

Gln Ala Thr Met Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln
        435                 440                 445

Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala
    450                 455                 460

Ala Ala Ala Ala Ala Asp Ser Arg Asp Tyr Ser Gly Val Gly Gly Ile
```

```
465                 470                 475                 480

Gly Gly Phe Ser Glu Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys
                485                 490                 495

Ser Ala Lys Glu Arg Arg Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu
            500                 505                 510

Gln Ala Glu Gly Glu Lys Asp Glu Glu Glu Phe Arg Lys Ser Glu Ser
        515                 520                 525

Glu Asp Ser Ile Lys Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn
    530                 535                 540

Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser Leu Leu
545                 550                 555                 560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser
                565                 570                 575

Leu Phe Ser Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp
            580                 585                 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Arg
        595                 600                 605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg Asn Ser Asn
    610                 615                 620

Ile Ser Gln Ala Ser Arg Ser Ser Arg Thr Val Pro Pro Leu Pro Val
625                 630                 635                 640

Asn Gly Lys Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu
                645                 650                 655

Val Gly Gly Pro Pro Ala Leu Thr Ser Pro Thr Gly Gln Leu Leu Pro
            660                 665                 670
```

```
Glu Gly Thr Thr Thr Glu Thr Asp Leu Arg Lys Arg Arg Ser Ser Ser
        675                 680                 685

Tyr Gln Val Pro Met Asp Tyr Leu Thr Asp Pro Ser Ala Arg Gln Arg
    690                 695                 700

Ala Met Ser Ile Ala Ser Met Leu Thr Asn Thr Met Glu Glu Leu Glu
705                 710                 715                 720

Glu Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe Ala Asn Thr
                725                 730                 735

Cys Leu Ile Trp Asp Cys Cys Thr Pro Trp Leu Lys Val Lys His Ile
            740                 745                 750

Val Asn Leu Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile
        755                 760                 765

Cys Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met
    770                 775                 780

Thr Glu Gln Phe Ser Gly Val Leu Ser Val Gly Asn Leu Val Phe Thr
785                 790                 795                 800

Gly Ile Phe Thr Ala Glu Met Phe Leu Lys Ile Ile Ala Met Asp Pro
                805                 810                 815

Tyr Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Phe Ile Val
            820                 825                 830

Ser Leu Ser Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser
        835                 840                 845

Val Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser
    850                 855                 860

Trp Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly
```

```
865                 870                 875                 880

Ala Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe
                885                 890                 895

Ala Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val
            900                 905                 910

Cys Lys Ile Ser Ser Asp Cys Glu Leu Pro Arg Trp His Met His Asp
        915                 920                 925

Phe Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp
    930                 935                 940

Ile Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys
945                 950                 955                 960

Leu Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu
                965                 970                 975

Asn Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu
            980                 985                 990

Ala Ala Thr Asp Asp Asp Asn Glu  Met Asn Asn Leu Gln  Ile Ala Val
        995                 1000                1005

Ala Arg  Ile Gln Lys Gly Ile  Asp Phe Val Lys Arg  Lys Val Arg
    1010                1015                1020

Glu Phe  Ile Gln Lys Ala Phe  Val Arg Lys Gln Lys  Val Leu Asp
    1025                1030                1035

Glu Ile  Lys Pro Leu Glu Asp  Leu Asn Asn Lys Lys  Asp Ser Cys
    1040                1045                1050

Ile Ser  Asn His Thr Ile Val  Glu Ile Gly Lys Asn  Leu Ala Tyr
    1055                1060                1065
```

```
Leu Lys  Glu Gly Asn Gly Thr  Thr Ser Gly Ile Gly  Ser Ser Val
    1070                1075                1080

Glu Lys  Tyr Val Val Asp Glu  Ser Asp Tyr Met Ser  Phe Ile Asn
    1085                1090                1095

Asn Pro  Ser Leu Thr Val Thr  Val Pro Ile Ala Val  Gly Glu Ser
    1100                1105                1110

Asp Phe  Glu Asn Leu Asn Thr  Glu Glu Phe Ser Ser  Glu Ser Asp
    1115                1120                1125

Leu Glu  Glu Ser Lys Glu Lys  Leu Asn Ala Ser Ser  Ser Ser Glu
    1130                1135                1140

Gly Ser  Thr Val Asp Ile Gly  Leu Pro Pro Glu Gly  Glu Gln Pro
    1145                1150                1155

Glu Val  Glu Pro Glu Glu Ser  Leu Glu Pro Glu Ala  Cys Phe Thr
    1160                1165                1170

Glu Gly  Cys Val Arg Arg Phe  Lys Cys Cys Gln Val  Ser Val Glu
    1175                1180                1185

Asp Gly  Lys Gly Lys Ile Trp  Trp Asn Leu Arg Lys  Thr Cys Tyr
    1190                1195                1200

Lys Ile  Val Glu His Asn Trp  Phe Glu Thr Phe Ile  Val Phe Met
    1205                1210                1215

Ile Leu  Leu Ser Ser Gly Ala  Leu Ala Phe Glu Asp  Ile Tyr Ile
    1220                1225                1230

Glu Gln  Arg Lys Thr Ile Lys  Thr Met Leu Glu Tyr  Ala Asp Lys
    1235                1240                1245

Val Phe  Thr Tyr Ile Phe Ile  Leu Glu Met Leu Leu  Lys Trp Val
```

```
    1250                1255                1260

Ala Tyr  Gly Phe Gln Thr Tyr  Phe Thr Asn Ala Trp  Cys Trp Leu
    1265                1270                1275

Asp Phe  Leu Ile Val Asp Val  Ser Leu Val Ser Leu  Thr Ala Asn
    1280                1285                1290

Ala Leu  Gly Tyr Ser Glu Leu  Gly Ala Ile Lys Ser  Leu Arg Thr
    1295                1300                1305

Leu Arg  Ala Leu Arg Pro Leu  Arg Ala Leu Ser Arg  Phe Glu Gly
    1310                1315                1320

Met Arg  Val Val Val Asn Ala  Leu Leu Gly Ala Ile  Pro Ser Ile
    1325                1330                1335

Met Asn  Val Leu Leu Val Cys  Leu Ile Phe Trp Leu  Ile Phe Ser
    1340                1345                1350

Ile Met  Gly Val Asn Leu Phe  Ala Gly Lys Phe Tyr  Tyr Cys Val
    1355                1360                1365

Asn Thr  Thr Thr Asp Glu Arg  Phe Asp Ile Ser Gln  Ile Asn Asn
    1370                1375                1380

Tyr Ser  Gln Cys Glu Glu Leu  Ile Lys Asn Asn Glu  Thr Ala Arg
    1385                1390                1395

Trp Lys  Asn Val Lys Val Asn  Phe Asp Asn Val Gly  Leu Gly Tyr
    1400                1405                1410

Leu Ser  Leu Leu Gln Val Ala  Thr Phe Lys Gly Trp  Met Asp Ile
    1415                1420                1425

Met Tyr  Ala Ala Val Asp Ser  Arg Asn Val Leu Asp  Gln Pro Lys
    1430                1435                1440
```

```
Tyr Glu  Asp Asn Leu Tyr Met  Tyr Leu Tyr Phe Val  Ile Phe Ile
    1445                1450                1455

Ile Phe  Gly Ser Phe Phe Thr  Leu Asn Leu Phe Ile  Gly Val Ile
    1460                1465                1470

Ile Asp  Asn Phe Asn Gln Gln  Lys Lys Lys Phe Gly  Gly Gln Asp
    1475                1480                1485

Ile Phe  Met Thr Glu Glu Gln  Lys Lys Tyr Tyr Asn  Ala Met Lys
    1490                1495                1500

Lys Leu  Gly Ser Lys Lys Pro  Gln Lys Pro Ile Pro  Arg Pro Ala
    1505                1510                1515

Asn Lys  Phe Gln Gly Met Val  Phe Asp Phe Val Thr  Lys Gln Ala
    1520                1525                1530

Phe Asp  Ile Ser Ile Met Ile  Leu Ile Cys Leu Asn  Met Val Thr
    1535                1540                1545

Met Met  Val Glu Thr Asp Asp  Gln Ser Glu Asp Met  Glu Asn Ile
    1550                1555                1560

Leu Tyr  Trp Ile Asn Leu Val  Phe Ile Val Leu Phe  Thr Gly Glu
    1565                1570                1575

Phe Val  Leu Lys Leu Ile Ser  Leu Arg His Tyr Tyr  Phe Thr Ile
    1580                1585                1590

Gly Trp  Asn Ile Phe Asp Phe  Val Val Val Ile Leu  Ser Ile Val
    1595                1600                1605

Gly Met  Phe Leu Ala Glu Met  Ile Glu Lys Tyr Phe  Val Ser Pro
    1610                1615                1620

Thr Leu  Phe Arg Val Ile Arg  Leu Ala Arg Ile Gly  Arg Ile Leu
```

```
    1625                1630                1635

Arg Leu  Ile Lys Gly Ala Lys  Gly Ile Arg Thr Leu  Leu Phe Ala
    1640                1645                1650

Leu Met  Met Ser Leu Pro Ala  Leu Phe Asn Ile Gly  Leu Leu Leu
    1655                1660                1665

Phe Leu  Val Met Phe Ile Tyr  Ala Ile Phe Gly Met  Ser Asn Phe
    1670                1675                1680

Ala Tyr  Val Lys Arg Glu Val  Gly Ile Asp Asp Met  Phe Asn Phe
    1685                1690                1695

Glu Thr  Phe Gly Asn Ser Met  Ile Cys Leu Phe Gln  Ile Thr Thr
    1700                1705                1710

Ser Ala  Gly Trp Asp Gly Leu  Leu Ala Pro Ile Leu  Asn Ser Gly
    1715                1720                1725

Glu Pro  Asp Cys Asp Pro His  Lys Asp His Pro Gly  Ser Ser Val
    1730                1735                1740

Lys Gly  Asp Cys Gly Asn Pro  Ser Val Gly Ile Phe  Phe Phe Val
    1745                1750                1755

Ser Tyr  Ile Ile Ile Ser Phe  Leu Val Val Val Asn  Met Tyr Ile
    1760                1765                1770

Ala Val  Ile Leu Glu Asn Phe  Ser Val Ala Thr Glu  Glu Ser Ala
    1775                1780                1785

Glu Pro  Leu Ser Glu Asp Asp  Phe Glu Met Phe Tyr  Glu Val Trp
    1790                1795                1800

Glu Lys  Phe Asp Pro Asp Ala  Thr Gln Phe Ile Glu  Phe Ser Lys
    1805                1810                1815
```

```
Leu Ser  Asp Phe Ala Ala Ser  Leu Asp Pro Pro Leu  Leu Ile Ala
    1820                1825                1830

Lys Pro  Asn Lys Val Gln Leu  Ile Ala Met Asp Leu  Pro Met Val
    1835                1840                1845

Ser Gly  Asp Arg Ile His Cys  Leu Asp Ile Leu Phe  Ala Phe Thr
    1850                1855                1860

Lys Arg  Val Leu Gly Glu Ser  Gly Glu Met Asp Ala  Leu Arg Ile
    1865                1870                1875

Gln Met  Glu Asp Arg Phe Met  Ala Ala Asn Pro Ser  Lys Val Ser
    1880                1885                1890

Tyr Glu  Pro Ile Thr Thr Thr  Leu Lys Arg Lys Gln  Glu Glu Val
    1895                1900                1905

Ser Ala  Val Val Ile Gln Arg  Ala Phe Arg Arg His  Leu Leu Arg
    1910                1915                1920

Gln Lys  Val Lys Lys Val Ser  Cys Ile Phe Asn Gln  Asp Lys Gly
    1925                1930                1935

Lys Asp  Glu Asp Asp Leu Pro  Met Lys Glu Asp Met  Ile Met Asp
    1940                1945                1950

Lys Leu  Asn Glu Asn Ser Thr  Pro Glu Lys Thr Asp  Met Thr Pro
    1955                1960                1965

Ser Thr  Thr Ser Pro Pro Ser  Tyr Asp Ser Val Thr  Lys Pro Asp
    1970                1975                1980

Lys Asp  Lys Tyr Glu Lys Asp  Lys Ser Glu Lys Glu  Asp Lys Gly
    1985                1990                1995

Lys Asp  Ser Arg Glu Ser Lys  Lys
```

2000 2005

<210> 55
<211> 1867
<212> PRT
<213> Ophiophagus hannah

<400> 55

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

Asp Ala Ser Lys Glu Glu Gln Gly Lys Phe Lys Ala Met Leu Asp Tyr
20 25 30

Pro Ala Glu Leu Arg Ala Arg Ala Lys Ser Asn Phe Asn Val Gln Asp
35 40 45

Glu Lys Met Ala Gln Thr Leu Leu Val Pro Pro Gly Pro Asp Ser Phe
50 55 60

Arg Phe Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Lys Arg Cys Thr
65 70 75 80

Glu Glu Lys Ala Lys Arg Pro Lys Gln Glu His Thr Asp Asn Asp Asp
85 90 95

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

Pro Phe Ile Tyr Gly Asp Ile Pro Pro Gly Met Val Ser Glu Pro Leu
115 120 125

Glu Asp Leu Asp Pro Tyr Tyr Ser Asn Lys Lys Thr Phe Ile Val Leu
130 135 140

Asn Arg Gly Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr
145 150 155 160

```
Ile Leu Thr Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu
                165                 170                 175

Gly Val Thr Pro Leu Asn Ile Trp Glu Gln Leu Phe Leu Lys Phe Tyr
            180                 185                 190

Leu Leu Leu Asn Ile Lys Ser Val Ser Lys Leu Arg Ser Val Trp Asn
        195                 200                 205

Ser Thr Phe Phe Asn Phe His Leu Pro Ala Ser Arg Tyr Thr Phe Thr
    210                 215                 220

Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala Arg Gly Phe
225                 230                 235                 240

Cys Leu Glu Gly Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp Leu Asp
                245                 250                 255

Phe Ser Val Ile Leu Met Ala Tyr Val Thr Glu Phe Val Asn Leu Gly
            260                 265                 270

Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu Lys Thr
        275                 280                 285

Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu Ile Gln
    290                 295                 300

Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe Cys Leu
305                 310                 315                 320

Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn Leu Arg
                325                 330                 335

His Lys Cys Leu Leu Trp Pro Leu Asp Asn Ala Thr Phe Glu Gly Asn
            340                 345                 350

Ile Thr Ser His Phe Asn Ser Thr Glu Gly Glu Asn Asp Thr Phe Val
        355                 360                 365
```

```
Asn Met Thr Val Thr Thr Phe Asn Trp Glu Glu Tyr Ile Glu Asp Glu
    370                 375                 380

Ser His Phe Tyr Val Leu Glu Gly Gln Arg Asp Ala Leu Leu Cys Gly
385                 390                 395                 400

Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Val Cys Ile Lys
                405                 410                 415

Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe Ser
            420                 425                 430

Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp Glu
        435                 440                 445

Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met Ile
    450                 455                 460

Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn Leu
465                 470                 475                 480

Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala Thr
                485                 490                 495

Met Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Leu Glu
            500                 505                 510

Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ile Thr Ile Arg Glu Ala
        515                 520                 525

Thr His Leu Leu Ile Thr Pro Asn Asn Asn Trp Phe Gly Leu Cys Ser
    530                 535                 540

Val Leu Pro Pro Leu Gln Ser Leu Leu Ser Phe Arg Gly Ser Leu Phe
545                 550                 555                 560
```

```
Ser Pro Arg Arg Asn Ser Arg Thr Ser Ile Phe Ser Phe Arg Gly Arg
                565                 570                 575

Ala Lys Asp Ile Gly Ser Glu Asn Asp Phe Ala Asp Asp Glu His Ser
            580                 585                 590

Thr Leu Glu Asp Asn Glu Ser Arg Arg Asp Ser Leu Phe Val Pro Asn
        595                 600                 605

Arg Gln Thr Ser Glu Arg Arg Asn Ser Thr Thr Ser Gln Met Ser Leu
    610                 615                 620

Ser Ser Lys Met Val Pro Val Leu Pro Ala Asn Gly Lys Met His Ser
625                 630                 635                 640

Thr Val Asp Cys Asn Gly Val Val Ser Leu Met Gly Gly Pro Pro Ala
                645                 650                 655

Leu Pro Ser Pro Thr Gly Gln Phe Leu Pro Glu Gly Thr Thr Thr Glu
            660                 665                 670

Thr Glu Ile Arg Lys Arg Arg Leu Ser Ser Tyr Gln Ile Ser Met Glu
        675                 680                 685

Leu Met Glu Glu Ser Ala Ala Arg Gln Arg Ala Met Ser Ile Ala Ser
    690                 695                 700

Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys
705                 710                 715                 720

Pro Pro Cys Trp Tyr Arg Phe Ala Asn Val Phe Leu Ile Trp Asp Cys
                725                 730                 735

Trp Ser Pro Trp Leu Lys Val Lys His Ile Val Asn Leu Ile Val Met
            740                 745                 750

Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr
        755                 760                 765
```

```
Leu Phe Met Ala Met Glu His Tyr Pro Met Thr Ser Asp Phe Tyr Gln
    770                 775                 780

Val Leu Ser Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu
785                 790                 795                 800

Met Ile Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu
                805                 810                 815

Gly Trp Asn Ile Phe Asp Gly Ile Ile Val Ser Leu Ser Leu Met Glu
            820                 825                 830

Leu Gly Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg
        835                 840                 845

Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met
    850                 855                 860

Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr
865                 870                 875                 880

Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln
                885                 890                 895

Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys Lys Ile Ala Glu Asp
            900                 905                 910

Cys Glu Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu
        915                 920                 925

Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp
    930                 935                 940

Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu Ile Val Phe Met Leu
945                 950                 955                 960
```

```
Val Met Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu
               965                 970                 975

Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala Ala Thr Asp Asp Asp
           980                 985                 990

Asn Glu Thr Asn Asn Leu Gln Ile  Ala Val Ala Arg Ile  Gln Lys Gly
        995                 1000                1005

Ile Asp  Tyr Ile Lys Lys Lys  Leu Gly Glu Ile Val  Gln Lys Ser
    1010                1015                1020

Thr Val  Arg Lys Gln Lys Ala  Ile Asp Asp Ile Lys  Val Phe Glu
    1025                1030                1035

Glu Leu  Asn His Lys Lys Asp  Val Tyr Ile Ser Asn  His Thr Met
    1040                1045                1050

Val Glu  Ile Thr Lys Asp Val  Asn Tyr Leu Arg Asp  Gly Asn Gly
    1055                1060                1065

Thr Thr  Ser Gly Leu Gly Thr  Gly Ser Ser Val Glu  Lys Tyr Ile
    1070                1075                1080

Ile Asp  Glu Asn Asp Tyr Met  Ser Phe Ile Asn Asn  Pro Gly Leu
    1085                1090                1095

Thr Val  Thr Val Pro Ile Ala  Val Gly Glu Ser Asp  Phe Glu Asn
    1100                1105                1110

Ile Asn  Thr Glu Glu Phe Ser  Ser Glu Ser Asp Leu  Glu Gly Ser
    1115                1120                1125

Lys Glu  Lys Ile Asn Ala Thr  Ser Ser Ser Glu Gly  Ser Thr Val
    1130                1135                1140

Asp Val  Ala Leu Pro Gly Glu  Gly Glu Gln Ala Glu  Ile Glu Pro
    1145                1150                1155
```

```
Glu Glu  Ala Leu Glu Pro Glu  Ala Cys Phe Thr Glu  Gly Cys Ile
    1160                1165                1170

Gln Lys  Phe Pro Cys Cys Gln  Val Ser Ile Glu Asp  Gly Lys Gly
    1175                1180                1185

Lys Ile  Trp Trp Asn Phe Arg  Lys Thr Cys Tyr Ser  Ile Val Glu
    1190                1195                1200

His Asn  Trp Phe Glu Thr Phe  Ile Val Phe Met Ile  Leu Leu Ser
    1205                1210                1215

Ser Gly  Ala Leu Ala Phe Glu  Asp Ile Tyr Val Glu  Gln Arg Lys
    1220                1225                1230

Thr Ile  Lys Thr Met Leu Glu  Tyr Ala Asp Lys Val  Phe Thr Tyr
    1235                1240                1245

Ile Phe  Ile Leu Glu Met Leu  Leu Lys Trp Val Ala  Tyr Gly Phe
    1250                1255                1260

Gln Ile  Tyr Phe Thr Asn Ala  Trp Cys Trp Leu Asp  Phe Leu Ile
    1265                1270                1275

Val Asp  Val Ser Leu Val Ser  Leu Ile Ala Asn Ala  Leu Gly Tyr
    1280                1285                1290

Ser Glu  Leu Gly Ala Ile Lys  Ser Leu Arg Thr Leu  Arg Ala Leu
    1295                1300                1305

Arg Pro  Leu Arg Ala Leu Ser  Arg Phe Glu Gly Met  Arg Val Val
    1310                1315                1320

Val Asn  Ala Leu Ile Gly Ala  Ile Pro Ser Ile Met  Asn Val Leu
    1325                1330                1335
```

```
Leu Val  Cys Leu Ile Phe Trp  Leu Ile Phe Ser Ile  Met Gly Val
    1340                1345                1350

Asn Leu  Phe Ala Gly Lys Phe  Tyr His Cys Val Asn  Thr Thr Thr
    1355                1360                1365

Gly Glu  Met Phe Asn Ile Ser  Asp Val Asn Asn Lys  Thr Glu Cys
    1370                1375                1380

Asp Glu  Leu Ile His Asn Asn  Gln Gln Ala Arg Trp  Lys Asn Val
    1385                1390                1395

Lys Val  Asn Phe Asp Asn Val  Gly Ala Gly Tyr Leu  Ala Leu Leu
    1400                1405                1410

Gln Val  Ala Thr Phe Lys Gly  Trp Met Asp Ile Met  Tyr Ala Ala
    1415                1420                1425

Val Asp  Ser Arg Asp Val Glu  Glu Gln Pro Tyr Tyr  Glu Asp Asn
    1430                1435                1440

Leu Tyr  Met Tyr Leu Tyr Phe  Val Ile Phe Ile Ile  Phe Gly Ser
    1445                1450                1455

Phe Phe  Thr Leu Asn Leu Phe  Ile Gly Val Ile Ile  Asp Asn Phe
    1460                1465                1470

Asn Gln  Gln Lys Lys Lys Ile  Arg Gln Asp Ile Phe  Met Thr Glu
    1475                1480                1485

Glu Gln  Lys Lys Tyr Tyr Asn  Ala Met Lys Lys Leu  Gly Ser Lys
    1490                1495                1500

Lys Pro  Gln Lys Pro Ile Pro  Arg Pro Gly Asn Lys  Phe Gln Gly
    1505                1510                1515

Leu Val  Phe Asp Phe Val Thr  Lys Gln Ala Phe Asp  Ile Ser Ile
    1520                1525                1530
```

```
Met Ile  Leu Ile Cys Leu Asn  Met Val Thr Met Met  Val Glu Thr
    1535                1540                1545

Asp Asp  Gln Ser Lys Glu Met  Glu Ile Ile Leu Ser  Arg Ile Asn
    1550                1555                1560

Leu Val  Phe Ile Ile Leu Phe  Thr Gly Glu Cys Ile  Leu Lys Leu
    1565                1570                1575

Ile Ser  Leu Arg His Tyr Tyr  Phe Thr Ile Gly Trp  Asn Ile Phe
    1580                1585                1590

Asp Phe  Val Val Val Ile Leu  Ser Ile Val Gly Met  Phe Leu Ala
    1595                1600                1605

Glu Ile  Ile Glu Lys Tyr Phe  Val Ser Pro Thr Leu  Phe Arg Val
    1610                1615                1620

Ile Arg  Leu Ala Arg Ile Gly  Arg Ile Leu Arg Leu  Ile Lys Gly
    1625                1630                1635

Ala Lys  Gly Ile Arg Thr Leu  Leu Phe Ala Leu Met  Met Ser Leu
    1640                1645                1650

Pro Ala  Leu Phe Asn Ile Gly  Leu Leu Leu Phe Leu  Val Met Phe
    1655                1660                1665

Ile Tyr  Ala Ile Phe Gly Met  Ser Asn Phe Ala Tyr  Val Lys Arg
    1670                1675                1680

Glu Val  Gly Ile Asp Asp Leu  Phe Asn Phe Glu Thr  Phe Gly Asn
    1685                1690                1695

Ser Met  Leu Cys Leu Phe Gln  Ile Thr Thr Ser Ala  Gly Trp Asp
    1700                1705                1710
```

```
Gly Leu  Leu Ala Pro Ile Leu  Asn Ser Gly Pro Pro  Asp Cys Asp
    1715                1720                1725

Pro Glu  Ile Asp His Pro Gly  Ser Ser Val Lys Gly  Asp Cys Gly
    1730                1735                1740

Asn Pro  Ser Val Gly Ile Phe  Phe Phe Val Ser Tyr  Ile Ile Ile
    1745                1750                1755

Ser Phe  Leu Val Val Val Asn  Met Tyr Ile Ala Val  Ile Leu Glu
    1760                1765                1770

Asn Phe  Ser Arg Ala Phe Arg  Arg Phe Leu Leu Lys  Gln Lys Val
    1775                1780                1785

Lys Lys  Val Thr Ser Met Tyr  Asn Lys Glu Lys Cys  Arg Asp Gly
    1790                1795                1800

Glu Ile  Leu Pro Ile Lys Asp  Val Thr Ser Asp Arg  Phe Asn Gly
    1805                1810                1815

Asn Ser  Ser Pro Glu Lys Thr  Asp Glu Ser Ser Ser  Thr Thr Ser
    1820                1825                1830

Pro Pro  Ser Tyr Asp Ser Val  Thr Lys Pro Asn Lys  Glu Lys Tyr
    1835                1840                1845

Glu Lys  Gly Lys Thr Asp Arg  Asp Phe Lys Gly Lys  Asp Ile Lys
    1850                1855                1860

Ile Ser  Lys Lys
    1865
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<210>  56
<211>  2019
<212>  PRT
<213>  Chelonia mydas

<400>  56

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Met Ala Gln Ser Val Leu Val Pro Pro Gly Pro Asp Ser Phe His Tyr
1               5                  10                  15

Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Gln Arg Ile Ala Glu Glu
            20                  25                  30

Lys Ala Lys Lys Ser Lys Gln Glu Arg Lys Asp Asp Asp Asp Glu Asn
        35                  40                  45

Gly Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Thr Leu Pro Phe
    50                  55                  60

Ile Tyr Gly Asp Ile Pro Pro Gly Met Val Ser Glu Pro Leu Glu Asp
65                  70                  75                  80

Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Arg
                85                  90                  95

Gly Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Val Tyr Met Leu
            100                 105                 110

Thr Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His
        115                 120                 125

Ser Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val
    130                 135                 140

Phe Met Thr Met Ser Asn Pro Pro Glu Trp Thr Lys Asn Val Glu Tyr
145                 150                 155                 160

Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Val Lys Ile Leu Ala
                165                 170                 175

Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn
            180                 185                 190

Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val
```

```
        195                 200                 205

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

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

Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val
                245                 250                 255

Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly
            260                 265                 270

Asn Leu Arg His Lys Cys Leu Gln Trp Pro Pro Asp Asn Ser Thr Leu
        275                 280                 285

Glu Ile Asn Val Ile Ser Tyr Phe Asn Ser Thr Ile Gly Glu Asn Gly
    290                 295                 300

Ser Phe Val Asn Thr Thr Val Ser Thr Phe Asn Trp Glu Glu Tyr Ile
305                 310                 315                 320

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

Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile
            340                 345                 350

Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp
        355                 360                 365

Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp
    370                 375                 380

Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr
385                 390                 395                 400
```

```
Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu
                405                 410                 415

Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn
            420                 425                 430

Gln Ala Thr Met Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln
        435                 440                 445

Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala
    450                 455                 460

Ala Ala Ala Val Ala Ala Asp Ser Arg Glu Phe Ser Gly Val Gly Gly
465                 470                 475                 480

Val Gly Gly Phe Ser Glu Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser
                485                 490                 495

Lys Ser Ala Lys Glu Arg Arg Asn Arg Arg Lys Lys Arg Lys Gln Lys
            500                 505                 510

Glu Gln Ser Glu Gly Glu Glu Lys Asp Glu Glu Asp Phe His Lys Ser
        515                 520                 525

Glu Ser Glu Asp Ser Met Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu
    530                 535                 540

Gly Asn Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser
545                 550                 555                 560

Leu Leu Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Ser Ser Arg
                565                 570                 575

Thr Ser Leu Phe Ser Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu
            580                 585                 590

Asn Asp Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser
```

```
        595                 600                 605

Arg Arg Gly Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg Asn
    610                 615                 620

Ser Asn Ile Ser Gln Ala Ser Arg Ser Ser Arg Met Val Pro Ala Leu
625                 630                 635                 640

Pro Ala Asn Gly Lys Met His Ser Thr Val Asp Cys Asn Gly Val Val
                645                 650                 655

Ser Leu Val Gly Gly Pro Pro Ala Leu Thr Ser Pro Thr Gly Gln Leu
            660                 665                 670

Leu Pro Glu Val Ile Ile Ala Ser Lys Ala Thr Gln Glu Asn Gly Thr
        675                 680                 685

Thr Thr Glu Thr Glu Leu Arg Lys Arg Arg Thr Ser Ser Tyr His Val
    690                 695                 700

Ser Met Asp Phe Leu Ser Glu Pro Ser Ala Arg Gln Arg Ala Met Ser
705                 710                 715                 720

Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu Ser Arg
                725                 730                 735

Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe Ala Asn Thr Cys Leu Ile
            740                 745                 750

Trp Asp Cys Cys Thr Pro Trp Leu Arg Val Lys His Ile Val Asn Leu
        755                 760                 765

Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val
    770                 775                 780

Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr Glu Gln
785                 790                 795                 800
```

```
Phe Ser His Val Leu Ser Val Gly Asn Leu Val Phe Thr Gly Ile Phe
                805                 810                 815

Thr Ala Glu Met Phe Leu Lys Ile Val Ala Met Asp Pro Tyr Tyr Tyr
            820                 825                 830

Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Phe Ile Val Ser Leu Ser
        835                 840                 845

Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg
    850                 855                 860

Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr
865                 870                 875                 880

Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly
                885                 890                 895

Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val
            900                 905                 910

Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys Lys Ile
        915                 920                 925

Ser Asn Asp Cys Glu Leu Pro Arg Trp His Met His Asp Phe Phe His
    930                 935                 940

Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr
945                 950                 955                 960

Met Trp Asp Cys Met Glu Val Ala Gly Gln Ala Met Cys Leu Ile Val
                965                 970                 975

Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe
            980                 985                 990

Leu Ala Leu Leu Leu Ser Ser Phe  Ser Ser Asp Asn Leu  Ala Ala Thr
```

```
        995                 1000                1005

Asp Asp  Asp Asn Glu Met Asn  Asn Leu Gln Ile Ala  Val Ala Arg
    1010                1015                1020

Ile Gln  Lys Gly Ile Asp Tyr  Val Lys Arg Lys Ala  Arg Glu Phe
    1025                1030                1035

Ile Gln  Lys Ala Phe Val Arg  Lys Gln Lys Ala Leu  Asp Glu Ile
    1040                1045                1050

Lys Pro  Leu Glu Asp Leu Asn  Asn Lys Lys Asp Ser  Cys Ile Ser
    1055                1060                1065

Asn His  Thr Val Ile Glu Ile  Gly Lys Asp Leu Asn  Tyr Leu Lys
    1070                1075                1080

Asp Gly  Asn Gly Thr Thr Ser  Gly Val Gly Ser Ser  Val Glu Lys
    1085                1090                1095

Tyr Val  Val Asp Glu Ser Asp  Tyr Met Ser Phe Ile  Asn Asn Pro
    1100                1105                1110

Ser Leu  Thr Val Thr Val Pro  Ile Ala Val Gly Glu  Ser Asp Phe
    1115                1120                1125

Glu Asn  Leu Asn Thr Glu Glu  Phe Ser Ser Glu Ser  Asp Leu Glu
    1130                1135                1140

Glu Ser  Lys Glu Lys Leu Asn  Ala Ser Ser Ser Ser  Glu Gly Ser
    1145                1150                1155

Thr Val  Asp Ile Gly Leu Pro  Gln Glu Gly Glu Gln  Pro Glu Ile
    1160                1165                1170

Glu Pro  Glu Glu Ala Leu Glu  Pro Glu Ala Cys Phe  Thr Glu Gly
    1175                1180                1185
```

```
Cys Val  Arg Lys Phe Lys Cys  Cys Gln Val Ser Thr  Glu Asp Gly
    1190                1195                1200

Lys Gly  Lys Ile Trp Trp Asn  Leu Arg Lys Thr Cys  Tyr Lys Ile
    1205                1210                1215

Val Glu  His Asn Trp Phe Glu  Thr Phe Ile Val Phe  Met Ile Leu
    1220                1225                1230

Leu Ser  Ser Gly Ala Leu Ala  Phe Glu Asp Ile Tyr  Ile Glu Gln
    1235                1240                1245

Arg Lys  Thr Ile Lys Thr Met  Leu Glu Tyr Ala Asp  Lys Val Phe
    1250                1255                1260

Thr Tyr  Ile Phe Ile Leu Glu  Met Leu Leu Lys Trp  Val Ala Tyr
    1265                1270                1275

Gly Phe  Gln Thr Tyr Phe Thr  Asn Ala Trp Cys Trp  Leu Asp Phe
    1280                1285                1290

Leu Ile  Val Asp Val Ser Leu  Val Ser Leu Thr Ala  Asn Ala Leu
    1295                1300                1305

Gly Tyr  Ser Glu Leu Gly Ala  Ile Lys Ser Leu Arg  Thr Leu Arg
    1310                1315                1320

Ala Leu  Arg Pro Leu Arg Ala  Leu Ser Arg Phe Glu  Gly Met Arg
    1325                1330                1335

Val Val  Val Asn Ala Leu Leu  Gly Ala Ile Pro Ser  Ile Met Asn
    1340                1345                1350

Val Leu  Leu Val Cys Leu Ile  Phe Trp Leu Ile Phe  Ser Ile Met
    1355                1360                1365

Gly Val  Asn Leu Phe Ala Gly  Lys Phe Tyr Tyr Cys  Val Asn Thr
```

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    1370                1375                1380

Thr Asn  Asp Glu Arg Phe Asp  Ile Ser Gln Ile Asn  Asn Tyr Ser
    1385                1390                1395

Gln Cys  Glu Asp Leu Ile Asn  Asn Asn Glu Thr Ala  Arg Trp Lys
    1400                1405                1410

Asn Val  Lys Val Asn Phe Asp  Asn Val Gly Leu Gly  Tyr Leu Ser
    1415                1420                1425

Leu Leu  Gln Val Ala Thr Phe  Lys Gly Trp Met Asp  Ile Met Tyr
    1430                1435                1440

Ala Ala  Val Asp Ser Arg Lys  Val Leu Asp Gln Pro  Lys Tyr Glu
    1445                1450                1455

Asp Asn  Leu Tyr Met Tyr Leu  Tyr Phe Val Ile Phe  Ile Ile Phe
    1460                1465                1470

Gly Ser  Phe Phe Thr Leu Asn  Leu Phe Ile Gly Val  Ile Ile Asp
    1475                1480                1485

Asn Phe  Asn Gln Gln Lys Lys  Lys Phe Gly Gly Gln  Asp Ile Phe
    1490                1495                1500

Met Thr  Glu Glu Gln Lys Lys  Tyr Tyr Asn Ala Met  Lys Lys Leu
    1505                1510                1515

Gly Ser  Lys Lys Pro Gln Lys  Pro Ile Pro Arg Pro  Ala Asn Lys
    1520                1525                1530

Phe Gln  Gly Met Val Phe Asp  Phe Val Thr Lys Gln  Val Phe Asp
    1535                1540                1545

Ile Ser  Ile Met Ile Leu Ile  Cys Leu Asn Met Val  Thr Met Met
    1550                1555                1560
```

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Val Glu  Thr Asp Asn Gln Ser  Asp Glu Met Gln Asp  Asn Leu Trp
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Trp Ile  Asn Leu Val Phe Ile  Val Leu Phe Thr Gly  Glu Cys Ile
    1580                1585                1590

Leu Lys  Leu Ile Ser Leu Arg  Tyr Tyr Tyr Phe Thr  Ile Gly Trp
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Asn Ile  Phe Asp Phe Val Val  Val Ile Leu Ser Ile  Val Gly Met
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Phe Leu  Ala Asp Leu Ile Glu  Lys Tyr Phe Val Ser  Pro Thr Leu
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Phe Arg  Val Ile Arg Leu Ala  Arg Ile Gly Arg Ile  Leu Arg Leu
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Ile Lys  Gly Ala Lys Gly Ile  Arg Thr Leu Leu Phe  Ala Leu Met
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Met Ser  Leu Pro Ala Leu Phe  Asn Ile Gly Leu Leu  Leu Phe Leu
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Val Met  Phe Ile Tyr Ala Ile  Phe Gly Met Ser Asn  Phe Ala Tyr
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Val Lys  Arg Glu Val Gly Ile  Asp Asp Met Phe Asn  Phe Glu Thr
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Phe Gly  Asn Ser Met Ile Cys  Leu Phe Gln Ile Thr  Thr Ser Ala
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Gly Trp  Asp Gly Leu Leu Ala  Pro Ile Leu Asn Ser  Gly Glu Pro
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Asp Cys  Asp Pro Tyr Lys Asp  His Pro Gly Ser Ser  Val Lys Gly
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Asp Cys  Gly Asn Pro Ser Val  Gly Ile Phe Phe Phe  Val Ser Tyr
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Ile Ile  Ile Ser Phe Leu Val  Val Val Asn Met Tyr  Ile Ala Val
    1775                1780                1785

Ile Leu  Glu Asn Phe Ser Val  Ala Thr Glu Glu Ser  Ala Glu Pro
    1790                1795                1800

Leu Ser  Glu Asp Asp Phe Glu  Met Phe Tyr Glu Val  Trp Glu Lys
    1805                1810                1815

Phe Asp  Pro Asp Ala Thr Gln  Phe Ile Glu Phe Ser  Lys Leu Ser
    1820                1825                1830

Asp Phe  Ala Ala Ser Leu Asp  Pro Pro Leu Leu Ile  Ala Lys Pro
    1835                1840                1845

Asn Lys  Val Gln Leu Ile Ala  Met Asp Leu Pro Met  Val Ser Gly
    1850                1855                1860

Asp Arg  Ile His Cys Leu Asp  Ile Leu Phe Ala Phe  Thr Lys Arg
    1865                1870                1875

Val Leu  Gly Glu Ser Gly Glu  Met Asp Thr Leu Arg  Ile Gln Met
    1880                1885                1890

Glu Asp  Arg Phe Met Ala Ala  Asn Pro Ser Lys Val  Ser Tyr Glu
    1895                1900                1905

Pro Ile  Thr Thr Thr Leu Lys  Arg Lys Gln Glu Glu  Val Ser Ala
    1910                1915                1920

Val Ile  Ile Gln Arg Ala Phe  Arg Arg Tyr Leu Leu  Lys Gln Lys
    1925                1930                1935
```

Ile Lys  Lys Val Ser Cys Met  Phe Asn Gln Asp Lys  Asp Lys Asp
    1940                1945                1950

Glu Asp  Asp Leu Pro Ile Lys  Glu Asp Met Ile Ile  Asp Lys Leu
    1955                1960                1965

Asn Glu  Asn Ser Thr Pro Glu  Lys Thr Asp Met Thr  Pro Ser Thr
    1970                1975                1980

Thr Ser  Pro Pro Ser Tyr Asp  Ser Val Thr Lys Pro  Asp Lys Glu
    1985                1990                1995

Lys Tyr  Glu Lys Asp Lys Ser  Glu Lys Glu Asp Lys  Gly Lys Asp
    2000                2005                2010

Val Arg  Glu Ser Lys Lys
    2015

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