

2014009273
SEQUENCE LISTING

<110> CureVac GmbH

<120> Composition and Vaccine for Treating Prostate Cancer

<130> CU01P147W01

<160> 87

<170> PatentIn version 3.5

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ccugugcuuu ugcauuugca ccaaacagcc caugcugaug aaauugacug cccuucagaa 180

cuucagcaca cacaggaacu cuuuccacag uggcacuugc caauaaaaau agcugcuauu 240

auagcaucuc ugacuuuuu uuacacucuu cugagggag aaauucaccc uuugcaacu 300

ucccaucaac aaauuuuuu uaaaauucca auccugguca ucaacaaagu cuugccaaug 360

guuuccauca cucucuuggc auugguuuac cugccaggug ugauagcagc aauguccaa 420

cuucaaaaug gaaccaagua uaagaaguuu ccacauuggu uggauaagug gauguuaaca 480

agaaagcagu uugggcuucu caguuuuuu uuugcuguac ugcaugcaau uuauagucug 540

ucuuacccaa ugaggcgauu cuacagauac aaguugcuua acugggcaua ucaacagguc 600

caacaaaaua aagaagaugc cuggauugag caugauguuu ggagaauuga gauuuauug 660

ucucugggaa uuuggggaa ggcaauacug gcucuguugg cugugacauc uauuccaucu 720

gugagugacu cuuugacaug gagagaauuu cacuauauuc agagcaagcu aggaauuguu 780

ucccuucuaac ugggcacaau acacgcauug auuuuugccu ggaauaagug gauagauua 840

aaacaauuug uaugguauac accuccaacu uuuaugauag cuguuuuccu uccaauuguu 900

guccugauau uaaaaagcau acuauuccug ccaugcuuga ggaagaagau acugaagauu 960

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<210> 12

<211> 1020

2014009273

<212> RNA

<213> Artificial Sequence

<220>

<223> CDS STEAP(GC)

<400> 12

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ccggugcucc ugcaccugca ccagaccgcc cacgccgacg aguucgacug ccccagcgag      180
cuccagcaca cccaggagcu guccccccag uggcaccugc ccaucaagau cgcggccauc      240
aucgccuccc ucaccuuccu guacacgcug cuccgggagg ucauccaccc gcuggccacc      300
agccaccagc aguacuucua caagaucucc auccugguga ucaacaaggu gcuccccaug      360
gucuccauca cccugcuggc ccucguguac cugcccgggg ugaucgcggc caucguccag      420
cugcacaacg gcaccaagua caagaaguuc ccgcacuggc ucgacaagug gaugcugacg      480
cgcaagcagu ucgggcugcu cagcuucuuc uucgccgugc ugcacgccau cuacucccug      540
agcuacccca ugcggcgcuc cuaccgguac aagcuccuga acugggcgua ccagcaggug      600
cagcagaaca aggaggacgc cuggaucgag cacgacgucu ggcgcaugga gaucuacgug      660
agccuggggca ucguggggcu cgccauccug gccucgcucg ccgucaccuc cauccccagc      720
guguccgaca gccugaccug gcgggaguuc cacuacaucc aguccaagcu gggcaucgug      780
agccuccugc ugggcaccau ccacgcgcuc aucuucgccu ggaacaagug gaucgacauc      840
aagcaguucg ucugguacac gcccccgacc uucaugaucg ccguguuccu gcccacugug      900
guccugaucu ucaaguccau ccucuuccug cccugccugc gcaagaagau ccucaagauc      960
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<210> 13

<211> 1353

<212> RNA

<213> Artificial Sequence

<220>

<223> CAP-PAP(GC)-muag-A64-C30

<400> 13

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ccgauggggc ucccaacggg ccuccucucc cuccuugcac cgagauuaa aaaaaaaaaa 1260
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<220>

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<223> CDS PAP(wt)

<400> 14

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guguuucggc auggagaccg aagucccauu gacaccuuuc ccacugaccc cauaaaggaa	180
uccucauggc cacaaggauu uggccaacuc acccagcugg gcauggagca gcauuugaa	240
cuuggagagu auauaagaaa gagauauaga aaauucuuga augaguccua uaaacaugaa	300
cagguuuaua uucgaagcac agacguugac cggacuuga ugagugcuau gacaaaccug	360
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aucccggugc acacaguucc ucuuucugaa gaucaguugc uauaccugcc uuucaggaac	480
ugcccucguu uucaagaacu ugagagugag acuuugaaa cagaggaauu ccagaagagg	540
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gagaaggggg aguacuugu ggagauguac uaucggaaug agacgcagca cgagccguau	1020
ccccucaugc uaccuggcug cagccccagc uguccucugg agagguuugc ugagcugguu	1080
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<210> 15

<211> 1161

<212> RNA

<213> Artificial Sequence

<220>

<223> CDS PAP(GC)

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 agcuccuggc cccagggguu cgggcagcug acccagcucg gcauggagca gcacuacgag 240
 cuggggggagu acauccgcaa gcgguaccgc aaguuccuga acgagagcua caagcacgag 300
 cagguguaca uccgguccac cgacgucgac cgcacccuca ugagcgccau gacgaaccug 360
 gcggcccugu ucccggccga gggcgugucc aucuggaacc ccauccuccu guggcagccc 420
 aucccgguugc acaccguccc ccugagcgag gaccagcucc uguaccugcc cuuccggaac 480
 ugcccccgcu uccaggagcu cgaguccgag acccugaaga gcgaggaguu ccagaagcgg 540
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 uucacgcugc ccagcugggc caccgaggac accaugacca agcuccgcga gcuguccgag 720
 cugagccucc ugucccugua cggcauccac aagcagaagg agaagagccg gcuccagggc 780
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<210> 16
 <211> 1860
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> CAP-MUC1 5xVNTR(GC)-muag-A64-C30

<400> 16
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caggacguga	cccucgcccc	ggccaccgag	cccgccagcg	gguccgccgc	gacguggggc	300
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cacgacguca	ccuccgcccc	cgacaacaag	cccgcgccgg	gcagcaccgc	ccccccgcc	420
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cccggcuuccg	ucguggugca	gcugacccuc	gccuuccggg	aggggacgau	caacguccac	1260
gacguggaga	cccaguuaa	ccaguacaag	accgaggccg	ccagccgcua	caaccugacc	1320
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gugcccgggu	ggggcaucgc	ccugcucguc	cuggugugcg	ugcuggucgc	ccucgccauc	1440
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aucuuccccg	cccgggacac	guaccacccg	augagcgagu	acccgaccua	ccacaccac	1560
ggccgcuacg	uccccccag	cuccaccgac	cggagccccu	acgagaaggu	guccgccggg	1620

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cuugcaccga	gauuaauaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	1800
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gccccggcca	cggaaccagc uucagguuca gcugccaccu ggggacagga ugucaccucg 300
gucccaguca	ccaggccagc ccugggcucc accaccccgc cagcccacga ugucaccuca 360
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gccccggaca	ccaggccggc cccgggcucc accgcccccc cagcccacgg ugucaccucg 480
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gcuaccacaa	ccccagccag caagagcacu ccauucucua uucccagcca ccacucugau 900
acuccuacca	cccuugccag ccuagcacc aagacugaug ccaguagcac ucaccuagc 960
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ccuagcagua ccgaucguag ccccuagag aagguuucug cagguaacgg uggcagcagc	1620
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<210> 18
 <211> 1668
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> CDS MUC1(GC)

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cugagcuccc acagccccgg guccggcagc uccacgaccc agggccagga cgugaccuc	240
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gccccgaca acaagcccgc gccgggcagc accgcccccc ccgcccacgg ggugaccucc	420
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gcgcccgaca cccgcccggc ccccggcagc accgcccccc cggcccacgg ggugaccucc	660
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cccagcaccg acuacuacca ggagcugcag cgggacaucu ccgagauguu ccugcagauc	1140
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gacacguacc acccgaugag cgaguacccg accuaccaca cccacggccg cuacgucccc	1560
cccagcucca ccgaccggag ccccuacgag aagguguccg ccgggaacgg cggcagcucc	1620
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<211> 1003

<212> RNA

<213> Artificial Sequence

<220>

<223> CAP-PSA/CLK3 (GC)-muag-A64-C30-histoneSL

<400> 19

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cagcccuggc aggugcuggu ggccagccgc ggccgggccc ugugcggcgg cgugcuggug	180

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cacccccagu gggugcugac cgccgccac ugcauccgga acaagagcgu cauccugcug	240
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uucccccacc ccuguacga caugagccuc cugaagaacc gguuccugcg gcccggcgac	360
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aacuacacc agaucccca ccuggccggg accgagcaga acuuccagcu ggccaagcag	300
auccagagcc aguggaagga guucggccug gacucggugg agcuggcgca cuacgacgug	360
cugcucagcu accccaacaa gaccacccc aacuacauca gcaucacaa cgaggacggc	420

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ugcagcggca agaucgugau cgcccggua ggcaaggugu uccggggcaa caaggugaag	660
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gggcaccgag acagcugggu guucggcgcc aucgaccccc agagcggcg cgccgugguc	1200
cacgagaucg ugcggucguu cggcacccug aagaaggagg gguggcggcc ccgccggacg	1260
auccuguucg ccagcuggga cgcggaggag uucggccugc ugggcagcac cgagugggcc	1320
gaggagaaca gccggcugcu gcaggagcgg ggcguggccu acaucaacgc cgacucgagc	1380
aucgagggca acuacacccu ccgcguggac ugcaccccg ugauguacag ccuggugcac	1440
aaccugacca aggagcugaa gagccccgag gaggguucg agggcaaguc gcuguacgag	1500
agcuggacca agaagagccc cucgcccag uucagcggca ugcccggau cagcaagcug	1560
ggcagcggga acgacuucga gguguucuuc cagcggcugg gcaucgccuc gggccgccc	1620
cgguacacca agaacuggga gacgaacaag uucagcggcu acccccucua ccacagcgug	1680
uacgagaccu acgagcuggu ggagaaguuc uacgaccca uguucaagua ccaccugacc	1740
guggcccagg ugccggggcg gaugguguuc gagcuggcca acagcaucgu gcugccuuc	1800
gacugccgag acuacgccgu cgugcugcgg aaguacgag acaagaucua cucgaucagc	1860
augaagcacc cccaggagau gaagaccuac agcgugagcu ucgacucgu guucagcgcg	1920
gugaagaacu ucaccgagau cgccagcaag uucucggagc ggcuccagga cuucgacaag	1980

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agcaacccga ucgugcugcg caugaugaac gaccagcuga uguuccugga gcgggccuuc 2040
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agacugacua gcccgauggg ccucccaacg ggcccuccuc ccuccuugc accgagauua 2340
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caccagaauu 2470

<210> 21
<211> 589
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<220>
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cugcaggugg agaacugcac gcagcugggc gagcagugcu ggaccgccc gauccgcgcc 180
gugggcccugc ucaccgugau cagcaagggc ugcagccuga acugcgugga cgacagccag 240
gacuacuacg ugggcaagaa gaacaucacc ugcugcgaca ccgaccugug caacgccagc 300
ggcgcccacg ccugcagcc cgcgggccgc auccuggccc ugcugcccgc ccugggcccug 360
cugcucuggg gccccggcca gcugugacca cuaguuaa gacugacuag cccgaugggc 420
cucccaacgg gccuccucc ccuccuugca ccgagauuaa uaaaaaaaaa aaaaaaaaaa 480
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaugcau cccccccccc 540
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<210> 22
<211> 1237

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<212> RNA

<213> Artificial Sequence

<220>

<223> CAP-STEAP1 (GC)-muag-A64-C30-histoneSL

<400> 22

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ucgaugcuga agcggcccgu gcuccugcac cugcaccaga ccgcccacgc ggacgaguuc      180
gacugcccga gcgagcucca gcacacgcag gagcuguucc cgcaguggca ccugcccauc      240
aagaucgccg ccaucaucgc gagccucacc uuccuguaca ccugcuccg cgaggucauc      300
caccgcugg ccacgucgca ccagcaguac uucuacaaga ucccgauccu ggugaucaac      360
aaggugcucc ccauggucag caucaccug cuggcccucg uguaccugcc gggggugauc      420
gcggccaucg uccagcugca caacggcacc aaguacaaga aguucccgca cuggcucgac      480
aaguggaugc ugacgcgga gcauucggc cugcucagcu ucuucuucgc cgugcugcac      540
gcgaucuacu cgugagcua cccaugcgg cgagcuacc gguacaagcu ccugaacugg      600
gccuaccagc aggugcagca gaacaaggag gacgccugga ucgagcacga cgucggcgg      660
auggagauca acgugucgcu ggggaucgug ggccucgcga uccuggcccu gcucgccguc      720
accagcaucc cgagcguguc ggacagccug accuggcgcg aguuccacua cauccagagc      780
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uuccugccga ucgugguccu gaucuuaag agcauccucu uccugccgug ccugcggaag      960
aagauccuca agauccggca cggcugggag gacgugacga agaucaaca gaccgagauc     1020
ugcagccagc ugugaccacu aguuaaaga cugacuagcc cgaugggccu cccaacgggc     1080
ccuccucucc uccuugcacc gagauuaaua aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa     1140
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<210> 23

<211> 1378

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<212> RNA

<213> Artificial Sequence

<220>

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aaguucguca ccuggguguu ccgccacggg gaccgguccc cgaucgacac cuuuuuuuacg	180
gaccccauca aggagagcuc cuggccccag ggcuucgggc agcugaccca gcucggcaug	240
gagcagcacu acgagcuggg ggaguacauc cgcaagcggg accgcaaguu ccugaacgag	300
agcuacaagc acgagcaggu guacaucggg uccaccgacg ucgaccgcac ccucaugagc	360
gccaugacga accuggcggc ccuguuuuucg cccgagggcg uguccaucug gaaccccauc	420
cuccuguggc agcccauucc ggugcacacc gucccccuga gcgaggacca gcuccuguac	480
cugcccuucc ggaacugccc ccgcuuccag gagcucgagu ccgagaccu gaagagcgag	540
gaguuccaga agcggcugca cccguacaag gacuuaucg ccaccucgg caagcugucc	600
gggcugcacg gccaggaccu cuucgggauc uggagcaagg uguacgacc ccuguacugc	660
gaguccgugc acaacuucac gcugcccagc ugggccaccg aggacaccau gaccaagcuc	720
cgcgagcugu ccgagcugag ccuccugucc cuguacggca uccacaagca gaaggagaag	780
agccggcucc agggcggcgu ccuggugaac gagauccuga accacaugaa gcgcgcgacg	840
cagaucucca gcuacaagaa gcucauauug uacuccgccc acgacaccac cgugagcggg	900
cugcagaugg ccugggacgu cuacaacggg cuccugccgc ccuacgccuc cugccaccug	960
accgagcugu acuucgagaa gggcgaguac uucguggaga uguacuaccg gaacgagacg	1020
cagcacgagc ccuaccccu caugcugccg gggugcagcc ccuccugccc ccuggagcgc	1080
uucgccgagc ucgugggccc cguaucuccg caggacugga gcaccgagug caugaccacc	1140
aacucccacc agggcacgga ggacagcacc gacugaggac uaguuaaag acugacuagc	1200
ccgaugggcc ucccaacggg ccuccuucc cuccuugcac cgagauuaau aaaaaaaaaa	1260
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaugcauc	1320
cccccccccc ccccccccc ccccccccc aaaggcucuu uucagagcca ccagaauu	1378

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<210> 24
<211> 1885
<212> RNA
<213> CAP-MUC1 5xVNTR (GC)-muag-A64-C30-histoneSL

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gagacgagcg ccacccagcg guccagcgug ccuuccagca ccgagaagaa cgcggucucc 180
augaccagcu ccgugcugag cuccacagc cccggguccg gcagcuccac gaccagggc 240
caggacguga ccucgcccc ggccaccgag cccgccagcg gguccgccgc gacguggggc 300
caggacguca ccagcgugcc cgugacccgc cccgccuggg ggagcaccac gccgcccgcc 360
cacgacguca ccuccgcccc cgacaacaag cccgcgccgg gcagcaccgc ccccccgcc 420
cacgggguga ccuccgcccc cgacacgcgg cgggcccccg gcagcaccgc gcccccgcc 480
cacggcguga ccuccgcccc ggacacccgc cccgcccccg ggagcacggc cccgccggcg 540
cacggcguga ccuccgcccc cgacacccgg cccgcccccg ggagcaccgc cccgccgcc 600
cacggcguga cguccgcgcc cgacacccgc cgggcccccg gcagcaccgc ccccccgcc 660
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ucccaccaca gcgacacccc caccaccug gcguccaca gcacgaagac cgacgccucc 960
agcaccacc acuccagcgu gccccgcug accagcucca accacagcac guccccgcag 1020
cucagcaccg ggguguccuu cuucuuccug agcuuccaca ucuccaaccu gcaguucaac 1080
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cccggcuccg ucguggugca gcugaccuc gccuuccggg aggggacgau caacguccac 1260
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aucuuccccg cccgggacac guaccacccg augagcgagu acccgaccua ccacaccac	1560
ggccgcuacg ucccccccag cuccaccgac cggagccccc acgagaaggu guccgccggg	1620
aacggcggca gcucccugag cuacaccaac ccggcggugg ccgccgccuc cgccaaccug	1680
ugaccacuag uuauaagacu gacuagcccg augggccucc caacgggccc uccuccccuc	1740
cuugcaccga gauuaauaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	1800
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<210> 25
 <211> 16
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Sequence according to formula (Ic)

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
 <221> misc_feature
 <222> (3)..(8)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
 <221> misc_feature
 <222> (10)..(14)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
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 <222> (16)..(16)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<400> 25
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<210> 26
 <211> 26
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Sequence according to formula (IIc)

<220>
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 <222> (1)..(2)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof; may be present or not

<220>
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 <222> (3)..(6)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
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 <222> (8)..(13)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

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 <222> (15)..(19)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
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 <222> (21)..(24)
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<220>
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 <222> (25)..(26)
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<400> 26
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26

<210> 27
 <211> 16
 <212> RNA
 <213> Artificial Sequence

<220>

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<220>

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<223> n is a, u, t, g, and c, or a nucleotide analogue thereof

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<222> (16)..(16)

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<400> 27

ncnnnnnnun nnnngn

16

<210> 28

<211> 26

<212> RNA

<213> Artificial Sequence

<220>

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<220>

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<223> n is a, u, t, g, and c, or a nucleotide analogue thereof; may be present or not.

<220>

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<222> (3)..(6)

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 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
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 <222> (24)..(26)
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<400> 28
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26

<210> 29
 <211> 16
 <212> RNA
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<220>
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<220>
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 <222> (10)..(14)
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<400> 29
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16

<210> 30
 <211> 26
 <212> RNA
 <213> Artificial Sequence

<220>
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<220>
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<220>
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<220>
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 <222> (15)..(19)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
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 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
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 <222> (24)..(26)
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<400> 30
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26

<210> 31
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 <212> RNA
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<220>

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<220>
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 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

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<400> 31
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16

<210> 32
 <211> 26
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Sequence according to formula (IIIf)

<220>
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 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof; may be present or not

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<220>
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<220>
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 <222> (15)..(15)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
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 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
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 <222> (19)..(19)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
 <221> misc_feature
 <222> (21)..(23)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
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 <222> (24)..(26)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof; may be present or not

<400> 32
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26

<210> 33
 <211> 16
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Sequence according to formula (Ig)

<220>
 <221> misc_feature

<222> (1)..(1)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
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 <222> (8)..(8)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
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 <222> (16)..(16)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<400> 33
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16

<210> 34
 <211> 26
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Sequence according to formula (IIg)

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<220>
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 <222> (21)..(23)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

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 <222> (24)..(25)
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<220>
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 <222> (26)..(26)
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<400> 34
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26

<210> 35
 <211> 16
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Sequence according to formula (Ih)

<400> 35
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16

<210> 36
 <211> 26
 <212> RNA
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<220>
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<220>
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 <222> (25)..(25)
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<220>
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 <222> (26)..(26)
 <223> may be present or not

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<210> 37 <211> 16 <212> DNA <213> Artificial Sequence	
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<210> 38 <211> 16 <212> DNA <213> Artificial Sequence	
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<400> 38 sgyytytym arrrcs	16
<210> 39 <211> 16 <212> DNA <213> Artificial Sequence	
<220> <223> Sequence according to formula (Ic)	
<400> 39 sgyycttttm agrrcs	16
<210> 40 <211> 16 <212> DNA <213> Artificial Sequence	
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<220> <221> misc_feature	

<222> (3)..(5)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
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 <222> (7)..(8)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
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 <222> (12)..(14)
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<400> 40
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16

<210> 41
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Sequence according to formula (Ie)

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 <222> (3)..(5)
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<220>
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 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<400> 41
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16

<210> 42
 <211> 16
 <212> DNA
 <213> Artificial Sequence

<220>
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<220>
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 <222> (3)..(3)

<223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>

<221> misc_feature

<222> (14)..(14)

<223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<400> 42

rgndbyhyth rdhncy

16

<210> 43

<211> 16

<212> DNA

<213> Artificial Sequence

<220>

<223> Sequence according to formula (If)

<400> 43

vgyytyhth rvrrcb

16

<210> 44

<211> 16

<212> DNA

<213> Artificial Sequence

<220>

<223> Sequence according to formula (If)

<400> 44

sgyycttytm agrrcs

16

<210> 45

<211> 16

<212> DNA

<213> Artificial Sequence

<220>

<223> Sequence according to formula (If)

<400> 45

sgyycttttm agrrcs

16

<210> 46

<211> 16

<212> DNA

<213> Artificial Sequence

<220>
 <223> Sequence according to formula (Ig)

<400> 46
 ggyycttyth agrgcc 16

<210> 47
 <211> 16
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Sequence according to formula (Ig)

<400> 47
 ggcycttytm agrgcc 16

<210> 48
 <211> 16
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Sequence according to formula (Ig)

<400> 48
 ggctcttttm agrgcc 16

<210> 49
 <211> 16
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Sequence according to formula (Ih)

<400> 49
 dghyctdyth asrrcc 16

<210> 50
 <211> 16
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Sequence according to formula (Ih)

<400> 50

ggcyctttth agrgcc

16

<210> 51
 <211> 16
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Sequence according to formula (Ih)

<400> 51
 ggcycttttm agrgcc

16

<210> 52
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Sequence according to formula (IIc)

<220>
 <221> misc_feature
 <222> (1)..(2)
 <223> may be present or not

<220>
 <221> misc_feature
 <222> (25)..(26)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof; may be present or not

<400> 52
 hhhhvggyy yhhthrvrc bvhhnn

26

<210> 53
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Sequence according to formula (IIc)

<220>
 <221> misc_feature
 <222> (1)..(2)
 <223> may be present or not

<220>
 <221> misc_feature
 <222> (25)..(26)
 <223> may be present or not

<400> 53
 mhmhmsgyyy ttytmarrrc smchhh

26

<210> 54
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Sequence according to formula (IIc)

<220>
 <221> misc_feature
 <222> (1)..(2)
 <223> may be present or not

<220>
 <221> misc_feature
 <222> (25)..(26)
 <223> may be present or not

<400> 54
 mmmmmmsgyyc tttmagrrc sachmh

26

<210> 55
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Sequence according to formula (IIe)

<220>
 <221> misc_feature
 <222> (1)..(2)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof; may be present or not

<220>
 <221> misc_feature
 <222> (3)..(5)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
 <221> misc_feature
 <222> (8)..(10)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
 <221> misc_feature
 <222> (12)..(13)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
 <221> misc_feature
 <222> (17)..(19)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
 <221> misc_feature
 <222> (22)..(22)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
 <221> misc_feature
 <222> (24)..(26)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof; may be present or not

<400> 55
 nnnnndgnnn bnnthvnnnc hnhnnn

26

<210> 56
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Sequence according to formula (IIe)

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof; may be present or not

<220>
 <221> misc_feature
 <222> (2)..(2)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof; may be present or not

<220>
 <221> misc_feature
 <222> (5)..(5)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
 <221> misc_feature
 <222> (8)..(10)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
 <221> misc_feature
 <222> (18)..(19)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
 <221> misc_feature
 <222> (24)..(24)
 <223> may be present or not

<220>
 <221> misc_feature
 <222> (25)..(26)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof; may be present or not

<400> 56
 nnhhnrgnnn yhbthrdnnc ydhnn

26

<210> 57
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Sequence according to formula (IIe)

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof; may be present or not

<220>
 <221> misc_feature
 <222> (2)..(2)
 <223> may be present or not

<220>
 <221> misc_feature

<222> (8)..(8)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
 <221> misc_feature
 <222> (19)..(19)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof

<220>
 <221> misc_feature
 <222> (24)..(26)
 <223> may be present or not

<400> 57
 nhhhvrgndb yhythrdhnc yrhhhh

26

<210> 58
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Sequence according to formula (IIIf)

<220>
 <221> misc_feature
 <222> (1)..(2)
 <223> may be present or not

<220>
 <221> misc_feature
 <222> (25)..(25)
 <223> may be present or not

<220>
 <221> misc_feature
 <222> (26)..(26)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof; may be present or not

<400> 58
 hhmhmvgyyy tyhthrvrrc bvmhnn

26

<210> 59
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Sequence according to formula (II_f)

<220>

<221> misc_feature

<222> (1)..(2)

<223> may be present or not

<220>

<221> misc_feature

<222> (25)..(26)

<223> may be present or not

<400> 59

mmmmmsggyc ttytmagrrc smchhh

26

<210> 60

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Sequence according to formula (II_f)

<220>

<221> misc_feature

<222> (1)..(2)

<223> may be present or not

<220>

<221> misc_feature

<222> (25)..(26)

<223> may be present or not

<400> 60

mmmmmsggyc ttttmagrrc sachmh

26

<210> 61

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Sequence according to formula (II_g)

<220>

<221> misc_feature

<222> (1)..(2)

<223> may be present or not

<220>

<221> misc_feature

<222> (24)..(25)

<223> n is a, u, t, g, and c, or a nucleotide analogue thereof; may be present or not

<220>

<221> misc_feature

<222> (26)..(26)

<223> may be present or not

<400> 61

hhmamggyyc ttythagrrc cvhnnm

26

<210> 62

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Sequence according to formula (IIg)

<220>

<221> misc_feature

<222> (1)..(2)

<223> may be present or not

<220>

<221> misc_feature

<222> (25)..(26)

<223> may be present or not

<400> 62

hhaamggcyc ttytmagrgc cvchhm

26

<210> 63

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Sequence according to formula (IIg)

<220>

<221> misc_feature

<222> (1)..(2)

<223> may be present or not

<220>

<221> misc_feature

<222> (24)..(26)

<223> may be present or not

<400> 63

mmaamggctc tttmagrgc cmcymm

26

<210> 64

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Sequence according to formula (IIh)

<220>

<221> misc_feature

<222> (1)..(1)

<223> n is a, u, t, g, and c, or a nucleotide analogue thereof; may be present or not

<220>

<221> misc_feature

<222> (2)..(2)

<223> may be present or not

<220>

<221> misc_feature

<222> (24)..(24)

<223> may be present or not

<220>

<221> misc_feature

<222> (25)..(25)

<223> n is a, u, t, g, and c, or a nucleotide analogue thereof; may be present or not

<220>

<221> misc_feature

<222> (26)..(26)

<223> may be present or not

<400> 64

nhaahdghyc tdythasrrc cvhbnh

26

<210> 65

<211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Sequence according to formula (IIh)

<220>
 <221> misc_feature
 <222> (1)..(2)
 <223> may be present or not

<220>
 <221> misc_feature
 <222> (24)..(24)
 <223> may be present or not

<220>
 <221> misc_feature
 <222> (25)..(25)
 <223> n is a, u, t, g, and c, or a nucleotide analogue thereof; may be present or not

<220>
 <221> misc_feature
 <222> (26)..(26)
 <223> may be present or not

<400> 65
 hhaamggcyc tttthagrgc cvmynm

26

<210> 66
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Sequence according to formula (IIh)

<220>
 <221> misc_feature
 <222> (1)..(2)
 <223> may be present or not

<220>
 <221> misc_feature
 <222> (24)..(26)
 <223> may be present or not

<400> 66
hmaaaggcyc tttmagrgc crmyhm 26

<210> 67
<211> 13
<212> RNA
<213> Artificial Sequence

<220>
<223> Kozak sequence

<400> 67
gccgccacca ugg 13

<210> 68
<211> 15
<212> RNA
<213> Artificial Sequence

<220>
<223> general formula of a 3-UTR stabilizing sequence

<220>
<221> misc_feature
<222> (1)..(1)
<223> n is c or u

<220>
<221> repeat_unit
<222> (5)..(5)
<223> n is a, u, t, g, or c; may be present or not

<220>
<221> misc_feature
<222> (5)..(5)
<223> n is a, u, t, g, or c

<220>
<221> misc_feature
<222> (9)..(9)
<223> n is a, or u

<220>
<221> repeat_unit
<222> (10)..(10)
<223> n is c or u, may be present or not

<220>
<221> misc_feature

<222> (10)..(10)
 <223> n is c or u

<220>
 <221> misc_feature
 <222> (13)..(13)
 <223> n is c or u

<400> 68
 nccancccn ucnc

15

<210> 69
 <211> 44
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> 3'-UTR of an alpha-globin gene (muag)

<400> 69
 gcccgauagg ccuccaagc ggcccuccuc ccucuccugc accg

44

<210> 70
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Specific histone stem-loop sequence

<400> 70
 caaaggctct tttagagcc acca

24

<210> 71
 <211> 24
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Specific histone stem-loop sequence

<400> 71
 caaaggcucu uuucagagcc acca

24

<210> 72
 <211> 9
 <212> PRT
 <213> Artificial Sequence

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<220>

<223> MUC1-derived peptide

<400> 72

Ser Ala Pro Asp Asn Arg Pro Ala Leu
1 5

<210> 73

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Connexin-derived peptide

<400> 73

Phe Glu Gln Asn Thr Ala Gln Pro
1 5

<210> 74

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> PAP-derived peptide

<400> 74

Val Ser Ile Trp Asn Pro Ile Leu Leu
1 5

<210> 75

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> PSMA-derived peptide

<400> 75

Ser Ala Val Lys Asn Phe Thr Glu Ile
1 5

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<210> 76
<211> 261
<212> PRT
<213> Homo sapiens

<400> 76

Met Trp Val Pro Val Val Phe Leu Thr Leu Ser Val Thr Trp Ile Gly
1 5 10 15

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

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

Val Cys Gly Gly Val Leu Val His Pro Gln Trp Val Leu Thr Ala Ala
50 55 60

His Cys Ile Arg Asn Lys Ser Val Ile Leu Leu Gly Arg His Ser Leu
65 70 75 80

Phe His Pro Glu Asp Thr Gly Gln Val Phe Gln Val Ser His Ser Phe
85 90 95

Pro His Pro Leu Tyr Asp Met Ser Leu Leu Lys Asn Arg Phe Leu Arg
100 105 110

Pro Gly Asp Asp Ser Ser His Asp Leu Met Leu Leu Arg Leu Ser Glu
115 120 125

Pro Ala Glu Leu Thr Asp Ala Val Lys Val Met Asp Leu Pro Thr Gln
130 135 140

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

Glu Pro Glu Glu Phe Leu Thr Pro Lys Lys Leu Gln Cys Val Asp Leu
165 170 175

His Val Ile Ser Asn Asp Val Cys Ala Gln Val His Pro Gln Lys Val

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180

185

190

Thr Lys Phe Met Leu Cys Ala Gly Arg Trp Thr Gly Gly Lys Ser Thr
195 200 205

Cys Ser Gly Asp Ser Gly Gly Pro Leu Val Cys Asn Gly Val Leu Gln
210 215 220

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

Ser Leu Tyr Thr Lys Val Val His Tyr Arg Lys Trp Ile Lys Asp Thr
245 250 255

Ile Val Ala Asn Pro
260

<210> 77
<211> 750
<212> PRT
<213> Homo sapiens

<400> 77

Met Trp Asn Leu Leu His Glu Thr Asp Ser Ala Val Ala Thr Ala Arg
1 5 10 15

Arg Pro Arg Trp Leu Cys Ala Gly Ala Leu Val Leu Ala Gly Gly Phe
20 25 30

Phe Leu Leu Gly Phe Leu Phe Gly Trp Phe Ile Lys Ser Ser Asn Glu
35 40 45

Ala Thr Asn Ile Thr Pro Lys His Asn Met Lys Ala Phe Leu Asp Glu
50 55 60

Leu Lys Ala Glu Asn Ile Lys Lys Phe Leu Tyr Asn Phe Thr Gln Ile
65 70 75 80

Pro His Leu Ala Gly Thr Glu Gln Asn Phe Gln Leu Ala Lys Gln Ile
85 90 95

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Gln Ser Gln Trp Lys Glu Phe Gly Leu Asp Ser Val Glu Leu Ala His
100 105 110

Tyr Asp Val Leu Leu Ser Tyr Pro Asn Lys Thr His Pro Asn Tyr Ile
115 120 125

Ser Ile Ile Asn Glu Asp Gly Asn Glu Ile Phe Asn Thr Ser Leu Phe
130 135 140

Glu Pro Pro Pro Pro Gly Tyr Glu Asn Val Ser Asp Ile Val Pro Pro
145 150 155 160

Phe Ser Ala Phe Ser Pro Gln Gly Met Pro Glu Gly Asp Leu Val Tyr
165 170 175

Val Asn Tyr Ala Arg Thr Glu Asp Phe Phe Lys Leu Glu Arg Asp Met
180 185 190

Lys Ile Asn Cys Ser Gly Lys Ile Val Ile Ala Arg Tyr Gly Lys Val
195 200 205

Phe Arg Gly Asn Lys Val Lys Asn Ala Gln Leu Ala Gly Ala Lys Gly
210 215 220

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

Ser Tyr Pro Asp Gly Trp Asn Leu Pro Gly Gly Gly Val Gln Arg Gly
245 250 255

Asn Ile Leu Asn Leu Asn Gly Ala Gly Asp Pro Leu Thr Pro Gly Tyr
260 265 270

Pro Ala Asn Glu Tyr Ala Tyr Arg Arg Gly Ile Ala Glu Ala Val Gly
275 280 285

Leu Pro Ser Ile Pro Val His Pro Ile Gly Tyr Tyr Asp Ala Gln Lys
290 295 300

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Leu Leu Glu Lys Met Gly Gly Ser Ala Pro Pro Asp Ser Ser Trp Arg
305 310 315 320

Gly Ser Leu Lys Val Pro Tyr Asn Val Gly Pro Gly Phe Thr Gly Asn
325 330 335

Phe Ser Thr Gln Lys Val Lys Met His Ile His Ser Thr Asn Glu Val
340 345 350

Thr Arg Ile Tyr Asn Val Ile Gly Thr Leu Arg Gly Ala Val Glu Pro
355 360 365

Asp Arg Tyr Val Ile Leu Gly Gly His Arg Asp Ser Trp Val Phe Gly
370 375 380

Gly Ile Asp Pro Gln Ser Gly Ala Ala Val Val His Glu Ile Val Arg
385 390 395 400

Ser Phe Gly Thr Leu Lys Lys Glu Gly Trp Arg Pro Arg Arg Thr Ile
405 410 415

Leu Phe Ala Ser Trp Asp Ala Glu Glu Phe Gly Leu Leu Gly Ser Thr
420 425 430

Glu Trp Ala Glu Glu Asn Ser Arg Leu Leu Gln Glu Arg Gly Val Ala
435 440 445

Tyr Ile Asn Ala Asp Ser Ser Ile Glu Gly Asn Tyr Thr Leu Arg Val
450 455 460

Asp Cys Thr Pro Leu Met Tyr Ser Leu Val His Asn Leu Thr Lys Glu
465 470 475 480

Leu Lys Ser Pro Asp Glu Gly Phe Glu Gly Lys Ser Leu Tyr Glu Ser
485 490 495

Trp Thr Lys Lys Ser Pro Ser Pro Glu Phe Ser Gly Met Pro Arg Ile
500 505 510

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

Gly Ile Ala Ser Gly Arg Ala Arg Tyr Thr Lys Asn Trp Glu Thr Asn
530 535 540

Lys Phe Ser Gly Tyr Pro Leu Tyr His Ser Val Tyr Glu Thr Tyr Glu
545 550 555 560

Leu Val Glu Lys Phe Tyr Asp Pro Met Phe Lys Tyr His Leu Thr Val
565 570 575

Ala Gln Val Arg Gly Gly Met Val Phe Glu Leu Ala Asn Ser Ile Val
580 585 590

Leu Pro Phe Asp Cys Arg Asp Tyr Ala Val Val Leu Arg Lys Tyr Ala
595 600 605

Asp Lys Ile Tyr Ser Ile Ser Met Lys His Pro Gln Glu Met Lys Thr
610 615 620

Tyr Ser Val Ser Phe Asp Ser Leu Phe Ser Ala Val Lys Asn Phe Thr
625 630 635 640

Glu Ile Ala Ser Lys Phe Ser Glu Arg Leu Gln Asp Phe Asp Lys Ser
645 650 655

Asn Pro Ile Val Leu Arg Met Met Asn Asp Gln Leu Met Phe Leu Glu
660 665 670

Arg Ala Phe Ile Asp Pro Leu Gly Leu Pro Asp Arg Pro Phe Tyr Arg
675 680 685

His Val Ile Tyr Ala Pro Ser Ser His Asn Lys Tyr Ala Gly Glu Ser
690 695 700

Phe Pro Gly Ile Tyr Asp Ala Leu Phe Asp Ile Glu Ser Lys Val Asp
705 710 715 720

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Pro Ser Lys Ala Trp Gly Glu Val Lys Arg Gln Ile Tyr Val Ala Ala
725 730 735

Phe Thr Val Gln Ala Ala Ala Glu Thr Leu Ser Glu Val Ala
740 745 750

<210> 78
<211> 123
<212> PRT
<213> Homo sapiens

<400> 78

Met Lys Ala Val Leu Leu Ala Leu Leu Met Ala Gly Leu Ala Leu Gln
1 5 10 15

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

Glu Asp Cys Leu Gln Val Glu Asn Cys Thr Gln Leu Gly Glu Gln Cys
35 40 45

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

Gly Cys Ser Leu Asn Cys Val Asp Asp Ser Gln Asp Tyr Tyr Val Gly
65 70 75 80

Lys Lys Asn Ile Thr Cys Cys Asp Thr Asp Leu Cys Asn Ala Ser Gly
85 90 95

Ala His Ala Leu Gln Pro Ala Ala Ala Ile Leu Ala Leu Leu Pro Ala
100 105 110

Leu Gly Leu Leu Leu Trp Gly Pro Gly Gln Leu
115 120

<210> 79
<211> 339
<212> PRT

2014009273

<213> Homo sapiens

<400> 79

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

Lys Pro Arg Arg Asn Leu Glu Glu Asp Asp Tyr Leu His Lys Asp Thr
20 25 30

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

Thr Ala His Ala Asp Glu Phe Asp Cys Pro Ser Glu Leu Gln His Thr
50 55 60

Gln Glu Leu Phe Pro Gln Trp His Leu Pro Ile Lys Ile Ala Ala Ile
65 70 75 80

Ile Ala Ser Leu Thr Phe Leu Tyr Thr Leu Leu Arg Glu Val Ile His
85 90 95

Pro Leu Ala Thr Ser His Gln Gln Tyr Phe Tyr Lys Ile Pro Ile Leu
100 105 110

Val Ile Asn Lys Val Leu Pro Met Val Ser Ile Thr Leu Leu Ala Leu
115 120 125

Val Tyr Leu Pro Gly Val Ile Ala Ala Ile Val Gln Leu His Asn Gly
130 135 140

Thr Lys Tyr Lys Lys Phe Pro His Trp Leu Asp Lys Trp Met Leu Thr
145 150 155 160

Arg Lys Gln Phe Gly Leu Leu Ser Phe Phe Phe Ala Val Leu His Ala
165 170 175

Ile Tyr Ser Leu Ser Tyr Pro Met Arg Arg Ser Tyr Arg Tyr Lys Leu
180 185 190

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Leu Asn Trp Ala Tyr Gln Gln Val Gln Gln Asn Lys Glu Asp Ala Trp
195 200 205

Ile Glu His Asp Val Trp Arg Met Glu Ile Tyr Val Ser Leu Gly Ile
210 215 220

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

Val Ser Asp Ser Leu Thr Trp Arg Glu Phe His Tyr Ile Gln Ser Lys
245 250 255

Leu Gly Ile Val Ser Leu Leu Leu Gly Thr Ile His Ala Leu Ile Phe
260 265 270

Ala Trp Asn Lys Trp Ile Asp Ile Lys Gln Phe Val Trp Tyr Thr Pro
275 280 285

Pro Thr Phe Met Ile Ala Val Phe Leu Pro Ile Val Val Leu Ile Phe
290 295 300

Lys Ser Ile Leu Phe Leu Pro Cys Leu Arg Lys Lys Ile Leu Lys Ile
305 310 315 320

Arg His Gly Trp Glu Asp Val Thr Lys Ile Asn Lys Thr Glu Ile Cys
325 330 335

Ser Gln Leu

<210> 80

<211> 386

<212> PRT

<213> Homo sapiens

<400> 80

Met Arg Ala Ala Pro Leu Leu Leu Ala Arg Ala Ala Ser Leu Ser Leu
1 5 10 15

Gly Phe Leu Phe Leu Leu Phe Phe Trp Leu Asp Arg Ser Val Leu Ala

20

25

30

Lys Glu Leu Lys Phe Val Thr Leu Val Phe Arg His Gly Asp Arg Ser
 35 40 45

Pro Ile Asp Thr Phe Pro Thr Asp Pro Ile Lys Glu Ser Ser Trp Pro
 50 55 60

Gln Gly Phe Gly Gln Leu Thr Gln Leu Gly Met Glu Gln His Tyr Glu
 65 70 75 80

Leu Gly Glu Tyr Ile Arg Lys Arg Tyr Arg Lys Phe Leu Asn Glu Ser
 85 90 95

Tyr Lys His Glu Gln Val Tyr Ile Arg Ser Thr Asp Val Asp Arg Thr
 100 105 110

Leu Met Ser Ala Met Thr Asn Leu Ala Ala Leu Phe Pro Pro Glu Gly
 115 120 125

Val Ser Ile Trp Asn Pro Ile Leu Leu Trp Gln Pro Ile Pro Val His
 130 135 140

Thr Val Pro Leu Ser Glu Asp Gln Leu Leu Tyr Leu Pro Phe Arg Asn
 145 150 155 160

Cys Pro Arg Phe Gln Glu Leu Glu Ser Glu Thr Leu Lys Ser Glu Glu
 165 170 175

Phe Gln Lys Arg Leu His Pro Tyr Lys Asp Phe Ile Ala Thr Leu Gly
 180 185 190

Lys Leu Ser Gly Leu His Gly Gln Asp Leu Phe Gly Ile Trp Ser Lys
 195 200 205

Val Tyr Asp Pro Leu Tyr Cys Glu Ser Val His Asn Phe Thr Leu Pro
 210 215 220

Ser Trp Ala Thr Glu Asp Thr Met Thr Lys Leu Arg Glu Leu Ser Glu

2014009273

225 230 235 240

Leu Ser Leu Leu Ser Leu Tyr Gly Ile His Lys Gln Lys Glu Lys Ser
245 250 255

Arg Leu Gln Gly Gly Val Leu Val Asn Glu Ile Leu Asn His Met Lys
260 265 270

Arg Ala Thr Gln Ile Pro Ser Tyr Lys Lys Leu Ile Met Tyr Ser Ala
275 280 285

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

Gly Leu Leu Pro Pro Tyr Ala Ser Cys His Leu Thr Glu Leu Tyr Phe
305 310 315 320

Glu Lys Gly Glu Tyr Phe Val Glu Met Tyr Tyr Arg Asn Glu Thr Gln
325 330 335

His Glu Pro Tyr Pro Leu Met Leu Pro Gly Cys Ser Pro Ser Cys Pro
340 345 350

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

Ser Thr Glu Cys Met Thr Thr Asn Ser His Gln Gly Thr Glu Asp Ser
370 375 380

Thr Asp
385

<210> 81
<211> 1255
<212> PRT
<213> Homo sapiens

<400> 81

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

Thr Glu Lys Asn Ala Val Ser Met Thr Ser Ser Val Leu Ser Ser His
50 55 60

Ser Pro Gly Ser Gly Ser Ser Thr Thr Gln Gly Gln Asp Val Thr Leu
65 70 75 80

Ala Pro Ala Thr Glu Pro Ala Ser Gly Ser Ala Ala Thr Trp Gly Gln
85 90 95

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

Pro Pro Ala His Asp Val Thr Ser Ala Pro Asp Asn Lys Pro Ala Pro
115 120 125

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr
130 135 140

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser
145 150 155 160

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His
165 170 175

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala
180 185 190

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro
195 200 205

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr
210 215 220

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Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser
225 230 235 240

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His
245 250 255

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

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro
275 280 285

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr
290 295 300

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser
305 310 315 320

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His
325 330 335

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala
340 345 350

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro
355 360 365

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr
370 375 380

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser
385 390 395 400

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His
405 410 415

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala
420 425 430

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Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro
435 440 445

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr
450 455 460

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser
465 470 475 480

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His
485 490 495

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala
500 505 510

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro
515 520 525

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr
530 535 540

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser
545 550 555 560

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His
565 570 575

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala
580 585 590

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro
595 600 605

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr
610 615 620

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser
625 630 635 640

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Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His
645 650 655

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala
660 665 670

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro
675 680 685

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr
690 695 700

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser
705 710 715 720

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His
725 730 735

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala
740 745 750

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro
755 760 765

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr
770 775 780

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser
785 790 795 800

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His
805 810 815

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala
820 825 830

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro
835 840 845

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Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr
850 855 860

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser
865 870 875 880

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His
885 890 895

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala
900 905 910

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro
915 920 925

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Asn
930 935 940

Arg Pro Ala Leu Gly Ser Thr Ala Pro Pro Val His Asn Val Thr Ser
945 950 955 960

Ala Ser Gly Ser Ala Ser Gly Ser Ala Ser Thr Leu Val His Asn Gly
965 970 975

Thr Ser Ala Arg Ala Thr Thr Thr Pro Ala Ser Lys Ser Thr Pro Phe
980 985 990

Ser Ile Pro Ser His His Ser Asp Thr Pro Thr Thr Leu Ala Ser His
995 1000 1005

Ser Thr Lys Thr Asp Ala Ser Ser Thr His His Ser Ser Val Pro
1010 1015 1020

Pro Leu Thr Ser Ser Asn His Ser Thr Ser Pro Gln Leu Ser Thr
1025 1030 1035

Gly Val Ser Phe Phe Phe Leu Ser Phe His Ile Ser Asn Leu Gln
1040 1045 1050

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Phe Asn Ser Ser Leu Glu Asp Pro Ser Thr Asp Tyr Tyr Gln Glu
1055 1060 1065

Leu Gln Arg Asp Ile Ser Glu Met Phe Leu Gln Ile Tyr Lys Gln
1070 1075 1080

Gly Gly Phe Leu Gly Leu Ser Asn Ile Lys Phe Arg Pro Gly Ser
1085 1090 1095

Val Val Val Gln Leu Thr Leu Ala Phe Arg Glu Gly Thr Ile Asn
1100 1105 1110

Val His Asp Val Glu Thr Gln Phe Asn Gln Tyr Lys Thr Glu Ala
1115 1120 1125

Ala Ser Arg Tyr Asn Leu Thr Ile Ser Asp Val Ser Val Ser Asp
1130 1135 1140

Val Pro Phe Pro Phe Ser Ala Gln Ser Gly Ala Gly Val Pro Gly
1145 1150 1155

Trp Gly Ile Ala Leu Leu Val Leu Val Cys Val Leu Val Ala Leu
1160 1165 1170

Ala Ile Val Tyr Leu Ile Ala Leu Ala Val Cys Gln Cys Arg Arg
1175 1180 1185

Lys Asn Tyr Gly Gln Leu Asp Ile Phe Pro Ala Arg Asp Thr Tyr
1190 1195 1200

His Pro Met Ser Glu Tyr Pro Thr Tyr His Thr His Gly Arg Tyr
1205 1210 1215

Val Pro Pro Ser Ser Thr Asp Arg Ser Pro Tyr Glu Lys Val Ser
1220 1225 1230

Ala Gly Asn Gly Gly Ser Ser Leu Ser Tyr Thr Asn Pro Ala Val
1235 1240 1245

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Ala Ala Ala Ser Ala Asn Leu
1250 1255

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<211> 786
<212> RNA
<213> Homo sapiens

<400> 82
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cugguggcca gccgcggccg ggccgugugc ggccggcugc uggugcacc cagugggug 180
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cugccgaccc aggagccccg ccugggcacc accugcuacg ccagcggcug ggggagcauc 480
gagcccgagg aguuccucac cccaagaag cugcagugcg uggaccugca cgugaucagc 540
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cgguggaccg gcggcaagag caccugcagc ggcgacagcg gcggcccccu ggucugcaac 660
ggcgugcugc agggcaucac cagcuggggc agcgagcccu gcgcccugcc cgagcgcccc 720
agccuguaca ccaagguggu gcacuaccgg aaguggauca aggacaccau cguggccaac 780
ccguga 786

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<211> 2253
<212> RNA
<213> Homo sapiens

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cugugcgccg gcgcccuggu ccuggccggg ggcuucuu ugcugggcuu ccuguucggc 120
ugguucauca agucgagcaa cgaggccacc acaucaccc ccaagcaca caugaaggcc 180

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uuccucgacg agcugaaggc cgagaacauc aagaaguucc uguacaacuu caccagauc	240
ccccaccugg ccgggaccga gcagaacuuc cagcuggcca agcagaucca gagccagugg	300
aaggaguucg gccuggacuc gguggagcug gcgcacuacg acgugcugcu cagcuacccc	360
aacaagaccc accccaacua caucagcauc aucaacgagg acggcaacga gauuucaac	420
accagccugu ucgagccccc gccccccggc uacgagaacg ugucggacau cgugccccc	480
uucagcgccu ucagcccga gggcaugccc gagggggacc ugguguacgu gaacuacgcc	540
cggacggagg acuucuuaa gcuggagcgc gacaugaaga ucaacugcag cggcaagauc	600
gugaucgccc gguacggcaa gguguuccgg ggcaacaagg ugaagaacgc ccagcuggcc	660
ggggccaagg gcgugauccu guacucggac cccgccgacu acuucgcccc cggcgugaag	720
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cugaacggcg ccggcgaccc gcugaccccc ggguaccccg cgaacgagua cgccuaccgg	840
cggggcaucg ccgaggccgu gggccugccc agcauccccg ugcacccgau cggcuacuac	900
gacgcccaga agcugcugga gaagaugggc gggagcgcgc cggccgacuc gagcuggcgg	960
ggcagccuga aggugccua caacgugggc cccggcuuca ccgggaacuu cucgacccag	1020
aaggugaaga ugcacaucca cagcaccaac gaggugaccc gcaucuacaa cgugaucggc	1080
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gccggcgagu cguucccggg gaucuacgac gcccuguucg acaucgagag caagguggac	2160
cccagcaagg ccuggggcga ggugaagcgc cagaucuacg uggccgccuu caccgugcag	2220
gccgcggccg agaccugag cgagguggcc uga	2253

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 <211> 372
 <212> RNA
 <213> Homo sapiens

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ugcacgcagc ugggcgagca gugcuggacc gcccggaucg gcgccguggg ccugcucacc	180
gugaucagca agggcugcag ccugaacugc guggacgaca gccaggacua cuacgugggc	240
aagaagaaca ucaccugcug cgacaccgac cugugcaacg ccagcggcgc ccacgccug	300
cagcccgagg ccgccauccu ggcccugcug cccgcccugg gccugcugcu cuggggcccc	360
ggccagcugu ga	372

<210> 85
 <211> 1020
 <212> RNA
 <213> Homo sapiens

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cccugcucc ugcaccugca ccagaccgcc cacgcggacg aguucgacug cccgagcgag	180

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cuccagcaca cgcaggagcu guccccgcag uggcaccugc ccaucaagau cgccgccauc 240
 aucgcgagcc ucaccuuccu guacacccug cuccgcgagg ucauccaccc gcuggccacg 300
 ucgcaccagc aguacuucua caagaucgag auccugguga ucaacaaggu gcuccccaug 360
 gucagcauca ccugcuggc ccucguguac cugccggggg ugaucgcggc caucguccag 420
 cugcacaacg gcaccaagua caagaaguuc ccgcacuggc ucgacaagug gaugcugacg 480
 cggaagcagu ucggccugcu cagcuucuc uucgccgugc ugcacgcgau cuacucgug 540
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 cagcagaaca agggaggacgc cuggaucgag cacgacgucu ggcgggaugga gaucuacgug 660
 ucgcuggggg ucgugggcu cgcgaucug gccucgucg ccgucaccag caucccgagc 720
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 <212> PRT
 <213> Artificial Sequence

<220>
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<400> 86

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Val Leu Thr Val Val Thr Gly Ser Gly His Ala Ser Ser Thr Pro Gly
 20 25 30

Gly Glu Lys Glu Thr Ser Ala Thr Gln Arg Ser Ser Val Pro Ser Ser
 35 40 45

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Thr Glu Lys Asn Ala Val Ser Met Thr Ser Ser Val Leu Ser Ser His
50 55 60

Ser Pro Gly Ser Gly Ser Ser Thr Thr Gln Gly Gln Asp Val Thr Leu
65 70 75 80

Ala Pro Ala Thr Glu Pro Ala Ser Gly Ser Ala Ala Thr Trp Gly Gln
85 90 95

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

Pro Pro Ala His Asp Val Thr Ser Ala Pro Asp Asn Lys Pro Ala Pro
115 120 125

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr
130 135 140

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser
145 150 155 160

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His
165 170 175

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala
180 185 190

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro
195 200 205

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr
210 215 220

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser
225 230 235 240

Ala Pro Asp Asn Arg Pro Ala Leu Gly Ser Thr Ala Pro Pro Val His
245 250 255

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Asn Val Thr Ser Ala Ser Gly Ser Ala Ser Gly Ser Ala Ser Thr Leu
260 265 270

Val His Asn Gly Thr Ser Ala Arg Ala Thr Thr Thr Pro Ala Ser Lys
275 280 285

Ser Thr Pro Phe Ser Ile Pro Ser His His Ser Asp Thr Pro Thr Thr
290 295 300

Leu Ala Ser His Ser Thr Lys Thr Asp Ala Ser Ser Thr His His Ser
305 310 315 320

Ser Val Pro Pro Leu Thr Ser Ser Asn His Ser Thr Ser Pro Gln Leu
325 330 335

Ser Thr Gly Val Ser Phe Phe Phe Leu Ser Phe His Ile Ser Asn Leu
340 345 350

Gln Phe Asn Ser Ser Leu Glu Asp Pro Ser Thr Asp Tyr Tyr Gln Glu
355 360 365

Leu Gln Arg Asp Ile Ser Glu Met Phe Leu Gln Ile Tyr Lys Gln Gly
370 375 380

Gly Phe Leu Gly Leu Ser Asn Ile Lys Phe Arg Pro Gly Ser Val Val
385 390 395 400

Val Gln Leu Thr Leu Ala Phe Arg Glu Gly Thr Ile Asn Val His Asp
405 410 415

Val Glu Thr Gln Phe Asn Gln Tyr Lys Thr Glu Ala Ala Ser Arg Tyr
420 425 430

Asn Leu Thr Ile Ser Asp Val Ser Val Ser Asp Val Pro Phe Pro Phe
435 440 445

Ser Ala Gln Ser Gly Ala Gly Val Pro Gly Trp Gly Ile Ala Leu Leu
450 455 460

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Val Leu Val Cys Val Leu Val Ala Leu Ala Ile Val Tyr Leu Ile Ala
465 470 475 480

Leu Ala Val Cys Gln Cys Arg Arg Lys Asn Tyr Gly Gln Leu Asp Ile
485 490 495

Phe Pro Ala Arg Asp Thr Tyr His Pro Met Ser Glu Tyr Pro Thr Tyr
500 505 510

His Thr His Gly Arg Tyr Val Pro Pro Ser Ser Thr Asp Arg Ser Pro
515 520 525

Tyr Glu Lys Val Ser Ala Gly Asn Gly Gly Ser Ser Leu Ser Tyr Thr
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Asn Pro Ala Val Ala Ala Ala Ser Ala Asn Leu
545 550 555

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<211> 3768
<212> DNA
<213> Homo sapiens

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