

SEQUENCE LISTING

<110> ONO PHARMACEUTICAL CO., LTD.

<120> Bispecific Antibody

<130> P18-199W0

<150> JP 2018-021498

<151> 2018-02-09

<150> JP 2018-153149

<151> 2018-08-16

<160> 41

<170> PatentIn version 3.5

<210> 1

<211> 127

<212> PRT

<213> Homo sapiens

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

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

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

Gly Trp Leu Asn Thr Asn Thr Glu Asn Pro Thr Phe Ala Gln Gly Phe
 50 55 60

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

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

Ala Arg Gly Asp Met Val Val Pro Thr Thr Ile Trp Asn Tyr Tyr His
100 105 110

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

<210> 2
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<213> Homo sapiens

<400> 2

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

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

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

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

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

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

Ala Arg Gly Asp Leu Val Val Pro Thr Thr Ile Trp Asn Tyr Tyr His
100 105 110

Tyr Met Glu Val Trp Gly Lys Gly Thr Leu Val Thr Val Ser Ser
115 120 125

<210> 3
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<213> Homo sapiens

<400> 3

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

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

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

Gly Trp Leu Asn Thr Asn Thr Glu Asn Pro Thr Tyr Ala Gln Gly Phe
50 55 60

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

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

Ala Arg Gly Asp Met Val Val Pro Thr Thr Ile Trp Asn Tyr Tyr Tyr
100 105 110

Tyr Met Asp Val Trp Gly Lys Gly Thr Thr Val Thr Val Ser Ser
115 120 125

<210> 4
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<400> 4

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

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr His Tyr

20

25

30

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

Gly Trp Leu Asn Thr Asn Thr Glu Asn Pro Thr Phe Ala Gln Gly Phe
50 55 60

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

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

Ala Arg Gly Asp Met Val Val Pro Thr Thr Ile Trp Asn Tyr Tyr His
100 105 110

Phe Met Asp Val Trp Gly Asn Gly Thr Thr Val Thr Val Ser Ser
115 120 125

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<400> 5

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

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

Gly Trp Leu Asn Thr Asn Thr Glu Asn Pro Thr Phe Ala Gln Gly Phe
50 55 60

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

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

Ala Arg Gly Asp Met Val Val Pro Thr Thr Ile Trp Asn Tyr Tyr His
100 105 110

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

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<400> 6

His Tyr Gly Leu His
1 5

<210> 7
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<400> 7

Trp Leu Asn Thr Asn Thr Glu Asn Pro Thr Phe Ala Gln Gly Phe Thr
1 5 10 15

Gly

<210> 8
<211> 18
<212> PRT
<213> Homo sapiens

<400> 8

Gly Asp Met Val Val Pro Thr Thr Ile Trp Asn Tyr Tyr His Phe Met
1 5 10 15

Asp Val

<210> 9
<211> 5
<212> PRT
<213> Homo sapiens

<400> 9

His Tyr Gly Leu His
1 5

<210> 10
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<400> 10

Trp Ile Asn Thr Asn Thr Gly Asn Pro Thr Tyr Ala Gln Gly Phe Thr
1 5 10 15

Gly

<210> 11
<211> 18
<212> PRT
<213> Homo sapiens

<400> 11

Gly Asp Leu Val Val Pro Thr Thr Ile Trp Asn Tyr Tyr His Tyr Met
1 5 10 15

Glu Val

<210> 12
<211> 5
<212> PRT

<213> Homo sapiens

<400> 12

His Tyr Ala Leu His
1 5

<210> 13

<211> 17

<212> PRT

<213> Homo sapiens

<400> 13

Trp Leu Asn Thr Asn Thr Glu Asn Pro Thr Tyr Ala Gln Gly Phe Thr
1 5 10 15

Gly

<210> 14

<211> 18

<212> PRT

<213> Homo sapiens

<400> 14

Gly Asp Met Val Val Pro Thr Thr Ile Trp Asn Tyr Tyr Tyr Tyr Met
1 5 10 15

Asp Val

<210> 15

<211> 5

<212> PRT

<213> Homo sapiens

<400> 15

His Tyr Ala Leu His
1 5

<210> 16

<211> 17

<212> PRT
<213> Homo sapiens

<400> 16

Trp Leu Asn Thr Asn Thr Glu Asn Pro Thr Phe Ala Gln Gly Phe Thr
1 5 10 15

Gly

<210> 17
<211> 18
<212> PRT
<213> Homo sapiens

<400> 17

Gly Asp Met Val Val Pro Thr Thr Ile Trp Asn Tyr Tyr His Phe Met
1 5 10 15

Asp Val

<210> 18
<211> 5
<212> PRT
<213> Homo sapiens

<400> 18

His Tyr Ala Leu His
1 5

<210> 19
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<400> 19

Trp Leu Asn Thr Asn Thr Glu Asn Pro Thr Phe Ala Gln Gly Phe Thr
1 5 10 15

Gly

<210> 20
<211> 18
<212> PRT
<213> Homo sapiens

<400> 20

Gly Asp Met Val Val Pro Thr Thr Ile Trp Asn Tyr Tyr His Phe Met
1 5 10 15

Asp Val

<210> 21
<211> 98
<212> PRT
<213> Homo sapiens

<400> 21

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

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

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

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

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

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

Ala Arg

<210> 22
<211> 98
<212> PRT
<213> Homo sapiens

<400> 22

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

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

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

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

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

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

Ala Arg

<210> 23
<211> 329
<212> PRT
<213> Homo sapiens

<400> 23

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

Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr

20

25

30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45

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

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

Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
85 90 95

Arg Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
100 105 110

Pro Ala Pro Glu Leu Gly Arg Gly Pro Ser Val Phe Leu Phe Pro Pro
115 120 125

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
130 135 140

Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
145 150 155 160

Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
165 170 175

Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
180 185 190

His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
195 200 205

Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
210 215 220

Gln Pro Arg Glu Pro Gln Val Tyr Thr Asp Pro Pro Ser Arg Glu Glu
225 230 235 240

Met Thr Lys Asn Gln Val Ser Leu Thr Cys Glu Val Lys Gly Phe Tyr
245 250 255

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
260 265 270

Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
275 280 285

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
290 295 300

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
305 310 315 320

Gln Lys Ser Leu Ser Leu Ser Pro Gly
325

<210> 24
<211> 329
<212> PRT
<213> Homo sapiens

<400> 24

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

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

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45

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

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

Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
85 90 95

Arg Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
100 105 110

Pro Ala Pro Glu Leu Gly Arg Gly Pro Ser Val Phe Leu Phe Pro Pro
115 120 125

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
130 135 140

Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
145 150 155 160

Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
165 170 175

Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
180 185 190

His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
195 200 205

Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
210 215 220

Gln Pro Arg Glu Pro Gln Val Tyr Thr Lys Pro Pro Ser Arg Glu Glu
225 230 235 240

Met Thr Lys Asn Gln Val Ser Leu Lys Cys Leu Val Lys Gly Phe Tyr

245

250

255

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
260 265 270

Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
275 280 285

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
290 295 300

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
305 310 315 320

Gln Lys Ser Leu Ser Leu Ser Pro Gly
325

<210> 25
<211> 107
<212> PRT
<213> Homo sapiens

<400> 25

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

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

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

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

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

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

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

<210> 26
<211> 11
<212> PRT
<213> Homo sapiens

<400> 26

Arg Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn
1 5 10

<210> 27
<211> 7
<212> PRT
<213> Homo sapiens

<400> 27

Ala Ala Ser Ser Leu Gln Ser
1 5

<210> 28
<211> 9
<212> PRT
<213> Homo sapiens

<400> 28

Gln Gln Ser Tyr Ser Thr Pro Pro Thr
1 5

<210> 29
<211> 107
<212> PRT
<213> Homo sapiens

<400> 29

Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
1 5 10 15

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

Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
35 40 45

Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
50 55 60

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

Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
85 90 95

Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
100 105

<210> 30
<211> 381
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(381)

<400> 30
cag gtg cag ctg gtg caa tct ggg tct gag ttg aag cag cct ggg gcc 48
Gln Val Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Gln Pro Gly Ala
1 5 10 15

tca gtg aag gtt tcc tgt aag gct tct gga tac acc ttc act cac tat 96
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr His Tyr
20 25 30

ggt ttg cat tgg gtg cga cag gcc cct gga caa ggg ctt gag tgg atg 144
Gly Leu His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met

aca gga cgg ttt gtc ttc tcc ttg gac acc tct gtc agc acg gca tat 240
 Thr Gly Arg Phe Val Phe Ser Leu Asp Thr Ser Val Ser Thr Ala Tyr
 65 70 75 80

ctg cag atc agc agc cta aag gct gaa gac act gcc gtg tat tac tgt 288
 Leu Gln Ile Ser Ser Leu Lys Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

gcg aga ggg gat tta gta gta cca act act ata tgg aac tac tac cac 336
 Ala Arg Gly Asp Leu Val Val Pro Thr Thr Ile Trp Asn Tyr Tyr His
 100 105 110

tac atg gag gtc tgg ggc aaa ggc acc ctg gtc acc gtc tcg agt 381
 Tyr Met Glu Val Trp Gly Lys Gly Thr Leu Val Thr Val Ser Ser
 115 120 125

<210> 32
 <211> 381
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)..(381)

<400> 32
 cag gtg cag ctg gtg caa tct ggg tct gag ttg aag aag cct ggg gcc 48
 Gln Val Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
 1 5 10 15

tca gtg atg gtt tcc tgc aag gct tct gga tac acc ttc act cac tat 96
 Ser Val Met Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr His Tyr
 20 25 30

gct ttg cat tgg gtg cgc cag gcc cct gga caa ggg ctt gag tgg atg 144
 Ala Leu His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
 35 40 45

gga tgg ctc aat acc aac act gag aat cca acg tat gcc cag ggc ttc 192
 Gly Trp Leu Asn Thr Asn Thr Glu Asn Pro Thr Tyr Ala Gln Gly Phe
 50 55 60

aca gga cgg ttt gtc ttc tcc ttg gac acc tct gtc acc acg gca tat 240
 Thr Gly Arg Phe Val Phe Ser Leu Asp Thr Ser Val Thr Thr Ala Tyr
 65 70 75 80

ctg cag atc aac agc cta aag gct gag gac act gcc gtg tat tac tgt 288
 Leu Gln Ile Asn Ser Leu Lys Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

gcg aga ggg gat atg gta gta cca act act ata tgg aac tac tac tac 336
 Ala Arg Gly Asp Met Val Val Pro Thr Thr Ile Trp Asn Tyr Tyr Tyr
 100 105 110

tac atg gac gtc tgg ggc aaa ggg acc acg gtc acc gtc tcg agt 381
 Tyr Met Asp Val Trp Gly Lys Gly Thr Thr Val Thr Val Ser Ser
 115 120 125

<210> 33
 <211> 381
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)..(381)

<400> 33
 cag gtg cag ctg gtg caa tct ggg tct gag ttg aag cag cct ggg gcc 48
 Gln Val Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Gln Pro Gly Ala
 1 5 10 15

tca gtg aag gtt tcc tgt aag gct tct gga tac acc ttc act cac tat 96
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr His Tyr
 20 25 30

gct ttg cat tgg ttg cga cag gcc cct gga caa ggg ctt gag tgg atg 144
 Ala Leu His Trp Leu Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
 35 40 45

gga tgg ctc aac acc aac act gag aac cca acg ttt gcc cag ggc ttc 192
 Gly Trp Leu Asn Thr Asn Thr Glu Asn Pro Thr Phe Ala Gln Gly Phe
 50 55 60

aca gga cgt ttt gtc ttc tct ttg gac acc tct gtc acc acg gca tat 240
 Thr Gly Arg Phe Val Phe Ser Leu Asp Thr Ser Val Thr Thr Ala Tyr
 65 70 75 80

ctg cag atc agc agc ctg aag gct gag gac act gcc gta tat tac tgt 288
 Leu Gln Ile Ser Ser Leu Lys Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

gcg aga ggg gat atg gta gta ccg act act ata tgg aac tac tac cac 336
 Ala Arg Gly Asp Met Val Val Pro Thr Thr Ile Trp Asn Tyr Tyr His
 100 105 110

ttc atg gac gtc tgg ggc aac ggg acc acg gtc acc gtc tcg agt 381
 Phe Met Asp Val Trp Gly Asn Gly Thr Thr Val Thr Val Ser Ser
 115 120 125

<210> 34
 <211> 381
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)..(381)

<400> 34
 cag gtg cag ctg gtg caa tct ggg tct gag ttg aag cag cct ggg gcc 48
 Gln Val Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Gln Pro Gly Ala
 1 5 10 15

tca gtg aag gtt tcc tgt aag gct tct gga tac acc ttc act cac tat 96
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr His Tyr
 20 25 30

gct ttg cat tgg ttg cga cag gcc cct gga caa ggg ctt gag tgg atg 144
 Ala Leu His Trp Leu Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
 35 40 45

gga tgg ctc aac acc aac act gag aac cca acg ttt gcc cag ggc ttc 192
 Gly Trp Leu Asn Thr Asn Thr Glu Asn Pro Thr Phe Ala Gln Gly Phe
 50 55 60

aca gga cgt ttt gtc ttc tct ttg gac acc tct gtc acc acg gca tat 240
 Thr Gly Arg Phe Val Phe Ser Leu Asp Thr Ser Val Thr Thr Ala Tyr
 65 70 75 80

ctg cag atc agc agc ctg aag gct gag gac act gcc gta tat tac tgt 288
 Leu Gln Ile Ser Ser Leu Lys Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

gcg aga ggg gat atg gta gta ccg act act ata tgg aac tac tac cac 336
 Ala Arg Gly Asp Met Val Val Pro Thr Thr Ile Trp Asn Tyr Tyr His
 100 105 110

ttc atg gac gtc tgg ggc cag ggg acc acg gtc acc gtc tcg agt 381

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

<210> 35
 <211> 321
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)..(321)

<400> 35
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 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15

gac aga gtc acc atc act tgc cgg gca agt cag agc att agc agc tac 96
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr
 20 25 30

tta aat tgg tat cag cag aaa cca ggg aaa gcc cct aag ctc ctg atc 144
 Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
 35 40 45

tat gct gca tcc agt ttg caa agt ggg gtc cca tca agg ttc agt ggc 192
 Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60

agt gga tct ggg aca gat ttc act ctc acc atc agc agt ctg caa cct 240
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80

gaa gat ttt gca act tac tac tgt caa cag agt tac agt acc cct cca 288
 Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Pro
 85 90 95

acg ttc ggc caa ggg acc aag gtg gag atc aaa 321
 Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
 100 105

<210> 36
 <211> 118
 <212> PRT
 <213> Homo sapiens

<400> 36

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

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

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

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

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

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

Thr Arg Gly Thr Gly Tyr Asn Trp Phe Asp Pro Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 37

<211> 5

<212> PRT

<213> Homo sapiens

<400> 37

Ser Tyr Gly Met His
1 5

<210> 38

<211> 17

<212> PRT

<213> Homo sapiens

<400> 38

Gln Ile Trp Tyr Asn Ala Arg Lys Gln Glu Tyr Ser Asp Ser Val Lys
1 5 10 15

Gly

<210> 39

<211> 9

<212> PRT

<213> Homo sapiens

<400> 39

Gly Thr Gly Tyr Asn Trp Phe Asp Pro
1 5

<210> 40

<211> 354

<212> DNA

<213> Homo sapiens

<220>

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<222> (1)..(354)

<400> 40

cag gtg cag ctg gtg cag tct ggc ggc gga gtg gtg cag ccc ggc aga 48
Gln Val Gln Leu Val Gln Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15

agc ctg aga ctg agc tgc gtg gcc agc ggc ttc acc ttc agc agc tac 96
Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30

ggc atg cac tgg gtc cgc cag gcc cct ggc aag gga ctg gaa tgg gtg 144
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

gcc cag atc tgg tac aac gcc cgg aag cag gaa tac tct gac agc gtg 192
Ala Gln Ile Trp Tyr Asn Ala Arg Lys Gln Glu Tyr Ser Asp Ser Val
50 55 60

aag ggc cgg ttc acc atc agc cgg gac aac agc aag aac acc ctg tac 240
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr

