SEQUENCE LISTING

<110> FUNDACIÓ PRIVADA INSTITUT D'INVESTIGACIÓ ONCOLÒGICA DE VALL HEBRON
INSTITUCIÓ CATALANA DE RECERCA I ESTUDIS AVANÇATS
PEPTOMYC, S.L.

<120> METHODS FOR THE DIAGNOSIS OF LUNG CANCER

<130> P17441PC00

<150> EP19382195.6
<151> 2019-03-19

<160> 65

<170> PatentIn version 3.5

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<211> 90
<212> PRT
<213> Artificial Sequence

<220>
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Thr Glu Glu Asn Val Lys Arg Arg Thr His Asn Val Leu Glu Arg Gln
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Arg Arg Asn Glu Leu Lys Arg Ser Phe Phe Ala Leu Arg Asp Gln Ile
20 25 30

Pro Glu Leu Glu Asn Asn Glu Lys Ala Pro Lys Val Val Ile Leu Lys
35 40 45

Lys Ala Thr Ala Tyr Ile Leu Ser Val Gln Ala Glu Thr Gln Lys Leu
50 55 60

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

Lys Leu Glu Gln Leu Arg Asn Ser Cys Ala
85 90

<210> 2
<211> 454
<212> PRT
<213> Homo sapiens

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20 25 30

Ser Val Gln Pro Tyr Phe Tyr Cys Asp Glu Glu Glu Asn Phe Tyr Gln
35 40 45

Gln Gln Gln Gln Ser Glu Leu Gln Pro Pro Ala Pro Ser Glu Asp Ile
50 55 60

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

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

Leu Arg Gly Asp Asn Asp Gly Gly Gly Gly Ser Phe Ser Thr Ala Asp
100 105 110

Gln Leu Glu Met Val Thr Glu Leu Leu Gly Gly Asp Met Val Asn Gln
115 120 125

Ser Phe Ile Cys Asp Pro Asp Asp Glu Thr Phe Ile Lys Asn Ile Ile
130 135 140

Ile Gln Asp Cys Met Trp Ser Gly Phe Ser Ala Ala Ala Lys Leu Val
145 150 155 160

Ser Glu Lys Leu Ala Ser Tyr Gln Ala Ala Arg Lys Asp Ser Gly Ser
165 170 175

Pro Asn Pro Ala Arg Gly His Ser Val Cys Ser Thr Ser Ser Leu Tyr
180 185 190

Leu Gln Asp Leu Ser Ala Ala Ala Ser Glu Cys Ile Asp Pro Ser Val
195 200 205

Val Phe Pro Tyr Pro Leu Asn Asp Ser Ser Ser Pro Lys Ser Cys Ala
210 215 220

Ser Gln Asp Ser Ser Ala Phe Ser Pro Ser Ser Asp Ser Leu Leu Ser
225 230 235 240

Ser Thr Glu Ser Ser Pro Gln Gly Ser Pro Glu Pro Leu Val Leu His
245 250 255

Glu Glu Thr Pro Pro Thr Thr Ser Ser Asp Ser Glu Glu Glu Gln Glu
260 265 270

Asp Glu Glu Glu Ile Asp Val Val Ser Val Glu Lys Arg Gln Ala Pro
275 280 285

Gly Lys Arg Ser Glu Ser Gly Ser Pro Ser Ala Gly Gly His Ser Lys
290 295 300

Pro Pro His Ser Pro Leu Val Leu Lys Arg Cys His Val Ser Thr His
305 310 315 320

Gln His Asn Tyr Ala Ala Pro Pro Ser Thr Arg Lys Asp Tyr Pro Ala
325 330 335

Ala Lys Arg Val Lys Leu Asp Ser Val Arg Val Leu Arg Gln Ile Ser
340 345 350

Asn Asn Arg Lys Cys Thr Ser Pro Arg Ser Ser Asp Thr Glu Glu Asn
355 360 365

Val Lys Arg Arg Thr His Asn Val Leu Glu Arg Gln Arg Arg Asn Glu
370 375 380

Leu Lys Arg Ser Phe Phe Ala Leu Arg Asp Gln Ile Pro Glu Leu Glu
385 390 395 400

Asn Asn Glu Lys Ala Pro Lys Val Val Ile Leu Lys Lys Ala Thr Ala

405 410 415

Tyr Ile Leu Ser Val Gln Ala Glu Glu Gln Lys Leu Ile Ser Glu Glu
420 425 430

Asp Leu Leu Arg Lys Arg Arg Glu Gln Leu Lys His Lys Leu Glu Gln
435 440 445

Leu Arg Asn Ser Cys Ala
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<210> 3
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<210> 4
<211> 91
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<213> Artificial Sequence

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<223> Recombinant protein

<400> 4

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20 25 30

Ile Pro Glu Leu Glu Asn Asn Glu Lys Ala Pro Lys Val Val Ile Leu
35 40 45

Lys Lys Ala Thr Ala Tyr Ile Leu Ser Val Gln Ala Glu Thr Gln Lys
50 55 60

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

His Lys Leu Glu Gln Leu Arg Asn Ser Cys Ala
85 90

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<222> (89)..(89)
<223> Xaa may be any amino acid except Cysteine

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

Pro Glu Leu Glu Asn Asn Glu Lys Ala Pro Lys Val Val Ile Leu Lys
35 40 45

Lys Ala Thr Ala Tyr Ile Leu Ser Val Gln Ala Glu Thr Gln Lys Leu
50 55 60

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

Lys Leu Glu Gln Leu Arg Asn Ser Xaa Ala
85 90

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20 25 30

Ile Pro Glu Leu Glu Asn Asn Glu Lys Ala Pro Lys Val Val Ile Leu
35 40 45

Lys Lys Ala Thr Ala Tyr Ile Leu Ser Val Gln Ala Glu Thr Gln Lys
50 55 60

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

His Lys Leu Glu Gln Leu Arg Asn Ser Xaa Ala
85 90

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

Pro Glu Leu Glu Asn Asn Glu Lys Ala Pro Lys Val Val Ile Leu Lys

35 40 45

Lys Ala Thr Ala Tyr Ile Leu Ser Val Gln Ala Glu Thr Gln Lys Leu
50 55 60

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

Lys Leu Glu Gln Leu Arg Asn Ser Ser Ala
85 90

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Gln Arg Arg Asn Glu Leu Lys Arg Ser Phe Phe Ala Leu Arg Asp Gln
20 25 30

Ile Pro Glu Leu Glu Asn Asn Glu Lys Ala Pro Lys Val Val Ile Leu
35 40 45

Lys Lys Ala Thr Ala Tyr Ile Leu Ser Val Gln Ala Glu Thr Gln Lys
50 55 60

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

His Lys Leu Glu Gln Leu Arg Asn Ser Ser Ala
85 90

<210> 9
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Arg Arg Asn Glu Leu Lys Arg Ser Phe Phe Ala Leu Arg Asp Gln Ile
20 25 30

Pro Glu Leu Glu Asn Asn Glu Lys Ala Pro Lys Val Val Ile Leu Lys
35 40 45

Lys Ala Thr Ala Tyr Ile Leu Ser Val Gln Ala Glu Thr Gln Lys Leu
50 55 60

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

Lys Leu Glu Gln Leu Arg Asn Ser Ala Ala
85 90

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Gln Arg Arg Asn Glu Leu Lys Arg Ser Phe Phe Ala Leu Arg Asp Gln
20 25 30

Ile Pro Glu Leu Glu Asn Asn Glu Lys Ala Pro Lys Val Val Ile Leu
35 40 45

Lys Lys Ala Thr Ala Tyr Ile Leu Ser Val Gln Ala Glu Thr Gln Lys
50 55 60

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

His Lys Leu Glu Gln Leu Arg Asn Ser Ala Ala
85 90

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20 25 30

Ile Pro Glu Leu Glu Asn Asn Glu Lys Ala Pro Lys Val Val Ile Leu
35 40 45

Lys Lys Ala Thr Ala Tyr Ile Leu Ser Val Gln Ala Glu Thr Gln Lys
50 55 60

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

His Lys Leu Glu Gln Leu Arg Asn Ser Cys Ala Gly Arg Lys Lys Arg
85 90 95

Arg Gln Arg Arg Arg
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<210> 12
<211> 99
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<220>
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20 25 30

Ile Pro Glu Leu Glu Asn Asn Glu Lys Ala Pro Lys Val Val Ile Leu
35 40 45

Lys Lys Ala Thr Ala Tyr Ile Leu Ser Val Gln Ala Glu Thr Gln Lys
50 55 60

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

His Lys Leu Glu Gln Leu Arg Asn Ser Cys Ala Arg Arg Arg Arg Arg
85 90 95

Arg Leu Arg

<210> 13
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> CPP sequence found in Drosophila antennapedia protein

<400> 13

Arg Gln Ile Lys Ile Trp Phe Gln Asn Arg Arg Met Lys Trp Lys Lys
1 5 10 15

<210> 14
<211> 34
<212> PRT
<213> Artificial Sequence

<220>
<223> CPP sequence found in the herpesvirus simplex 1 (HSV-1) VP22
DNA-binding protein

<400> 14

Asp Ala Ala Thr Ala Thr Arg Gly Arg Ser Ala Ala Ser Arg Pro Thr
1 5 10 15

Glu Arg Pro Arg Ala Pro Ala Arg Ser Ala Ser Arg Pro Arg Arg Pro
20 25 30

Val Glu

<210> 15
<211> 24
<212> PRT
<213> Artificial Sequence

<220>
<223> CPP sequence of Bac-7

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Pro Leu Pro Phe Pro Arg Pro Gly
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<210> 16
<211> 9
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<213> Artificial Sequence

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<223> CPP sequence of the HIV-1 TAT protein (amino acids 49-57)

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Arg Lys Lys Arg Arg Gln Arg Arg Arg
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<210> 17
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<212> PRT
<213> Artificial Sequence

<220>
<223> CPP sequence of the HIV-1 TAT protein (amino acids 48-60)

<400> 17

Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Thr Pro Gln
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<210> 18
<211> 11
<212> PRT
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<223> CPP sequence of the HIV-1 TAT protein (amino acids 47-57)

<400> 18

Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg
1 5 10

<210> 19
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<212> PRT
<213> Artificial Sequence

<220>
<223> CPP sequence of S413-PV peptide

<400> 19

Ala Leu Trp Lys Thr Leu Leu Lys Lys Val Leu Lys Ala Pro Lys Lys
1 5 10 15

Lys Arg Lys Val
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<210> 20
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> CPP sequence of penetratin

<400> 20

Arg Gln Ile Lys Trp Phe Gln Asn Arg Arg Met Lys Trp Lys Lys
1 5 10 15

<210> 21
<211> 18

<212> PRT
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<220>
<223> CPP sequence of SynB1

<400> 21

Arg Gly Gly Arg Leu Ser Tyr Ser Arg Arg Arg Phe Ser Thr Ser Thr
1 5 10 15

Gly Arg

<210> 22
<211> 10
<212> PRT
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<220>
<223> CPP sequence of SynB3

<400> 22

Arg Arg Leu Ser Tyr Ser Arg Arg Arg Phe
1 5 10

<210> 23
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<212> PRT
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<220>
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<400> 23

Pro Ile Arg Arg Arg Lys Lys Leu Arg Arg Leu Lys
1 5 10

<210> 24
<211> 12
<212> PRT
<213> Artificial Sequence

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<223> CPP sequence of PTD-5

<400> 24

Arg Arg Gln Arg Arg Thr Ser Lys Leu Met Lys Arg
1 5 10

<210> 25
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Arg Arg Arg Arg Asn Arg Thr Arg Arg Asn Arg Arg Arg Val Arg
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<220>
<223> CPP sequence of BMV Gag (amino acids 7-25)

<400> 26

Lys Met Thr Arg Ala Gln Arg Arg Ala Ala Ala Arg Arg Asn Arg Trp
1 5 10 15

Thr Ala Arg

<210> 27
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> CPP sequence of HTLV-II Rex (amino acids 4-16)

<400> 27

Thr Arg Arg Gln Arg Thr Arg Arg Ala Arg Arg Asn Arg
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<210> 28
<211> 13
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<213> Artificial Sequence

<220>
<223> CPP sequence of D-Tat

<400> 28

Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln
1 5 10

<210> 29
<211> 13
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<220>
<223> CPP sequence of R9-Tat

<400> 29

Gly Arg Arg Arg Arg Arg Arg Arg Arg Arg Pro Pro Gln
1 5 10

<210> 30
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> CPP sequence of MAP

<400> 30

Lys Leu Ala Leu Lys Leu Ala Leu Lys Leu Ala Leu Ala Leu Lys Leu
1 5 10 15

Ala

<210> 31
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> CPP sequence of SBP

<400> 31

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

Ala Trp Ser Gln Pro Lys Lys Lys Arg Lys Val
20 25

<210> 32
<211> 27
<212> PRT
<213> Artificial Sequence

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<223> CPP sequence of FBP

<400> 32

Gly Ala Leu Phe Leu Gly Trp Leu Gly Ala Ala Gly Ser Thr Met Gly
1 5 10 15

Ala Trp Ser Gln Pro Lys Lys Lys Arg Lys Val
20 25

<210> 33
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<212> PRT
<213> Artificial Sequence

<220>
<223> CPP sequence of MPG

<400> 33

Gly Ala Leu Phe Leu Gly Phe Leu Gly Ala Ala Gly Ser Thr Met Gly
1 5 10 15

Ala Trp Ser Gln Pro Lys Lys Lys Arg Lys Val
20 25

<210> 34
<211> 27
<212> PRT
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<220>
<223> CPP sequence of MPG(ENLS)

<400> 34

Gly Ala Leu Phe Leu Gly Phe Leu Gly Ala Ala Gly Ser Thr Met Gly
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Ala Trp Ser Gln Pro Lys Ser Lys Arg Lys Val
20 25

<210> 35
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<212> PRT
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<220>
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<400> 35

Lys Glu Thr Trp Trp Glu Thr Trp Trp Thr Glu Trp Ser Gln Pro Lys
1 5 10 15

Lys Lys Arg Lys Val
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<210> 36
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<220>
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<400> 36

Lys Glu Thr Trp Phe Glu Thr Trp Phe Thr Glu Trp Ser Gln Pro Lys
1 5 10 15

Lys Lys Arg Lys Val
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<210> 37
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Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg
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<400> 38

Arg Arg Arg Arg Arg Arg Leu Arg
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<210> 39
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Arg Arg Gln Arg Arg Thr Ser Lys Leu Met Lys Arg
1 5 10

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Gly Trp Thr Leu Asn Ser Ala Gly Tyr Leu Leu Gly Lys Ile Asn Leu
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Lys Ala Leu Ala Ala Leu Ala Lys Lys Ile Leu
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<210> 41
<211> 33
<212> PRT
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<400> 41

Lys Ala Leu Ala Trp Glu Ala Lys Leu Ala Lys Ala Leu Ala Lys Ala
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Leu Ala Lys His Leu Ala Lys Ala Leu Ala Lys Ala Leu Lys Cys Glu
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Ala

<210> 42
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1 5 10 15

<210> 43
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1 5

<210> 45
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1 5 10

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<220>
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Arg Arg Arg His Ser Asp Glu Asn Asp Gly Gly Gln Pro His Lys Arg
1 5 10 15

Arg Lys

<210> 51
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<212> PRT
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<220>
<223> NLS sequence of HIV-I Rev protein

<400> 51

Arg Gln Ala Arg Arg Asn Arg Arg Arg Trp Glu
1 5 10

<210> 52
<211> 18

<212> PRT
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<220>
<223> NLS sequence of HTLV-I Rex

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1 5 10 15

Pro Thr

<210> 53
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<212> PRT
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<220>
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<400> 53

Asn Gln Ser Ser Asn Phe Gly Pro Met Lys Gly Gly Asn Phe Gly Gly
1 5 10 15

Arg Ser Ser Gly Pro Tyr Gly Gly Gly Gly Gln Tyr Phe Lys Pro Arg
20 25 30

Asn Gln Gly Gly Tyr
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<211> 43
<212> PRT
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<220>
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<400> 54

Val His Ser His Lys Lys Lys Lys Ile Arg Thr Ser Pro Thr Phe Thr
1 5 10 15

Thr Pro Lys Thr Leu Arg Leu Arg Arg Gln Pro Lys Tyr Pro Arg Lys
20 25 30

Ser Ala Pro Arg Arg Asn Lys Leu Asp His Tyr
35 40

<210> 55
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<223> Xaa can be any naturally occurring amino acid

<220>
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<222> (4)..(4)
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Lys Xaa Xaa Xaa
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<210> 56
<211> 9
<212> PRT
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<220>
<223> M1 peptide (Myc NLS)

<400> 56

Pro Ala Ala Lys Arg Val Lys Leu Asp
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<210> 57
<211> 11
<212> PRT
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<220>
<223> M2 peptide (Myc NLS)

<400> 57

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<210> 58
<211> 6
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<400> 58

Gly Pro Arg Arg Arg Arg
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<210> 59
<211> 8
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<220>
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<400> 59

Asp Tyr Lys Asp Asp Asp Asp Lys
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<210> 60
<211> 8
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<400> 60

Trp Ser His Pro Gln Phe Glu Lys
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<210> 61
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<400> 61

Tyr Pro Tyr Asp Val Pro Asp Tyr Ala
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<210> 62
<211> 14
<212> PRT
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<400> 62

Gly Lys Pro Ile Pro Asn Pro Leu Leu Gly Leu Asp Ser Thr
1 5 10

<210> 63
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<400> 63

Ala His Gly His Arg Pro
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<222> (19)..(20)
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<400> 64

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Thr Cys Xaa Xaa Cys
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<210> 65
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<220>
<223> CPP

<400> 65

Arg Arg Arg Arg Arg Arg Arg Arg
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