PHASSeqList
SEQUENCE LISTING

<110> PhaseBio Pharmaceuticals, Inc.
Jowett, James
Woods, Christopher

<120> THERAPEUTIC AGENTS COMPRISING INSULIN AMINO ACID SEQUENCES

<130> PHAS-025/01WO 309646-2127

<150> US 61/563,985
<151> 2011-11-28

<160> 34

<170> PatentIn version 3.5

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Ile Pro Gly Xaa Gly
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Gly Val Gly Val Pro Gly Val Gly
1 5

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Val Pro Gly Val Gly Val Pro Gly Gly
1 5

<210> 13
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<213> Homo sapiens

<400> 13

Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Tyr
1 5 10 15

Leu Val Cys Gly Glu Arg Gly Phe Phe Tyr Thr Pro Lys Thr Arg Arg
20 25 30

Glu Ala Glu Asp Leu Gln Val Gly Gln Val Glu Leu Gly Gly Gly Pro
35 40 45

Gly Ala Gly Ser Leu Gln Pro Leu Ala Leu Glu Gly Ser Leu Gln Lys
50 55 60

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

Leu Glu Asn Tyr Cys Asn
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Leu Val Cys Gly Glu Arg Gly Phe Phe Tyr Thr Pro Lys Thr Arg Arg
20 25 30

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Glu Ala Glu Asp Leu Gln Val Gly Gln Val Glu Leu Gly Gly Gly Pro
        35                  40                  45

Gly Ala Gly Ser Leu Gln Pro Leu Ala Leu Glu Gly Ser Leu Gln Lys
    50                  55                  60

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

Leu Glu Asn Tyr Cys Asn Val Pro Gly Val Gly Val Pro Gly Val Gly
                85                  90                  95

Val Pro Gly Gly Gly Val Pro Gly Ala Gly Val Pro Gly Val Gly Val
            100                 105                 110

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Gly Gly Val Pro
        115                 120                 125

Gly Ala Gly Val Pro Gly Gly Gly Val Pro Gly Val Gly Val Pro Gly
    130                 135                 140

Val Gly Val Pro Gly Gly Gly Val Pro Gly Ala Gly Val Pro Gly Val
145                 150                 155                 160

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Gly Gly
                165                 170                 175

Val Pro Gly Ala Gly Val Pro Gly Gly Gly Val Pro Gly Val Gly Val
            180                 185                 190

Pro Gly Val Gly Val Pro Gly Gly Gly Val Pro Gly Ala Gly Val Pro
        195                 200                 205

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly
    210                 215                 220

Gly Gly Val Pro Gly Ala Gly Val Pro Gly Gly Gly Val Pro Gly Val
225                 230                 235                 240

Gly Val Pro Gly Val Gly Val Pro Gly Gly Gly Val Pro Gly Ala Gly
                245                 250                 255

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
            260                 265                 270

Pro Gly Gly Gly Val Pro Gly Ala Gly Val Pro Gly Gly Gly Val Pro
        275                 280                 285
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Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Gly Gly Val Pro Gly
    290                 295                 300

Ala Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
305                 310                 315                 320

Gly Val Pro Gly Gly Gly Val Pro Gly Ala Gly Val Pro Gly Gly Gly
                325                 330                 335

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Gly Gly Val
            340                 345                 350

Pro Gly Ala Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro
        355                 360                 365

Gly Val Gly Val Pro Gly Gly Gly Val Pro Gly Ala Gly Val Pro Gly
    370                 375                 380

Gly Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Gly
385                 390                 395                 400

Gly Val Pro Gly Ala Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
                405                 410                 415

Val Pro Gly Val Gly Val Pro Gly Gly Gly Val Pro Gly Ala Gly Val
            420                 425                 430

Pro Gly Gly Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro
        435                 440                 445

Gly Gly Gly Val Pro Gly Ala Gly Val Pro Gly Val Gly Val Pro Gly
    450                 455                 460

Val Gly Val Pro Gly Val Gly Val Pro Gly Gly Gly Val Pro Gly Ala
465                 470                 475                 480

Gly Val Pro Gly Gly Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
                485                 490                 495

Val Pro Gly Gly Gly Val Pro Gly Ala Gly Val Pro Gly Val Gly Val
            500                 505                 510

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Gly Gly Val Pro
        515                 520                 525

Gly Ala Gly Val Pro Gly Gly Gly Val Pro Gly Val Gly Val Pro Gly
    530                 535                 540
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Val Gly Val Pro Gly Gly Gly Val Pro Gly Ala Gly Val Pro Gly Val
545                 550                 555                 560

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Gly Gly
                565                 570                 575

Val Pro Gly Ala Gly Val Pro Gly Gly Gly Val Pro Gly Val Gly Val
            580                 585                 590

Pro Gly Val Gly Val Pro Gly Gly Gly Val Pro Gly Ala Gly Val Pro
        595                 600                 605

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly
    610                 615                 620

Gly Gly Val Pro Gly Ala Gly Val Pro Gly Gly Gly Val Pro Gly Val
625                 630                 635                 640

Gly Val Pro Gly Val Gly Val Pro Gly Gly Gly Val Pro Gly Ala Gly
                645                 650                 655

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
            660                 665                 670

Pro Gly Gly Gly Val Pro Gly Ala Gly Val Pro Gly Gly Gly Val Pro
        675                 680                 685

Gly Trp Pro
    690
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<213> Homo sapiens

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Gly Ile Val Glu Gln Cys Cys Ala Ser Val Cys Ser Leu Tyr Gln Leu
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Glu Asn Tyr Cys Asn
            20
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<210> 16
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<212> PRT
<213> Homo sapiens

<400> 16

Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Tyr
1 5 10 15

Leu Val Cys Gly Glu Arg Gly Phe Phe Tyr Thr Pro Lys Ala
20 25 30

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<223> Linker peptide

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Lys Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg
1 5 10

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<400> 18

Gly Ala Gly Ser Ser Ser Arg Arg Ala Pro Gln Thr
1 5 10

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<212> DNA
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ggggaacgag gcttcttcta cacacccaag acccgccggg aggcagagga cctgcaggtg 120

gggcaggtgg agctgggcgg gggccctggt gcaggcagcc tgcagccctt ggccctggag 180

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cagctggaga actactgcaa c 261

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<212> PRT
<213> Homo sapiens

<400> 20

Met Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu
1 5 10 15

Tyr Leu Val Cys Gly Glu Arg Gly Phe Phe Tyr Thr Pro Lys Thr Arg
20 25 30

Arg Glu Ala Glu Asp Leu Gln Val Gly Gln Val Glu Leu Gly Gly Gly
35 40 45

Pro Gly Ala Gly Ser Leu Gln Pro Leu Ala Leu Glu Gly Ser Leu Gln
50 55 60

Lys Arg Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Tyr
65 70 75 80

Gln Leu Glu Asn Tyr Cys Asn
85

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Gly Phe Leu Gly
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<400> 22

His Asp Glu Phe Glu Arg His Ala Glu Gly Thr Phe Thr Ser Asp Val
1 5 10 15

Ser Ser Tyr Leu Glu Gly Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu
20 25 30

Val Lys Gly Arg Gly
35

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<212> PRT
<213> Heloderma suspectum

<400> 23

Met Lys Ile Ile Leu Trp Leu Cys Val Phe Gly Leu Phe Leu Ala Thr

1 5 10 15

Leu Phe Pro Ile Ser Trp Gln Met Pro Val Glu Ser Gly Leu Ser Ser
20 25 30

Glu Asp Ser Ala Ser Ser Glu Ser Phe Ala Ser Lys Ile Lys Arg His
35 40 45

Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu Glu
50 55 60

Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser Ser
65 70 75 80

Gly Ala Pro Pro Pro Ser Gly
85

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<212> PRT
<213> Homo sapiens

<400> 24

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

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 25
<211> 31
<212> PRT
<213> Homo sapiens

<400> 25

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

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

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

<400> 26

His Ala Asp Gly Ser Phe Ser Asp Glu Met Asn Thr Ile Leu Asp Asn
1 5 10 15

Leu Ala Ala Arg Asp Phe Ile Asn Trp Leu Ile Gln Thr Lys Ile Thr
            20   25   30

Asp

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<213> Homo sapiens

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Met Val Ala Thr Lys Thr Phe Ala Leu Leu Leu Leu Ser Leu Phe Leu
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Ala Val Gly Leu Gly Glu Lys Lys Glu Gly His Phe Ser Ala Leu Pro
            20   25   30

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

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

Met Asp Lys Ile His Gln Gln Asp Phe Val Asn Trp Leu Leu Ala Gln
65   70   75   80

Lys Gly Lys Lys Asn Asp Trp Lys His Asn Ile Thr Gln Arg Glu Ala
                85   90   95

Arg Ala Leu Glu Leu Ala Ser Gln Ala Asn Arg Lys Glu Glu Glu Ala
            100   105   110

Val Glu Pro Gln Ser Ser Pro Ala Lys Asn Pro Ser Asp Glu Asp Leu
        115   120   125

Leu Arg Asp Leu Leu Ile Gln Glu Leu Leu Ala Cys Leu Leu Asp Gln
    130   135   140

Thr Asn Leu Cys Arg Leu Arg Ser Arg
145   150

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<213> Homo sapiens

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Gly Ser Trp Gln Arg Ser Leu Gln Asp Thr Glu Glu Lys Ser Arg Ser
            20                  25                  30

Phe Ser Ala Ser Gln Ala Asp Pro Leu Ser Asp Pro Asp Gln Met Asn
        35                  40                  45

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

Tyr Leu Asp Ser Arg Arg Ala Gln Asp Phe Val Gln Trp Leu Met Asn
65                  70                  75                  80

Thr Lys Arg Asn Arg Asn Asn Ile Ala Lys Arg His Asp Glu Phe Glu
                85                  90                  95

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

Gly Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
        115                 120                 125

Arg Arg Asp Phe Pro Glu Glu Val Ala Ile Val Glu Glu Leu Gly Arg
    130                 135                 140

Arg His Ala Asp Gly Ser Phe Ser Asp Glu Met Asn Thr Ile Leu Asp
145                 150                 155                 160

Asn Leu Ala Ala Arg Asp Phe Ile Asn Trp Leu Ile Gln Thr Lys Ile
                165                 170                 175

Thr Asp Arg Lys
            180
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<210> 29
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<213> Homo sapiens

<400> 29

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His Ser Gln Gly Thr Phe Thr Ser Asp Tyr Ser Lys Tyr Leu Asp Ser
1               5                   10                  15

Arg Arg Ala Gln Asp Phe Val Gln Trp Leu Met Asn Thr Lys Arg Asn
            20                  25                  30
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Arg Asn Asn Ile Ala
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<223> Xaa may be any natural or non-natural amino acid residue

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Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val
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Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro
20 25 30

Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly
35 40 45

Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa
50 55 60

Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly
65 70 75 80

Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val
85 90 95

Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro
100 105 110

Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly
115 120 125

Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa
130 135 140

Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly
145 150 155 160

Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val
165 170 175

Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro
180 185 190

Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly
195 200 205

Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa
210 215 220

Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly
225 230 235 240

Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val
245 250 255

Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro
260 265 270

Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly
275 280 285

Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly
290 295 300

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<223> Xaa may be any natural or non-natural amino acid residue

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Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro
20 25 30

Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly
35 40 45

Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa
50 55 60

Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly
65 70 75 80

Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val
85 90 95

Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro
100 105 110

Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly
115 120 125

Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa
130 135 140

Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly
145 150 155 160

Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val
165 170 175

Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro
180 185 190

Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly
195 200 205

Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa
210 215 220

Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly
225 230 235 240

Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val
245 250 255

Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro
260 265 270

Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly
275 280 285

Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa
290 295 300

Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly

305 310 315 320

Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val
325 330 335

Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro
340 345 350

Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly
355 360 365

Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa
370 375 380

Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly
385 390 395 400

Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val
405 410 415

Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro
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Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly
435 440 445

Xaa Gly
450

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<223> Xaa may be any natural or non-natural amino acid residue

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20 25 30

Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly
35 40 45

Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa
50 55 60

Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly
65 70 75 80

Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val
85 90 95

Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro
100 105 110

Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly
115 120 125

Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa
130 135 140

Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly
145 150 155 160

Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val
165 170 175

Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro
180 185 190

Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly
195 200 205

Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa
210 215 220

Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly
225 230 235 240

Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val
245 250 255

Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro
260 265 270

Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly
275 280 285

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290 295 300

Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly
305 310 315 320

Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val
325 330 335

Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro
340 345 350

Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly
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370 375 380

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385 390 395 400

Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val
405 410 415

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Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly
435 440 445

Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa
450 455 460

Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly
465 470 475 480

Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val
485 490 495

Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro
500 505 510

Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly
515 520 525

Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa
530 535 540

Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly
545 550 555 560

Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val
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Gly Xaa Gly Val Pro Gly Xaa Gly
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<210> 33
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<222> (1)..(900)
<223> Xaa may be any natural or non-natural amino acid residue

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20 25 30

Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly
35 40 45

Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa
50 55 60

Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly
65 70 75 80

Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val
85 90 95

Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro
100 105 110

Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly

115 120 125

Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa
130 135 140

Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly
145 150 155 160

Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val
165 170 175

Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro
180 185 190

Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly
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Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa
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225 230 235 240

Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val
245 250 255

Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro
260 265 270

Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly
275 280 285

Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa
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305 310 315 320

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Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro
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Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro
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Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa
530 535 540

Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly
545 550 555 560

Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val
565 570 575

Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro
580 585 590

Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly
595 600 605

Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa
610 615 620

Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly
625 630 635 640

Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val
645 650 655

Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro
660 665 670

Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly
675 680 685

Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa
690 695 700

Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly
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Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val
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Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro
740 745 750

Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly
755 760 765

Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa
770 775 780

Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly
785 790 795 800

Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val
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Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro
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Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa
850 855 860

Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly Val Pro Gly Xaa Gly
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Pro Gly Xaa Gly
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<223> Gy Gly Gly Gly Ser subsequence may be repeated 1 to 4 times

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Gly Gly Gly Ser
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