SEQUENCE LISTING

<110> Mitsubishi Tanabe Pharma Corporation

<120> PREVENTION OR TREATMENT METHOD FOR PERIPHERAL NEUROPATHY
OR PAIN ACCOMPANYING DISEASE IN WHICH PERIPHERAL NEUROPATHY
OR ASTROCYTE DISORDER IS RECOGNIZED

<130> A19007-18289

<150> US 62/696,052
<151> 2018-07-10

<160> 45

<170> PatentIn version 3.5

<210> 1
<211> 450
<212> PRT
<213> Homo sapiens

<400> 1

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1               5                  10                  15
Met Gly Met Gly Arg Gly Ala Gly Arg Ser Ala Leu Gly Phe Trp Pro
            20                  25                  30
Thr Leu Ala Phe Leu Leu Cys Ser Phe Pro Ala Ala Thr Ser Pro Cys
        35                  40                  45
Lys Ile Leu Lys Cys Asn Ser Glu Phe Trp Ser Ala Thr Ser Gly Ser
    50                  55                  60
His Ala Pro Ala Ser Asp Asp Thr Pro Glu Phe Cys Ala Ala Leu Arg
65                  70                  75                  80
Ser Tyr Ala Leu Cys Thr Arg Arg Thr Ala Arg Thr Cys Arg Gly Asp
                85                  90                  95
Leu Ala Tyr His Ser Ala Val His Gly Ile Glu Asp Leu Met Ser Gln
            100                 105                 110
His Asn Cys Ser Lys Asp Gly Pro Thr Ser Gln Pro Arg Leu Arg Thr
        115                 120                 125
Leu Pro Pro Ala Gly Asp Ser Gln Glu Arg Ser Asp Ser Pro Glu Ile
    130                 135                 140
Cys His Tyr Glu Lys Ser Phe His Lys His Ser Ala Thr Pro Asn Tyr
145                 150                 155                 160
Thr His Cys Gly Leu Phe Gly Asp Pro His Leu Arg Thr Phe Thr Asp
                165                 170                 175
Arg Phe Gln Thr Cys Lys Val Gln Gly Ala Trp Pro Leu Ile Asp Asn
            180                 185                 190
Asn Tyr Leu Asn Val Gln Val Thr Asn Thr Pro Val Leu Pro Gly Ser
        195                 200                 205
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Ala Ala Thr Ala Thr Ser Lys Leu Thr Ile Ile Phe Lys Asn Phe Gln
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Glu Cys Val Asp Gln Lys Val Tyr Gln Ala Glu Met Asp Glu Leu Pro
225                 230                 235                 240
Ala Ala Phe Val Asp Gly Ser Lys Asn Gly Gly Asp Lys His Gly Ala
                245                 250                 255
Asn Ser Leu Lys Ile Thr Glu Lys Val Ser Gly Gln His Val Glu Ile
            260                 265                 270
Gln Ala Lys Tyr Ile Gly Thr Thr Ile Val Val Arg Gln Val Gly Arg
        275                 280                 285
Tyr Leu Thr Phe Ala Val Arg Met Pro Glu Glu Val Val Asn Ala Val
    290                 295                 300
Glu Asp Trp Asp Ser Gln Gly Leu Tyr Leu Cys Leu Arg Gly Cys Pro
305                 310                 315                 320
Leu Asn Gln Gln Ile Asp Phe Gln Ala Phe His Thr Asn Ala Glu Gly
                325                 330                 335
Thr Gly Ala Arg Arg Leu Ala Ala Ala Ser Pro Ala Pro Thr Ala Pro
            340                 345                 350
Glu Thr Phe Pro Tyr Glu Thr Ala Val Ala Lys Cys Lys Glu Lys Leu
        355                 360                 365
Pro Val Glu Asp Leu Tyr Tyr Gln Ala Cys Val Phe Asp Leu Leu Thr
    370                 375                 380
Thr Gly Asp Val Asn Phe Thr Leu Ala Ala Tyr Tyr Ala Leu Glu Asp
385                 390                 395                 400
Val Lys Met Leu His Ser Asn Lys Asp Lys Leu His Leu Tyr Glu Arg
                405                 410                 415
Thr Arg Asp Leu Pro Gly Arg Ala Ala Ala Gly Leu Pro Leu Ala Pro
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Arg Pro Leu Leu Gly Ala Leu Val Pro Leu Leu Ala Leu Leu Pro Val
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Phe Cys
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<210> 2
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<212> PRT
<213> Mus musculus

<400> 2

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Met Gly Met Gly Arg Gly Ala Gly Arg Ser Ala Leu Gly Leu Trp Pro
            20                  25                  30
Thr Leu Ala Phe Leu Leu Cys Ser Phe Pro Ala Ala Ile Ser Pro Cys
        35                  40                  45
Lys Ile Leu Lys Cys Asn Ser Glu Phe Trp Ser Ala Thr Ser Ser Gly
    50                  55                  60
Ser His Ala Pro Ala Ser Asp Asp Val Pro Glu Phe Cys Ala Ala Leu
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65                  70                  75                  80
Arg Thr Tyr Ala Leu Cys Thr Arg Arg Thr Ala Arg Thr Cys Arg Gly
                85                  90                  95
Asp Leu Ala Tyr His Ser Ala Val His Gly Ile Glu Asp Leu Met Ser
            100                 105                 110
Gln His Asn Cys Ser Lys Asp Gly Pro Thr Ser Gln Pro Arg Val Arg
        115                 120                 125
Thr Leu Pro Pro Ala Gly Asp Ser Gln Glu Arg Ser Asp Ser Pro Glu
    130                 135                 140
Ile Cys His Tyr Glu Lys Ser Phe His Lys His Ser Ala Ala Pro Asn
145                 150                 155                 160
Tyr Thr His Cys Gly Leu Phe Gly Asp Pro His Leu Arg Thr Phe Thr
                165                 170                 175
Asp His Phe Gln Thr Cys Lys Val Gln Gly Ala Trp Pro Leu Ile Asp
            180                 185                 190
Asn Asn Tyr Leu Asn Val Gln Val Thr Asn Thr Pro Val Leu Pro Gly
        195                 200                 205
Ser Ala Ala Thr Ala Thr Ser Lys Leu Thr Ile Ile Phe Lys Asn Phe
    210                 215                 220
Gln Glu Cys Val Asp Gln Lys Val Tyr Gln Ala Glu Met Asp Glu Leu
225                 230                 235                 240
Pro Ser Ala Phe Ala Asp Gly Ser Lys Asn Gly Gly Asp Lys His Gly
                245                 250                 255
Ala Asn Ser Leu Lys Ile Thr Glu Lys Val Ser Gly Gln His Val Glu
            260                 265                 270
Ile Gln Ala Lys Tyr Ile Gly Thr Thr Ile Val Val Arg Gln Val Gly
        275                 280                 285
Arg Tyr Leu Thr Phe Ala Val Arg Met Pro Glu Glu Val Val Asn Ala
    290                 295                 300
Val Glu Asp Arg Asp Ser Gln Gly Leu Tyr Leu Cys Leu Arg Gly Cys
305                 310                 315                 320
Pro Leu Asn Gln Gln Ile Asp Phe Gln Ala Phe Arg Ala Asn Ala Glu
                325                 330                 335
Ser Pro Arg Arg Pro Ala Ala Ala Ser Pro Ser Pro Val Val Pro Glu
            340                 345                 350
Thr Phe Pro Tyr Glu Thr Ala Val Ala Lys Cys Lys Glu Lys Leu Pro
        355                 360                 365
Val Glu Asp Leu Tyr Tyr Gln Ala Cys Val Phe Asp Leu Leu Thr Thr
    370                 375                 380
Gly Asp Val Asn Phe Thr Leu Ala Ala Tyr Tyr Ala Leu Glu Asp Gly
385                 390                 395                 400
Lys Met Leu His Ser Asn Lys Asp Lys Leu His Leu Phe Glu Arg Thr
                405                 410                 415
Arg Glu Leu Pro Gly Ala Val Ala Ala Ala Ala Ala Ala Ala Thr Thr
            420                 425                 430
Phe Pro Leu Ala Pro Gln Ile Leu Leu Gly Thr Ile Pro Leu Leu Val
        435                 440                 445
Leu Leu Pro Val Leu Trp
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<212> PRT
<213> Rattus norvegicus

<400> 3

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Met Gly Met Gly Arg Gly Ala Gly Arg Ser Ala Leu Gly Leu Trp Pro
            20                  25                  30
Thr Leu Ala Phe Leu Leu Cys Ser Phe Pro Ala Ala Ile Ser Pro Cys
        35                  40                  45
Lys Ile Leu Lys Cys Asn Ser Glu Phe Trp Ser Ala Thr Ser Ser Gly
    50                  55                  60
Ser His Ala Pro Ala Ser Asp Asp Val Pro Glu Phe Cys Ala Ala Leu
65                  70                  75                  80
Arg Thr Tyr Ala Leu Cys Thr Arg Arg Thr Ala Arg Thr Cys Arg Gly
                85                  90                  95
Asp Leu Ala Tyr His Ser Ala Val His Gly Ile Glu Asp Leu Met Ser
            100                 105                 110
Gln His Asn Cys Ser Lys Asp Gly Pro Thr Ser Gln Pro Arg Val Arg
        115                 120                 125
Thr Leu Pro Pro Ala Gly Asp Ser Gln Glu Arg Ser Asp Ser Pro Glu
    130                 135                 140
Ile Cys His Tyr Glu Lys Ser Phe His Lys His Ser Ala Ala Pro Asn
145                 150                 155                 160
Tyr Thr His Cys Gly Leu Phe Gly Asp Pro His Leu Arg Thr Phe Thr
                165                 170                 175
Asp His Phe Gln Thr Cys Lys Val Gln Gly Ala Trp Pro Leu Ile Asp
            180                 185                 190
Asn Asn Tyr Leu Asn Val Gln Val Thr Asn Thr Pro Val Leu Pro Gly
        195                 200                 205
Ser Ala Ala Thr Ala Thr Ser Lys Leu Thr Ile Ile Phe Lys Asn Phe
    210                 215                 220
Gln Glu Cys Val Asp Gln Lys Val Tyr Gln Ala Glu Met Asp Glu Leu
225                 230                 235                 240
Pro Ser Ala Phe Ala Asp Gly Ser Lys Asn Gly Gly Asp Lys His Gly
                245                 250                 255
Ala Asn Ser Leu Lys Ile Thr Glu Lys Val Ser Gly Gln His Val Glu
            260                 265                 270
Ile Gln Ala Lys Tyr Ile Gly Thr Thr Ile Val Val Arg Gln Val Gly
        275                 280                 285
Arg Tyr Leu Thr Phe Ala Val Arg Met Pro Glu Glu Val Val Asn Ala
    290                 295                 300
Val Glu Asp Arg Asp Ser Gln Gly Leu Tyr Leu Cys Leu Arg Gly Cys
305                 310                 315                 320
Pro Leu Asn Gln Gln Ile Asp Phe Gln Ala Phe Arg Ala Asn Ala Glu
                325                 330                 335
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Ser Pro Arg Arg Pro Ala Ala Ala Ser Pro Ser Pro Val Val Pro Glu
            340                 345                 350
Thr Phe Pro Tyr Glu Thr Ala Val Ala Lys Cys Lys Glu Lys Leu Pro
        355                 360                 365
Val Glu Asp Leu Tyr Tyr Gln Ala Cys Val Phe Asp Leu Leu Thr Thr
    370                 375                 380
Gly Asp Val Asn Phe Thr Leu Ala Ala Tyr Tyr Ala Leu Glu Asp Gly
385                 390                 395                 400
Lys Met Leu His Ser Asn Lys Asp Lys Leu His Leu Phe Glu Arg Thr
                405                 410                 415
Arg Glu Leu Pro Gly Ala Val Ala Ala Ala Ala Phe Pro Leu Ala Pro
            420                 425                 430
Glu Met Leu Pro Gly Thr Val Thr Leu Leu Val Leu Leu Pro Leu Phe
        435                 440                 445
Trp
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<210> 4
<211> 1353
<212> DNA
<213> Homo sapiens

<400> 4

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ttccccgcag ccacctcccc gtgcaagatc ctcaagtgca actctgagtt ctggagcgcc     180

acgtcgggca gccacgcccc agcctcagac gacacccccg agttctgtgc agccttgcgc     240

agctacgccc tgtgcacgcg gcggacggcc cgcacctgcc ggggtgacct ggcctaccac     300

tcggccgtcc atggcataga ggacctcatg agccagcaca actgctccaa ggatggcccc     360

acctcgcagc cacgcctgcg cacgctccca ccggccggag acagccagga gcgctcggac     420

agccccgaga tctgccatta cgagaagagc tttcacaagc actcggccac ccccaactac     480

acgcactgtg gcctcttcgg ggacccacac ctcaggactt tcaccgaccg cttccagacc     540

tgcaaggtgc agggcgcctg gccgctcatc gacaataatt acctgaacgt gcaggtcacc     600

aacacgcctg tgctgcccgg ctcagcggcc actgccacca gcaagctcac catcatcttc     660

aagaacttcc aggagtgtgt ggaccagaag gtgtaccagg ctgagatgga cgagctcccg     720

gccgccttcg tggatggctc taagaacggt ggggacaagc acggggccaa cagcctgaag     780
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atcactgaga aggtgtcagg ccagcacgtg gagatccagg ccaagtacat cggcaccacc 840

atcgtggtgc gccaggtggg ccgctacctg acctttgccg tccgcatgcc agaggaagtg 900

gtcaatgctg tggaggactg ggacagccag ggtctctacc tctgcctgcg gggctgcccc 960

ctcaaccagc agatcgactt ccaggccttc cacaccaatg ctgagggcac cggtgcccgc 1020

aggctggcag ccgccagccc tgcacccaca gcccccgaga ccttcccata cgagacagcc 1080

gtggccaagt gcaaggagaa gctgccggtg gaggacctgt actaccaggc ctgcgtcttc 1140

gacctcctca ccacgggcga cgtgaacttc acactggccg cctactacgc gttggaggat 1200

gtcaagatgc tccactccaa caaagacaaa ctgcacctgt atgagaggac tcgggacctg 1260

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ccgctcctgg ccctgctccc tgtgttctgc tag 1353

<210> 5
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<213> Mus musculus

<400> 5

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

<210> 6
<211> 7
<212> PRT
<213> Mus musculus

<400> 6

Tyr Thr Ser Arg Leu His Ser
1 5

<210> 7
<211> 7
<212> PRT
<213> Mus musculus

<400> 7

Gln Gln Leu Asn Thr Leu Pro
1 5

<210> 8
<211> 5
<212> PRT
<213> Mus musculus

<400> 8

Asp Ala Trp Met Asp
1 5

<210> 9
<211> 19
<212> PRT
<213> Mus musculus

<400> 9

Glu Ile Arg Ser Lys Ala Asn Asn His Ala Thr Tyr Tyr Ala Glu Ser
1 5 10 15

Val Lys Gly

<210> 10
<211> 5
<212> PRT
<213> Mus musculus

<400> 10

Arg Asp Gly Ala Tyr
1 5

<210> 11
<211> 16
<212> PRT
<213> Mus musculus

<400> 11

Arg Ser Ser Gln Ser Leu Val His Ser Asn Gly Asn Thr Tyr Leu His
1 5 10 15

<210> 12
<211> 7
<212> PRT
<213> Mus musculus

<400> 12

Lys Val Ser Asn Arg Phe Ser
1 5

<210> 13
<211> 7
<212> PRT
<213> Mus musculus

<400> 13

Ser Gln Ser Thr His Val Pro
1 5

<210> 14
<211> 6
<212> PRT
<213> Mus musculus

<400> 14

Thr Ser Tyr Tyr Trp Asn
1 5

<210> 15
<211> 16
<212> PRT
<213> Mus musculus

<400> 15

Tyr Ile Ser Tyr Asp Gly Thr Asn Asn Tyr Asn Pro Ser Leu Lys Asn
1 5 10 15

<210> 16
<211> 23
<212> PRT
<213> Homo sapiens

<400> 16

Pro Cys Lys Ile Leu Lys Cys Asn Ser Glu Phe Trp Ser Ala Thr Ser
1 5 10 15

Gly Ser His Ala Pro Ala Ser
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<210> 17
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 17

Arg Ser Ser Gln Ser Leu Glu Tyr Ser Asp Gly Tyr Thr Phe Leu Glu
1 5 10 15

<210> 18
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 18

Glu Val Ser Asn Arg Phe Ser
1 5

<210> 19
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 19

Phe Gln Ala Thr His Asp Pro Leu Thr
1 5

<210> 20
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
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<400> 20

Asn Tyr Gly Met Asn
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<210> 21
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 21

Met Ile Tyr Tyr Asp Ser Ser Glu Lys His Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 22
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 22

Gly Thr Thr Pro Asp Tyr
1 5

<210> 23
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 23

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

<210> 24
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 24

Gly Ala Thr Asn Leu Ala Asp
1 5

<210> 25
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 25

Leu Gln Gly Tyr Ile Pro Pro Arg Thr
1 5

<210> 26
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
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<400> 26

Ser Tyr Val Met His
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<210> 27
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
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<400> 27

Tyr Ile Ile Pro Tyr Asn Asp Asn Thr Lys Tyr Asn Glu Lys Phe Lys
1 5 10 15

Gly

<210> 28
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 28

Ala Arg Arg Asn Glu Tyr Tyr Gly Ser Ser Phe Phe Asp Tyr
1 5 10

<210> 29
<211> 14

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 29

Thr Gly Thr Ser Ser Ser Val Gly Asp Ser Ile Tyr Val Ser
1 5 10

<210> 30
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
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<400> 30

Asp Val Thr Lys Arg Pro Ser
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<210> 31
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
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peptide

<400> 31

Cys Ser Tyr Ala Gly Thr Asp Thr Leu
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<210> 32
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
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peptide

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Ser His Gly Ile Ser
1 5

<210> 33
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
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<400> 33

Trp Ile Ser Pro Tyr Ser Gly Asn Thr Asn Tyr Ala Gln Lys Leu Gln
1 5 10 15

Gly

<210> 34
<211> 11
<212> PRT
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Val Gly Ser Gly Pro Tyr Tyr Tyr Met Asp Val
1 5 10

<210> 35
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
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<400> 35

Tyr Ser Tyr Ala Gly Thr Asp Thr Leu
1 5

<210> 36
<211> 14
<212> PRT
<213> Homo sapiens

<400> 36

Glu Glu Val Val Asn Ala Val Glu Asp Trp Asp Ser Gln Gly
1 5 10

<210> 37
<211> 14
<212> PRT
<213> Homo sapiens

<400> 37

Asn Gln Gln Ile Asp Phe Gln Ala Phe His Thr Asn Ala Glu
1 5 10

<210> 38
<211> 11
<212> PRT
<213> Homo sapiens

<400> 38

Pro Thr Ala Pro Glu Thr Phe Pro Tyr Glu Thr
1 5 10

<210> 39
<211> 11
<212> PRT
<213> Homo sapiens

<400> 39

Lys Leu Pro Val Glu Asp Leu Tyr Tyr Gln Ala
1 5 10

<210> 40
<211> 9
<212> PRT
<213> Artificial Sequence

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<400> 40
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1 5

<210> 41
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
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<400> 41
His Ser Tyr Ala Gly Thr Asp Thr Leu
1 5

<210> 42
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
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<400> 42
Leu Ser Tyr Ala Gly Thr Asp Thr Leu
1 5

<210> 43
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
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peptide

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1 5

<210> 44
<211> 9
<212> PRT
<213> Artificial Sequence

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1 5

<210> 45
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
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<400> 45
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1 5