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<170> PatentIn version 3.5

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<213> Mus musculus

<400> 31

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Asp Lys Val Thr Ile Thr Cys Lys Ala Ser Gln Asp Ile Asn Lys Tyr
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Ile Asp Trp Tyr Gln His Lys Pro Gly Lys Gly Pro Arg Leu Leu Ile
35 40 45

His Tyr Thr Ser Thr Leu Gln Pro Gly Ile Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Arg Asp Tyr Ser Phe Ser Ile Ser Asn Leu Glu Pro
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Glu Asp Ile Ala Thr Tyr Tyr Cys Val Gln Tyr Asp Asp Leu Trp Thr
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Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
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<213> Mus musculus

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Gly Val His Trp Val Arg Gln Ser Pro Gly Lys Gly Leu Glu Trp Leu
35 40 45
Gly Val Ile Trp Arg Gly Gly Ser Thr Asp Tyr Asn Ala Ala Phe Met
50 55 60
Ser Arg Leu Ser Ile Thr Lys Asp Asn Ser Lys Ser Gln Val Phe Phe
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Asn His Arg Asp Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala
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<212> PRT

<213> Mus musculus

<400> 33

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Gly Lys Val Thr Ile Thr Cys Lys Ala Ser Gln Asp Ile Asn Lys Tyr
            20                  25                  30
Ile Asp Trp Tyr Gln His Lys Pro Gly Lys Ser Pro Arg Leu Leu Ile
        35                  40                  45
His Tyr Ala Ser Thr Leu Gln Pro Gly Ile Pro Ser Arg Phe Ser Gly
    50                  55                  60
Ser Gly Ser Gly Arg Asp Tyr Ser Phe Ser Ile Ser Asn Leu Glu Pro
65                  70                  75                  80
Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp Asp Leu Trp Thr
                85                  90                  95
Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
            100                 105
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<210> 34
<211> 111
<212> PRT
<213> Mus musculus

<400> 34

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Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Ser Tyr
            20                  25                  30
Gly Ile His Trp Val Arg Gln Ser Pro Gly Lys Gly Leu Glu Trp Leu
        35                  40                  45
Gly Val Ile Trp Arg Gly Gly Ile Thr Asp Tyr Asn Ala Pro Phe Met
    50                  55                  60
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Ser Arg Leu Asn Ile Thr Lys Asp Asn Ser Lys Asn Gln Val Phe Phe
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Lys Met Asn Ser Leu Gln Val Asp Asp Thr Ala Ile Tyr Tyr Cys Ala
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Asn His Arg Asp Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala
100 105 110

<210> 35
<211> 111
<212> PRT
<213> Mus musculus

<400> 35

Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Val Val Ser Leu Gly
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Gln Arg Ala Thr Ile Ser Cys Arg Ala Ser Glu Ser Val Asp Asn Tyr
20 25 30
Gly Ile Ser Phe Met Asn Trp Phe Gln Gln Lys Pro Gly Gln Pro Pro
35 40 45
Lys Leu Leu Ile Tyr Thr Thr Ser Asn Gln Gly Ser Gly Val Arg Ala
50 55 60
Arg Leu Ser Gly Ser Gly Cys Gly Thr Asp Phe Ser Leu Asn Ile His
65 70 75 80
Pro Met Glu Glu Asp Asp Ser Ala Met Tyr Phe Cys Gln Gln Ser Lys
85 90 95
Glu Val Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
100 105 110

<210> 36
<211> 120
<212> PRT
<213> Mus musculus

<400> 36

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Asp Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
1               5                  10                  15
Ser Leu Ser Leu Thr Cys Thr Val Thr Gly Tyr Ser Ile Thr Ser Asp
            20                  25                  30
Tyr Ala Trp Asn Trp Ile Arg Gln Phe Pro Gly Asn Lys Val Glu Trp
        35                  40                  45
Met Gly Tyr Ile Ser Tyr Ser Gly Ser Ser Ser Tyr Asn Pro Ser Leu
    50                  55                  60
Lys Gly Arg Ile Ser Ile Thr Arg Asp Thr Ser Lys Asn Gln Phe Phe
65                  70                  75                  80
Leu Gln Leu Asn Ser Val Thr Thr Glu Asp Thr Ala Thr Tyr Tyr Cys
                85                  90                  95
Ala Arg Phe Tyr Tyr Arg Phe Asp Ala Tyr Phe Asp Ser Trp Gly Gln
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Gly Thr Thr Leu Thr Val Ser Ser
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<210> 37
<211> 111
<212> PRT
<213> Mus musculus

<400> 37

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Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala Val Ser Leu Gly
1               5                  10                  15
Gln Arg Ala Thr Ile Ser Cys Arg Ala Ser Glu Ser Val Glu Tyr Tyr
            20                  25                  30
Gly Thr Ser Leu Met His Trp Tyr Gln His Lys Pro Gly Gln Thr Pro
        35                  40                  45
Lys Leu Leu Ile Tyr Ser Gly Ser Asn Val Glu Ser Gly Val Pro Ala
    50                  55                  60
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Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Ser Leu Asn Ile His
65 70 75 80
Pro Val Glu Glu Asp Asp Ile Ala Met Tyr Phe Cys Gln Gln Ser Arg
85 90 95
Glu Val Pro Ser Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
100 105 110

<210> 38
<211> 119
<212> PRT
<213> Mus musculus

<400> 38

Asp Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
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20 25 30
Tyr Ala Trp Asn Trp Ile Arg Gln Phe Pro Gly Asn Lys Leu Glu Trp
35 40 45
Met Gly Tyr Ile Ser Tyr Ser Gly Thr Thr Asn Tyr Asn Pro Ser Leu
50 55 60
Lys Ser Arg Ile Ser Ile Thr Arg Asp Thr Ser Lys Asn Gln Phe Phe
65 70 75 80
Leu His Leu Asn Ser Val Ile Thr Glu Asp Thr Ala Thr Tyr Tyr Cys
85 90 95
Ala Arg Arg Glu Gly His Tyr Ser Trp Phe Pro Tyr Trp Gly Gln Gly
100 105 110
Thr Leu Val Thr Val Ser Ala
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<210> 39
<211> 107
<212> PRT

<213> Mus musculus

<400> 39

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Asp Ile Gln Met Thr Gln Ser Pro Ala Ser Leu Ser Ala Ser Val Gly
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Glu Thr Val Thr Ile Thr Cys Arg Ala Ser Glu Asn Ile Tyr Ser Tyr
            20                  25                  30
Leu Ala Trp Tyr Gln Gln Lys Gln Glu Asn Ser Pro Gln Leu Leu Val
        35                  40                  45
Tyr Asn Ala Tyr Thr Leu Ala Asp Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60
Ser Gly Ser Gly Thr Gln Phe Ser Leu Lys Ile Ile Ser Leu Gln Pro
65                  70                  75                  80
Glu Asp Phe Gly Asn Tyr Tyr Cys Gln His His Tyr Arg Thr Pro Pro
                85                  90                  95
Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
            100                 105
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<211> 117
<212> PRT
<213> Mus musculus

<400> 40

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Ser Ile Lys Val Ser Cys Lys Ala Ser Gly Tyr Ala Phe Thr Asn Tyr
            20                  25                  30
Leu Ile Glu Trp Ile Lys Lys Arg Pro Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45
Gly Met Ile Asn Pro Gly Ser Gly Asp Thr Asn Phe Asn Glu Lys Phe
    50                  55                  60
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Lys Ala Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Thr Thr Ala Tyr
65 70 75 80
Met Gln Leu Asn Ser Leu Thr Phe Asp Asp Ser Ala Val Tyr Phe Cys
85 90 95
Ala Arg Ser Ser Gln Leu Gly Leu Pro Tyr Trp Gly Gln Gly Thr Leu
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Val Thr Val Ser Ala
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<212> DNA
<213> Homo sapiens

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2079

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<211> 2365
<212> DNA
<213> Homo sapiens

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<210> 43
<211> 31
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<213> Artificial sequence

<220>
<223> Primer

<400> 43
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<210> 44
<211> 25
<212> DNA
<213> Artificial sequence

<220>
<223> Primer

<400> 44
gatcctcgag ccctcacgct actgg
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<210> 45
<211> 106
<212> PRT
<213> Artificial sequence

<220>

<223> Amino acid sequence of light chain

<400> 45

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 Gln Ala Ser Gln Asp Ile Asn Lys Tyr
20 25 30
Ile Asp Trp Tyr Gln His Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45
His Tyr Ala Ser Thr Leu Gln Pro Gly Val Pro Ser Arg Phe Ser Gly
50 55 60
Ser Gly Ser Gly Arg Asp Tyr Thr Phe Thr Ile Ser Ser Leu Gln Pro
65 70 75 80
Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp Asp Leu Trp Thr
85 90 95
Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105

<210> 46
<211> 318
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic acid encoding amino acid sequence of light chain

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ggcaaggccc ccaagctgct gatccactac gccagcaccc tgcagcccgg cgtgcccagc
180

agattcagcg gcagcggcag cggcagagac tacaccttca ccatcagcag cctgcagccc
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gaggacatcg ccacctacta ctgcctgcag tacgacgacc tgtggacctt cggccagggc
300
accaaggtgg agatcaag
318

<210> 47
<211> 111
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<213> Artificial sequence

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<223> Amino acid sequence of heavy chain

<400> 47

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
1 5 10 15
Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Ser Ile Ser Ser Tyr
20 25 30
Gly Ile His Trp Ile Arg Gln Ser Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45
Gly Val Ile Trp Arg Gly Gly Ile Thr Asp Tyr Asn Ala Pro Phe Met
50 55 60
Ser Arg Val Thr Ile Ser Lys Asp Asn Ser Lys Asn Gln Val Ser Phe
65 70 75 80
Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95
Asn His Arg Asp Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
100 105 110

<210> 48
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<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic acid encoding amino acid sequence of heavy chain

<400> 48
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120
ccgggcaaag gcctggaatg gattggcgtg atttggcgcg gcggcattac cgattataac
180
gcgccgttta tgagccgcgt gaccattagc aaagataaca gcaaaaacca ggtgagcttt
240
aaactgagca gcgtgaccgc ggcggatacc gcggtgtatt attgcgcgaa ccatcgcgat
300
tggggccagg gcaccctggt gaccgtgagc agc
333

<210> 49
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<212> PRT
<213> Artificial sequence

<220>
<223> Amino acid sequence of heavy chain

<400> 49

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
1 5 10 15
Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Ser Ile Ser Ser Tyr
20 25 30

Gly Val His Trp Ile Arg Gln Ser Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45
Gly Val Ile Trp Arg Gly Gly Ser Thr Asp Tyr Asn Ala Ala Phe Met
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333