

SEQUENCE LISTING

<110> Regeneron Pharmaceuticals, Inc.

<120> NON-HUMAN ANIMALS WITH MODIFIED IMMUNOGLOBULIN HEAVY CHAIN SEQUENCES

<130> 2010794-0456

<150> US 61/879,338

<151> 2013-09-18

<150> US 61/766,765

<151> 2013-02-20

<170> PatentIn version 3.5

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35 40 45

Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
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35 40 45

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

Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu
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Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
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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
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Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Pro
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Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
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Ala Ala Pro Thr Val Ser Ile
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Ala Pro Thr Val Ser Ile

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Ala Ala Pro Thr Val Ser Ile
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Ala Ala Pro Thr Val Ser Ile
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Pro Arg Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Ala Asp
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Ala Ala Pro Thr Val Ser Ile
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Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser
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Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Ala Asp
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Ala Ala Pro Thr Val Ser Ile
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Pro Pro Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Ala Asp
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Ala Ala Pro Thr Val Ser Ile

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

Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu
35 40 45

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

Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu
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20 25 30

Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu
35 40 45

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

Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu
65 70 75 80

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

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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
85 90 95

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Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
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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 His Ser His Ser Thr Lys
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20 25 30

Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
35 40 45

Ser Asn Ser Pro Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
50 55 60

Glu Trp Val Ser Ala Ile Ser Gly Ser Gly Ser Asn Thr Phe Tyr Ala
65 70 75 80

Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn
85 90 95

Thr Leu His Leu Gln Val Asn Ser Leu Arg Ala Asp Asp Thr Ala Val
100 105 110

Tyr Tyr Cys Ala Lys Gly Tyr Tyr Phe Asp Tyr Trp Gly Gln Gly Thr
115 120 125

Leu Val Thr Val Ser Ser
130

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<212> DNA

<213> Mus musculus

<400> 138

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ctggactagg tccttaacta agaaatgcac tgctcatgaa tatgcaaatt acccaagtct	180
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acagtccttg aagacactga ttc	263

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<212> DNA

<213> Homo sapiens

<400> 139

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 <213> Homo sapiens

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cctcctgagc ccagcagcac 200

<210> 141

<211> 255

<212> DNA

<213> Mus musculus

<400> 141

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aaactaagaa tctgtgtgat ggtgttggtg gagtccctgg atgatgggat agggactttg 180

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agttggagat tttca 255

<210> 142

<211> 4798

<212> DNA

<213> Unknown

<220>

<223> mammal

<400> 142

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ctccagctgg actaggtcct taactaagaa atgcactgct catgaatatg caaattaccc 180

aagtctatgg cagtaaatac agagatgtcc acaccctgaa gacaacctat ggccaatgtc 240

ctctccacag tccctgaaga cactgattct aactataacg gtccctaaggt agcgatcgag 300

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ggggtaaccga aaccttgccg tcgttcgccg gccaggacag aaatgcctcg acttcgctgc 420

tgcccaaggt tgccgggtga cgcacaccgt ggaaacggat gaaggcacga acccagtgga 480

cataagcctg ttcggttcgt aagctgtaat gcaagtagcg tatgcgctca cgcaactggt 540

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<213> Unknown

<220>
<223> mammal

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<211> 448
<212> DNA
<213> Unknown

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<211> 430
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 cctgaagagc 430

<210> 148
 <211> 433
 <212> DNA
 <213> Unknown

<220>
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 <211> 141
 <212> PRT
 <213> Unknown

<220>
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<400> 149

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Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
35 40 45

Ser Ser Tyr Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
50 55 60

Glu Trp Val Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala
65 70 75 80

Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn
85 90 95

Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
100 105 110

Tyr Tyr Cys Ala Lys Thr Thr Val Thr Tyr Tyr Tyr Tyr Tyr Gly Met
115 120 125

Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
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<223> mammal

<400> 150

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Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
 35 40 45

Ser Ser Tyr Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
 50 55 60

Glu Trp Val Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala
 65 70 75 80

Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn
 85 90 95

Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
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<220>
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17

<210> 152
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<220>
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<400> 152
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21

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<211> 25
<212> DNA
<213> Unknown

<220>
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<400> 158
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<210> 159
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<212> DNA
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<220>
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<400> 159
ccctcaggaa taacagactc atc 23

<210> 160
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<210> 161
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<400> 167
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32

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