

SEQUENCE LISTING

<110> Zoetis Services LLC

<120> MUTATIONS IN FELINE ANTIBODY CONSTANT REGIONS

<130> ZP000370A

<160> 18

<170> PatentIn version 3.5

<210> 1

<211> 335

<212> PRT

<213> Felis catus

<220>

<221> MISC_FEATURE

<223> Feline IgG1a wildtype constant region

<400> 1

Ala Ser Thr Thr Ala Pro Ser Val Phe Pro Leu Ala Pro Ser Cys Gly
1 5 10 15

Thr Thr Ser Gly Ala Thr Val Ala Leu Ala Cys Leu Val Leu Gly Tyr
20 25 30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45

Gly Val His Thr Phe Pro Ala Val Leu Gln Ala Ser Gly Leu Tyr Ser
50 55 60

Leu Ser Ser Met Val Thr Val Pro Ser Ser Arg Trp Leu Ser Asp Thr
65 70 75 80

Phe Thr Cys Asn Val Ala His Pro Pro Ser Asn Thr Lys Val Asp Lys
85 90 95

Thr Val Arg Lys Thr Asp His Pro Pro Gly Pro Lys Pro Cys Asp Cys
100 105 110

Pro Lys Cys Pro Pro Pro Glu Met Leu Gly Gly Pro Ser Ile Phe Ile
115 120 125

Phe Pro Pro Lys Pro Lys Asp Thr Leu Ser Ile Ser Arg Thr Pro Glu
130 135 140

Val Thr Cys Leu Val Val Asp Leu Gly Pro Asp Asp Ser Asp Val Gln
145 150 155 160

Ile Thr Trp Phe Val Asp Asn Thr Gln Val Tyr Thr Ala Lys Thr Ser
165 170 175

Pro Arg Glu Glu Gln Phe Asn Ser Thr Tyr Arg Val Val Ser Val Leu
180 185 190

Pro Ile Leu His Gln Asp Trp Leu Lys Gly Lys Glu Phe Lys Cys Lys
195 200 205

Val Asn Ser Lys Ser Leu Pro Ser Pro Ile Glu Arg Thr Ile Ser Lys
210 215 220

Ala Lys Gly Gln Pro His Glu Pro Gln Val Tyr Val Leu Pro Pro Ala
225 230 235 240

Gln Glu Glu Leu Ser Arg Asn Lys Val Ser Val Thr Cys Leu Ile Lys
245 250 255

Ser Phe His Pro Pro Asp Ile Ala Val Glu Trp Glu Ile Thr Gly Gln
260 265 270

Pro Glu Pro Glu Asn Asn Tyr Arg Thr Thr Pro Pro Gln Leu Asp Ser
275 280 285

Asp Gly Thr Tyr Phe Val Tyr Ser Lys Leu Ser Val Asp Arg Ser His
290 295 300

Trp Gln Arg Gly Asn Thr Tyr Thr Cys Ser Val Ser His Glu Ala Leu
305 310 315 320

His Ser His His Thr Gln Lys Ser Leu Thr Gln Ser Pro Gly Lys
325 330 335

<210> 2
<211> 657
<212> DNA
<213> Felis catus

<220>
<221> misc_feature
<223> Feline Fc IgG1a wildtype constant region

<400> 2
ccccctgaga tgcttggagg accgtccatc ttcattcttc ccccaaaacc caaggacacc 60
ctctcgattt cccggacgcc cgaggtcaca tgcttggtgg tggacttggg cccagatgac 120
tccgatgtcc agatcacatg gtttgtggat aacaccaggg tgtacacagc caagacgagt 180
ccgcgtgagg agcagttcaa cagcacctac cgtgtggtca gtgtcctccc catcctacac 240
caggactggc tcaaggggaa ggagttcaag tgcaaggcca acagcaaata cctcccctcc 300
cccatcgaga ggaccatctc caaggccaaa ggacagcccc acgagcccca ggtgtacgtc 360
ctgcctccag cccaggagga gctcagcagg aacaaagtca gtgtgacctg cctgatcaaa 420
tccttccacc cgcctgacat tgccgtcgag tgggagatca ccggacagcc ggagccagag 480
aacaactacc ggacgacccc gccccagctg gacagcgacg ggacctactt cgtgtacagc 540
aagctctcgg tggacaggtc ccactggcag aggggaaaca cctacacctg ctcggtgtca 600
cacgaagctc tgcacagcca ccacacacag aaatccctca cccagtctcc gggtaaa 657

<210> 3
<211> 335
<212> PRT
<213> Felis catus

<220>
<221> MISC_FEATURE
<223> Feline IgG1b wildtype constant region

<400> 3

Ala Ser Thr Thr Ala Pro Ser Val Phe Pro Leu Ala Pro Ser Cys Gly
1 5 10 15

Thr Thr Ser Gly Ala Thr Val Ala Leu Ala Cys Leu Val Leu Gly Tyr
20 25 30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45

Gly Val His Thr Phe Pro Ala Val Leu Gln Ala Ser Gly Leu Tyr Ser
50 55 60

Leu Ser Ser Met Val Thr Val Pro Ser Ser Arg Trp Leu Ser Asp Thr
65 70 75 80

Phe Thr Cys Asn Val Ala His Pro Pro Ser Asn Thr Lys Val Asp Lys
85 90 95

Thr Val Arg Lys Thr Asp His Pro Pro Gly Pro Lys Pro Cys Asp Cys
100 105 110

Pro Lys Cys Pro Pro Pro Glu Met Leu Gly Gly Pro Ser Ile Phe Ile
115 120 125

Phe Pro Pro Lys Pro Lys Asp Thr Leu Ser Ile Ser Arg Thr Pro Glu
130 135 140

Val Thr Cys Leu Val Val Asp Leu Gly Pro Asp Asp Ser Asp Val Gln
145 150 155 160

Ile Thr Trp Phe Val Asp Asn Thr Gln Val Tyr Thr Ala Lys Thr Ser
165 170 175

Pro Arg Glu Glu Gln Phe Asn Ser Thr Tyr Arg Val Val Ser Val Leu
180 185 190

Pro Ile Leu His Gln Asp Trp Leu Lys Gly Lys Glu Phe Lys Cys Lys
195 200 205

Val Asn Ser Lys Ser Leu Pro Ser Pro Ile Glu Arg Thr Ile Ser Lys
210 215 220

Asp Lys Gly Gln Pro His Glu Pro Gln Val Tyr Val Leu Pro Pro Ala
225 230 235 240

Gln Glu Glu Leu Ser Arg Asn Lys Val Ser Val Thr Cys Leu Ile Glu
245 250 255

Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ile Thr Gly Gln
260 265 270

Pro Glu Pro Glu Asn Asn Tyr Arg Thr Thr Pro Pro Gln Leu Asp Ser
275 280 285

Asp Gly Thr Tyr Phe Leu Tyr Ser Arg Leu Ser Val Asp Arg Ser Arg
290 295 300

Trp Gln Arg Gly Asn Thr Tyr Thr Cys Ser Val Ser His Glu Ala Leu
305 310 315 320

His Ser His His Thr Gln Lys Ser Leu Thr Gln Ser Pro Gly Lys
325 330 335

<210> 4
<211> 335
<212> PRT
<213> Felis catus

<220>
<221> MISC_FEATURE
<223> Feline IgG2 wildtype constant region

<400> 4

Ala Ser Thr Thr Ala Ser Ser Val Phe Pro Leu Ala Pro Ser Cys Gly
1 5 10 15

Thr Thr Ser Gly Ala Thr Val Ala Leu Ala Cys Leu Val Leu Gly Tyr
20 25 30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45

Gly Val His Thr Phe Pro Ser Val Leu Gln Ala Ser Gly Leu Tyr Ser
50 55 60

Leu Ser Ser Met Val Thr Val Pro Ser Ser Arg Trp Leu Ser Asp Thr
65 70 75 80

Phe Thr Cys Asn Val Ala His Arg Pro Ser Ser Thr Lys Val Asp Lys
85 90 95

Thr Val Pro Lys Thr Ala Ser Thr Ile Glu Ser Lys Thr Gly Glu Gly
100 105 110

Pro Lys Cys Pro Val Pro Glu Ile Pro Gly Ala Pro Ser Val Phe Ile
115 120 125

Phe Pro Pro Lys Pro Lys Asp Thr Leu Ser Ile Ser Arg Thr Pro Glu
130 135 140

Val Thr Cys Leu Val Val Asp Leu Gly Pro Asp Asp Ser Asn Val Gln
145 150 155 160

Ile Thr Trp Phe Val Asp Asn Thr Glu Met His Thr Ala Lys Thr Arg
165 170 175

Pro Arg Glu Glu Gln Phe Asn Ser Thr Tyr Arg Val Val Ser Val Leu
180 185 190

Pro Ile Leu His Gln Asp Trp Leu Lys Gly Lys Glu Phe Lys Cys Lys
195 200 205

Val Asn Ser Lys Ser Leu Pro Ser Ala Met Glu Arg Thr Ile Ser Lys
210 215 220

Ala Lys Gly Gln Pro His Glu Pro Gln Val Tyr Val Leu Pro Pro Thr
225 230 235 240

Gln Glu Glu Leu Ser Glu Asn Lys Val Ser Val Thr Cys Leu Ile Lys
245 250 255

Gly Phe His Pro Pro Asp Ile Ala Val Glu Trp Glu Ile Thr Gly Gln
260 265 270

Pro Glu Pro Glu Asn Asn Tyr Gln Thr Thr Pro Pro Gln Leu Asp Ser
275 280 285

Asp Gly Thr Tyr Phe Leu Tyr Ser Arg Leu Ser Val Asp Arg Ser His
290 295 300

Trp Gln Arg Gly Asn Thr Tyr Thr Cys Ser Val Ser His Glu Ala Leu
305 310 315 320

His Ser His His Thr Gln Lys Ser Leu Thr Gln Ser Pro Gly Lys
325 330 335

<210> 5
<211> 335
<212> PRT
<213> Felis catus

<220>
<221> MISC_FEATURE
<223> Feline IgG2_Hinge mutant constant region

<400> 5

Ala Ser Thr Thr Ala Ser Ser Val Phe Pro Leu Ala Pro Ser Cys Gly
1 5 10 15

Thr Thr Ser Gly Ala Thr Val Ala Leu Ala Cys Leu Val Leu Gly Tyr
20 25 30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45

Gly Val His Thr Phe Pro Ser Val Leu Gln Ala Ser Gly Leu Tyr Ser
50 55 60

Leu Ser Ser Met Val Thr Val Pro Ser Ser Arg Trp Leu Ser Asp Thr
65 70 75 80

Phe Thr Cys Asn Val Ala His Arg Pro Ser Ser Thr Lys Val Asp Lys
85 90 95

Thr Val Pro Lys Thr Ala Ser Thr Ile Glu Ser Lys Thr Gly Cys Gly
100 105 110

Cys Lys Cys Pro Val Pro Glu Ile Pro Gly Ala Pro Ser Val Phe Ile
115 120 125

Phe Pro Pro Lys Pro Lys Asp Thr Leu Ser Ile Ser Arg Thr Pro Glu
130 135 140

Val Thr Cys Leu Val Val Asp Leu Gly Pro Asp Asp Ser Asn Val Gln
145 150 155 160

Ile Thr Trp Phe Val Asp Asn Thr Glu Met His Thr Ala Lys Thr Arg
165 170 175

Pro Arg Glu Glu Gln Phe Asn Ser Thr Tyr Arg Val Val Ser Val Leu
180 185 190

Pro Ile Leu His Gln Asp Trp Leu Lys Gly Lys Glu Phe Lys Cys Lys
195 200 205

Val Asn Ser Lys Ser Leu Pro Ser Ala Met Glu Arg Thr Ile Ser Lys
210 215 220

Ala Lys Gly Gln Pro His Glu Pro Gln Val Tyr Val Leu Pro Pro Thr
225 230 235 240

Gln Glu Glu Leu Ser Glu Asn Lys Val Ser Val Thr Cys Leu Ile Lys
245 250 255

Gly Phe His Pro Pro Asp Ile Ala Val Glu Trp Glu Ile Thr Gly Gln
260 265 270

Pro Glu Pro Glu Asn Asn Tyr Gln Thr Thr Pro Pro Gln Leu Asp Ser
275 280 285

Asp Gly Thr Tyr Phe Leu Tyr Ser Arg Leu Ser Val Asp Arg Ser His
290 295 300

Trp Gln Arg Gly Asn Thr Tyr Thr Cys Ser Val Ser His Glu Ala Leu
305 310 315 320

His Ser His His Thr Gln Lys Ser Leu Thr Gln Ser Pro Gly Lys
325 330 335

<210> 6

<211> 330

<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<223> Human IgG1 constant region

<400> 6

Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
1 5 10 15

Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
20 25 30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
50 55 60

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65 70 75 80

Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
85 90 95

Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
100 105 110

Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro
115 120 125

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
130 135 140

Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
145 150 155 160

Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
165 170 175

Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
180 185 190

His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
195 200 205

Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
210 215 220

Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu
225 230 235 240

Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
245 250 255

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
260 265 270

Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
275 280 285

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
290 295 300

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
305 310 315 320

Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
325 330

<210> 7
<211> 1005
<212> DNA
<213> Felis catus

<220>
<221> misc_feature
<223> Feline IgG1b wildtype constant region

<400> 7
gcctccacca cggcccatc ggtgttcca ctggcccca gctgcgggac cacatctggc 60
gccaccgtgg ccctggcctg cctggtgtta ggctacttcc ctgagccggt gaccgtgtcc 120

tggaactccg gcgccctgac cagcgggtgtg cacaccttcc cggccgtcct gcaggcctcg	180
gggctgtact ctctcagcag catggtgaca gtgccctcca gcaggtggct cagtgaacacc	240
ttcacctgca acgtggccca cccgcccagc aacaccaagg tggacaagac cgtgcgcaaa	300
acagaccacc caccgggacc caaacctgc gactgtccca aatgcccacc ccctgagatg	360
cttgaggagc cgtccatctt catctttccc caaaaacca aggacaccct ctcgatttcc	420
cggacgcccg aggtcacatg cttggtggtg gacttgggcc cagatgactc cgatgtccag	480
atcacatggt ttgtggataa caccaggtg tacacagcca agacgagtcc gcgtgaggag	540
cagttcaaca gcacctaccg tgtggtcagt gtcctccca tcctgcacca ggactggctc	600
aaggggaagg agttcaagt caaggtcaac agcaaatccc tcccctcccc catcgagagg	660
accatctcca aggacaaagg acagccccac gagccccagg tgtacgtcct gcctccagcc	720
caggaggagc tcagcaggaa caaagtcagt gtgacctgcc tgatcgaagg cttctacccg	780
tctgacattg ccgtcgagtg ggagatcacc ggacagccgg agccagagaa caactaccgg	840
acgaccccg cccagctgga cagcgacggg acctacttcc tgtacagcag gctctcggtg	900
gacaggtccc gctggcagag gggaaacacc tacacctgct cgggtgtcaca cgaagctctg	960
cacagccacc acacacagaa atccctcacc cagtctccgg gtaaa	1005

<210> 8
 <211> 1005
 <212> DNA
 <213> Felis catus

<220>
 <221> misc_feature
 <223> Feline IgG2 wildtype constant region

<400> 8	
gcctccacca cggcctcatc ggtgttcca ctggcccca gctgcgggac cacatctggc	60
gccaccgtgg ccctggcctg cctggtgtta ggctacttcc ctgagccggt gaccgtgtcc	120
tggaactccg gcgccctgac cagcgggtgtg cacaccttcc catccgtcct gcaggcctcg	180
gggctgtact ctctcagcag catggtgaca gtgccctcca gcaggtggct cagtgaacacc	240
ttcacctgca acgtggccca ccggcccagc agcaccaaag tggacaagac cgtacccaaa	300
acagcgtcta caatagagtc caaaaccggg gaaggtccca aatgcccagt tcctgagatt	360

cctggagcac cgtccgtctt catcttcccc ccaaaaccca aggacaccct ctcgatttcc	420
cggacgcccc aggtcacgtg cttggtggtg gacttgggcc cagatgactc caatgtccag	480
atcacatggt ttgtggataa caccgagatg cacacagcca agacgaggcc gcgtgaggag	540
cagttcaaca gcacctaccg tgtggtcagt gtcctcccca tcctacacca ggactggctc	600
aaggggaagg agttcaagtg caaggtcaac agcaaattccc tcccctctgc catggagagg	660
accatctcca aggccaaagg acagccccac gagccccagg tgtacgtcct gcctccaacc	720
caggaggagc tcagcgagaa caaagtcagt gtgacctgcc tgatcaaagg cttccacccg	780
cctgacattg ccgtcgagtg ggagatcacc ggacagccgg agccagagaa caactaccag	840
acgaccccg cccagctgga cagcgacggg acctacttcc tgtacagcag gctctcggtg	900
gacaggtccc actggcagag gggaaacacc tacacctgct cggtgtcaca cgaagctctg	960
cacagccacc acacacagaa atccctcacc cagtctccgg gtaaa	1005

<210> 9
 <211> 351
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> ZTS-5864 Heavy Chain Variable Region

<400> 9	
gacgtgcaat tgggtggagtc tgggggagac ctggtgaagc ctggggggtc cctgagactc	60
acctgtgtgg cctctggatt caccttcagt gactatgcaa tgagctgggt ccgccaggct	120
ccagggaagg ggctgcagtg ggtcgcaggt attgacagtg ttggaagtgg cacaagctac	180
gcagactccg tgaagggccg attcaccatc tccagagaca atgccaagaa cacgctgtat	240
ctgcagatga acagcctcaa gaccgaggac acggccacat attactgtgc gagcgggttc	300
cctgggtcct ttgagcactg gggccaagga accctggtga cggtctcgag c	351

<210> 10
 <211> 117
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> ZTS-5864 Heavy Chain Variable Region

<400> 10

Asp Val Gln Leu Val Glu Ser Gly Gly Asp Leu Val Lys Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Thr Cys Val Ala Ser Gly Phe Thr Phe Ser Asp Tyr
20 25 30

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

Ala Gly Ile Asp Ser Val Gly Ser Gly Thr Ser Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Thr Tyr Tyr Cys
85 90 95

Ala Ser Gly Phe Pro Gly Ser Phe Glu His Trp Gly Gln Gly Thr Leu
100 105 110

Val Thr Val Ser Ser
115

<210> 11

<211> 5

<212> PRT

<213> Canis familiaris

<400> 11

Asp Tyr Ala Met Ser
1 5

<210> 12

<211> 17

<212> PRT

<213> Canis familiaris

<400> 12

Gly Ile Asp Ser Val Gly Ser Gly Thr Ser Tyr Ala Asp Ser Val Lys

1 5 10 15

Gly

<210> 13
<211> 8
<212> PRT
<213> Canis familiaris

<400> 13

Gly Phe Pro Gly Ser Phe Glu His
1 5

<210> 14
<211> 312
<212> DNA
<213> Artificial Sequence

<220>
<223> ZTS-5864 Light Chain Variable Region

<400> 14
cagtctgtgc tgactcagcc atcctcagtg tctgggaccc taggccagag gatcaccatc 60
tcctgcaccg gaagcagctc caacatcggg agtggttatg tgggctggta tcaacaagtc 120
ccaggaatgg gccccaaaac cgatcatctat tataatagcg accgaccctc tggagtccca 180
gataggttct ccggctccaa gtctggcagc tcaggcaccc tgaccatcac tggattgcag 240
gctgaagacg aggctgacta ttactgttca gtatatgaca gaactttcaa tgctgtgttc 300
ggcggaggga cc 312

<210> 15
<211> 104
<212> PRT
<213> Artificial Sequence

<220>
<223> ZTS-5864 Light Chain Variable Region

<400> 15

Gln Ser Val Leu Thr Gln Pro Ser Ser Val Ser Gly Thr Leu Gly Gln
1 5 10 15

Arg Ile Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Ser Gly
20 25 30

Tyr Val Gly Trp Tyr Gln Gln Val Pro Gly Met Gly Pro Lys Thr Val
35 40 45

Ile Tyr Tyr Asn Ser Asp Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
50 55 60

Gly Ser Lys Ser Gly Ser Ser Gly Thr Leu Thr Ile Thr Gly Leu Gln
65 70 75 80

Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Val Tyr Asp Arg Thr Phe
85 90 95

Asn Ala Val Phe Gly Gly Gly Thr
100

<210> 16
<211> 13
<212> PRT
<213> Canis familiaris

<400> 16

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

<210> 17
<211> 7
<212> PRT
<213> Canis familiaris

<400> 17

Tyr Tyr Asn Ser Asp Arg Pro
1 5

<210> 18
<211> 10
<212> PRT
<213> Canis familiaris

<400> 18

Ser Val Tyr Asp Arg Thr Phe Asn Ala Val

1

5

10