

SEQUENCE LISTING

<110> Humabs BioMed SA

<120> NOVEL ANTIBODIES SPECIFICALLY BINDING TO ZIKA VIRUS EPITOPES AND
USES THEREOF

<130> HB01P028W01

<150> PCT/EP2016/066684

<151> 2016-07-13

<160> 407

<170> PatentIn version 3.5

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Ile Ser Tyr Glu Gly Ser Asn Lys
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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Lys Tyr

20 25 30

Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val

35 40 45

Ala Val Ile Ser Tyr Glu Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val

50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr

65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys

85 90 95

Ala Lys Ser Gly Thr Gln Tyr Tyr Asp Thr Thr Gly Tyr Glu Tyr Arg

100 105 110

Gly Leu Glu Tyr Phe Gly Tyr Trp Gly Gln Gly Thr Leu Val Thr Val

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Ser Ser
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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 Arg Gly Gln Ala Pro Arg Leu Leu
35 40 45

Ile Tyr Asp 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

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85 90 95

Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
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cgtggccagg ctcccaggct cctcatctat gatgcatcca gcagggccac tggcatccca 180

gacagggttca gtggcagtgg gtctgggaca gacttcactc tcaccatcag cagactggag 240

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Phe Asp Pro Ser Asp Ser Gln Thr

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

Trp Ile Thr Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Trp Met
35 40 45

Ala Lys Phe Asp Pro Ser Asp Ser Gln Thr Asn Tyr Ser Pro Ser Phe
50 55 60

Gln Gly His Val Thr Ile Ser Val Asp Lys Ser Ile Ser Thr Ala Tyr
65 70 75 80

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

Ala Arg Arg Tyr Cys Ser Ser Ser Ser Cys Tyr Val Asp Asn Trp Gly
100 105 110

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

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

Glu Asp Asn Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

Ser Ser Gly Thr Met Ala Thr Leu Thr Ile Ser Gly Ala Gln Val Glu
65 70 75 80

Asp Glu Ala Asp Tyr His Cys Tyr Ser Thr Asp Ser Ser Ser Asn Pro
85 90 95

Leu Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
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cccgggaaag gcctggagtg gatggcgaag tttgatccta gtgactctca aaccaactac 180
agcccgtcct tccaaggcca cgtcaccatc tcagttgaca agtccatcag cactgcctac 240
ttgcagtgga gcagcctgaa ggcctcggac accgccatgt attactgtgc gagaagatat 300
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ggcggaggga ccaagctgac cgtcctag	328

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<400> 38

Ile	Tyr	Tyr	Ser	Gly	Ser	Thr
1				5		

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Ala	Arg	Arg	Arg	Lys	Tyr	Asp	Ser	Leu	Trp	Gly	Ser	Phe	Ala	Phe	Asp
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Ile

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Thr Leu Ser Leu Thr Cys Ala Val Ser Gly Gly Ser Ile Ser Ser Asp
20 25 30

Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr Asn Tyr Asn Pro Ser Leu Lys
50 55 60

Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn His Phe Ser Leu
65 70 75 80

Lys Leu Asn Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Arg Arg Lys Tyr Asp Ser Leu Trp Gly Ser Phe Ala Phe Asp Ile
100 105 110

Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
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Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Gly Asn
20 25 30

Tyr Val Tyr Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
35 40 45

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

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

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Thr Trp Asp Asp Ser Leu
85 90 95

Gly Gly Leu Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

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acctgcgcag tctctggtgg ctccatcagt agtgactact ggagctggat ccggcagccc 120
ccagggaagg gactggagtg gattgggtat atctattaca gtgggagcac caactacaac 180
ccctccctca agagtcgagt caccatatca gtagacacgt ccaagaacca cttctccctg 240
aagctgaact ctgtgaccgc tgcggacacg gccgtgtatt actgtgcgag gaggaggaag 300
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gtctcttcag 370

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ccaggaaagg cccccaaact cctcatctgt attaatgac accggccctc aggggtccct 180
gaccgattct ctggctcaa gtctggcacc tcagcctccc tggccatcag tgggctccag 240

tccgaggatg aggctgatta ttactgtgca acatgggatg acagcctggg tggccttgta 300

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

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

Ser Gly Ile Gly Arg Asn Gly Asp Ser Ile Tyr Tyr Thr Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Ser Met Val Tyr
65 70 75 80

Leu Gln Met Ser Ser Leu Arg Thr Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Val Lys Asp Leu Ala Ile Pro Glu Ser Tyr Arg Ile Glu Ala Asp Tyr
100 105 110

Trp Gly Gln Gly Thr Leu Val Ile Val Ser Ala
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<400> 63

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

Ser Asn Asn Lys Asn Tyr Leu Ser Trp Tyr Gln Gln Lys Pro Gly Gln
35 40 45

Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
50 55 60

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
65 70 75 80

Ile Ser Pro Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln
85 90 95

Tyr Tyr Ser Ser Pro Arg Thr Phe Gly Gln Gly Thr Lys Val Glu Ile
100 105 110

Lys

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ctgatctatt gggcttcaac ccgggaa 27

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cctgggaagg gactggagta tgtctctggc atcgggcgca acggggactc tatctactat 180

actgatagt tgaagggccg gttcaccatc agcagagaca atagcaaatc catggtgtac 240

ctgcagatga gctccctgcg aaccgaagac acagcagtgt actattgcgt gaaagatctg 300

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gtgagcgccg 370

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tggtatcagc agaagcccgg acagccccct aaactgctga tctattgggc ttcaacccgg 180

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

His Ile Asp Trp Val Arg Gln Ala Arg Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Arg Ile Asn Pro Asn Ser Gly Gly Thr Asn Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr
65 70 75 80

Met Gln Leu Ser Arg Leu Arg Ser Asp Asp Ser Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Met Ser Ser Ser Ile Trp Gly Phe Asp His Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

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<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA64 VL

<400> 81

Glu Ile Val Met Thr Gln Ser Pro Ala Thr Leu Ser Val Ser Pro Gly
1 5 10 15

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Leu Ile Asn
20 25 30

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

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

Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Ser
65 70 75 80

Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Asn Asp Trp Pro Pro
85 90 95

Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
100 105

<210> 82
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> ZKA64 CDRH1

<400> 82
ggctacacct tcacagggtg tacac 24

<210> 83
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> ZKA64 CDRH2

<400> 83
attaacccta attctggcgg gacc 24

<210> 84
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
 <223> ZKA64 CDRH3

 <400> 84
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 <210> 85
 <211> 18
 <212> DNA
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 <220>
 <223> ZKA64 CDRL1

 <400> 85
 cagtctgtgc tgattaac 18

 <210> 86

 <400> 86
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 <210> 87
 <211> 27
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 <220>
 <223> ZKA64 CDRL2 long

 <400> 87
 ctgatctatg gagcatcctc cagggct 27

 <210> 88
 <211> 30
 <212> DNA
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 <220>
 <223> ZKA64 CDRL3

 <400> 88
 cagcagtaca atgattggcc ccctatcaca 30

 <210> 89
 <211> 358

<212> DNA
<213> Artificial Sequence

<220>
<223> ZKA64 VH

<400> 89
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agctgcaaag cttccggcta caccttcaca gggatcacaca tcgactgggt gaggcaggca 120
agaggacagg gactgggaatg gatgggacgg attaacccta attctggcgg gaccaactac 180
gcccagaagt ttcagggccg agtgactatg accagagaca ccagcatctc cacagcttat 240
atgcagctgt cccggctgag atctgacgat agtgccgtct actattgtgc tcggatgagc 300
tcctctatatt ggggcttcga tcattggggg cagggaacac tgggtgactgt cagttcag 358

<210> 90
<211> 325
<212> DNA
<213> Artificial Sequence

<220>
<223> ZKA64 VL

<400> 90
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ctgtcttgca gagcctccca gtctgtgctg attaacctgg cttggtacca gcagaagcca 120
ggccaggcac cccgactgct gatctatgga gcatcctcca gggctaccgg cattcctgca 180
cgcttcagtg gatcaggaag cggaacagag tttaccctga caatctctag tctgcagtcc 240
gaagacttcg ctgtctacta ttgtcagcag tacaatgatt ggccccctat cacatttggc 300
caggggacta gactggagat caagc 325

<210> 91
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA15 CDRH1

<400> 91

Gly Gly Phe Ile Asn Ser Tyr Tyr
1 5

<210> 92

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKA15 CDRH2

<400> 92

Ile Tyr Lys Ser Gly Ser Thr
1 5

<210> 93

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKA15 CDRH3

<400> 93

Ala Arg Asp Pro Tyr Gly Asp Tyr Val Lys Ala Phe Asp Ile
1 5 10

<210> 94

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKA15 CDRL1

<400> 94

Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr
1 5 10

<210> 95

<400> 95
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<210> 96
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA15 CDRL2 long

<400> 96

Leu Ile Tyr Leu Gly Ser Asn Arg Ala
1 5

<210> 97
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA15 CDRL3

<400> 97

Met Gln Ala Leu Gln Thr Val Thr
1 5

<210> 98
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA15 VH

<400> 98

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Phe Ile Asn Ser Tyr
20 25 30

Tyr Trp Ser Trp Ile Arg Gln Pro Ala Gly Lys Gly Leu Glu Trp Ile

35

40

45

Gly Arg Ile Tyr Lys Ser Gly Ser Thr Asn Tyr Asn Pro Ser Leu Lys
 50 55 60

Ser Arg Val Thr Met Ser Leu Asp Thr Ser Lys Tyr Gln Phe Ser Leu
 65 70 75 80

Lys Leu Arg Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
 85 90 95

Arg Asp Pro Tyr Gly Asp Tyr Val Lys Ala Phe Asp Ile Trp Gly Gln
 100 105 110

Gly Thr Met Val Thr Val Ser Ser
 115 120

<210> 99

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKA15 VL

<400> 99

Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly
 1 5 10 15

Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Ser
 20 25 30

Asn Gly Tyr Asn Tyr Leu Asn Trp Tyr Leu Gln Lys Pro Gly Gln Ser
 35 40 45

Pro Gln Leu Leu Ile Tyr Leu Gly Ser Asn Arg Ala Ser Gly Val Pro
 50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile

65		70		75		80									
Ser	Arg	Val	Glu	Ala	Glu	Asp	Val	Gly	Val	Tyr	Tyr	Cys	Met	Gln	Ala
			85					90						95	

Leu	Gln	Thr	Val	Thr	Phe	Gly	Pro	Gly	Thr	Lys	Val	Asp	Ile	Lys
		100						105					110	

<210> 100
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> ZKA15 CDRH1

<400> 100
 ggtggcttca tcaatagtta ctac 24

<210> 101
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> ZKA15 CDRH2

<400> 101
 atctataaaa gtgggagcac c 21

<210> 102
 <211> 42
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> ZKA15 CDRH3

<400> 102
 gcgagagatc cctacgggtga ctacgttaag gcttttgata tt 42

<210> 103
 <211> 33
 <212> DNA

<213> Artificial Sequence

<220>

<223> ZKA15 CDRL1

<400> 103

cagagcctcc tgcataagtaa tggatacaac tat

33

<210> 104

<400> 104

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<210> 105

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> ZKA15 CDRL2 long

<400> 105

ctgatctatt tgggttctaa tcgggcc

27

<210> 106

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> ZKA15 CDRL3

<400> 106

atgcaagctc taaaactgt cact

24

<210> 107

<211> 361

<212> DNA

<213> Artificial Sequence

<220>

<223> ZKA15 VH

<400> 107

caggtgcagc tgcaggagtc ggggccagga ctggtgaagc cttcggagac cctgtccctc

60

acctgcactg tctccggtgg cttcatcaat agttactact ggagctggat ccggcagccc

120

gccgggaagg gactggagtg gattgggcgt atctataaaa gtgggagcac caactacaac	180
ccctccctca agagtcgagt caccatgtca ctagacacgt ccaagtacca gttctccctg	240
aagctgaggt ctgtgaccgc cgctgacacg gccgtgtatt actgtgagag agatccctac	300
ggtgactacg ttaaggcttt tgatatttgg ggccaaggga caatgggtcac cgtctcttca	360
g	361

<210> 108
 <211> 334
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> ZKA15 VL

<400> 108	
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atctcctgca ggtctagtca gagcctcctg catagtaatg gatacaacta tttgaattgg	120
tacctgcaga agccagggca gtctccacag ctctgatct atttgggttc taatcgggcc	180
tccgggggtcc ctgacagggt cagtggcagt ggatcaggca cagattttac actgaaaatc	240
agcagagtgg aggctgagga tgttgggggt tattactgca tgcaagctct acaaactgtc	300
actttcggcc ctgggaccaa agtggatatc aaac	334

<210> 109
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> ZKA25 CDRH1

<400> 109

Gly	Phe	Thr	Phe	Arg	Ser	His	Trp
1						5	

<210> 110
 <211> 8

<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA25 CDRH2

<400> 110

Ile Lys Glu Asp Gly Tyr Glu Lys
1 5

<210> 111
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA25 CDRH3

<400> 111

Ala Arg Asp Leu Arg Val Tyr Ser Gly Arg Gly Phe Asp Pro
1 5 10

<210> 112
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA25 CDRL1

<400> 112

Lys Leu Gly Asp Lys Tyr
1 5

<210> 113

<400> 113
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<210> 114
<211> 9
<212> PRT
<213> Artificial Sequence

<220>

<223> ZKA25 CDRL2 long

<400> 114

Val Ile Tyr Gln Asp Ser Lys Arg Pro
1 5

<210> 115

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKA25 CDRL3

<400> 115

Gln Ala Trp Asp Ser Ser Thr Val Val
1 5

<210> 116

<211> 121

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKA25 VH

<400> 116

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Arg Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Arg Ser His
20 25 30

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

Ala Asn Ile Lys Glu Asp Gly Tyr Glu Lys Tyr Tyr Val Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr

65		70		75		80									
Leu	Gln	Met	Lys	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys
			85						90					95	
Ala	Arg	Asp	Leu	Arg	Val	Tyr	Ser	Gly	Arg	Gly	Phe	Asp	Pro	Trp	Gly
			100					105					110		
Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser							
		115					120								
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<212>	PRT														
<213>	Artificial Sequence														
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<223>	ZKA25 VL														
<400>	117														
Ser	Tyr	Glu	Leu	Thr	Gln	Pro	Pro	Ser	Leu	Ser	Val	Ser	Pro	Gly	Gln
1				5					10					15	
Thr	Ala	Ser	Ile	Thr	Cys	Ser	Gly	Asp	Lys	Leu	Gly	Asp	Lys	Tyr	Ala
			20					25					30		
Cys	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ser	Pro	Val	Leu	Val	Ile	Tyr
		35					40					45			
Gln	Asp	Ser	Lys	Arg	Pro	Ser	Gly	Ile	Pro	Ala	Arg	Phe	Ser	Gly	Ser
	50					55					60				
Asn	Ser	Gly	Asn	Thr	Ala	Thr	Leu	Thr	Ile	Ser	Gly	Thr	Gln	Ala	Met
65					70					75					80
Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Gln	Ala	Trp	Asp	Ser	Ser	Thr	Val	Val
			85						90					95	
Phe	Gly	Gly	Gly	Thr	Lys	Leu	Thr	Val	Leu						

<210> 118
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> ZKA25 CDRH1

<400> 118
ggattcacct ttagaagtca ttgg

24

<210> 119
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> ZKA25 CDRH2

<400> 119
ataaaggaag atggatatga gaaa

24

<210> 120
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> ZKA25 CDRH3

<400> 120
gcgagagatt tgagggtata tagtgggaga ggtttcgacc cc

42

<210> 121
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> ZKA25 CDRL1

<400> 121
aaattggggg ataaatat

18

<210> 122

<400> 122
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<210> 123

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> ZKA25 CDRL2 long

<400> 123

gtcatctatc aagatagcaa gcggccc

27

<210> 124

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> ZKA25 CDRL3

<400> 124

caggcgtggg acagcagcac tgtggta

27

<210> 125

<211> 364

<212> DNA

<213> Artificial Sequence

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<223> ZKA25 VH

<400> 125

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60

tcctgtgcag cctctggatt cacctttaga agtcattgga tgagttgggt ccgccaggct

120

ccagggaagg ggctggagtg ggtggccaac ataaaggaag atggatatga gaaatactat

180

gtggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctactgtat

240

ctgcaaatga agagcctgag agccgaggac acggccgtgt attactgtgc gagagatttg

300

agggtatata gtgggagagg tttcgacccc tggggccagg gaaccctgggt caccgtctcc

360

tcag

364

<210> 126
<211> 319
<212> DNA
<213> Artificial Sequence

<220>
<223> ZKA25 VL

<400> 126
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acctgctctg gagataaatt gggggataaa tatgcttgct ggtatcagca gaagccaggc 120
cagtccccctg tgttggtcat ctatcaagat agcaagcggc cctcagggat ccctgcgcga 180
ttctctggct ccaactctgg gaacacagcc actctgacca tcagcgggac ccaggctatg 240
gatgaggctg actattactg tcaggcgtgg gacagcagca ctgtggtatt cgggtggaggg 300
accaagctga ccgtcctag 319

<210> 127
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA35 CDRH1

<400> 127

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

<210> 128
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA35 CDRH2

<400> 128

Ile Tyr Tyr Ser Gly Asn Thr
1 5

<210> 129
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA35 CDRH3

<400> 129

Ala Lys Gly Gly Gly Arg Glu Arg Pro Phe Asp Tyr
1 5 10

<210> 130
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA35 CDRL1

<400> 130

Ser Ser Asn Ile Gly Arg Asn Tyr
1 5

<210> 131

<400> 131
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<210> 132
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA35 CDRL2 long

<400> 132

Leu Ile Tyr Arg Asn Asn Gln Arg Pro
1 5

<210> 133
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA35 CDRL3

<400> 133

Val Ala Trp Asp Asp Ser Arg Ser Gly Phe Val Val
1 5 10

<210> 134
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA35 VH

<400> 134

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 Gly Ser Ile Ser Thr Gly
20 25 30

Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro Gly Lys Gly Leu Glu
35 40 45

Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Asn Thr Tyr Tyr Asn Pro Ser
50 55 60

Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Lys Gln Phe
65 70 75 80

Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Ala Lys Gly Gly Gly Arg Glu Arg Pro Phe Asp Tyr Trp Gly Gln

100

105

110

Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 135

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKA35 VL

<400> 135

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

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

Tyr Val Asp Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
 35 40 45

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

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Arg
 65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Val Ala Trp Asp Asp Ser Arg
 85 90 95

Ser Gly Phe Val Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu
 100 105 110

<210> 136

<211> 30

<212> DNA

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<220>
 <223> ZKA35 CDRH1

 <400> 136
 ggtggctcca tcagcactgg tggttactac 30

 <210> 137
 <211> 21
 <212> DNA
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 <220>
 <223> ZKA35 CDRH2

 <400> 137
 atctattaca gtgggaacac c 21

 <210> 138
 <211> 36
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> ZKA35 CDRH3

 <400> 138
 gcgaaaggag gagggaggga gcgacccttt gactac 36

 <210> 139
 <211> 24
 <212> DNA
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 <220>
 <223> ZKA35 CDRL1

 <400> 139
 agctccaaca tcggaagaaa ttat 24

 <210> 140

 <400> 140
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 <210> 141
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<212> DNA
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<220>
<223> ZKA35 CDRL2 long

<400> 141
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27

<210> 142
<211> 36
<212> DNA
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<220>
<223> ZKA35 CDRL3

<400> 142
gtagcatggg atgacagccg gagtggtttt gtggta

36

<210> 143
<211> 361
<212> DNA
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<220>
<223> ZKA35 VH

<400> 143
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60

acctgcactg tctctggtgg ctccatcagc actggtgggtt actactggag ctggatccgc

120

cagcaccag ggaagggcct ggagtggatt ggttacatct attacagtgg gaacacctac

180

tacaacccgt ccctcaagag tcgagttacc atatcagttg acacctctaa gaagcagttc

240

tccctgaagc tgagctctgt gactgccgcg gacacggccg tgtattactg tgcgaaagga

300

ggagggaggg agcgaccctt tgactactgg ggccagggaa ccctgggtcac cgtctcctca

360

g

361

<210> 144
<211> 334
<212> DNA
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<400> 144

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ccaggaacgg cccccaaact cctcatctat aggaataatc agcggccctc aggggtccct      180
gagcgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccgg      240
tccgaggatg aggctgatta ttactgtgta gcatgggatg acagccggag tggttttgtg      300
gtattcggcg gagggaccaa ggtgaccgtc ctag                                     334
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<210> 145

<211> 330

<212> PRT

<213> Artificial Sequence

<220>

<223> IgG1 CH1-CH2-CH3 aa

<400> 145

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1           5           10           15
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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
```

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

Arg 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 Glu Glu
225 230 235 240

Met 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> 146

<211> 330

<212> PRT

<213> Artificial Sequence

<220>

<223> IgG1 CH1-CH2-CH3 LALA aa

<400> 146

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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 Ala Ala 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> 147
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> IgG CK aa

<400> 147

Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
1 5 10 15

Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe
20 25 30

Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
35 40 45

Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
50 55 60

Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu
65 70 75 80

Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
85 90 95

Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
100 105

<210> 148
<211> 106
<212> PRT
<213> Artificial Sequence

<220>

<223> IgG CL aa

<400> 148

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

Glu Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp
20 25 30

Phe Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Ser Ser Pro
35 40 45

Val Lys Ala Gly Val Glu Thr Thr Thr Pro Ser Lys Gln Ser Asn Asn
50 55 60

Lys Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys
65 70 75 80

Ser His Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val
85 90 95

Glu Lys Thr Val Ala Pro Thr Glu Cys Ser
100 105

<210> 149

<211> 990

<212> DNA

<213> Artificial Sequence

<220>

<223> IgG1 CH1-CH2-CH3 nucl

<400> 149

gcgtcgacca agggcccatc ggtcttcccc ctggcaccct cctccaagag cacctctggg 60

ggcacagcgg ccctgggctg cctgggtcaag gactacttcc ccgaacctgt gacgggtctcg 120

tggaactcag ggcacctgac cagcggcgtg cacaccttcc cggctgtcct acagtcctca 180

ggactctact ccctcagcag cgtgggtgacc gtgccctcca gcagcttggg cacccagacc 240

tacatctgca acgtgaatca caagcccagc aacaccaagg tggacaagag agttgagccc 300

aaatcttgtg acaaaaactca cacatgcccc ccgtgcccag cacctgaact cctgggggga	360
ccgtcagtct tcctcttccc cccaaaaccc aaggacaccc tcatgatctc ccggaccct	420
gaggtcacat gcgtgggtgg ggacgtgagc cacgaagacc ctgaggtcaa gttcaactgg	480
tacgtggacg gcgtggaggt gcataatgcc aagacaaagc cgcggggagga gcagtacaac	540
agcacgtacc gtgtggtcag cgtcctcacc gtcctgcacc aggactggct gaatggcaag	600
gagtacaagt gcaagggtctc caacaaagcc ctcccagccc ccatcgagaa aaccatctcc	660
aaagccaaag ggcagccccg agaaccacag gtgtacaccc tgcccccatc ccgggaggag	720
atgaccaaga accaggtcag cctgacctgc ctggtcaaag gcttctatcc cagcgacatc	780
gccgtggagt gggagagcaa tgggcagccg gagaacaact acaagaccac gcctcccggtg	840
ctggactccg acggctcctt cttcctctat agcaagctca ccgtggacaa gagcaggtgg	900
cagcagggga acgtcttctc atgctccgtg atgcatgagg ctctgcacaa ccactacacg	960
cagaagagcc tctccctgtc cccgggtaaa	990

<210> 150

<211> 990

<212> DNA

<213> Artificial Sequence

<220>

<223> IgG1 CH1-CH2-CH3 LALA nucl

<400> 150

gcgtcgacca agggcccatc ggtcttcccc ctggcacctt cctccaagag cacctctggg	60
ggcacagcgg ccctgggctg cctggtcaag gactacttcc ccgaacctgt gacggtctcg	120
tggaactcag gcgccctgac cagcggcgtg cacaccttcc cggctgtcct acagtcctca	180
ggactctact ccctcagcag cgtggtgacc gtgccctcca gcagcttggg caccagacc	240
tacatctgca acgtgaatca caagcccagc aacaccaagg tggacaagag agttgagccc	300
aaatcttgtg acaaaaactca cacatgcccc ccgtgcccag cacctgaagc cgcgggggga	360
ccgtcagtct tcctcttccc cccaaaaccc aaggacaccc tcatgatctc ccggaccct	420
gaggtcacat gcgtgggtgg ggacgtgagc cacgaagacc ctgaggtcaa gttcaactgg	480

tacgtggacg gcgtggaggt gcataatgcc aagacaaagc cgcgggagga gcagtacaac	540
agcacgtacc gtgtggtcag cgtcctcacc gtcctgcacc aggactggct gaatggcaag	600
gagtacaagt gcaaggtctc caacaaagcc ctcccagccc ccatcgagaa aaccatctcc	660
aaagccaaag ggcagccccg agaaccacag gtgtacaccc tgcccccatc ccgggaggag	720
atgaccaaga accaggtcag cctgacctgc ctggtaaag gcttctatcc cagcgacatc	780
gccgtggagt gggagagcaa tgggcagccg gagaacaact acaagaccac gcctcccgtg	840
ctggactccg acggctcctt cttcctctat agcaagctca ccgtggacaa gagcagggtg	900
cagcagggga acgtcttctc atgctccgtg atgcatgagg ctctgcacaa ccactacacg	960
cagaagagcc tctccctgtc cccgggtaaa	990

<210> 151
 <211> 321
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> IgG CK nucl

<400> 151	
cgtaggtgg ctgcaccatc tgtcttcac ttcccgccat ctgatgagca gttgaaatct	60
ggaactgcct ctgttgtgtg cctgctgaat aacttctatc ccagagaggc caaagtacag	120
tggaaggtgg ataacgccct ccaatcgggt aactcccagg agagtgtcac agagcaggac	180
agcaaggaca gcacctacag cctcagcagc accctgacgc tgagcaaagc agactacgag	240
aaacacaaaag tctacgcctg cgaagtcacc catcagggcc tgagctcgcc cgtcacaaag	300
agcttcaaca ggggagagtg t	321

<210> 152
 <211> 318
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> IgG CL nucl

<400> 152
 ggtcagccca aggctgcccc ctcggtcact ctgttccgc cctcctctga ggagcttcaa 60
 gccacaagg ccacactggg gtgtctcata agtgacttct acccgggagc cgtgacagtg 120
 gcttggaag cagatagcag ccccgtaag gcgggagtgg agaccaccac accctccaaa 180
 caaagcaaca acaagtacgc ggccagcagc tatctgagcc tgacgcctga gcagtggaag 240
 tcccacagaa gctacagctg ccaggtcacg catgaaggga gcaccgtgga gaagacagtg 300
 gcccctacag aatgttca 318

<210> 153
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> ZKA10 CDRH1

<400> 153
 Gly Phe Thr Phe Ser Asp Ser Tyr
 1 5

<210> 154
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> ZKA10 CDRH2

<400> 154
 Ile Ser Ser Ser Ser Pro Phe Thr
 1 5

<210> 155
 <211> 17
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> ZKA10 CDRH3

<400> 155

Ala Arg Gly Leu Val Arg Asp Gly Tyr Lys Trp Leu Tyr Phe Phe Asp
1 5 10 15

Tyr

<210> 156

<211> 124

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKA10 VH

<400> 156

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Glu Pro Arg Gly
1 5 10 15

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

Tyr Met Ser Trp Ile Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

Ser Tyr Ile Ser Ser Ser Ser Pro Phe Thr Asn Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Arg Gly Leu Val Arg Asp Gly Tyr Lys Trp Leu Tyr Phe Phe Asp
100 105 110

Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 157
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA18 CDRH1

<400> 157

Gly Phe Thr Phe Ser Ser Tyr Gly
1 5

<210> 158
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA18 CDRH2

<400> 158

Ile Trp Tyr Asp Gly Ser Asn Lys
1 5

<210> 159
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA18 CDRH3

<400> 159

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

<210> 160
<211> 120
<212> PRT
<213> Artificial Sequence

<220>

<223> ZKA18 VH

<400> 160

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15

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

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

Ala Val Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
50 55 60

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

Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asp Asp Ser Gly Tyr Ser Glu Pro Phe Asp Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 161

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKA28 CDRH1

<400> 161

Gly Phe Thr Val Ser Arg Asn Tyr
1 5

<210> 162
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA28 CDRH2

<400> 162

Ile Tyr Ser Gly Gly Ser Thr
1 5

<210> 163
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA28 CDRH3

<400> 163

Ala Arg Trp Ile Asn Asp Ala Phe Asp Ile
1 5 10

<210> 164
<211> 116
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA28 VH

<400> 164

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Ile Gln Pro Gly Gly
1 5 10 15

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

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

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

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

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

Arg Trp Ile Asn Asp Ala Phe Asp Ile Trp Gly Gln Gly Thr Met Val
100 105 110

Thr Val Ser Ser
115

<210> 165
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA29 CDRH1

<400> 165

Gly Phe Thr Phe Ser Arg Tyr Ser
1 5

<210> 166
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA29 CDRH2

<400> 166

Ile Ser Pro Arg Ser Thr Thr Ile
1 5

<210> 167
<211> 15

<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA29 CDRH3

<400> 167

Ala Arg Glu Asp Cys Thr Asn Gly Val Cys Tyr Arg Val Asp Tyr
1 5 10 15

<210> 168
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA29 VH

<400> 168

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

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

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

Ser Tyr Ile Ser Pro Arg Ser Thr Thr Ile Tyr Tyr Ala Asp Ser Val
50 55 60

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

Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Glu Asp Cys Thr Asn Gly Val Cys Tyr Arg Val Asp Tyr Trp
100 105 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 169
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA33 CDRH1

<400> 169

Gly Phe Thr Phe Ser Arg Asn Trp
1 5

<210> 170
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA33 CDRH2

<400> 170

Ile Lys Glu Asp Gly Asn Glu Lys
1 5

<210> 171
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA33 CDRH3

<400> 171

Ala Arg Pro Phe His Gln Gly Gly Tyr Ala Tyr Gly Leu Ala Tyr
1 5 10 15

<210> 172
<211> 122
<212> PRT
<213> Artificial Sequence

<220>

<223> ZKA33 VH

<400> 172

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Arg Asn
20 25 30

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

Ala Asn Ile Lys Glu Asp Gly Asn Glu Lys Tyr Tyr Val Asp Ser Val
50 55 60

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

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

Ala Arg Pro Phe His Gln Gly Gly Tyr Ala Tyr Gly Leu Ala Tyr Trp
100 105 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 173

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKA39 CDRH1

<400> 173

Gly Phe Thr Phe Ser Thr Tyr Ser
1 5

<210> 174
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA39 CDRH2

<400> 174

Ile Ser Pro Ser Ser Ser Thr Ile
1 5

<210> 175
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA39 CDRH3

<400> 175

Ala Arg Glu Tyr Cys Ser Gly Gly Ser Cys Tyr Leu Leu Asp Tyr
1 5 10 15

<210> 176
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA39 VH

<400> 176

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

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

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

Ser Tyr Ile Ser Pro Ser Ser Ser Thr Ile Tyr Tyr Pro Asp Ser Leu
50 55 60

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

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

Ala Arg Glu Tyr Cys Ser Gly Gly Ser Cys Tyr Leu Leu Asp Tyr Trp
100 105 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 177
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA43 CDRH1

<400> 177

Gly Gly Ser Ile Thr Ser Tyr Tyr
1 5

<210> 178
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA43 CDRH2

<400> 178

Ser His Tyr Ser Gly Ser Thr
1 5

<210> 179
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA43 CDRH3

<400> 179

Ala Arg Gly Ile Tyr Ser Gly Lys Asn Trp Phe Asp Pro
1 5 10

<210> 180
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA43 VH

<400> 180

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

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

Tyr Trp Thr Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

Gly Tyr Ser His Tyr Ser Gly Ser Thr Asn Tyr Asn Pro Ser Leu Lys
50 55 60

Ser Arg Val Thr Ile Ser Ile Asp Thr Ser Lys Ser Gln Phe Ser Leu
65 70 75 80

Asn Leu Asn Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Gly Ile Tyr Ser Gly Lys Asn Trp Phe Asp Pro Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 181
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA44 CDRH1

<400> 181

Gly Phe Thr Val Ser Thr Ser Tyr
1 5

<210> 182
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA44 CDRH2

<400> 182

Ile Tyr Ser Ser Gly Ser Thr
1 5

<210> 183
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA44 CDRH3

<400> 183

Ala Arg Val Ser Leu Gly Gly Leu Asp Pro
1 5 10

<210> 184
<211> 116

<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA44 VH

<400> 184

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Ile Gln Pro Gly Gly
1 5 10 15

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

Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

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

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

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

Arg Val Ser Leu Gly Gly Leu Asp Pro Trp Gly Gln Gly Thr Pro Val
100 105 110

Thr Val Ser Ser
115

<210> 185
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA46 CDRH1

<400> 185

Gly Phe Ser Leu Ser Asn Gly Arg Met Gly
1 5 10

<210> 186
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA46 CDRH2

<400> 186

Ile Phe Ser Asn Asp Glu Lys
1 5

<210> 187
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA46 CDRH3

<400> 187

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

<210> 188
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA46 VH

<400> 188

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

Thr Leu Thr Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Ser Asn Gly
20 25 30

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

Trp Leu Ala His Ile Phe Ser Asn Asp Glu Lys Tyr Tyr Ser Thr Ser
50 55 60

Leu Lys Asn Arg Leu Thr Ile Ser Lys Asp Thr Ser Lys Ser Gln Val
65 70 75 80

Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr
85 90 95

Cys Ala Arg Val Glu Phe Arg Ala Gly Asn Tyr Leu Asp Ser Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 189
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA50 CDRH1

<400> 189

Gly Tyr Thr Phe Thr Asn Ser Trp
1 5

<210> 190
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA50 CDRH2

<400> 190

Ile Tyr Pro Gly Asp Ser Asp Thr
1 5

<210> 191
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA50 CDRH3

<400> 191

Ala Arg Gln Pro Phe Phe Asp Tyr
1 5

<210> 192
<211> 115
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA50 VH

<400> 192

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

Ser Leu Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Ser
20 25 30

Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Trp Met
35 40 45

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

Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser Thr Ala Tyr
65 70 75 80

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

Ala Arg Gln Pro Phe Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
100 105 110

Val Ser Ser
115

<210> 193
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA54 CDRH1

<400> 193

Gly Tyr Thr Phe Thr Gly Tyr Tyr
1 5

<210> 194
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA54 CDRH2

<400> 194

Ile Asn Ala Asn Ser Gly Gly Thr
1 5

<210> 195
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA54 CDRH3

<400> 195

Ala His Ser Asp Ile Val Val Val Pro Ser Asp Asp Tyr Tyr Ala Leu
1 5 10 15

Asp Val

<210> 196
<211> 125
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA54 VH

<400> 196

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

Ser Val Lys Val Ser Cys Lys Thr Ser Gly Tyr Thr Phe Thr Gly Tyr
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Trp Ile Asn Ala Asn Ser Gly Gly Thr Asn Phe Ala Gln Arg Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Trp Asp Thr Ser Ile Ser Thr Ala Tyr
65 70 75 80

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

Ala His Ser Asp Ile Val Val Val Pro Ser Asp Asp Tyr Tyr Ala Leu
100 105 110

Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120 125

<210> 197
<211> 8
<212> PRT
<213> Artificial Sequence

<220>

<223> ZKB18 CDRH1

<400> 197

Gly Tyr Ser Phe Thr Ser Tyr Trp
1 5

<210> 198

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKB18 CDRH2

<400> 198

Ile Tyr Pro Gly Asp Ser Asp Thr
1 5

<210> 199

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKB18 CDRH3

<400> 199

Ala Arg Gln Thr Pro Gly Asp Tyr
1 5

<210> 200

<211> 115

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKB18 VH

<400> 200

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

Ser Leu Lys Ile Ser Cys Lys Thr Phe Gly Tyr Ser Phe Thr Ser Tyr
20 25 30

Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Trp Met
35 40 45

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

Gln Gly Gln Val Thr Ile Ser Ala Asp Met Ser Ile Ser Thr Ala Tyr
65 70 75 80

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

Ala Arg Gln Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
100 105 110

Val Ser Ser
115

<210> 201
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB20 CDRH1

<400> 201

Gly Tyr Phe Phe Thr Arg Tyr Val
1 5

<210> 202
<211> 8
<212> PRT
<213> Artificial Sequence

<220>

<223> ZKB20 CDRH2

<400> 202

Ile Asn Thr Asp Asn Gly Ser Thr
1 5

<210> 203

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKB20 CDRH3

<400> 203

Ala Arg Gly Thr Gly Arg Asp Gly Tyr Asn Ser Phe Phe Ala Asn
1 5 10 15

<210> 204

<211> 122

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKB20 VH

<400> 204

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

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

Val Ile Leu Trp Val Arg Gln Ala Pro Gly Gln Arg Pro Glu Trp Met
35 40 45

Gly Trp Ile Asn Thr Asp Asn Gly Ser Thr Arg Tyr Ser Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Thr Lys Asp Thr Ser Ala Thr Thr Ala Tyr
65 70 75 80

Met Asp Leu Ser Ser Leu Lys Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Gly Thr Gly Arg Asp Gly Tyr Asn Ser Phe Phe Ala Asn Trp
100 105 110

Gly Gln Gly Thr Leu Val Thr Val Ser Pro
115 120

<210> 205
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB21 CDRH1

<400> 205

Gly Tyr Thr Phe Thr Gly Tyr Ser
1 5

<210> 206
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB21 CDRH2

<400> 206

Ile Asp Thr Asn Ser Gly Asp Thr
1 5

<210> 207
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB21 CDRH3

<400> 207

Ala Arg Asp Arg Glu Arg His Pro Phe Ser Tyr
1 5 10

<210> 208

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKB21 VH

<400> 208

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

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Gly Tyr
20 25 30

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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr
65 70 75 80

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

Ala Arg Asp Arg Glu Arg His Pro Phe Ser Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 209

<211> 10

<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB23 CDRH1

<400> 209

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

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

<220>
<223> ZKB23 CDRH2

<400> 210

Ile Thr His Ser Gly Thr Thr
1 5

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

<220>
<223> ZKB23 CDRH3

<400> 211

Ala Arg His Phe Gly Trp Phe Asp Pro
1 5

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

<220>
<223> ZKB23 VH

<400> 212

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

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

Asp Tyr Ser Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu
35 40 45

Trp Ile Gly Tyr Ile Thr His Ser Gly Thr Thr Tyr Phe Asn Pro Ser
50 55 60

Leu Lys Ser Arg Val Thr Ile Ser Val Asp Arg Ser Arg Asn Gln Phe
65 70 75 80

Ser Leu Lys Val Thr Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Ala Arg His Phe Gly Trp Phe Asp Pro Trp Gly Gln Gly Thr Leu
100 105 110

Val Thr Val Ser Ser
115

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

<220>
<223> ZKC29 CDRH1

<400> 213

Gly Gly Ser Ile Ser Ser Gly Glu Tyr Phe
1 5 10

<210> 214
<211> 7
<212> PRT
<213> Artificial Sequence

<220>

<223> ZKC29 CDRH2

<400> 214

Ile His Asn Arg Gly Asn Thr
1 5

<210> 215

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKC29 CDRH3

<400> 215

Ala Arg Gly Gly Gly Asp Leu Val Val Val Pro Asp Ser Ile Trp Asp
1 5 10 15

Tyr Tyr Gly Met Asp Val
20

<210> 216

<211> 130

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKC29 VH

<400> 216

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg Pro Ser Gln
1 5 10 15

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Gly
20 25 30

Glu Tyr Phe Trp Thr Trp Ile Arg Gln His Pro Lys Lys Gly Leu Glu
35 40 45

Trp Ile Gly Tyr Ile His Asn Arg Gly Asn Thr Tyr Tyr Asn Pro Ser
50 55 60

Leu Lys Ser Arg Leu Ser Ile Ser Leu Asp Thr Ser Lys Asn His Leu
65 70 75 80

Ser Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Ala Arg Gly Gly Gly Asp Leu Val Val Val Pro Asp Ser Ile Trp
100 105 110

Asp Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
115 120 125

Ser Ser
130

<210> 217
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC31 CDRH1

<400> 217

Gly Gly Ser Ile Ser Ser Gly Gly Tyr His
1 5 10

<210> 218
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC31 CDRH2

<400> 218

Ile Tyr Tyr Ser Gly Ser Thr
1 5

<210> 219
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC31 CDRH3

<400> 219

Ala Arg Asp Arg Ser Glu Pro Gly Glu Tyr His Tyr Tyr Tyr Tyr Ala
1 5 10 15

Met Asp Val

<210> 220
<211> 127
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC31 VH

<400> 220

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 Gly Ser Ile Ser Ser Gly
20 25 30

Gly Tyr His Trp Ser Trp Ile Arg Gln His Pro Gly Lys Gly Leu Glu
35 40 45

Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr Tyr Tyr Asn Pro Ser
50 55 60

Leu Lys Arg Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe
65 70 75 80

Ser Leu Lys Leu Ser Ser Val Ser Ala Ala Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Ala Arg Asp Arg Ser Glu Pro Gly Glu Tyr His Tyr Tyr Tyr Tyr
100 105 110

Ala Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120 125

<210> 221
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC32 CDRH1

<400> 221

Gly Phe Thr Val Ser Ser Asn Tyr
1 5

<210> 222
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC32 CDRH2

<400> 222

Ile Tyr Ser Ser Gly Ser Thr
1 5

<210> 223
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC32 CDRH3

<400> 223

Ala Arg Gly Lys Lys Gly Asn Ala Phe Asp Ile
1 5 10

<210> 224
<211> 117
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC32 VH

<400> 224

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

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

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

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

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

Gln Met Asn Ser Leu Arg Ala Gly Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Gly Lys Lys Gly Asn Ala Phe Asp Ile Trp Gly Gln Gly Thr Val
100 105 110

Val Thr Val Ser Ser
115

<210> 225
<211> 10
<212> PRT
<213> Artificial Sequence

<220>

<223> ZKC33, CDRH1

<400> 225

Gly Asp Ser Ile Ser Ser Arg Thr Phe Ser
1 5 10

<210> 226

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKC33 CDRH2

<400> 226

Ile Tyr Tyr Ser Gly Ser Thr
1 5

<210> 227

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKC33 CDRH3

<400> 227

Ala Arg Arg Asn Ala Glu Phe Phe Ser Phe Trp Ser Tyr Tyr Gly Met
1 5 10 15

Asp Val

<210> 228

<211> 126

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKC33 VH

<400> 228

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 Asp Ser Ile Ser Ser Arg
20 25 30

Thr Phe Ser Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu
35 40 45

Trp Val Gly His Ile Tyr Tyr Ser Gly Ser Thr Asp Tyr Asn Pro Ser
50 55 60

Leu Lys Ser Arg Ile Ser Ile Ser Ile Asp Thr Ser Lys Asn Gln Phe
65 70 75 80

Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Ala Arg Arg Asn Ala Glu Phe Phe Ser Phe Trp Ser Tyr Tyr Gly
100 105 110

Met Asp Val Trp Gly His Gly Thr Ala Val Ile Val Ser Ser
115 120 125

<210> 229

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKC34 CDRH1

<400> 229

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

<210> 230

<211> 7

<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC34 CDRH2

<400> 230

Ile Leu His Ser Gly Asn Thr
1 5

<210> 231
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC34 CDRH3

<400> 231

Ala Arg Ala Gly Asp Tyr Tyr Ser Gly Tyr Val Pro Pro Glu Tyr
1 5 10 15

<210> 232
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC34 VH

<400> 232

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 Ala Val Ser Gly Gly Ser Ile Asn Ser Gly
20 25 30

Gly Tyr Tyr Trp Ser Trp Val Arg Gln His Pro Gly Lys Gly Leu Glu
35 40 45

Trp Ile Gly Tyr Ile Leu His Ser Gly Asn Thr Asn Tyr Asn Pro Ser
50 55 60

Leu Lys Ser Arg Val Asn Ile Phe Val Asp Thr Ser Glu Asn Gln Phe
65 70 75 80

Ser Leu Lys Leu Arg Ser Val Thr Ala Ala Asp Thr Ala Ile Tyr Phe
85 90 95

Cys Ala Arg Ala Gly Asp Tyr Tyr Ser Gly Tyr Val Pro Pro Glu Tyr
100 105 110

Trp Gly Pro Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 233
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD25 CDRH1

<400> 233

Gly Phe Thr Val Ser Ser Asn Tyr
1 5

<210> 234
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD25 CDRH2

<400> 234

Ile Tyr Ser Gly Gly Ser Thr
1 5

<210> 235
<211> 11
<212> PRT
<213> Artificial Sequence

<220>

<223> ZKD25 CDRH3

<400> 235

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

<210> 236

<211> 117

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKD25 VH

<400> 236

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

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

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

Ser Val Ile Tyr Ser Gly Gly Ser Thr Tyr Tyr Ala Asn Ser Val Lys
50 55 60

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

Gln Met Asn Asn Leu Arg Ala Glu Asp Thr Ala Val Tyr Phe Cys Ala
85 90 95

Arg Phe Gly Gly Asn Pro Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu
100 105 110

Val Thr Val Ser Ser
115

<210> 237
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA3 CDRH1

<400> 237

Gly Phe Ile Phe Ser Asn Tyr Ala
1 5

<210> 238
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA3 CDRH2

<400> 238

Ile Gly Gly Lys Gly Asp Ser Ile
1 5

<210> 239
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA3 CDRH3

<400> 239

Val Lys Asp Leu Ala Val Leu Glu Ser Asp Arg Leu Glu Val Asp Gln
1 5 10 15

<210> 240
<211> 123
<212> PRT
<213> Artificial Sequence

<220>

<223> ZKA3 VH

<400> 240

Glu Val Gln Leu Ala Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ser Gly Ser Gly Phe Ile Phe Ser Asn Tyr
20 25 30

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

Ser Gly Ile Gly Gly Lys Gly Asp Ser Ile Tyr His Ile Asp Ser Val
50 55 60

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

Leu Gln Met Ser Arg Leu Arg Thr Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Val Lys Asp Leu Ala Val Leu Glu Ser Asp Arg Leu Glu Val Asp Gln
100 105 110

Trp Gly Gln Gly Thr Leu Val Ile Val Ser Ala
115 120

<210> 241

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKA4 CDRH1

<400> 241

Gly Phe Thr Phe Ser Ser Tyr Val
1 5

<210> 242
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA4 CDRH2

<400> 242

Thr Ser Tyr Asp Gly Ser Asn Lys
1 5

<210> 243
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA4 CDRH3

<400> 243

Ala Arg Gly Pro Val Pro Tyr Trp Ser Gly Glu Ser Tyr Ser Gly Ala
1 5 10 15

Tyr Phe Asp Phe
20

<210> 244
<211> 127
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA4 VH

<400> 244

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15

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

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

Thr Val Thr Ser Tyr Asp Gly Ser Asn Lys Tyr 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 Arg Gly Glu Asp Thr Ala Ile Tyr Tyr Cys
85 90 95

Ala Arg Gly Pro Val Pro Tyr Trp Ser Gly Glu Ser Tyr Ser Gly Ala
100 105 110

Tyr Phe Asp Phe Trp Gly Gln Gly Ile Leu Val Thr Val Ser Ser
115 120 125

<210> 245
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA5 CDRH1

<400> 245

Gly Phe Thr Phe Ser Asn Tyr Tyr
1 5

<210> 246
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA5 CDRH2

<400> 246

Met Ser Ser Ser Glu Thr Ile Lys
1 5

<210> 247
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA5 CDRH3

<400> 247

Ala Arg Ser Gly Ile Glu Thr Val Ala Gly Ser Ile Asp Tyr Tyr Gly
1 5 10 15

Met Asp Val

<210> 248
<211> 126
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA5 VH

<400> 248

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

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

Tyr Met Thr Trp Ile Arg Gln Ala Pro Gly Lys Gly Leu Glu Leu Val
35 40 45

Ser Tyr Met Ser Ser Ser Glu Thr Ile Lys Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Arg Ser Gly Ile Glu Thr Val Ala Gly Ser Ile Asp Tyr Tyr Gly
100 105 110

Met Asp Val Trp Gly His Gly Thr Pro Val Thr Val Ser Ser
115 120 125

<210> 249
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA6 CDRH1

<400> 249

Asp Phe Thr Val Ser Asn Tyr Ala
1 5

<210> 250
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA6 CDRH2

<400> 250

Val Ser Tyr Asp Gly Ser Asn Lys
1 5

<210> 251
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA6 CDRH3

<400> 251

Ala Thr Gly Val Thr Met Phe Gln Gly Ala Gln Thr Asn Ala Glu Tyr
1 5 10 15

Leu His Tyr

<210> 252
<211> 126
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA6 VH

<400> 252

Gln Val His Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15

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

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

Ala Val Val Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Thr Gly Val Thr Met Phe Gln Gly Ala Gln Thr Asn Ala Glu Tyr
100 105 110

Leu His Tyr Trp Gly Gln Gly Ser Leu Val Thr Ile Ser Ser
115 120 125

<210> 253
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA7 CDRH1

<400> 253

Gly Phe Thr Phe Ser Arg Tyr Gly
1 5

<210> 254
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA7 CDRH2

<400> 254

Val Ser Gly Asp Gly Ser Ser Thr
1 5

<210> 255
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA7 CDRH3

<400> 255

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

<210> 256
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA7 VH

<400> 256

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

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

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

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

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

Leu His Met Ser Arg Leu Arg Asp Glu Asp Thr Ala Met Tyr Tyr Cys
85 90 95

Val Lys Asp Phe Trp Ser Gly Asp Gln Ser Leu Glu Ser Asp Phe Trp
100 105 110

Gly Gln Gly Ala Leu Val Thr Val Ser Ser
115 120

<210> 257

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKA8 CDRH1

<400> 257

Gly Phe Thr Phe Ser Ala His Ala
1 5

<210> 258

<211> 8

<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA8 CDRH2

<400> 258

Ile Ser Arg Asn Glu Asp Tyr Thr
1 5

<210> 259
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA8 CDRH3

<400> 259

Val Lys Asp Phe Gly Thr Ser Pro Gln Thr Asp Phe
1 5 10

<210> 260
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA8 VH

<400> 260

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

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

Ala Met His Trp Val Arg Gln Pro Pro Gly Lys Gly Leu Glu Tyr Val
35 40 45

Ser Thr Ile Ser Arg Asn Glu Asp Tyr Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

Leu Gln Met Arg Arg Leu Arg Pro Glu Asp Thr Ala Ile Tyr Tyr Cys
85 90 95

Val Lys Asp Phe Gly Thr Ser Pro Gln Thr Asp Phe Trp Gly Gln Gly
100 105 110

Thr Leu Val Ala Val Ser Ser
115

<210> 261
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA76 CDRH1

<400> 261

Gly Phe Thr Phe Ser Thr Tyr Phe
1 5

<210> 262
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA76 CDRH2

<400> 262

Ile Ser Ser Thr Gly Ser Tyr Lys
1 5

<210> 263
<211> 17
<212> PRT
<213> Artificial Sequence

<220>

<223> ZKA76 CDRH3

<400> 263

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

Ile

<210> 264

<211> 124

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKA76 VH

<400> 264

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

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

Phe Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

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

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

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Phe Tyr Cys
85 90 95

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

Ile Trp Gly Gln Gly Thr Met Leu Thr Val Ser Ser
115 120

<210> 265
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA117 CDRH1

<400> 265

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

<210> 266
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA117 CDRH2

<400> 266

Ile Ser Tyr Ser Gly Ser Thr
1 5

<210> 267
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA117 CDRH3

<400> 267

Ala Arg Leu Asn Asp Gly Ser Thr Val Thr Thr Ser Ser Tyr Phe Asp
1 5 10 15

Tyr

<210> 268
<211> 125
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA117 VH

<400> 268

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Arg Arg Thr
20 25 30

Asn Ser Tyr Trp Gly Trp Ile Arg Gln Thr Thr Gly Lys Gly Leu Gln
35 40 45

Trp Ile Gly Ser Ile Ser Tyr Ser Gly Ser Thr Phe Tyr Asn Pro Ser
50 55 60

Leu Lys Ser Arg Val Thr Ile Ser Leu Asp Thr Ser Lys Asp His Phe
65 70 75 80

Ser Leu Glu Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Ile Tyr Tyr
85 90 95

Cys Ala Arg Leu Asn Asp Gly Ser Thr Val Thr Thr Ser Ser Tyr Phe
100 105 110

Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120 125

<210> 269
<211> 8
<212> PRT
<213> Artificial Sequence

<220>

<223> ZKB27 CDRH1

<400> 269

Gly Tyr Ser Phe Thr Ser Ser Trp
1 5

<210> 270

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKB27 CDRH2

<400> 270

Ile Asp Pro Ser Asp Ser Tyr Thr
1 5

<210> 271

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKB27 CDRH3

<400> 271

Ala Arg His Asp Tyr Ser Val Ser Glu Asn Gly Met Asp Val
1 5 10

<210> 272

<211> 121

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKB27 VH

<400> 272

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

Ser Leu Arg Ile Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Ser Ser
20 25 30

Trp Ile Asn Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Trp Met
35 40 45

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

Gln Gly His Val Thr Ile Ser Val Asp Lys Ser Ile Gly Thr Ala Tyr
65 70 75 80

Leu Gln Trp Asn Ser Leu Arg Ala Ser Asp Thr Ala Met Tyr Tyr Cys
85 90 95

Ala Arg His Asp Tyr Ser Val Ser Glu Asn Gly Met Asp Val Trp Gly
100 105 110

Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 273
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB29 CDRH1

<400> 273

Gly Phe Thr Phe Ser Ser Tyr Thr
1 5

<210> 274
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB29 CDRH2

<400> 274

Ile Ser Tyr Asp Gly Ser His Lys
1 5

<210> 275

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKB29 CDRH3

<400> 275

Ala Arg Arg Ser Tyr Ser Ile Ser Cys Phe Asp Tyr
1 5 10

<210> 276

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKB29 VH

<400> 276

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15

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

Thr Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Val Ile Ser Tyr Asp Gly Ser His Lys Phe Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Arg Arg Ser Tyr Ser Ile Ser Cys Phe Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Ile Ser Ser
115

<210> 277
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB34 CDRH1

<400> 277

Gly Phe Thr Phe Ser Arg Ser Gly
1 5

<210> 278
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB34 CDRH2

<400> 278

Val Ser Tyr Asp Gly Ser Asn Lys
1 5

<210> 279
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB34 CDRH3

<400> 279

Ala Lys Asp Leu Thr Met Val Arg Gly Val His Tyr Tyr Tyr Tyr Val
1 5 10 15

Met Asp Val

<210> 280
<211> 126
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB34 VH

<400> 280

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Arg Ser
20 25 30

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

Ala Val Val Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ser Asp Ser Val
50 55 60

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

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

Ala Lys Asp Leu Thr Met Val Arg Gly Val His Tyr Tyr Tyr Tyr Val
100 105 110

Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120 125

<210> 281
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB39 CDRH1

<400> 281

Gly Tyr Thr Phe Asp Asp Tyr Tyr
1 5

<210> 282
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB39 CDRH2

<400> 282

Ile Asn Pro His Arg Gly Gly Thr
1 5

<210> 283
<211> 23
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB39 CDRH3

<400> 283

Val Arg Asp Gln Tyr Cys Asp Gly Gly Asn Cys Tyr Gly Ile His Gln
1 5 10 15

Pro His Tyr Gly Met Asp Val
20

<210> 284
<211> 130
<212> PRT
<213> Artificial Sequence

<220>

<223> ZKB39 VH

<400> 284

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

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

Tyr Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Leu
35 40 45

Gly Arg Ile Asn Pro His Arg Gly Gly Thr Asn Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Ile Met Thr Leu Asp Met Ser Ile Ser Thr Thr Tyr
65 70 75 80

Met Glu Leu Arg Arg Ile Thr Ser Asp Asp Ala Ala Val Tyr Tyr Cys
85 90 95

Val Arg Asp Gln Tyr Cys Asp Gly Gly Asn Cys Tyr Gly Ile His Gln
100 105 110

Pro His Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
115 120 125

Ser Ser
130

<210> 285

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKB46 CDRH1

<400> 285

Gly Tyr Ser Phe Thr Ser Tyr Trp
1 5

<210> 286

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKB46 CDRH2

<400> 286

Ile Asp Pro Ser Asp Ser Tyr Thr
1 5

<210> 287

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKB46 CDRH3

<400> 287

Ala Arg Arg Glu Tyr Ser Ser Ser Ser Gly Gln Glu Asp Trp Phe Asp
1 5 10 15

Pro

<210> 288

<211> 124

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKB46 VH

<400> 288

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

Ser Leu Arg Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe Thr Ser Tyr
20 25 30

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

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

Gln Gly His Val Thr Ile Ser Ala Asp Lys Ser Ile Ser Thr Ala Tyr
65 70 75 80

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

Ala Arg Arg Glu Tyr Ser Ser Ser Ser Gly Gln Glu Asp Trp Phe Asp
100 105 110

Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 289
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB53 CDRH1

<400> 289

Gly Phe Thr Phe Ser Ser Tyr Ala
1 5

<210> 290
<211> 8
<212> PRT
<213> Artificial Sequence

<220>

<223> ZKB53 CDRH2

<400> 290

Ile Ser Tyr Asp Gly Ser Asn Arg
1 5

<210> 291

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKB53 CDRH3

<400> 291

Ala Arg His Val Glu Gln Leu Pro Ser Ser Gly Tyr Phe Gln His
1 5 10 15

<210> 292

<211> 122

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKB53 VH

<400> 292

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15

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

Ala Met His Trp Val Arg Gln Thr Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

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

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

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

Ala Arg His Val Glu Gln Leu Pro Ser Ser Gly Tyr Phe Gln His Trp
100 105 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 293
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC26 CDRH1

<400> 293

Gly Phe Ile Phe Ser Asp Phe Tyr
1 5

<210> 294
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC26 CDRH2

<400> 294

Ile Gly His Asp Gly Ser Tyr Ile
1 5

<210> 295
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC26 CDRH3

<400> 295

Ala Arg Ala His Gly Gly Phe Arg His
1 5

<210> 296

<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKC26 VH

<400> 296

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ile Phe Ser Asp Phe
20 25 30

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

Ala Tyr Ile Gly His Asp Gly Ser Tyr Ile Leu Tyr Ala Asp Ser Val
50 55 60

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

Leu Arg Met Asn Ser Leu Arg Val Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Ala His Gly Gly Phe Arg His Trp Gly Gln Gly Thr Val Val
100 105 110

Ala Val Ser Pro
115

<210> 297

<211> 8

<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD5 CDRH1

<400> 297

Gly Phe Thr Phe Thr Ser Tyr Gly
1 5

<210> 298
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD5 CDRH2

<400> 298

Ile Ser Tyr Asp Gly Ser Asn Lys
1 5

<210> 299
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD5 CDRH3

<400> 299

Ala Arg Asp Arg Asp His Tyr Asp Leu Trp Asn Ala Tyr Thr Phe Asp
1 5 10 15

Tyr

<210> 300
<211> 124
<212> PRT
<213> Artificial Sequence

<220>

<223> ZKD5 VH

<400> 300

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15

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

Gly Met His Trp Val Arg Gln Thr Pro Gly Lys Gly Leu Asp Trp Val
35 40 45

Ala Val Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Arg Asp Arg Asp His Tyr Asp Leu Trp Asn Ala Tyr Thr Phe Asp
100 105 110

Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 301

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKD7 CDRH1

<400> 301

Gly Phe Thr Phe Ser Asn Tyr Ala
1 5

<210> 302
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD7 CDRH2

<400> 302

Ile Ser Tyr Asp Val Ser Asp Lys
1 5

<210> 303
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD7 CDRH3

<400> 303

Ala Gly Gly Pro Leu Gly Val Val Val Ile Lys Pro Ser Asn Ala Glu
1 5 10 15

His Phe His His
20

<210> 304
<211> 127
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD7 VH

<400> 304

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15

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

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

Ala Val Ile Ser Tyr Asp Val Ser Asp Lys Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Gly Gly Pro Leu Gly Val Val Val Ile Lys Pro Ser Asn Ala Glu
100 105 110

His Phe His His Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120 125

<210> 305
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD8 CDRH1

<400> 305

Gly Phe Thr Phe Ile Asn Tyr Ala
1 5

<210> 306
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD8 CDRH2

<400> 306

Ile Ser Tyr Asp Gly Ser Asn Lys
1 5

<210> 307
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD8 CDRH3

<400> 307

Ala Thr Asp Ala Asp Ala Tyr Gly Asp Ser Gly Ala Asn Phe His Tyr
1 5 10 15

<210> 308
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD8 VH

<400> 308

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ile Asn Tyr
20 25 30

Ala Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Val Ile Ser Tyr Asp Gly Ser Asn Lys Phe Tyr Thr Asp Ser Val
50 55 60

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

Leu Gln Met Asn Ser Leu Arg Ala Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Thr Asp Ala Asp Ala Tyr Gly Asp Ser Gly Ala Asn Phe His Tyr
100 105 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 309
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD15 CDRH1

<400> 309

Asp Ala Ser Ile Ser Ser Gly Gly Phe Ser
1 5 10

<210> 310
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD15 CDRH2

<400> 310

Ile Tyr Ser Ser Gly Asp Thr
1 5

<210> 311
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD15 CDRH3

<400> 311

Ala Arg Ala His Thr Pro Thr Ser Lys Phe Tyr Tyr Tyr Tyr Ala Met
1 5 10 15

Asp Val

<210> 312
<211> 126
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD15 VH

<400> 312

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Asp Ala Ser Ile Ser Ser Gly
20 25 30

Gly Phe Ser Trp Ser Trp Ile Arg Gln Pro Leu Gly Lys Gly Leu Glu
35 40 45

Trp Leu Gly Tyr Ile Tyr Ser Ser Gly Asp Thr Phe Tyr Asn Pro Ser
50 55 60

Leu Gln Gly Arg Val Thr Met Ser Val Asp Ile Phe Arg Ser Gln Phe
65 70 75 80

Ser Leu Lys Leu Thr Ser Val Thr Ala Ala Asp Thr Ala Met Tyr Tyr
85 90 95

Cys Ala Arg Ala His Thr Pro Thr Ser Lys Phe Tyr Tyr Tyr Tyr Ala
100 105 110

Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120 125

<210> 313
<211> 8
<212> PRT
<213> Artificial Sequence

<220>

<223> ZKD16 CDRH1

<400> 313

Gly Phe Thr Phe Ser Asp His Phe
1 5

<210> 314

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKD16 CDRH2

<400> 314

Ser Arg Asn Lys Pro Asn Ser Tyr Thr Thr
1 5 10

<210> 315

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKD16 CDRH3

<400> 315

Ala Lys Val Gly Gly Cys Tyr Gly Gly Asp Cys His Val Glu Asn Asp
1 5 10 15

Tyr

<210> 316

<211> 126

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKD16 VH

<400> 316

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

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

Phe Met Asp Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Gly Arg Ser Arg Asn Lys Pro Asn Ser Tyr Thr Thr Glu Tyr Ala Ala
50 55 60

Ser Val Lys Gly Arg Phe Ser Ile Ser Arg Asp Asp Ser Lys Lys Ala
65 70 75 80

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

Tyr Cys Ala Lys Val Gly Gly Cys Tyr Gly Gly Asp Cys His Val Glu
100 105 110

Asn Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120 125

<210> 317

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKD17 CDRH1

<400> 317

Gly Phe Ile Phe Ser Asp Tyr Ala
1 5

<210> 318

<211> 8

<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD17 CDRH2

<400> 318

Ile Ser Tyr Asp Gly Ser Ser Arg
1 5

<210> 319
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD17 CDRH3

<400> 319

Ala Arg Gly Tyr Cys Ser Ser Gly Thr Cys Phe Ser Thr Asn Ala Glu
1 5 10 15

Tyr Phe His Pro
20

<210> 320
<211> 127
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD17 VH

<400> 320

Gln Val Gln Met Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Thr
1 5 10 15

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

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

Ala Val Ile Ser Tyr Asp Gly Ser Ser Arg Leu Tyr Ala Asp Ser Val
50 55 60

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

Leu Gln Met His Ser Leu Arg Ala Gly Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Gly Tyr Cys Ser Ser Gly Thr Cys Phe Ser Thr Asn Ala Glu
100 105 110

Tyr Phe His Pro Trp Gly Gln Gly Thr Leu Ala Thr Ile Ser Ser
115 120 125

<210> 321
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD20 CDRH1

<400> 321

Gly Phe Thr Phe Ser Asp His Phe
1 5

<210> 322
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD20 CDRH2

<400> 322

Ser Arg Asn Lys Pro Asn Ser Tyr Thr Thr
1 5 10

<210> 323
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD20 CDRH3

<400> 323

Ala Arg Val Gly Gly Cys Asn Gly Gly Asp Cys His Val Glu Asn Asp
1 5 10 15

Tyr

<210> 324
<211> 126
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD20 VH

<400> 324

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

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

Phe Met Asp Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Gly Arg Ser Arg Asn Lys Pro Asn Ser Tyr Thr Thr Glu Tyr Ala Ala
50 55 60

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Ser
65 70 75 80

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

Tyr Cys Ala Arg Val Gly Gly Cys Asn Gly Gly Asp Cys His Val Glu
100 105 110

Asn Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120 125

<210> 325
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA134 CDRH1

<400> 325

Gly Gly Thr Phe Ser Ala Tyr Ala
1 5

<210> 326
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA134 CDRH2

<400> 326

Ile Ile Pro Phe Phe Gly Thr Ala
1 5

<210> 327
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA134 CDRH3

<400> 327

Ala Arg Ser Asp Ile Val Ser Thr Thr Arg Gly Tyr His His Tyr Gly
1 5 10 15

Met Asp Val

<210> 328
<211> 126
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA134 VH

<400> 328

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

Ser Val Asn Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Ser Ala Tyr
20 25 30

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

Gly Gly Ile Ile Pro Phe Phe Gly Thr Ala Tyr Tyr Ala Gln Lys Phe
50 55 60

Lys Gly Arg Val Thr Val Thr Ala Asp Lys Ser Thr Ser Thr Val Tyr
65 70 75 80

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

Ala Arg Ser Asp Ile Val Ser Thr Thr Arg Gly Tyr His His Tyr Gly
100 105 110

Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120 125

<210> 329
<211> 8

<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA246 CDRH1

<400> 329

Gly Tyr Thr Phe Ser Asp Tyr Tyr
1 5

<210> 330
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA246 CDRH2

<400> 330

Ile Asn Pro Tyr Ser Gly Gly Thr
1 5

<210> 331
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA246 CDRH3

<400> 331

Ala Arg Gly Phe Thr Met Ile Ser Asp Arg Glu Phe Asp Pro
1 5 10

<210> 332
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA246 VH

<400> 332

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

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

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Arg Ile Asn Pro Tyr Ser Gly Gly Thr Asn Tyr Ala Gln Lys Phe
50 55 60

His Gly Arg Val Thr Val Thr Arg Asp Thr Ser Ile Ser Thr Val Tyr
65 70 75 80

Met Glu Leu Arg Gly Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Gly Phe Thr Met Ile Ser Asp Arg Glu Phe Asp Pro Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 333
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA256 CDRH1

<400> 333

Gly Phe Thr Phe Ser Thr Tyr Trp
1 5

<210> 334
<211> 8
<212> PRT
<213> Artificial Sequence

<220>

<223> ZKA256 CDRH2

<400> 334

Ile Lys Gln Asp Gly Ser Glu Lys
1 5

<210> 335

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKA256 CDRH3

<400> 335

Ala Arg Asp Pro Gly Tyr Asp Asp Phe Trp Ser Gly Ser Tyr Ser Gly
1 5 10 15

Ser Phe Asp Ile
20

<210> 336

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKA256 VH

<400> 336

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

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

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

Ala Asn Ile Lys Gln Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val
50 55 60

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

Leu Gln Val Asn Ser Leu Arg Ala Glu Asp Thr Ala Ile Tyr Tyr Cys
85 90 95

Ala Arg Asp Pro Gly Tyr Asp Asp Phe Trp Ser Gly Ser Tyr Ser Gly
100 105 110

Ser Phe Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 337
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB42 CDRH1

<400> 337

Gly Phe Thr Phe Asn Asn Tyr Gly
1 5

<210> 338
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB42 CDRH2

<400> 338

Ile Ser Tyr Asp Gly Asn Lys Lys
1 5

<210> 339
<211> 16

<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB42 CDRH3

<400> 339

Val Lys Tyr Gly Glu Arg Ile Asn Gly Tyr Ser Asp Pro Phe Asp His
1 5 10 15

<210> 340
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB42 VH

<400> 340

Gln Val Gln Val Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15

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

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

Ala Leu Ile Ser Tyr Asp Gly Asn Lys Lys Tyr Tyr Ala Asp Ser Val
50 55 60

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

Leu Gln Met Asn Arg Leu Arg Ser Gly Asp Thr Ala Val Tyr His Cys
85 90 95

Val Lys Tyr Gly Glu Arg Ile Asn Gly Tyr Ser Asp Pro Phe Asp His
100 105 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 341
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB85 CDRH1

<400> 341

Gly Tyr Thr Phe Thr Thr Tyr Ala
1 5

<210> 342
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB85 CDRH2

<400> 342

Ile Asn Thr Asn Thr Gly Asn Pro
1 5

<210> 343
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB85 CDRH3

<400> 343

Ala Arg Val Ile Val Pro Tyr Ala Phe Asp Ile
1 5 10

<210> 344
<211> 118
<212> PRT
<213> Artificial Sequence

<220>

<223> ZKB85 VH

<400> 344

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

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Thr Tyr
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Pro Glu Trp Val
35 40 45

Gly Trp Ile Asn Thr Asn Thr Gly Asn Pro Thr Tyr Ala Gln Gly Phe
50 55 60

Thr Gly Arg Phe Val Leu Ser Leu Asp Thr Ser Val Ser Thr Ala Phe
65 70 75 80

Leu Gln Ile Ser Ser Leu Lys Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Val Ile Val Pro Tyr Ala Phe Asp Ile Trp Gly Gln Gly Thr
100 105 110

Met Val Thr Val Ser Ser
115

<210> 345

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKB47 CDRH1

<400> 345

Gly Tyr Thr Phe Thr Asn Tyr Tyr
1 5

<210> 346
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB47 CDRH2

<400> 346

Ile Asn Pro Ser Gly Gly Pro Thr
1 5

<210> 347
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB47 CDRH3

<400> 347

Ala Arg Asp Gln Tyr Gly Gly Tyr Ala Arg Tyr Gly Met Asp Val
1 5 10 15

<210> 348
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB47 VH

<400> 348

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

Ser Val Lys Val Ser Cys Gln Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Ile Ile Asn Pro Ser Gly Gly Pro Thr Ser Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Val Tyr
65 70 75 80

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

Ala Arg Asp Gln Tyr Gly Gly Tyr Ala Arg Tyr Gly Met Asp Val Trp
100 105 110

Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 349
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC6 CDRH1

<400> 349

Gly Tyr Thr Phe Thr Gly Tyr Tyr
1 5

<210> 350
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC6 CDRH2

<400> 350

Ile Asn Pro Asn Ser Gly Gly Thr
1 5

<210> 351
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC6 CDRH3

<400> 351

Ala Arg Val Ser Asp Trp Gly Phe Ala Phe Asp Ile
1 5 10

<210> 352
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC6 VH

<400> 352

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

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Gly Tyr
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Arg Ile Asn Pro Asn Ser Gly Gly Thr Asn Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr
65 70 75 80

Met Glu Leu Ser Gly Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Val Ser Asp Trp Gly Phe Ala Phe Asp Ile Trp Gly Gln Gly
100 105 110

Thr Met Val Thr Val Ser Gln
115

<210> 353
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA160 CDRH1

<400> 353

Gly Gly Ser Ile Thr Ser Tyr Ser
1 5

<210> 354
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA160 CDRH2

<400> 354

Ile Phe Tyr Ser Gly Ser Thr
1 5

<210> 355
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA160 CDRH3

<400> 355

Ala Arg Asp Gln Thr Met Pro Val Trp Val Gly Gly Met Asp Val
1 5 10 15

<210> 356
<211> 121

<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA160 VH

<400> 356

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

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

Ser Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

Gly Tyr Ile Phe Tyr Ser Gly Ser Thr Asp Tyr Asn Pro Ser Leu Lys
50 55 60

Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asp Gln Phe Ser Leu
65 70 75 80

Arg Leu Arg Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Asp Gln Thr Met Pro Val Trp Val Gly Gly Met Asp Val Trp Gly
100 105 110

Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 357
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA172 CDRH1

<400> 357

Gly Tyr Ile Phe Thr Arg Tyr Trp
1 5

<210> 358
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA172 CDRH2

<400> 358

Ile Asp Pro Ser Asp Ser Tyr Thr
1 5

<210> 359
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA172 CDRH3

<400> 359

Ala Arg Gln Glu Thr Ala Arg Glu Asp Gly Met Ala Val
1 5 10

<210> 360
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA172 VH

<400> 360

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

Ser Leu Arg Ile Ser Cys Lys Gly Ser Gly Tyr Ile Phe Thr Arg Tyr
20 25 30

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

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

Gln Gly His Val Thr Ile Ser Ala Asp Lys Ser Ile Ser Thr Ala Tyr
65 70 75 80

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

Ala Arg Gln Glu Thr Ala Arg Glu Asp Gly Met Ala Val Trp Gly Gln
100 105 110

Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 361
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA174 CDRH1

<400> 361

Gly Gly Ser Met Ser Asn Ser Tyr Tyr His
1 5 10

<210> 362
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA174 CDRH2

<400> 362

Ile Tyr Tyr Ser Gly Ser Thr
1 5

<210> 363
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA174 CDRH3

<400> 363

Ala Arg Asn Pro Val Phe Asn Pro Leu Thr Leu Thr His Asp Ala Phe
1 5 10 15

Asp Ile

<210> 364
<211> 126
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA174 VH

<400> 364

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Met Ser Asn Ser
20 25 30

Tyr Tyr His Trp Gly Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu
35 40 45

Trp Ile Gly Ser Ile Tyr Tyr Ser Gly Ser Thr Tyr Tyr Asn Pro Ser
50 55 60

Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe
65 70 75 80

Ser Leu Lys Leu Asn Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Ala Arg Asn Pro Val Phe Asn Pro Leu Thr Leu Thr His Asp Ala
100 105 110

Phe Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 365
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA189 CDRH1

<400> 365

Gly Phe Thr Phe Ser Ser Tyr Ala
1 5

<210> 366
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA189 CDRH2

<400> 366

Ile Ser Gly Ser Gly Asp Asn Thr
1 5

<210> 367
<211> 18
<212> PRT
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<220>
<223> ZKA189 CDRH3

<400> 367

Ala Lys Trp Pro Tyr Tyr Asp Phe Trp Ser Gly Ser Glu Ser Tyr Phe
1 5 10 15

Asp Pro

<210> 368
<211> 125
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA189 VH

<400> 368

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

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

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

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

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

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

Ala Lys Trp Pro Tyr Tyr Asp Phe Trp Ser Gly Ser Glu Ser Tyr Phe
100 105 110

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120 125

<210> 369
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA195 CDRH1

<400> 369

Gly Tyr Asn Phe Pro Ser Tyr Trp
1 5

<210> 370
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA195 CDRH2

<400> 370

Ile Asp Pro Ser Asp Ser Tyr Thr
1 5

<210> 371
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA195 CDRH3

<400> 371

Ala Arg Ala Asp Cys Arg Ser Thr Ser Cys Tyr Leu Val Phe Glu
1 5 10 15

<210> 372
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA195 VH

<400> 372

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

Ser Leu Arg Ile Ser Cys Lys Asp Ser Gly Tyr Asn Phe Pro Ser Tyr
20 25 30

Trp Ile His Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Trp Met
35 40 45

Gly Thr Ile Asp Pro Ser Asp Ser Tyr Thr Asn Tyr Ser Pro Ser Phe
50 55 60

Gln Gly His Val Thr Ile Ser Ala Asp Lys Ser Ile Ser Thr Ala Tyr
65 70 75 80

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

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

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 373

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKA215 CDRH1

<400> 373

Gly Tyr Thr Phe Thr Ser Tyr Trp
1 5

<210> 374

<211> 8

<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA215 CDRH2

<400> 374

Ile Asp Pro Ser Asp Ser His Thr
1 5

<210> 375
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA215 CDRH3

<400> 375

Ala Arg His Ala Leu Pro Asn Tyr Phe Asp Ser
1 5 10

<210> 376
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA215 VH

<400> 376

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

Ser Leu Arg Ile Ser Cys Lys Gly Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

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

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

Gln Gly His Val Thr Ile Ser Ala Asp Lys Ser Ile Ser Ala Ala Tyr
65 70 75 80

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

Ala Arg His Ala Leu Pro Asn Tyr Phe Asp Ser Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 377
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA218 CDRH1

<400> 377

Gly Phe Pro Phe Ser Ser Tyr Trp
1 5

<210> 378
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKA218 CDRH2

<400> 378

Ile Asn Ser Asp Gly Arg Asn Thr
1 5

<210> 379
<211> 15
<212> PRT
<213> Artificial Sequence

<220>

<223> ZKA218 CDRH3

<400> 379

Ala Arg Gly Gly Tyr Asp Tyr Asp Ser Ser Gly Cys Phe Asp Tyr
1 5 10 15

<210> 380

<211> 122

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKA218 VH

<400> 380

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Pro Phe Ser Ser Tyr
20 25 30

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

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

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

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

Ala Arg Gly Gly Tyr Asp Tyr Asp Ser Ser Gly Cys Phe Asp Tyr Trp
100 105 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 381
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB75 CDRH1

<400> 381

Gly Phe Thr Phe Ser Asn Tyr Ala
1 5

<210> 382
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB75 CDRH2

<400> 382

Ile Ser Gly Thr Gly Gly Ser Thr
1 5

<210> 383
<211> 25
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB75 CDRH3

<400> 383

Ala Lys Asp Ser Ala Ser Arg Gly Gly Tyr Cys Ser Gly Gly Val Cys
1 5 10 15

Tyr Leu Asn Pro Gly His His Asp Tyr
20 25

<210> 384
<211> 132

<212> PRT
<213> Artificial Sequence

<220>
<223> ZKB75 VH

<400> 384

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

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

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

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

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

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

Ala Lys Asp Ser Ala Ser Arg Gly Gly Tyr Cys Ser Gly Gly Val Cys
100 105 110

Tyr Leu Asn Pro Gly His His Asp Tyr Trp Gly Gln Gly Thr Leu Val
115 120 125

Thr Val Ser Ser
130

<210> 385
<211> 8
<212> PRT
<213> Artificial Sequence

<220>

<223> ZKB83 CDRH1

<400> 385

Gly Tyr Ser Phe Thr Asn Tyr Trp
1 5

<210> 386

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKB83 CDRH2

<400> 386

Ile Asp Pro Ser Asp Ser Tyr Thr
1 5

<210> 387

<211> 27

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKB83 CDRH3

<400> 387

Ala Arg Leu Arg Gly Ser Leu Tyr Cys Ser Gly Gly Arg Cys Tyr Ser
1 5 10 15

Val Pro Gly Glu Thr Pro Asn Trp Phe Asp Pro
20 25

<210> 388

<211> 134

<212> PRT

<213> Artificial Sequence

<220>

<223> ZKB83 VH

<400> 388

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

Ser Leu Arg Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe Thr Asn Tyr
20 25 30

Trp Ile Thr Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Trp Met
35 40 45

Gly Ser Ile Asp Pro Ser Asp Ser Tyr Thr Asn Tyr Ser Pro Ser Phe
50 55 60

Gln Gly His Val Thr Ile Ser Ala Asp Trp Ser Ile Asn Thr Ala Tyr
65 70 75 80

Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Lys Tyr Tyr Cys
85 90 95

Ala Arg Leu Arg Gly Ser Leu Tyr Cys Ser Gly Gly Arg Cys Tyr Ser
100 105 110

Val Pro Gly Glu Thr Pro Asn Trp Phe Asp Pro Trp Gly Gln Gly Thr
115 120 125

Leu Val Thr Val Ser Ser
130

<210> 389
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC3 CDRH1

<400> 389

Gly Gly Ser Ile Thr Ser Tyr Tyr
1 5

<210> 390
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC3 CDRH2

<400> 390

Ile Tyr Tyr Ser Gly Ser Thr
1 5

<210> 391
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC3 CDRH3

<400> 391

Ala Arg Val Gly Gly Ala Pro Tyr Tyr Tyr Gly Met Asp Val
1 5 10 15

<210> 392
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC3 VH

<400> 392

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

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

Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr Asn Tyr Asn Pro Ser Leu Lys
50 55 60

Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu
65 70 75 80

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Val Gly Gly Ala Pro Tyr Tyr Tyr Tyr Gly Met Asp Val Trp Gly
100 105 110

Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 393
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC18 CDRH1

<400> 393

Gly Phe Thr Phe Gly Asp Tyr Ala
1 5

<210> 394
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC18 CDRH2

<400> 394

Ile Arg Ser Lys Ala Tyr Gly Gly Thr Thr
1 5 10

<210> 395
<211> 13

<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC18 CDRH3

<400> 395

Ser Arg Asp His Thr Gly Thr Thr Tyr Ala Phe Asp Ile
1 5 10

<210> 396
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKC18 VH

<400> 396

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
1 5 10 15

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

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

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

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Ser Ile
65 70 75 80

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

Tyr Cys Ser Arg Asp His Thr Gly Thr Thr Tyr Ala Phe Asp Ile Trp
100 105 110

Gly Gln Gly Thr Met Val Thr Val Ser Gln
115 120

<210> 397
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD1 CDRH1

<400> 397

Gly Phe Thr Phe Ser Ser Tyr Gly
1 5

<210> 398
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD1 CDRH2

<400> 398

Ile Trp Tyr Asp Gly Ser Asn Lys
1 5

<210> 399
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD1 CDRH3

<400> 399

Ala Arg Asp Arg Arg Gly Tyr Gly Asp Tyr Val Gly Tyr Tyr Tyr Gly
1 5 10 15

Met Asp Val

<210> 400
<211> 126
<212> PRT
<213> Artificial Sequence

<220>
<223> ZKD1 VH

<400> 400

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15

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

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

Ala Val Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Arg Asp Arg Arg Gly Tyr Gly Asp Tyr Val Gly Tyr Tyr Tyr Gly
100 105 110

Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120 125

<210> 401
<211> 95
<212> PRT
<213> Zika virus

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<222> (13)..(14)
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<222> (25)..(25)
<223> Xaa can be any naturally occurring amino acid

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<222> (27)..(27)
<223> Xaa can be any naturally occurring amino acid

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<222> (33)..(33)
<223> Xaa can be any naturally occurring amino acid

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<222> (35)..(35)
<223> Xaa can be any naturally occurring amino acid

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<222> (41)..(41)
<223> Xaa can be any naturally occurring amino acid

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<222> (60)..(60)
<223> Xaa can be any naturally occurring amino acid

<220>
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<222> (83)..(83)
<223> Xaa can be any naturally occurring amino acid

<220>
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<222> (85)..(85)

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<400> 401

Thr	Ala	Ala	Phe	Thr	Phe	Thr	Lys	Xaa	Pro	Ala	Glu	Xaa	Xaa	His	Gly
1				5					10					15	

Thr	Val	Thr	Val	Glu	Xaa	Gln	Tyr	Xaa	Gly	Xaa	Asp	Gly	Pro	Cys	Lys
			20					25					30		

Xaa	Pro	Xaa	Gln	Met	Ala	Val	Asp	Xaa	Gln	Thr	Leu	Thr	Pro	Val	Gly
		35					40					45			

Arg	Leu	Ile	Thr	Ala	Asn	Pro	Val	Ile	Thr	Glu	Xaa	Thr	Glu	Asn	Ser
	50					55					60				

Lys	Met	Met	Leu	Glu	Leu	Asp	Pro	Pro	Phe	Gly	Asp	Ser	Tyr	Ile	Val
65					70					75					80

Ile	Gly	Xaa	Gly	Xaa	Lys	Lys	Ile	Thr	His	His	Trp	His	Arg	Ser	
				85					90					95	

<210> 402

<211> 95

<212> PRT

<213> Zika virus

<400> 402

Thr	Ala	Ala	Phe	Thr	Phe	Thr	Lys	Ile	Pro	Ala	Glu	Thr	Leu	His	Gly
1				5					10					15	

Thr	Val	Thr	Val	Glu	Val	Gln	Tyr	Ala	Gly	Thr	Asp	Gly	Pro	Cys	Lys
			20					25					30		

Val	Pro	Ala	Gln	Met	Ala	Val	Asp	Met	Gln	Thr	Leu	Thr	Pro	Val	Gly
		35					40					45			

Arg	Leu	Ile	Thr	Ala	Asn	Pro	Val	Ile	Thr	Glu	Ser	Thr	Glu	Asn	Ser
	50					55					60				

Lys Met Met Leu Glu Leu Asp Pro Pro Phe Gly Asp Ser Tyr Ile Val
65 70 75 80

Ile Gly Val Gly Glu Lys Lys Ile Thr His His Trp His Arg Ser
85 90 95

<210> 403
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> ZIKV-NS1 forward primer

<400> 403
tggagttcaa ctgacggtcg 20

<210> 404
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> ZIKV-NS1-reverse primer

<400> 404
taccccgaac ccatgadcct 20

<210> 405
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Gapdh- forward primer

<400> 405
ggcaagttca aaggcacagt c 21

<210> 406
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Gapdh-reverse primer

<400> 406
caccagcatc accccattt

19

<210> 407
<211> 104
<212> PRT
<213> Artificial Sequence

<220>
<223> ZIKV EDIII generic

<220>
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<222> (1)..(1)
<223> X may be any (naturally occurring) amino acid, preferably K, A,
or E

<220>
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<222> (3)..(3)
<223> X may be any (naturally occurring) amino acid, preferably V, F,
or L

<220>
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<222> (4)..(4)
<223> X may be any (naturally occurring) amino acid, preferably S or F

<220>
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<222> (17)..(17)
<223> X may be any (naturally occurring) amino acid, preferably I or V

<220>
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<222> (21)..(21)
<223> X may be any (naturally occurring) amino acid, preferably T or V

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<222> (22)..(22)
<223> X may be any (naturally occurring) amino acid, preferably L or D

<220>

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<222> (30)..(30)
<223> X may be any (naturally occurring) amino acid, preferably V or G

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<222> (33)..(33)
<223> X may be any (naturally occurring) amino acid, preferably A or G

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<222> (35)..(35)
<223> X may be any (naturally occurring) amino acid except R,
preferably T or A

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<222> (41)..(41)
<223> X may be any (naturally occurring) amino acid, preferably V or I

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<222> (43)..(43)
<223> X may be any (naturally occurring) amino acid, preferably A or V

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<222> (49)..(49)
<223> X may be any (naturally occurring) amino acid, preferably M or T

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<222> (68)..(68)
<223> X may be any (naturally occurring) amino acid, preferably S or G

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<222> (70)..(70)
<223> X may be any (naturally occurring) amino acid, preferably E or K

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<222> (91)..(91)
<223> X may be any (naturally occurring) amino acid, preferably V or I

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<222> (93)..(93)
<223> X may be any (naturally occurring) amino acid, preferably E, A,
K, or D

<220>

<221> misc_feature

<222> (94)..(94)

<223> X may be any (naturally occurring) amino acid, preferably E, A,
or K, more preferably K or A

<400> 407

Xaa	Gly	Xaa	Xaa	Tyr	Ser	Leu	Cys	Thr	Ala	Ala	Phe	Thr	Phe	Thr	Lys
1				5					10					15	

Xaa	Pro	Ala	Glu	Xaa	Xaa	His	Gly	Thr	Val	Thr	Val	Glu	Xaa	Gln	Tyr
			20					25					30		

Xaa	Gly	Xaa	Asp	Gly	Pro	Cys	Lys	Xaa	Pro	Xaa	Gln	Met	Ala	Val	Asp
		35					40					45			

Xaa	Gln	Thr	Leu	Thr	Pro	Val	Gly	Arg	Leu	Ile	Thr	Ala	Asn	Pro	Val
	50					55					60				

Ile	Thr	Glu	Xaa	Thr	Xaa	Asn	Ser	Lys	Met	Met	Leu	Glu	Leu	Asp	Pro
65					70					75					80

Pro	Phe	Gly	Asp	Ser	Tyr	Ile	Val	Ile	Gly	Xaa	Gly	Xaa	Xaa	Lys	Ile
				85					90					95	

Thr	His	His	Trp	His	Arg	Ser	Gly
			100				