

SEQUENCE LISTING

<110> AMGEN INC.

<120> ANTI-JAGGED1 ANTIGEN BINDING PROTEINS

<130> A-2156-WO-PCT

<140> PCT/US 18/XXXXXX

<141> 2018-05-30

<150> 62/512,805

<151> 2017-05-31

<160> 358

<170> PatentIn version 3.5

<210> 1

<211> 321

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 1

gacatccaga tgacccagtc tccatcttcc gtgtctgcat ctgtaggaga cagagtcacc 60

atcacttgtc gggcgagtca ggggtattagc gactgggtag cctgggtatca gcagaaacca 120

gggaaagccc ctaagctcct gatctttgct gcatccagtt tgcaaagtgg ggtcccatcc 180

aggttcagcg gcagtgaatc tgggacagat ttactctca ccatcagcag cctgcagcct 240

gaagattttg caacttacta ttgtcaacag gctaacagtt tcccgatcac cttcggccaa 300

gggacacgac tggagattca a 321

<210> 2

<211> 357

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 2

caggtgcagc tgggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60

<210> 4
<211> 119
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 4

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 Glu 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 His Asp His Ser His Tyr Gly Phe Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 5
<211> 330
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 5
cagtctgccc tgactcagcc tgcctccgtg tctgggtctc ctggacagtc gatcaccatc 60
tcctgcactg gaaccagcag tgccgttggg ggtcataact ttgtctcctg gtaccaacag 120
taccaggca aagcccccaa actcatgatt tatgagggtca gtaatcggcc ctcaggggtt 180
tctactcgct tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc 240
caggctgagg acgaggctga ttattactgc agctcttata caagcagcag cacttgggtg 300
ttcggcggag ggaccaggct gaccgtccta 330

<210> 6
<211> 360
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 6
caggtcacct tgaaggagtc tggctctgtg ctggtgaaac ccacagagac cctcacgctg 60
acctgcaccg tctctgggtt ctactcagc aatgctgaaa tgggtgtgag ctggatccgt 120
cagccccag ggaaggccct ggagtggctt gcacaccttt tttcgaatga cgaaaaatcc 180
tacagcacat ctctgaagag caggctcacc atctccaagg acacctcaa aagccagggtg 240
gtccttacca tgaccgacct ggaccctgtg gacacagcca cctattactg tgcacggctg 300
tttaactgga actacgactt tgactactgg ggccagggaa ccctgggtcac cgtctcctca 360

<210> 7
<211> 110
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 7

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

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

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

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

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

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Thr Ser Ser
85 90 95

Ser Thr Trp Val Phe Gly Gly Gly Thr Arg Leu Thr Val Leu
100 105 110

<210> 8

<211> 120

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 8

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 Ala
20 25 30

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

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

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

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

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

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 9
<211> 318
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 9
gaaatagtga tgacgcagtc tccagccacc ctgtctgtgt ctccagggga aagagccacc 60
ctctcctgca gggccagtca gagtgttagg agcaacttag cctggtacca gcagaaagct 120
ggccaggctc ccaggctcct catcgatggg gcatccacca gggccactgg cataacagcc 180
aggttcagtg gcagtgggtc tgggacagag ttactctca ccatcagcag cctgcagtct 240
gaagattttg cagtttatta ctgtcagcag tataataact ggcctacttt cggccctggg 300
accaaagtgg atatcaaa 318

<210> 10
<211> 354
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 10
cagctgcagc tgcaggagtc gggcccagga ctggtgaagc cttcggagac cctgtccctc 60
acctgcactg tctctggtgg ctccatcagc agtggtagtt actactgggg ctggatccgc 120

cagccccag ggaaggggct ggagtggatt gggagtatct attatgggtgg gaacacctac	180
tacaacccgt ccctcaagag tcgagtcacc atatccatag acacgtccaa gaaccagttc	240
tccctgaagc tgagctctgt gaccgccgca gacacggctg tgtattactg tgcggggagaa	300
ctgcggaggg cttttgatat ctggggccaa gggacaatgg tcaccgtctc ttca	354

<210> 11
 <211> 106
 <212> PRT
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Antibody or a portion thereof.

<400> 11

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	Arg	Ser	Asn
			20					25					30		

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

Asp	Gly	Ala	Ser	Thr	Arg	Ala	Thr	Gly	Ile	Thr	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	Asn	Trp	Pro	Thr
				85					90					95	

Phe	Gly	Pro	Gly	Thr	Lys	Val	Asp	Ile	Lys
			100					105	

<210> 12
 <211> 118

<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 12

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 Ser Ser Gly
20 25 30

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

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

Leu Lys Ser Arg Val Thr 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 Gly Glu Leu Arg Arg Ala Phe Asp Ile Trp Gly Gln Gly Thr
100 105 110

Met Val Thr Val Ser Ser
115

<210> 13
<211> 333
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 13
aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc

tcctgcaccc gcagcagtga cagcattgcc agcaactatg tgcagtggta ccagcagcgc	120
ccggggcagtt cccccaccac tgtgatcttt gaggataacc aaagaccctc tgggggtccct	180
gatcggttct ctggctccat cgacagctcc tccaactctg cctccctcac catctctgga	240
ctgaagcctg aggacgaggc tgactactac tgtcagtcct atgatagcag caatcatgtg	300
gtattcggcg gagggaccaa gctgaccgtc cta	333

<210> 14
 <211> 363
 <212> DNA
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Polynucleotide encoding the antibody or a portion thereof.

<400> 14	
caggtgcagc tgggtggagtc tggggggaggc gtggtccagc ctgggaggtc cctgagactc	60
tcctgtgcag cgtctggatt caccttcagt tactatggca tgcactgggt ccgccaggct	120
ccaggcaagg ggctggagtg ggtggcagtt atatggtatg atggaagtaa taaatactat	180
gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat	240
ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gagagatcat	300
gactacgggtg tcctgtacta ctttgactac tggggccagg gaaccctggg caccgtctcc	360
tca	363

<210> 15
 <211> 111
 <212> PRT
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Antibody or a portion thereof.

<400> 15

Asn	Phe	Met	Leu	Thr	Gln	Pro	His	Ser	Val	Ser	Glu	Ser	Pro	Gly	Lys
1				5					10					15	

Thr Val Thr Ile Ser Cys Thr Arg Ser Ser Asp Ser Ile Ala Ser Asn
20 25 30

Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ser Pro Thr Thr Val
35 40 45

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

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

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

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

<210> 16
<211> 121
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 16

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 Tyr 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 His Asp Tyr Gly Val Leu Tyr Tyr Phe Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 17
<211> 318
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 17
tcctttgaac tgacacagcc accctcgggtg tcagtgtccc caggacagac ggccaggatc 60
acctgctctg gagatgcatt gccaaagcaa tatgcttatt ggtaccggca gaagccaggc 120
caggccccctg tactggtaat atataaagac agtgagaggc cctcagggat ccatgagcga 180
ttctctgggt ccacctcagg gacaacagtc acgttgacca tcagtggagt ccaggcagaa 240
gacgaggctg actattactg tcaatcaaca gacagaagag gtactgtgtt cggcggaggg 300
accaagttga ccgtccta 318

<210> 18
<211> 369
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 18
cagatcacct tgaaggagtc tggctctacg ctggtgaaac ccacacagac cctcacgctg 60
acctgcacct tctctgggtt ctactcagc actagtggag tgggtgtggg ctggatccgt 120

cagccccag gaaaggccct ggagtggctt gcactcatTT attggaatga tgataagcgc	180
tacagcccat ctctgaagag caggctcacc atcaccaagg acacctccaa aaaccagggtg	240
gtccttataa tgaccaacat ggaccctgtg gacacagcca catattactg tgcacacaga	300
catggctacg ataggatgcg tgatgctttt gatatctggg gccaaaggac aatggtcacc	360
gtctcttca	369

<210> 19
 <211> 106
 <212> PRT
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Antibody or a portion thereof.

<400> 19

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

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

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

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

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

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

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

<210> 20
<211> 123
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 20

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

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

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

Trp Leu Ala Leu Ile Tyr Trp Asn Asp Asp Lys Arg Tyr Ser Pro Ser
50 55 60

Leu Lys Ser Arg Leu Thr Ile Thr Lys Asp Thr Ser Lys Asn 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 His Arg His Gly Tyr Asp Arg Met Arg Asp Ala Phe Asp Ile
100 105 110

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

<210> 21
<211> 321
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 21
gaaatttgtgt tgacgcagtc tccagacacc ctgtctttgt ctccagggga aagagccacc 60
ctctcctgca gggccagtca gatttttagc agcagttact tagcctggta ccagcagaaa 120
cctggccagg ctcccaggct cctcatctct ggtgcatcca gcagggccac tggcatccca 180
gacaggttca gtggcagtgg gtctgggtca gacttcactc tcaccatcag cagactggag 240
cctgaggatt ttgcagtgtg ttactgtcag cagtatggta gctcatgcag ttttggccag 300
gggaccaagc tggagatcaa a 321

<210> 22
<211> 381
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 22
caggtgcagt tgggtgcagtc tggggctgag gtgaagaagc ctggggcctc agtgaaggtt 60
tcctgcaagg catctggata caccttcacc agctacttta tacactgggt gcgacaggcc 120
cctggacaag ggcttgagtg gatgggaata atcaacccta gtggtggtag cacaagctac 180
gcacagaagt tccagggcag agtcaccatg accagggaca cgtccacgag tacagtctac 240
atggagctta gcagcctgag atctgaggac acggccgtgt attactgtgc gagagatcag 300
gagggagcag tggctgggtac agactactac ttctacggta tggacgtctg gggccaaggg 360
accacggtca ccgtctcctc a 381

<210> 23
<211> 107
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 23

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

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

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

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

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

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

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

<210> 24

<211> 127

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 24

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 Ser Tyr
20 25 30

Phe Ile 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 Ser Thr Ser Tyr Ala Gln Lys Phe
50 55 60

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

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

<210> 25
<211> 336
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 25
gatattgtga tgactcagtc tccactctcc ctgcccgtca cccctggaga gccggcctcc 60
atctcctgca ggtctagtca gagcctccta catagtcatg gatacagcta tttgaattgg 120
tacctgcaga agccagggca gtctccacag ctctgatcc atttgggttc taatcgggcc 180
tccgggggtcc ctgacagggt cagtggcagt ggatcaggca cagaatttac actgagaatc 240
agcagagtgg aggctgagga tgttgggggt tattactgca tgcaagttct gctaactccg 300
atcacccctcg gccaaggagac acgactggag attaaa 336

<210> 26
<211> 360
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 26
caggtgcagc tgggtggagtc tggggggaggc gtggtccagc ctgggaggtc cctgagactc 60

tcctgtgcag	cctctggatt	caccttcagt	agctatggca	tgcactgggt	ccgccaggct	120
ccaggcaagg	ggctggagtg	ggtggcagtt	atatcatatg	atggaaataa	taaatactat	180
gcagactccg	tgaagggccg	attcaccatc	tccagagaca	attccaagac	cacgctgtat	240
ctgcaaatga	acagcctgag	acctgaggac	acggctgtgt	tttactgtgc	gagagatgcc	300
agtgggagct	ccctctacct	tgactactgg	ggccagggaa	ccctggtcac	cgctctctca	360

<210>	27
<211>	112
<212>	PRT
<213>	ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 27

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

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

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

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

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

Leu Leu Thr Pro Ile Thr Leu Gly Gln Gly Thr Arg Leu Glu Ile Lys
100 105 110

<210> 28
<211> 120
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 28

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

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

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

Ala Arg Asp Ala Ser Gly Ser Ser Leu Tyr Leu Asp Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 29
<211> 336
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 29
gatattgtga tgactcagtc tccactctcc ctgcccgtca cccctggaga gccggcctcc 60
atctcctgca ggtctagtca gagcctcctg catagtcatg gatacaacta tttgaattgg 120
tacctgcaga agccagggca gtctccacac ctctgatct atttgggttc taatcgggcc 180
tccgggggtcc ctgacagggt cagtggcagt ggatcaggca cagaatttac actgaaaatc 240
agcagagtgg aggctgagga tgttgggggt tattactgca tgcaagttct acaaactccg 300
atcacccctcg gccaaaggac acgactggag attaaa 336

<210> 30
<211> 360
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 30
caggtgcagc tgggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60
tcctgtgcag cctctggatt caccttcagt aactatggca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcagtt atatcatatg atggaagtaa aaaatactat 180
gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaatga acagcctgag agctgaggac acggctgtgt attactgtgc gagagatgcc 300
agtgggagct ccctctactc tgactactgg ggccaggga tccctggtcac cgtctcctca 360

<210> 31
<211> 112
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 31

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

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

Pro His 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 Glu Phe Thr Leu Lys Ile
65 70 75 80

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

Leu Gln Thr Pro Ile Thr Leu Gly Gln Gly Thr Arg Leu Glu Ile Lys
100 105 110

<210> 32
<211> 120
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 32

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

Gly 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 Lys 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 Ala Ser Gly Ser Ser Leu Tyr Ser Asp Tyr Trp Gly Gln
100 105 110

Gly Ile Leu Val Thr Val Ser Ser
115 120

<210> 33
<211> 336
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 33
gatattgtga tgactcagtc tccactctcc ctgcccgtca cccctggaga gccggcctcc 60
atctcctgca ggtctagtca gggcctcctg catagtcatg gataccacta tttgaattgg 120
tacctgcaga agccagggca gtctccacag ctctgatct atttgggttc taatcgggcc 180
tccgggggtcc ctgacagggt cagtggcagt ggatcaggca cagaatttac actgaaaatc 240
agcagagtgg aggctgagga tgttgggggtt tattactgca tgcaagttct acaaactccg 300
atcacccctcg gccaaaggac acgactggag attaaa 336

<210> 34
<211> 360
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 34
caggtgcagc tgggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60
tcctgtgcag cctctggatt caccttcagt agctatggca tgcactgggt ccgccaggct 120

ccaggcaagg ggctggagtg ggtgacagtt atatcaaaag atggaagtta taaatactat	180
gcggactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat	240
ctgcaaatga acagcctgag agctgaggac acggctgtgt attactgtgc gagggatgcc	300
agtgggagct ccctctactt agactactgg ggccagggtta ccctgggtcac cgtctcctca	360

<210> 35
 <211> 112
 <212> PRT
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Antibody or a portion thereof.

<400> 35

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	Gly	Leu	Leu	His	Ser
			20					25					30		

His	Gly	Tyr	His	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	Glu	Phe	Thr	Leu	Lys	Ile
65					70					75					80

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

Leu	Gln	Thr	Pro	Ile	Thr	Leu	Gly	Gln	Gly	Thr	Arg	Leu	Glu	Ile	Lys
			100					105					110		

<210> 36
 <211> 120

<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 36

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

Thr Val Ile Ser Lys Asp Gly Ser Tyr 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 Ala Ser Gly Ser Ser Leu Tyr Leu Asp Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 37
<211> 330
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 37
cagtctgtgc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc

tcttgttctg	gaagcagctc	caacatcgga	agaaatactg	taaactggta	ccagcagctc	120
ccaggaacgg	cccccaaact	cctcatctat	agtaataatc	agcggccctc	aggggtccct	180
gaccgattct	ctggctccaa	gtctggcacc	tcagtctccc	tggccatcag	tgggctccag	240
tctgaggatg	aggctgatta	ttactgtgca	gcatgggatg	acagcctgaa	tggtgtggta	300
ttcggcggag	ggaccaagtt	gaccgtccta				330

<210> 38

<212> DNA

<213> ARTIFICIAL SEQUENCE

 $\langle 220 \rangle$

<400> 38

tcctgtgcag cgtctggatt caccttcagt agctatggca tgcactgggt ccgccaggct 120

gcagactccg tgaagggccg attcaccatc tccagagaca attccaagga cacgctgtat 240

ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc ggggggacttt 300

gcttacttct actacggtat ggacgtctgg ggccaaggga ccacggtcac cgtctcctca 360

<210> 39

<212> PRT

<213> ARTIFICIAL SEQUENCE

 $\langle 220 \rangle$

<400> 39

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

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

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

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

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

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

<210> 40

<211> 120

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 40

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 His 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 Val Tyr Tyr Cys
85 90 95

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

Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 41
<211> 318
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 41
tcctatgagc tgacccagcc accctcgggtg tcagtgtccc caggacagac ggccaggatc 60
acctgctctg gagatgcttt gccaaggcaa tatacttatt ggtaccagca gaaaccaggc 120
caggcccctg ttctggtgat atttaaagac actgcgaggc cctcagggat ccctgagcga 180
ttctctggct ccagctcagg gacaacagtc acgttgacca tcagtggagt ccaggcagaa 240
gacgaggctg actattactg tcaatcaaca gacagaagtg gtactgtgtt cggcggaggg 300
accaagctga ccgtccta 318

<210> 42
<211> 369
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 42
cagatcacct tgaaggagtc tggtcctacg ctggtgaaac ccacacagac cctcacgctg 60
acctgcacct tctctgggtt ctactcagc actagtggag tgggtgtggg ctggatccgt 120
cagccccag gaaaggccct ggagtggctt gcactcattt attggaatga tgataagcgc 180

tacagcccat ctctgaagag caggctcacc atcaccaagg acacctccaa aaaccaggtg	240
gtccttacaa tgaccaacat ggaccctgtg gacacagcca catattactg tgcacacaga	300
catggctacg ataggatgcg tgatgctttt gatatctggg gccaagggac aatggtcacc	360
gtctcttca	369

<210> 43
 <211> 106
 <212> PRT
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Antibody or a portion thereof.

<400> 43

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

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

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

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

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

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

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

<210> 44
 <211> 123

<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 44

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

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

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

Trp Leu Ala Leu Ile Tyr Trp Asn Asp Asp Lys Arg Tyr Ser Pro Ser
50 55 60

Leu Lys Ser Arg Leu Thr Ile Thr Lys Asp Thr Ser Lys Asn 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 His Arg His Gly Tyr Asp Arg Met Arg Asp Ala Phe Asp Ile
100 105 110

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

<210> 45
<211> 336
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 45
gaaattgtga tgaccagac tccattctct ctgtccgtca cccctggaca gccggcctcc

atctcctgca agtctagtca gagcctcctg catagtagtg gaaagaccta tttgtattgg	120
tacctgcaga agccaggcca gcctccacag ctctgatct atgaagtttc caaccgggtc	180
tctggagtg cagatagggt cagtggcagc gggtcaggga cagatttcac actgaaaatc	240
agccgggtgg aggctgagga tgttgggggt tattttctgca tgcaaagtat acagcttccg	300
tggacgttcg gccaaaggac caaggtggaa atcaaa	336

<210> 46
 <211> 363
 <212> DNA
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Polynucleotide encoding the antibody or a portion thereof.

<400> 46	
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcccagac cctgtccctc	60
acctgcactg tctctggtgg ctccatcaac agtggtggtt actactggag ctggatccgc	120
cagcaccag ggaagggcct ggagtggatt gggtagatct cttacagtgg gagcacctac	180
tacaaccgt ccctcaagag tcgagttacc atatcagtag acacgtctaa gaaccagttc	240
tccctgaggc tgagctctgt gactgccgcg gacacggccg tgtattactg tgcgagagag	300
agccctacgg tgactacggc ttttgatata tggggccaag ggacaaaggt caccgtctct	360
tca	363

<210> 47
 <211> 112
 <212> PRT
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Antibody or a portion thereof.

<400> 47

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

Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Leu Leu His Ser
20 25 30

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

Pro Gln Leu Leu Ile Tyr Glu Val Ser Asn Arg Phe 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 Phe Cys Met Gln Ser
85 90 95

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

<210> 48
<211> 121
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 48

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

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

Gln Gly Thr Lys Val Thr Val Ser Ser
115 120

<210> 49
<211> 321
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 49
gacatccagt tgacccagtc tccatcctcc ctgtgtgcat ctgtaggaga cagagtcacc 60
atcacttgcc ggggtgagtca ggacattaac agttatttaa attggtgtcg gcagaaacca 120
gggaaagttc ctcagttcct gatctatagt gcatccaatt tgcaatctgg agtcccatct 180
cggttcagtg gcagtggatc tgggacagat ttactctca ctttcagcgg cctgcagact 240
gaatatgttg cacgttatta cggtaacgg acttacaatg cccttccgac gttcggccta 300
gggaccaggg cggaatcaa a 321

<210> 50
<211> 378
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 50
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cctcacagac cctgtccctc 60
acctgcactg tctctggtgg ctccatcagc agtggtggtt acgactggag ctggatccgc 120

cagcaccag ggaagggcct ggagtggatt gggaacattt attacagtgg gaggacctac	180
tacaacccgt ccctcaagag tcgaattacc atatcagtag acacgtctaa gaaccagttc	240
tccctgaagc tgaggtctgt gactgccgcg gacacggccg tgtattactg tgcgagagat	300
cgcccttatg gaggtaatc cggctactac tacggtatgg acgtctgggg ccaagggacc	360
acggtcaccg tctcccca	378

<210> 51
 <211> 107
 <212> PRT
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Antibody or a portion thereof.

<400> 51

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

Asp	Arg	Val	Thr	Ile	Thr	Cys	Arg	Val	Ser	Gln	Asp	Ile	Asn	Ser	Tyr
		20						25					30		

Leu	Asn	Trp	Cys	Arg	Gln	Lys	Pro	Gly	Lys	Val	Pro	Gln	Phe	Leu	Ile
		35					40					45			

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

Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Thr	Phe	Ser	Gly	Leu	Gln	Thr
65					70					75				80	

Glu	Tyr	Val	Ala	Arg	Tyr	Tyr	Gly	Gln	Arg	Thr	Tyr	Asn	Ala	Leu	Pro
				85					90					95	

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

<210> 52
<211> 126
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 52

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

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

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

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

Cys Ala Arg Asp Arg Pro Tyr Gly Gly Asn Ser Gly Tyr Tyr Tyr Gly
100 105 110

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

<210> 53
<211> 327
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 53
gaaatttgtgt tgacgcagtc tccaggcacc ctgtctttgt ctccagggga aagagccacc 60
ctctcctgca gggccagtca gactattagc agcagctact tagcctggta ccagcagaga 120
cctggccagg ctcccaggct ccttatgtat ggtgcatcca acagggtcat tggcatccca 180
gtcaggttca gtggcgggtgg gtgtgggaca gacttcactt tcaccatcag cagactggat 240
cctgaagatt ttgcagtgtg ttactgtcag cagtatggta actcacccat gtgcagtttt 300
ggccagggga ccaaggtgga gatcaaa 327

<210> 54
<211> 378
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 54
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cctcacagac cctgtccctc 60
acctgcactg tctctggtgg ctccatcagc agtgggtggtt acgactggag ctggatccgc 120
cagcaccag ggaagggcct ggagtggatt gggaacattt attacagtgg gaggacctac 180
tacaaccgt ccctcaagag tcgaattacc atatcagtag acacgtctaa gaaccagttc 240
tccctgaagc tgaggctctgt gactgccgcg gacacggccg tgtattactg tgcgagagat 300
cgcccttatg gaggttaattc cggctactac tacggtatgg acgtctgggg ccaagggacc 360
acggtcaccg tctcccca 378

<210> 55
<211> 109
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 55

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

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

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

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

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

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

Met Cys Ser Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105

<210> 56
<211> 126
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 56

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

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

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

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

Cys Ala Arg Asp Arg Pro Tyr Gly Gly Asn Ser Gly Tyr Tyr Tyr Gly
100 105 110

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

<210> 57
<211> 318
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 57
gaaatagtga tgacgcagtc tccagccacc ctgtctgtgt ctccagggga gagagccacc 60
ctctcctgca gggccagtca gagtgttagg agcaacttag cctggtacca gcagaaacct 120
ggccaggctc ccaggctcct catcgatggg gcatccacca gggccactgg catcacagcc 180
aggttcagtg gcagtgggtc tgggacagag ttactctca ccatcagcag cctgcagtct 240
gaagattttg cagtttatta ctgtcagcag tataataact ggcctacttt cggccctggg 300
accaaagtgg atatcaaa 318

<210> 58
<211> 354
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 58
cagctgcagc tgcaggagtc gggcccagga ctggtgaagc cttcggagac cctgtccctc 60

acctgcactg tctctggtgg ctccatcagc agtagtagtt actattgggg ctggatccgc 120
cagccccag ggaaggggct ggagtggatt gggagtatct attatggtgg gaacacctac 180
tacaacccgt ccctcaagag tcgagtcacc atatccgtag acacgtccaa gaaccagttc 240
tccctgaagc tgagctctgt gaccgccgca gacacggctg tgtattactg tgcgggagaa 300
ctgcggaggg cttttgatat ctggggccaa gggacaatgg tcaccgtctc ttca 354

<210> 59
<211> 106
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 59

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 Arg Ser Asn
20 25 30

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

Asp Gly Ala Ser Thr Arg Ala Thr Gly Ile Thr 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 Asn Trp Pro Thr
85 90 95

Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 60
<211> 118
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 60

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 Ser Ser Ser
20 25 30

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

Trp Ile Gly Ser Ile Tyr Tyr Gly Gly Asn 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 Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Ala Gly Glu Leu Arg Arg Ala Phe Asp Ile Trp Gly Gln Gly Thr
100 105 110

Met Val Thr Val Ser Ser
115

<210> 61
<211> 318
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 61
gaaatagtga tgacgcagtc tccagccacc ctgtctgtgt ctccagggga aagagccacc 60
ctctcctgca gggccagtca gagggttagg agcaacttag cctggtagca gcagaaacct 120
ggccaggctc ccaggctcct catcgatggg gcatccacca gggccactgg catcacagcc 180
aggttcagtg gcagtggttc tgggacagag ttcactctca ccatcagcag cctgcagtct 240
gaagattttg cagtttatta ctgtcagcag tataataatt ggcctacttt cggccctggg 300
accaaagtgg atatcaaa 318

<210> 62
<211> 354
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 62
cagctgcagc tgcaggagtc gggcccagga ctggtgaagc cttcggagac cctgtccctc 60
acctgcactg tctctggtgg ctccatcagc agtggttagt actactgggg ctggatccgc 120
cagccccag ggaaggggct ggagtggatt gggagtatct attatggtgg gaacacctac 180
tacaaccgt ccctcaagag tcgagtcacc atatccgtag acacgtccaa gaaccagttc 240
tccctgaagc tgagctctgt gaccgccgca gacacggctg tgtattactg tgcgggagaa 300
ctgcggaggg cttttgatat ctggggccaa gggacaatgg tcaccgtctc ttca 354

<210> 63
<211> 106
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 63

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 Arg Ser Asn
20 25 30

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

Asp Gly Ala Ser Thr Arg Ala Thr Gly Ile Thr 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 Asn Trp Pro Thr
85 90 95

Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 64

<211> 118

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 64

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 Ser Ser Gly
20 25 30

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

Trp Ile Gly Ser Ile Tyr Tyr Gly Gly Asn 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 Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Ala Gly Glu Leu Arg Arg Ala Phe Asp Ile Trp Gly Gln Gly Thr
100 105 110

Met Val Thr Val Ser Ser
115

<210> 65
<211> 321
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 65
gacatccaga tgacccagtc tccgtcctcc ctgtgtgcat ctgtaggaga cagagtcacc 60
atctcttgcc gggcaagtca ggacattaga aatgatttag gctggtatca gcagaaacca 120
gggaaagccc ctaagcgctt gatttatggt gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagcg gcagtggatt tgggacagaa ttactctca caatcagcag cctgcagcgt 240
gaagattttg caacttatta ctgtctacag cataatattt acccgtgcag ttttggccag 300
gggaccaagc tggagatcaa a 321

<210> 66
<211> 363
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 66
caggtgcagc tgggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60
tcctgtgcag cctctggatt caccttcagt agctttggca tgcactgggt ccgccaggct 120

ccaggcaagg ggctggagtg ggtggcaatt ttatcatttg atggaaataa taaatactat 180
gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacggtgtat 240
ctgcaaatga acagcctgag agctgaggac acggctgtgt attactgtgc gagagagggg 300
gggtataact ggaactacga ctttgactac tggggccagg gaaccctggt caccgtctcc 360
tca 363

<210> 67
<211> 107
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 67

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

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

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

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

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln His Asn Ile Tyr Pro Cys
85 90 95

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

<210> 68
<211> 121
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 68

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 Phe
20 25 30

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

Ala Ile Leu Ser Phe Asp Gly Asn 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 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 Glu Gly Gly Tyr Asn Trp Asn Tyr Asp Phe Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 69
<211> 324
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 69
tcttctgagc tgactcagga ccctgctgtg tctgtggcct tgggacagac agtcaggatc 60
acatgtcaag gagacagcct cagaacctat tatgcaagct ggtaccagca gaagccagga 120
caggccccctg tacttgtcat ctatggtaaa aacatccggc cctcagggat cccagaccga 180
ttctctgcct ccaggtcagg aaatacagct gccttgacca tcactggggc tcaggcggaa 240
gatgaggctg actattactg taactcccgg gacagcagtg gtgaccatgt gatattcggc 300
ggagggacca aggtgaccgt ccta 324

<210> 70
<211> 360
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 70
cagggtgaac tgcaggagtc gggcccagga ctggtgaagc cttcggagac cctgtccctc 60
acctgcactg tctctggtgg ctccgtcagc agtggtggtg actactggag ctggatccgg 120
cagccccccag ggaagggact ggagtggatt ggttatatct attacactgg gagcaccaac 180
tacaaccctt ccctcaagag tcgagtcacc atatcagtag acacgttcaa gcaccagttc 240
tccgtgaatc tgacctctgt gaccgctgcg gacacggccg tgtattattg tgcgagatcg 300
ggtgtagcaa tggctcgctt tgactactgg ggccagggaa ccctgggtcac cgtctcctca 360

<210> 71
<211> 108
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 71

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

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

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

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

Arg Ser Gly Asn Thr Ala Ala Leu Thr Ile Thr Gly Ala Gln Ala Glu
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Ser Ser Gly Asp His
85 90 95

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

<210> 72
<211> 120
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 72

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 Val Ser Ser Gly
20 25 30

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

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

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

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

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

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 73
<211> 330
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 73
aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc 60
tcctgcaccc gcagcagtgg cagcattgtc agcaactatg tgcagtggta ccaacagcgc 120
ccgggcagtt cccccacat tgtgatctat gaggataatc aaagaccctc tggggtcctt 180
gatcggttct ctggctccat cgacagctcc tcgaactctg cctccctcac catctctgga 240
ctgaagactg aggacgaggc tgactactat tgtcagtctt atgatagcag caatcaggtg 300
ttcggcggag ggaccaagct gaccgtccta 330

<210> 74
<211> 363
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 74
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcacagac cctgtccctc 60
atctgcactg tctctggtgg ctccatcagc agtggtggct accactggag ctggatccgc 120

cagcaccag ggaagggcct ggagtggatt gggtagatct attacagtgg gagcacctac 180
tacaacccgt ccctcaagag tcgagttacc atatcagtag acacgtctaa gaaccagttc 240
tcctgaagc tgagctctgt gactgccgcg gacacggccg tatattactg tgcgagagag 300
actacggtgg taaaggggta cttcgatctc tggggccgtg gcaccctggg cactgtctcc 360
tca 363

<210> 75
<211> 110
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 75

Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys
1 5 10 15

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

Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ser Pro Thr Ile Val
35 40 45

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

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

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

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

<210> 76
<211> 121
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 76

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

Thr Leu Ser Leu Ile 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 Ser Arg Val Thr Ile Ser Val 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 Glu Thr Thr Val Val Lys Gly Tyr Phe Asp Leu Trp Gly
100 105 110

Arg Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 77
<211> 330
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 77
cagtctgtgc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc 60
tcttgttctg gaagcagctc caacatcgga agtaattatg tattctggta ccagcagctc 120
ccaggaacgg cccccaaact cctcatcttt aggaataatc agcggccctc aggggtccct 180
gaccgattct ttggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccgg 240
tccgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgag tggttgggtg 300
ttcggcggag ggaccaagct gaccgtccta 330

<210> 78
<211> 360
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 78
gaggtgcagc tgggtggagtc tgggggaggc ttggtaaagc ctggggggtc ccttagactc 60
tcctgtgcag cctctggatt cactttcagt tacgcctgga tgggctgggt ccgccaggct 120
ccaggggaagg ggctggagtg gattggccgt attaaaagca aaactgatgg tgggacaaca 180
gactacgctg caccctgtaa aggagattc accatctcaa gagatgattc aaaaaacacg 240
ctgtatctgc aaatgaacag cctgaaaacc gaggacacag ccgtgtatta ctgtaccaca 300
gatggggcac tggcccccca cggctactgg ggccaggga ccctgggtcac cgtctcctca 360

<210> 79
<211> 110
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 79

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 Ser Asn
20 25 30

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

Ile Phe Arg Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Phe
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 Ala Ala Trp Asp Asp Ser Leu
85 90 95

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

<210> 80
<211> 120
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 80

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 Tyr Ala
20 25 30

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

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

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

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

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

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 81
<211> 318
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 81
gaaatagtga tgacgcagtc tccagccacc ctgtctgtgt ctccagggga tagagccacc 60
ctctcctgca gggccagtca gagtgttaga agcaacttag cctggtacca gcagaaacct 120
ggccaggctc ccaggctcct catctatggg gcatccacca gggccactgg tatcccagcc 180
aggttcagtg gcagtgggtc tgggacagag ttactctca ccatcagcag cctgcagtct 240
gaagattttg cagtttatta ctgtcagcaa tacactgact ggcccacttt cggcggaggg 300
accaaggtgg agatcaaa 318

<210> 82
<211> 357
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 82
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcacagac cctgtccctc 60
acctgcactg tctctggtgg ctccatcagc agtggtggtt acttctggag ctggatccgc 120

cagcaccag ggaagggcct ggagtggatt gggtagatct attacagtgg gagcacctac	180
tacaacccgt ccctcaagag tcgagttacc atatcagtag acacgtctaa gaaccagttc	240
tccctgaagc tgagctctgt gactgccgcg gacacggccg tgtattactg tgcgagatgg	300
ggagcagcag ccggctttga ctattggggc cagggaaccc tggtcaccgt ctcctca	357

<210> 83
 <211> 106
 <212> PRT
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Antibody or a portion thereof.

<400> 83

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

Asp Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Arg Ser 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 Thr 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 Thr Asp Trp Pro Thr	
85 90 95	

Phe Gly Gly Gly Thr Lys Val Glu Ile Lys	
100 105	

<210> 84
 <211> 119

<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 84

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

Thr Leu Val Thr Val Ser Ser
115

<210> 85
<211> 336
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 85
gatattgtga tgactcagtc tccactctcc ctgcccgtca cccctggaga gccggcctcc

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

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

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

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

Leu Leu Thr Pro Ile Thr Leu Gly Gln Gly Thr Arg Leu Glu Ile Lys
100 105 110

<210> 88

<211> 120

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 88

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 Ser Tyr Asp Gly Asn 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 Ala Ser Gly Ser Ser Leu Tyr Leu Asp Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 89
<211> 33
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 89
cgggcgagtc agggatttag cgactggta gcc 33

<210> 90
<211> 21
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 90
gctgcatcca gtttgcaaag t 21

<210> 91
<211> 27
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 91
caacaggcta acagtttccc gatcacc 27

<210> 92
<211> 11
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 92

Arg Ala Ser Gln Gly Ile Ser Asp Trp Leu Ala
1 5 10

<210> 93
<211> 7
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 93

Ala Ala Ser Ser Leu Gln Ser
1 5

<210> 94
<211> 9
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 94

Gln Gln Ala Asn Ser Phe Pro Ile Thr
1 5

<210> 95
<211> 42
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 95
actggaacca gcagtgccgt tgggtggtcat aactttgtct cc 42

<210> 96
<211> 21
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 96
gaggtcagta atcggccctc a 21

<210> 97
<211> 30
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 97
agctcttata caagcagcag cacttgggtg 30

<210> 98
<211> 14
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 98
Thr Gly Thr Ser Ser Ala Val Gly Gly His Asn Phe Val Ser
1 5 10

<210> 99
<211> 7
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 99

Glu Val Ser Asn Arg Pro Ser
1 5

<210> 100

<211> 10

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 100

Ser Ser Tyr Thr Ser Ser Ser Thr Trp Val
1 5 10

<210> 101

<211> 33

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 101

agggccagtc agagtgttag gagcaactta gcc

33

<210> 102

<211> 21

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 102

ggtgcatcca ccagggccac t

21

<210> 103

<211> 24

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 103

cagcagtata ataactggcc tact

24

<210> 104

<211> 11

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 104

Arg Ala Ser Gln Ser Val Arg Ser Asn Leu Ala

1

5

10

<210> 105

<211> 7

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 105

Gly Ala Ser Thr Arg Ala Thr

1

5

<210> 106

<211> 8

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 106

Gln Gln Tyr Asn Asn Trp Pro Thr

1

5

<210> 107

<211> 39

<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 107
acccgcagca gtgacagcat tgccagcaac tatgtgcag 39

<210> 108
<211> 21
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 108
gaggataacc aaagaccctc t 21

<210> 109
<211> 30
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 109
cagtcttatg atagcagcaa tcatgtggta 30

<210> 110
<211> 13
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 110
Thr Arg Ser Ser Asp Ser Ile Ala Ser Asn Tyr Val Gln
1 5 10

<210> 111
<211> 7

<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 111

Glu Asp Asn Gln Arg Pro Ser
1 5

<210> 112
<211> 10
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 112

Gln Ser Tyr Asp Ser Ser Asn His Val Val
1 5 10

<210> 113
<211> 33
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 113
tctggagatg cattgccaaa gcaatatgct tat 33

<210> 114
<211> 21
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 114
aaagacagtg agaggccctc a 21

<210> 115
<211> 27
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 115
caatcaacag acagaagagg tactgtg

27

<210> 116
<211> 11
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 116
Ser Gly Asp Ala Leu Pro Lys Gln Tyr Ala Tyr
1 5 10

<210> 117
<211> 7
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 117
Lys Asp Ser Glu Arg Pro Ser
1 5

<210> 118
<211> 9
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 118

Gln Ser Thr Asp Arg Arg Gly Thr Val
1 5

<210> 119
<211> 36
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 119
agggccagtc agatttttag cagcagttac ttagcc 36

<210> 120
<211> 21
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 120
ggtgcatcca gcagggccac t 21

<210> 121
<211> 24
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 121
cagcagtatg gtagctcatg cagt 24

<210> 122
<211> 12
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 122

Arg Ala Ser Gln Ile Phe Ser Ser Ser Tyr Leu Ala
1 5 10

<210> 123
<211> 7
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 123

Gly Ala Ser Ser Arg Ala Thr
1 5

<210> 124
<211> 8
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 124

Gln Gln Tyr Gly Ser Ser Cys Ser
1 5

<210> 125
<211> 48
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 125
aggcttagtc agagcctcct acatagtcac ggatacagct atttgaat

48

<210> 126
<211> 21
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 126

ttgggttcta atcgggcctc c

21

<210> 127

<211> 27

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 127

atgcaagttc tgctaactcc gatcacc

27

<210> 128

<211> 16

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 128

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

<210> 129

<211> 7

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 129

Leu Gly Ser Asn Arg Ala Ser
1 5

<210> 130

<211> 9

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 130

Met Gln Val Leu Leu Thr Pro Ile Thr
1 5

<210> 131

<211> 48

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 131

aggctctagtc agagcctcct gcatagtcatt ggatacaact atttgaat 48

<210> 132

<211> 21

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 132

ttgggttcta atcgggcctc c 21

<210> 133

<211> 27

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 133

atgcaagttc tacaaactcc gatcacc 27

<210> 134

<211> 16

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 134

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

<210> 135

<211> 7

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 135

Leu	Gly	Ser	Asn	Arg	Ala	Ser
1			5			

<210> 136

<211> 9

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 136

Met	Gln	Val	Leu	Gln	Thr	Pro	Ile	Thr
1				5				

<210> 137

<211> 48

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 137

agggtctagtc agggcctcct gcatagtcacat ggataccact atttgaat

<210> 138
<211> 21
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 138
ttgggttcta atcgggcctc c 21

<210> 139
<211> 27
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 139
atgcaagttc tacaaactcc gatcacc 27

<210> 140
<211> 16
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 140

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

<210> 141
<211> 7
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 141

Leu Gly Ser Asn Arg Ala Ser
1 5

<210> 142
<211> 9
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 142

Met Gln Val Leu Gln Thr Pro Ile Thr
1 5

<210> 143
<211> 39
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 143
tctggaagca gctccaacat cggaagaaat actgtaaac 39

<210> 144
<211> 21
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 144
agtaataatc agcggccctc a 21

<210> 145
<211> 33
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 145
gcagcatggg atgacagcct gaatggtgtg gta 33

<210> 146
<211> 13
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 146

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

<210> 147
<211> 7
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 147

Ser Asn Asn Gln Arg Pro Ser
1 5

<210> 148
<211> 11
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 148

Ala Ala Trp Asp Asp Ser Leu Asn Gly Val Val
1 5 10

<210> 149
<211> 33
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 149

tctggagatg ctttgccaag gcaatatact tat

33

<210> 150

<211> 21

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 150

aaagacactg cgaggccctc a

21

<210> 151

<211> 27

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 151

caatcaacag acagaagtgg tactgtg

27

<210> 152

<211> 11

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 152

Ser Gly Asp Ala Leu Pro Arg Gln Tyr Thr Tyr

1

5

10

<210> 153

<211> 7

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 153

Lys Asp Thr Ala Arg Pro Ser
1 5

<210> 154

<211> 9

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 154

Gln Ser Thr Asp Arg Ser Gly Thr Val
1 5

<210> 155

<211> 48

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 155

aagtctagtc agagcctcct gcatagtagt ggaaagacct atttgtat 48

<210> 156

<211> 21

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 156

gaagtttcca accggttctc t 21

<210> 157

<211> 27

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 157

atgcaaagta tacagcttcc gtggacg

27

<210> 158

<211> 16

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 158

Lys Ser Ser Gln Ser Leu Leu His Ser Ser Gly Lys Thr Tyr Leu Tyr
1 5 10 15

<210> 159

<211> 7

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 159

Glu Val Ser Asn Arg Phe Ser
1 5

<210> 160

<211> 9

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 160

Met Gln Ser Ile Gln Leu Pro Trp Thr
1 5

<210> 161
<211> 33
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 161
cgggtgagtc aggacattaa cagttattta aat 33

<210> 162
<211> 21
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 162
agtgcattcca atttgcaatc t 21

<210> 163
<211> 27
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 163
caacggactt acaatgccct tccgacg 27

<210> 164
<211> 11
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 164

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

<210> 165
<211> 7
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 165

Ser Ala Ser Asn Leu Gln Ser
1 5

<210> 166
<211> 9
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 166

Gln Arg Thr Tyr Asn Ala Leu Pro Thr
1 5

<210> 167
<211> 36
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 167
agggccagtc agactattag cagcagctac ttagcc

36

<210> 168
<211> 21
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 168
ggtgcatcca acagggtcat t

21

<210> 169
<211> 30
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 169
cagcagtatg gtaactcacc catgtgcagt

30

<210> 170
<211> 12
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 170

Arg Ala Ser Gln Thr Ile Ser Ser Ser Tyr Leu Ala
1 5 10

<210> 171
<211> 7
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 171

Gly Ala Ser Asn Arg Val Ile
1 5

<210> 172
<211> 10
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 172

Gln Gln Tyr Gly Asn Ser Pro Met Cys Ser
1 5 10

<210> 173

<211> 33

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 173

agggccagtc agagtgttag gagcaactta gcc

33

<210> 174

<211> 21

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 174

ggtgcatcca ccagggccac t

21

<210> 175

<211> 24

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 175

cagcagtata ataactggcc tact

24

<210> 176

<211> 11

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 176

Arg Ala Ser Gln Ser Val Arg Ser Asn Leu Ala
1 5 10

<210> 177

<211> 7

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 177

Gly Ala Ser Thr Arg Ala Thr
1 5

<210> 178

<211> 8

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 178

Gln Gln Tyr Asn Asn Trp Pro Thr
1 5

<210> 179

<211> 33

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 179

agggccagtc agagtgttag gagcaactta gcc

33

<210> 180

<211> 21

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 180

ggtgcatcca ccagggccac t

21

<210> 181

<211> 24

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 181

cagcagtata ataattggcc tact

24

<210> 182

<211> 11

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 182

Arg Ala Ser Gln Ser Val Arg Ser Asn Leu Ala

1

5

10

<210> 183

<211> 7

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 183

Gly Ala Ser Thr Arg Ala Thr

1

5

<210> 184

<211> 8

<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 184

Gln Gln Tyr Asn Asn Trp Pro Thr
1 5

<210> 185
<211> 33
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 185
cgggcaagtc aggacattag aaatgattta ggc 33

<210> 186
<211> 21
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 186
gttgcatcca gtttgcaaag t 21

<210> 187
<211> 27
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 187
ctacagcata atattttaccc gtgcagt 27

<210> 188
<211> 11

<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 188

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

<210> 189
<211> 7
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 189

Val Ala Ser Ser Leu Gln Ser
1 5

<210> 190
<211> 9
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 190

Leu Gln His Asn Ile Tyr Pro Cys Ser
1 5

<210> 191
<211> 33
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 191
caaggagaca gcctcagaac ctattatgca agc

<210> 192
<211> 21
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 192
ggtaaaaaca tccggccctc a 21

<210> 193
<211> 33
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 193
aactcccggg acagcagtgg tgaccatgtg ata 33

<210> 194
<211> 11
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 194
Gln Gly Asp Ser Leu Arg Thr Tyr Tyr Ala Ser
1 5 10

<210> 195
<211> 7
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 195

Gly Lys Asn Ile Arg Pro Ser
1 5

<210> 196
<211> 11
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 196

Asn Ser Arg Asp Ser Ser Gly Asp His Val Ile
1 5 10

<210> 197
<211> 39
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 197
accgcgagca gtggcagcat tgtcagcaac tatgtgcag 39

<210> 198
<211> 21
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 198
gaggataatc aaagaccctc t 21

<210> 199
<211> 27
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 199
cagtcttatg atagcagcaa tcaggtg

27

<210> 200
<211> 13
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 200

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

<210> 201
<211> 7
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 201

Glu Asp Asn Gln Arg Pro Ser
1 5

<210> 202
<211> 9
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 202

Gln Ser Tyr Asp Ser Ser Asn Gln Val
1 5

<210> 203
<211> 39
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 203
tctggaagca gctccaacat cggaagtaat tatgtattc 39

<210> 204
<211> 21
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 204
aggaataatc agcggccctc a 21

<210> 205
<211> 33
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 205
gcagcatggg atgacagcct gagtggttgg gtg 33

<210> 206
<211> 13
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 206

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

<210> 207
<211> 7
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 207

Arg Asn Asn Gln Arg Pro Ser
1 5

<210> 208

<211> 11

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 208

Ala Ala Trp Asp Asp Ser Leu Ser Gly Trp Val
1 5 10

<210> 209

<211> 33

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 209

agggccagtc agagtgttag aagcaactta gcc

33

<210> 210

<211> 21

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 210

ggtgcatcca ccagggccac t

21

<210> 211

<211> 24

<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 211
cagcaataca ctgactggcc cact

24

<210> 212
<211> 11
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 212
Arg Ala Ser Gln Ser Val Arg Ser Asn Leu Ala
1 5 10

<210> 213
<211> 7
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 213
Gly Ala Ser Thr Arg Ala Thr
1 5

<210> 214
<211> 8
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 214
Gln Gln Tyr Thr Asp Trp Pro Thr
1 5

<210> 215
<211> 48
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 215
aggctctagtc agagcctcct acatagtcac ggatacagct atttgaat 48

<210> 216
<211> 21
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 216
ttgggttcta atcgggcctc c 21

<210> 217
<211> 27
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 217
atgcaagttc tgctaactcc gatcacc 27

<210> 218
<211> 16
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 218

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

<210> 219
<211> 7
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 219

Leu Gly Ser Asn Arg Ala Ser
1 5

<210> 220
<211> 9
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 220

Met Gln Val Leu Leu Thr Pro Ile Thr
1 5

<210> 221
<211> 15
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 221
agttatggca tgcac

15

<210> 222
<211> 51
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 222
gttatatggt atgatggaag taatgaatac tatgcagact ccgtgaaggg c 51

<210> 223
<211> 30
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 223
catgaccaca gtcactacgg ttttgactac 30

<210> 224
<211> 5
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 224

Ser Tyr Gly Met His
1 5

<210> 225
<211> 17
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 225

Val Ile Trp Tyr Asp Gly Ser Asn Glu Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 226
<211> 10

<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 226

His Asp His Ser His Tyr Gly Phe Asp Tyr
1 5 10

<210> 227
<211> 21
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 227
aatgctgaaa tgggtgtgag c 21

<210> 228
<211> 48
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 228
cacctttttt cgaatgacga aaaatcctac agcacatctc tgaagagc 48

<210> 229
<211> 30
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 229
tcgtttaact ggaactacga ctttgactac 30

<210> 230
<211> 7

<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 230

Asn Ala Glu Met Gly Val Ser
1 5

<210> 231
<211> 16
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 231

His Leu Phe Ser Asn Asp Glu Lys Ser Tyr Ser Thr Ser Leu Lys Ser
1 5 10 15

<210> 232
<211> 10
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 232

Ser Phe Asn Trp Asn Tyr Asp Phe Asp Tyr
1 5 10

<210> 233
<211> 21
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 233
agtggtagtt actactgggg c

<210> 234
<211> 48
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 234
agtatctatt atggtgggaa cacctactac aacccgtccc tcaagagt 48

<210> 235
<211> 24
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 235
gaactgcgga gggcttttga tatc 24

<210> 236
<211> 7
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 236

Ser Gly Ser Tyr Tyr Trp Gly
1 5

<210> 237
<211> 16
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 237

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

<210> 238
<211> 8
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 238

Glu Leu Arg Arg Ala Phe Asp Ile
1 5

<210> 239
<211> 15
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 239
tactatggca tgcac 15

<210> 240
<211> 51
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 240
gttatatggt atgatggaag taataaatac tatgcagact ccgtgaaggg c 51

<210> 241
<211> 36
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 241
gatcatgact acggtgtcct gtactacttt gactac

36

<210> 242
<211> 5
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 242

Tyr Tyr Gly Met His
1 5

<210> 243
<211> 17
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 243

Val Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 244
<211> 12
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 244

Asp His Asp Tyr Gly Val Leu Tyr Tyr Phe Asp Tyr
1 5 10

<210> 245
<211> 21
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 245
actagtggag tgggtgtggg c 21

<210> 246
<211> 48
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 246
ctcatttatt ggaatgatga taagcgctac agcccatctc tgaagagc 48

<210> 247
<211> 39
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 247
agacatggct acgataggat gcgtgatgct tttgatatc 39

<210> 248
<211> 7
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 248

Thr Ser Gly Val Gly Val Gly
1 5

<210> 249
<211> 16
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 249

Leu	Ile	Tyr	Trp	Asn	Asp	Asp	Lys	Arg	Tyr	Ser	Pro	Ser	Leu	Lys	Ser
1				5				10					15		

<210> 250
<211> 13
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 250

Arg	His	Gly	Tyr	Asp	Arg	Met	Arg	Asp	Ala	Phe	Asp	Ile
1				5			10					

<210> 251
<211> 15
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 251
agctacttta tacac 15

<210> 252
<211> 51
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 252
ataatcaacc ctagtggtgg tagcacaagc tacgcacaga agttccaggg c 51

<210> 253
<211> 54
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 253
gatcaggagg gagcagtggc tggtagacac tactacttct acggtatgga cgtc 54

<210> 254
<211> 5
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 254

Ser Tyr Phe Ile His
1 5

<210> 255
<211> 17
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 255

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

Gly

<210> 256
<211> 18
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 256

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

Asp Val

<210> 257

<211> 15

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 257

agctatggca tgcac 15

<210> 258

<211> 51

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 258

gttatatcat atgatggaaa taataaatac tatgcagact ccgtgaaggg c 51

<210> 259

<211> 33

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 259

gatgccagtg ggagctccct ctaccttgac tac 33

<210> 260
<211> 5
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 260

Ser Tyr Gly Met His
1 5

<210> 261
<211> 17
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 261

Val Ile Ser Tyr Asp Gly Asn Asn Lys Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 262
<211> 11
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 262

Asp Ala Ser Gly Ser Ser Leu Tyr Leu Asp Tyr
1 5 10

<210> 263
<211> 15
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 263
aactatggca tgcac 15

<210> 264
<211> 51
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 264
gttatatcat atgatggaag taaaaaatac tatgcagact ccgtgaaggg c 51

<210> 265
<211> 33
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 265
gatgccagtg ggagctccct ctactctgac tac 33

<210> 266
<211> 5
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 266

Asn Tyr Gly Met His
1 5

<210> 267
<211> 17
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 267

Val	Ile	Ser	Tyr	Asp	Gly	Ser	Lys	Lys	Tyr	Tyr	Ala	Asp	Ser	Val	Lys
1				5				10						15	

Gly

<210> 268

<211> 11

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 268

Asp	Ala	Ser	Gly	Ser	Ser	Leu	Tyr	Ser	Asp	Tyr
1				5				10		

<210> 269

<211> 15

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 269

agctatggca tgcac 15

<210> 270

<211> 51

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 270

gttatatcaa aagatggaag ttataaatac tatgcggact ccgtgaaggg c 51

<210> 271
<211> 33
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 271
gatgccagtg ggagctccct ctacttagac tac

33

<210> 272
<211> 5
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 272

Ser Tyr Gly Met His
1 5

<210> 273
<211> 17
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 273

Val Ile Ser Lys Asp Gly Ser Tyr Lys Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 274
<211> 11
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 274

Asp Ala Ser Gly Ser Ser Leu Tyr Leu Asp Tyr
1 5 10

<210> 275

<211> 15

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 275

agctatggca tgcac

15

<210> 276

<211> 51

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 276

gttatatggg atgatggaag taataaatac catgcagact ccgtgaaggg c

51

<210> 277

<211> 33

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 277

gactttgctt acttctacta cggtatggac gtc

33

<210> 278

<211> 5

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 278

Ser Tyr Gly Met His
1 5

<210> 279

<211> 17

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 279

Val Ile Trp Tyr Asp Gly Ser Asn Lys Tyr His Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 280

<211> 11

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 280

Asp Phe Ala Tyr Phe Tyr Tyr Gly Met Asp Val
1 5 10

<210> 281

<211> 21

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 281
actagtggag tgggtgtggg c 21

<210> 282
<211> 48
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 282
ctcatttatt ggaatgatga taagcgctac agcccatctc tgaagagc 48

<210> 283
<211> 39
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 283
agacatggct acgataggat gcgtgatgct ttgatatc 39

<210> 284
<211> 7
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 284

Thr Ser Gly Val Gly Val Gly
1 5

<210> 285
<211> 16
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 285

Leu Ile Tyr Trp Asn Asp Asp Lys Arg Tyr Ser Pro Ser Leu Lys Ser
1 5 10 15

<210> 286

<211> 13

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 286

Arg His Gly Tyr Asp Arg Met Arg Asp Ala Phe Asp Ile
1 5 10

<210> 287

<211> 21

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 287

agtgggtggtt actactggag c

21

<210> 288

<211> 48

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 288

tacatctctt acagtgggag cacctactac aacccgtccc tcaagagt

48

<210> 289

<211> 33

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 289

gagagcccta cggtgactac ggcttttgat atc

33

<210> 290

<211> 7

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 290

Ser Gly Gly Tyr Tyr Trp Ser

1 5

<210> 291

<211> 16

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 291

Tyr Ile Ser Tyr Ser Gly Ser Thr Tyr Tyr Asn Pro Ser Leu Lys Ser

1 5 10 15

<210> 292

<211> 11

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 292

Glu Ser Pro Thr Val Thr Thr Ala Phe Asp Ile

1 5 10

<210> 293

<211> 21

<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 293
agtgggtggtt acgactggag c 21

<210> 294
<211> 48
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 294
aacatttatt acagtgggag gacctactac aacccgtccc tcaagagt 48

<210> 295
<211> 48
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 295
gatcgccctt atggaggtaa ttccggctac tactacggta tggacgtc 48

<210> 296
<211> 7
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 296

Ser Gly Gly Tyr Asp Trp Ser
1 5

<210> 297
<211> 16

<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 297

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

<210> 298
<211> 16
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 298

Asp	Arg	Pro	Tyr	Gly	Gly	Asn	Ser	Gly	Tyr	Tyr	Tyr	Gly	Met	Asp	Val
1				5				10					15		

<210> 299
<211> 21
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 299

agtgggtggtt acgactggag c 21

<210> 300
<211> 48
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 300

aacatttatt acagtggggag gacctactac aacccgtccc tcaagagt 48

<210> 301
<211> 48
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 301
gatcgccctt atggaggtaa ttccggctac tactacggta tggacgtc 48

<210> 302
<211> 7
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 302
Ser Gly Gly Tyr Asp Trp Ser
1 5

<210> 303
<211> 16
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 303
Asn Ile Tyr Tyr Ser Gly Arg Thr Tyr Tyr Asn Pro Ser Leu Lys Ser
1 5 10 15

<210> 304
<211> 16
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 304

Asp	Arg	Pro	Tyr	Gly	Gly	Asn	Ser	Gly	Tyr	Tyr	Tyr	Gly	Met	Asp	Val
1				5					10					15	

<210> 305
 <211> 21
 <212> DNA
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Polynucleotide encoding the antibody or a portion thereof.

<400> 305
 agtagtagtt actattgggg c 21

<210> 306
 <211> 48
 <212> DNA
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Polynucleotide encoding the antibody or a portion thereof.

<400> 306
 agtatctatt atggtgggaa cacctactac aaccgtccc tcaagagt 48

<210> 307
 <211> 24
 <212> DNA
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Polynucleotide encoding the antibody or a portion thereof.

<400> 307
 gaactgcgga gggcttttga tatc 24

<210> 308
 <211> 7
 <212> PRT
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Antibody or a portion thereof.

<400> 308

Ser Ser Ser Tyr Tyr Trp Gly
1 5

<210> 309
<211> 16
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 309

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

<210> 310
<211> 8
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 310

Glu Leu Arg Arg Ala Phe Asp Ile
1 5

<210> 311
<211> 21
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 311
agtggtagtt actactgggg c

21

<210> 312
<211> 48
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 312
agtatctatt atggtgggaa cacctactac aacccgtccc tcaagagt 48

<210> 313
<211> 24
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 313
gaactgcgga gggcttttga tatc 24

<210> 314
<211> 7
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 314

Ser Gly Ser Tyr Tyr Trp Gly
1 5

<210> 315
<211> 16
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 315

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

<210> 316
<211> 8
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 316

Glu Leu Arg Arg Ala Phe Asp Ile
1 5

<210> 317

<211> 15

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 317

agctttggca tgcac

15

<210> 318

<211> 51

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 318

attttatcat ttgatggaaa taataaatac tatgcagact ccgtgaaggg c

51

<210> 319

<211> 36

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 319

gaggggggggt ataactggaa ctacgacttt gactac

36

<210> 320

<211> 5

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 320

Ser	Phe	Gly	Met	His
1			5	

<210> 321

<211> 17

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 321

Ile	Leu	Ser	Phe	Asp	Gly	Asn	Asn	Lys	Tyr	Tyr	Ala	Asp	Ser	Val	Lys
1				5				10						15	

Gly

<210> 322

<211> 12

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 322

Glu	Gly	Gly	Tyr	Asn	Trp	Asn	Tyr	Asp	Phe	Asp	Tyr
1				5				10			

<210> 323

<211> 21

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 323
agtgggtggtg actactggag c 21

<210> 324
<211> 48
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 324
tatatctatt aactgaggag caccaactac aaccctccc tcaagagt 48

<210> 325
<211> 30
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 325
tcgggtgtag caatggctcg ctttgactac 30

<210> 326
<211> 7
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 326
Ser Gly Gly Asp Tyr Trp Ser
1 5

<210> 327
<211> 16
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 327

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

<210> 328

<211> 10

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 328

Ser Gly Val Ala Met Ala Arg Phe Asp Tyr
1 5 10

<210> 329

<211> 21

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 329

agtgggtggct accactggag c

21

<210> 330

<211> 48

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 330

tacatctatt acagtgggag cacctactac aacccgtccc tcaagagt

48

<210> 331

<211> 33

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 331

gagactacgg tggtaaaggg gtacttcgat ctc

33

<210> 332

<211> 7

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 332

Ser Gly Gly Tyr His Trp Ser

1 5

<210> 333

<211> 16

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 333

Tyr Ile Tyr Tyr Ser Gly Ser Thr Tyr Tyr Asn Pro Ser Leu Lys Ser

1 5 10 15

<210> 334

<211> 11

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 334

Glu Thr Thr Val Val Lys Gly Tyr Phe Asp Leu

1 5 10

<210> 335

<211> 15

<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 335
tacgcctgga tgggc 15

<210> 336
<211> 57
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 336
cgtattaaaa gcaaaactga tgggtgggaca acagactacg ctgcacccgt gaaaggc 57

<210> 337
<211> 27
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 337
gatgggggcac tggcccccca cggctac 27

<210> 338
<211> 5
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 338

Tyr Ala Trp Met Gly
1 5

<210> 339
<211> 19

<212> PRT
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<220>
<223> Antibody or a portion thereof.

<400> 339

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

<210> 340
<211> 9
<212> PRT
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<220>
<223> Antibody or a portion thereof.

<400> 340

Asp	Gly	Ala	Leu	Ala	Pro	His	Gly	Tyr
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<210> 341
<211> 21
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 341
agtgggtgggtt acttctggag c

21

<210> 342
<211> 48
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 342
tacatctatt acagtgggag cacctactac aaccgtccc tcaagagt 48

<210> 343
<211> 27
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 343
tggggagcag cagccggctt tgactat 27

<210> 344
<211> 7
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 344

Ser Gly Gly Tyr Phe Trp Ser
1 5

<210> 345
<211> 16
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Antibody or a portion thereof.

<400> 345

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

<210> 346
<211> 9
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 346

Trp Gly Ala Ala Ala Gly Phe Asp Tyr
1 5

<210> 347

<211> 15

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 347

agctatggca tgcac 15

<210> 348

<211> 51

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 348

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<210> 349

<211> 33

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> Polynucleotide encoding the antibody or a portion thereof.

<400> 349

gatgccagtg ggagctccct ctaccttgac tac 33

<210> 350

<211> 5

<212> PRT

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<223> Antibody or a portion thereof.

<400> 350

Ser Tyr Gly Met His
1 5

<210> 351

<211> 17

<212> PRT

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<220>

<223> Antibody or a portion thereof.

<400> 351

Val Ile Ser Tyr Asp Gly Asn Asn Lys Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 352

<211> 11

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Antibody or a portion thereof.

<400> 352

Asp Ala Ser Gly Ser Ser Leu Tyr Leu Asp Tyr
1 5 10

<210> 353

<211> 1218

<212> PRT

<213> Homo sapiens

<220>

<221> MISC_FEATURE

<223> HUMAN JAGGED1

<400> 353

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20 25 30

Gly Gln Phe Glu Leu Glu Ile Leu Ser Met Gln Asn Val Asn Gly Glu
35 40 45

Leu Gln Asn Gly Asn Cys Cys Gly Gly Ala Arg Asn Pro Gly Asp Arg
50 55 60

Lys Cys Thr Arg Asp Glu Cys Asp Thr Tyr Phe Lys Val Cys Leu Lys
65 70 75 80

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

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

Arg Gly Asn Asp Arg Asn Arg Ile Val Leu Pro Phe Ser Phe Ala Trp
115 120 125

Pro Arg Ser Tyr Thr Leu Leu Val Glu Ala Trp Asp Ser Ser Asn Asp
130 135 140

Thr Val Gln Pro Asp Ser Ile Ile Glu Lys Ala Ser His Ser Gly Met
145 150 155 160

Ile Asn Pro Ser Arg Gln Trp Gln Thr Leu Lys Gln Asn Thr Gly Val
165 170 175

Ala His Phe Glu Tyr Gln Ile Arg Val Thr Cys Asp Asp Tyr Tyr Tyr
180 185 190

Gly Phe Gly Cys Asn Lys Phe Cys Arg Pro Arg Asp Asp Phe Phe Gly
195 200 205

His Tyr Ala Cys Asp Gln Asn Gly Asn Lys Thr Cys Met Glu Gly Trp
210 215 220

Met Gly Arg Glu Cys Asn Arg Ala Ile Cys Arg Gln Gly Cys Ser Pro
225 230 235 240

Lys His Gly Ser Cys Lys Leu Pro Gly Asp Cys Arg Cys Gln Tyr Gly
245 250 255

Trp Gln Gly Leu Tyr Cys Asp Lys Cys Ile Pro His Pro Gly Cys Val
260 265 270

His Gly Ile Cys Asn Glu Pro Trp Gln Cys Leu Cys Glu Thr Asn Trp
275 280 285

Gly Gly Gln Leu Cys Asp Lys Asp Leu Asn Tyr Cys Gly Thr His Gln
290 295 300

Pro Cys Leu Asn Gly Gly Thr Cys Ser Asn Thr Gly Pro Asp Lys Tyr
305 310 315 320

Gln Cys Ser Cys Pro Glu Gly Tyr Ser Gly Pro Asn Cys Glu Ile Ala
325 330 335

Glu His Ala Cys Leu Ser Asp Pro Cys His Asn Arg Gly Ser Cys Lys
340 345 350

Glu Thr Ser Leu Gly Phe Glu Cys Glu Cys Ser Pro Gly Trp Thr Gly
355 360 365

Pro Thr Cys Ser Thr Asn Ile Asp Asp Cys Ser Pro Asn Asn Cys Ser
370 375 380

His Gly Gly Thr Cys Gln Asp Leu Val Asn Gly Phe Lys Cys Val Cys
385 390 395 400

Pro Pro Gln Trp Thr Gly Lys Thr Cys Gln Leu Asp Ala Asn Glu Cys
405 410 415

Glu Ala Lys Pro Cys Val Asn Ala Lys Ser Cys Lys Asn Leu Ile Ala
420 425 430

Ser Tyr Tyr Cys Asp Cys Leu Pro Gly Trp Met Gly Gln Asn Cys Asp
435 440 445

Ile Asn Ile Asn Asp Cys Leu Gly Gln Cys Gln Asn Asp Ala Ser Cys
450 455 460

Arg Asp Leu Val Asn Gly Tyr Arg Cys Ile Cys Pro Pro Gly Tyr Ala
465 470 475 480

Gly Asp His Cys Glu Arg Asp Ile Asp Glu Cys Ala Ser Asn Pro Cys
485 490 495

Leu Asp Gly Gly His Cys Gln Asn Glu Ile Asn Arg Phe Gln Cys Leu
500 505 510

Cys Pro Thr Gly Phe Ser Gly Asn Leu Cys Gln Leu Asp Ile Asp Tyr
515 520 525

Cys Glu Pro Asn Pro Cys Gln Asn Gly Ala Gln Cys Tyr Asn Arg Ala
530 535 540

Ser Asp Tyr Phe Cys Lys Cys Pro Glu Asp Tyr Glu Gly Lys Asn Cys
545 550 555 560

Ser His Leu Lys Asp His Cys Arg Thr Thr Pro Cys Glu Val Ile Asp
565 570 575

Ser Cys Thr Val Ala Met Ala Ser Asn Asp Thr Pro Glu Gly Val Arg
580 585 590

Tyr Ile Ser Ser Asn Val Cys Gly Pro His Gly Lys Cys Lys Ser Gln
595 600 605

Ser Gly Gly Lys Phe Thr Cys Asp Cys Asn Lys Gly Phe Thr Gly Thr
610 615 620

Tyr Cys His Glu Asn Ile Asn Asp Cys Glu Ser Asn Pro Cys Arg Asn
625 630 635 640

Gly Gly Thr Cys Ile Asp Gly Val Asn Ser Tyr Lys Cys Ile Cys Ser
645 650 655

Asp Gly Trp Glu Gly Ala Tyr Cys Glu Thr Asn Ile Asn Asp Cys Ser
660 665 670

Gln Asn Pro Cys His Asn Gly Gly Thr Cys Arg Asp Leu Val Asn Asp
675 680 685

Phe Tyr Cys Asp Cys Lys Asn Gly Trp Lys Gly Lys Thr Cys His Ser
690 695 700

Arg Asp Ser Gln Cys Asp Glu Ala Thr Cys Asn Asn Gly Gly Thr Cys
705 710 715 720

Tyr Asp Glu Gly Asp Ala Phe Lys Cys Met Cys Pro Gly Gly Trp Glu
725 730 735

Gly Thr Thr Cys Asn Ile Ala Arg Asn Ser Ser Cys Leu Pro Asn Pro
740 745 750

Cys His Asn Gly Gly Thr Cys Val Val Asn Gly Glu Ser Phe Thr Cys
755 760 765

Val Cys Lys Glu Gly Trp Glu Gly Pro Ile Cys Ala Gln Asn Thr Asn
770 775 780

Asp Cys Ser Pro His Pro Cys Tyr Asn Ser Gly Thr Cys Val Asp Gly
785 790 795 800

Asp Asn Trp Tyr Arg Cys Glu Cys Ala Pro Gly Phe Ala Gly Pro Asp
805 810 815

Cys Arg Ile Asn Ile Asn Glu Cys Gln Ser Ser Pro Cys Ala Phe Gly
820 825 830

Ala Thr Cys Val Asp Glu Ile Asn Gly Tyr Arg Cys Val Cys Pro Pro
835 840 845

Gly His Ser Gly Ala Lys Cys Gln Glu Val Ser Gly Arg Pro Cys Ile
850 855 860

Thr Met Gly Ser Val Ile Pro Asp Gly Ala Lys Trp Asp Asp Asp Cys
865 870 875 880

Asn Thr Cys Gln Cys Leu Asn Gly Arg Ile Ala Cys Ser Lys Val Trp
885 890 895

Cys Gly Pro Arg Pro Cys Leu Leu His Lys Gly His Ser Glu Cys Pro
900 905 910

Ser Gly Gln Ser Cys Ile Pro Ile Leu Asp Asp Gln Cys Phe Val His
915 920 925

Pro Cys Thr Gly Val Gly Glu Cys Arg Ser Ser Ser Leu Gln Pro Val
930 935 940

Lys Thr Lys Cys Thr Ser Asp Ser Tyr Tyr Gln Asp Asn Cys Ala Asn
945 950 955 960

Ile Thr Phe Thr Phe Asn Lys Glu Met Met Ser Pro Gly Leu Thr Thr
965 970 975

Glu His Ile Cys Ser Glu Leu Arg Asn Leu Asn Ile Leu Lys Asn Val
980 985 990

Ser Ala Glu Tyr Ser Ile Tyr Ile Ala Cys Glu Pro Ser Pro Ser Ala
995 1000 1005

Asn Asn Glu Ile His Val Ala Ile Ser Ala Glu Asp Ile Arg Asp
1010 1015 1020

Asp Gly Asn Pro Ile Lys Glu Ile Thr Asp Lys Ile Ile Asp Leu
1025 1030 1035

Val Ser Lys Arg Asp Gly Asn Ser Ser Leu Ile Ala Ala Val Ala
1040 1045 1050

Glu Val Arg Val Gln Arg Arg Pro Leu Lys Asn Arg Thr Asp Phe
1055 1060 1065

Leu Val Pro Leu Leu Ser Ser Val Leu Thr Val Ala Trp Ile Cys
1070 1075 1080

Cys Leu Val Thr Ala Phe Tyr Trp Cys Leu Arg Lys Arg Arg Lys
1085 1090 1095

Pro Gly Ser His Thr His Ser Ala Ser Glu Asp Asn Thr Thr Asn
1100 1105 1110

Asn Val Arg Glu Gln Leu Asn Gln Ile Lys Asn Pro Ile Glu Lys
1115 1120 1125

His Gly Ala Asn Thr Val Pro Ile Lys Asp Tyr Glu Asn Lys Asn
1130 1135 1140

Ser Lys Met Ser Lys Ile Arg Thr His Asn Ser Glu Val Glu Glu
1145 1150 1155

Asp Asp Met Asp Lys His Gln Gln Lys Ala Arg Phe Ala Lys Gln
1160 1165 1170

Pro Ala Tyr Thr Leu Val Asp Arg Glu Glu Lys Pro Pro Asn Gly
1175 1180 1185

Thr	Pro	Thr	Lys	His	Pro	Asn	Trp	Thr	Asn	Lys	Gln	Asp	Asn	Arg
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Asp	Leu	Glu	Ser	Ala	Gln	Ser	Leu	Asn	Arg	Met	Glu	Tyr	Ile	Val
1205						1210					1215			

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 <212> DNA
 <213> Homo sapiens

<220>
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 <223> JAGGED1 DNA

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gcctcgggtc	agttcgagtt	ggagatcctg
120		
tccatgcaga	acgtgaacgg	ggagctgcag
aacgggaact	gctgcggcgg	cgcccggaac
180		
ccgggagacc	gcaagtgcac	ccgcgacgag
tgtgacacat	acttcaaagt	gtgcctcaag
240		
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300		
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420		
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attattgaaa	aggcttctca	ctcgggcatg
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gcctgtgacc	agaatggcaa	caaaacttgc
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agagctat	gccgacaagg	ctgcagtcct
720		
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tgaggtgcc	agtacggctg	gcaaggcctg
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tgctccacg	gcatctgtaa	tgagccctgg
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cagctctgtg	acaaagatct	caattactgt
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Leu Arg Gly Ala Arg Cys
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<210> 356

<211> 66

<212> DNA

<213> ARTIFICIAL SEQUENCE

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<210> 357

<211> 19

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Leader Sequence

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Ser Trp Ala

<210> 358

<211> 57

<212> DNA

<213> ARTIFICIAL SEQUENCE

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57