

SEQUENCE LISTING

<110> Mitsubishi Tanabe Pharma Corporation
Pharma Foods International Co., Ltd.

<120> Novel anti-PAD4 antibody

<130> P212096

<150> JP2021-024642

<151> 2021-02-18

<160> 40

<170> PatentIn version 3.5

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<212> PRT

<213> Artificial Sequence

<220>

<223> HCDR

<400> 1

Thr Tyr Ala Met Gly

1 5

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<222> (11)..(11)

<223> Tyr, Thr or Ile

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<222> (12)..(12)

<223> Gly, Ser or Pro

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<222> (13)..(13)
<223> Thr, Val Tyr or Pro

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<222> (14)..(14)
<223> Pro or Asn

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<222> (15)..(15)
<223> Tyr, Ala, Gln or Leu

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<222> (17)..(17)
<223> Gly, Thr or Ser

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Ala Ile Arg Asn Asp Gly Ser Trp Thr Gly Xaa Xaa Xaa Xaa Xaa Lys
1 5 10 15
Xaa

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Xaa Lys Tyr Thr Gly Ser Ser Gly Gly Ser Ile Gly Ala
1 5 10

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

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Ala Asn Asp Lys Arg Pro Ser
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<222> (4)..(4)

<223> Thr, Leu or Tyr

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Gly Thr Ala Xaa Thr Gly Lys Tyr Val
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Ala Ile Arg Asn Asp Gly Ser Trp Thr Gly Tyr Gly Thr Pro Tyr Lys
1 5 10 15

Thr

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<400> 8
Ala Ile Arg Asn Asp Gly Ser Trp Thr Gly Thr Ser Val Asn Ala Lys
1 5 10 15
Thr

<210> 9
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<213> Artificial Sequence

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<400> 9
Ala Ile Arg Asn Asp Gly Ser Trp Thr Gly Ile Gly Tyr Asn Gln Lys
1 5 10 15
Ser

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<213> Artificial Sequence

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

<210> 11

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<400> 11
Ala Lys Tyr Thr Gly Ser Ser Gly Gly Ser Ile Gly Ala
1 5 10

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<213> Artificial Sequence

<220>
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<400> 12
Gly Lys Tyr Thr Gly Ser Ser Gly Gly Ser Ile Gly Ala
1 5 10

<210> 13
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<220>
<223> LCDR

<400> 13
Gly Thr Ala Thr Thr Gly Lys Tyr Val
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<210> 14
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<400> 14
Gly Thr Ala Leu Thr Gly Lys Tyr Val
1 5

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<400> 15
 Gly Thr Ala Tyr Thr Gly Lys Tyr Val
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<210> 16
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<220>
 <223> Antibody heavy chain

<400> 16
 Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Thr Tyr
 20 25 30
 Ala Met Gly Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Phe Val
 35 40 45
 Ala Ala Ile Arg Asn Asp Gly Ser Trp Thr Gly Tyr Gly Thr Pro Tyr
 50 55 60
 Lys Thr Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
 65 70 75 80
 Leu Gln Met Ser Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Lys Tyr Thr Gly Ser Ser Gly Gly Ser Ile Gly Ala Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val
 115 120 125
 Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala
 130 135 140
 Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser
 145 150 155 160
 Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val
 165 170 175
 Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro
 180 185 190
 Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys
 195 200 205
 Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp

210	215	220
Lys Thr His Thr Cys Pro	Pro Cys Pro Ala Pro	Glu Leu Leu Gly Gly
225	230	235
Pro Ser Val Phe Leu Phe	Pro Pro Lys Pro Lys	Asp Thr Leu Met Ile
245	250	255
Ser Arg Thr Pro Glu Val	Thr Cys Val Val Val	Asp Val Ser His Glu
260	265	270
Asp Pro Glu Val Lys Phe	Asn Trp Tyr Val Asp	Gly Val Glu Val His
275	280	285
Asn Ala Lys Thr Lys Pro	Arg Glu Glu Gln Tyr	Asn Ser Thr Tyr Arg
290	295	300
Val Val Ser Val Leu Thr	Val Leu His Gln Asp	Trp Leu Asn Gly Lys
305	310	315
Glu Tyr Lys Cys Lys Val	Ser Asn Lys Ala Leu	Pro Ala Pro Ile Glu
325	330	335
Lys Thr Ile Ser Lys Ala	Lys Gly Gln Pro Arg	Glu Pro Gln Val Tyr
340	345	350
Thr Leu Pro Pro Ser Arg	Asp Glu Leu Thr Lys	Asn Gln Val Ser Leu
355	360	365
Thr Cys Leu Val Lys Gly	Phe Tyr Pro Ser Asp	Ile Ala Val Glu Trp
370	375	380
Glu Ser Asn Gly Gln Pro	Glu Asn Asn Tyr Lys	Thr Thr Pro Pro Val
385	390	395
Leu Asp Ser Asp Gly Ser	Phe Phe Leu Tyr Ser	Lys Leu Thr Val Asp
405	410	415
Lys Ser Arg Trp Gln Gln	Gly Asn Val Phe Ser	Cys Ser Val Met His
420	425	430
Glu Ala Leu His Asn His	Tyr Thr Gln Lys Ser	Leu Ser Leu Ser Pro
435	440	445
Gly Lys		
450		

<210> 17
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 <213> Artificial Sequence

<220>
 <223> Antibody light chain

<400> 17
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 Gly Asn Arg Asn Tyr Tyr Tyr Gly
20 25 30
Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Thr Val Ile Tyr Ala
35 40 45
Asn Asp Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser Asn
50 55 60

Ser Gly Ser Thr Thr Thr Leu Thr Ile Ser Gly Val Gln Ala Glu Asp
 65 70 75 80
 Glu Ala Asp Tyr Tyr Cys Gly Thr Ala Thr Thr Gly Lys Tyr Val Phe
 85 90 95
 Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gln Pro Lys Ala Ala Pro
 100 105 110
 Ser Val Thr Leu Phe Pro Pro Ser Ser Glu Glu Leu Gln Ala Asn Lys
 115 120 125
 Ala Thr Leu Val Cys Leu Ile Ser Asp Phe Tyr Pro Gly Ala Val Thr
 130 135 140
 Val Ala Trp Lys Ala Asp Ser Ser Pro Val Lys Ala Gly Val Glu Thr
 145 150 155 160
 Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys Tyr Ala Ala Ser Ser Tyr
 165 170 175
 Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser His Arg Ser Tyr Ser Cys
 180 185 190
 Gln Val Thr His Glu Gly Ser Thr Val Glu Lys Thr Val Ala Pro Thr
 195 200 205
 Glu Cys
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<210> 18
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 <213> Artificial Sequence

<220>
 <223> Antibody heavy chain

<400> 18
 Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Thr Tyr
 20 25 30
 Ala Met Gly Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Phe Val
 35 40 45
 Ala Ala Ile Arg Asn Asp Gly Ser Trp Thr Gly Thr Ser Val Asn Ala
 50 55 60
 Lys Thr Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
 65 70 75 80
 Leu Gln Met Ser Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Lys Tyr Thr Gly Ser Ser Gly Gly Ser Ile Gly Ala Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val
 115 120 125
 Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala
 130 135 140
 Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser

145					150					155				160	
Trp	Asn	Ser	Gly	Ala	Leu	Thr	Ser	Gly	Val	His	Thr	Phe	Pro	Ala	Val
				165					170					175	
Leu	Gln	Ser	Ser	Gly	Leu	Tyr	Ser	Leu	Ser	Ser	Val	Val	Thr	Val	Pro
			180					185					190		
Ser	Ser	Ser	Leu	Gly	Thr	Gln	Thr	Tyr	Ile	Cys	Asn	Val	Asn	His	Lys
		195					200					205			
Pro	Ser	Asn	Thr	Lys	Val	Asp	Lys	Lys	Val	Glu	Pro	Lys	Ser	Cys	Asp
	210					215				220					
Lys	Thr	His	Thr	Cys	Pro	Pro	Cys	Pro	Ala	Pro	Glu	Leu	Leu	Gly	Gly
225					230				235					240	
Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro	Lys	Pro	Lys	Asp	Thr	Leu	Met	Ile
			245					250					255		
Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys	Val	Val	Val	Asp	Val	Ser	His	Glu
		260					265					270			
Asp	Pro	Glu	Val	Lys	Phe	Asn	Trp	Tyr	Val	Asp	Gly	Val	Glu	Val	His
	275					280				285					
Asn	Ala	Lys	Thr	Lys	Pro	Arg	Glu	Glu	Gln	Tyr	Asn	Ser	Thr	Tyr	Arg
	290				295					300					
Val	Val	Ser	Val	Leu	Thr	Val	Leu	His	Gln	Asp	Trp	Leu	Asn	Gly	Lys
305				310					315					320	
Glu	Tyr	Lys	Cys	Lys	Val	Ser	Asn	Lys	Ala	Leu	Pro	Ala	Pro	Ile	Glu
			325					330					335		
Lys	Thr	Ile	Ser	Lys	Ala	Lys	Gly	Gln	Pro	Arg	Glu	Pro	Gln	Val	Tyr
		340					345					350			
Thr	Leu	Pro	Pro	Ser	Arg	Asp	Glu	Leu	Thr	Lys	Asn	Gln	Val	Ser	Leu
	355					360						365			
Thr	Cys	Leu	Val	Lys	Gly	Phe	Tyr	Pro	Ser	Asp	Ile	Ala	Val	Glu	Trp
	370				375				380						
Glu	Ser	Asn	Gly	Gln	Pro	Glu	Asn	Asn	Tyr	Lys	Thr	Thr	Pro	Pro	Val
385				390					395					400	
Leu	Asp	Ser	Asp	Gly	Ser	Phe	Phe	Leu	Tyr	Ser	Lys	Leu	Thr	Val	Asp
			405				410					415			
Lys	Ser	Arg	Trp	Gln	Gln	Gly	Asn	Val	Phe	Ser	Cys	Ser	Val	Met	His
		420					425					430			
Glu	Ala	Leu	His	Asn	His	Tyr	Thr	Gln	Lys	Ser	Leu	Ser	Leu	Ser	Pro
	435					440					445				
Gly	Lys														
	450														

<210> 19
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 <213> Artificial Sequence

 <220>
 <223> Antibody light chain

 <400> 19

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 Gly Asn Arg Asn Tyr Tyr Tyr Gly
 20 25 30
 Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Thr Val Ile Tyr Ala
 35 40 45
 Asn Asp Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser Asn
 50 55 60
 Ser Gly Ser Thr Thr Thr Leu Thr Ile Ser Gly Val Gln Ala Glu Asp
 65 70 75 80
 Glu Ala Asp Tyr Tyr Cys Gly Thr Ala Thr Thr Gly Lys Tyr Val Phe
 85 90 95
 Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gln Pro Lys Ala Ala Pro
 100 105 110
 Ser Val Thr Leu Phe Pro Pro Ser Ser Glu Glu Leu Gln Ala Asn Lys
 115 120 125
 Ala Thr Leu Val Cys Leu Ile Ser Asp Phe Tyr Pro Gly Ala Val Thr
 130 135 140
 Val Ala Trp Lys Ala Asp Ser Ser Pro Val Lys Ala Gly Val Glu Thr
 145 150 155 160
 Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys Tyr Ala Ala Ser Ser Tyr
 165 170 175
 Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser His Arg Ser Tyr Ser Cys
 180 185 190
 Gln Val Thr His Glu Gly Ser Thr Val Glu Lys Thr Val Ala Pro Thr
 195 200 205
 Glu Cys
 210

<210> 20
 <211> 450
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Antibody heavy chain

<400> 20
 Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Thr Tyr
 20 25 30
 Ala Met Gly Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Phe Val
 35 40 45
 Ala Ala Ile Arg Asn Asp Gly Ser Trp Thr Gly Ile Gly Tyr Asn Gln
 50 55 60
 Lys Ser Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
 65 70 75 80
 Leu Gln Met Ser Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys

				85				90					95			
Gly	Lys	Tyr	Thr	Gly	Ser	Ser	Gly	Gly	Ser	Ile	Gly	Ala	Trp	Gly	Gln	
			100					105					110			
Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Ala	Ser	Thr	Lys	Gly	Pro	Ser	Val	
		115					120					125				
Phe	Pro	Leu	Ala	Pro	Ser	Ser	Lys	Ser	Thr	Ser	Gly	Gly	Thr	Ala	Ala	
	130					135					140					
Leu	Gly	Cys	Leu	Val	Lys	Asp	Tyr	Phe	Pro	Glu	Pro	Val	Thr	Val	Ser	
145					150					155					160	
Trp	Asn	Ser	Gly	Ala	Leu	Thr	Ser	Gly	Val	His	Thr	Phe	Pro	Ala	Val	
			165					170						175		
Leu	Gln	Ser	Ser	Gly	Leu	Tyr	Ser	Leu	Ser	Ser	Val	Val	Thr	Val	Pro	
			180					185					190			
Ser	Ser	Ser	Leu	Gly	Thr	Gln	Thr	Tyr	Ile	Cys	Asn	Val	Asn	His	Lys	
		195				200						205				
Pro	Ser	Asn	Thr	Lys	Val	Asp	Lys	Lys	Val	Glu	Pro	Lys	Ser	Cys	Asp	
	210					215				220						
Lys	Thr	His	Thr	Cys	Pro	Pro	Cys	Pro	Ala	Pro	Glu	Leu	Leu	Gly	Gly	
225				230						235					240	
Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro	Lys	Pro	Lys	Asp	Thr	Leu	Met	Ile	
			245					250						255		
Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys	Val	Val	Val	Asp	Val	Ser	His	Glu	
		260						265					270			
Asp	Pro	Glu	Val	Lys	Phe	Asn	Trp	Tyr	Val	Asp	Gly	Val	Glu	Val	His	
	275					280					285					
Asn	Ala	Lys	Thr	Lys	Pro	Arg	Glu	Glu	Gln	Tyr	Asn	Ser	Thr	Tyr	Arg	
	290					295					300					
Val	Val	Ser	Val	Leu	Thr	Val	Leu	His	Gln	Asp	Trp	Leu	Asn	Gly	Lys	
305				310						315					320	
Glu	Tyr	Lys	Cys	Lys	Val	Ser	Asn	Lys	Ala	Leu	Pro	Ala	Pro	Ile	Glu	
			325					330						335		
Lys	Thr	Ile	Ser	Lys	Ala	Lys	Gly	Gln	Pro	Arg	Glu	Pro	Gln	Val	Tyr	
		340					345						350			
Thr	Leu	Pro	Pro	Ser	Arg	Asp	Glu	Leu	Thr	Lys	Asn	Gln	Val	Ser	Leu	
	355					360						365				
Thr	Cys	Leu	Val	Lys	Gly	Phe	Tyr	Pro	Ser	Asp	Ile	Ala	Val	Glu	Trp	
	370				375					380						
Glu	Ser	Asn	Gly	Gln	Pro	Glu	Asn	Asn	Tyr	Lys	Thr	Thr	Pro	Pro	Val	
385				390					395						400	
Leu	Asp	Ser	Asp	Gly	Ser	Phe	Phe	Leu	Tyr	Ser	Lys	Leu	Thr	Val	Asp	
			405					410						415		
Lys	Ser	Arg	Trp	Gln	Gln	Gly	Asn	Val	Phe	Ser	Cys	Ser	Val	Met	His	
		420					425						430			
Glu	Ala	Leu	His	Asn	His	Tyr	Thr	Gln	Lys	Ser	Leu	Ser	Leu	Ser	Pro	
		435				440							445			
Gly	Lys															
	450															

<210> 21

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

<220>
<223> Antibody light chain

<400> 21
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 Gly Asn Arg Asn Tyr Tyr Tyr Gly
20 25 30
Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Thr Val Ile Tyr Ala
35 40 45
Asn Asp Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser Asn
50 55 60
Ser Gly Ser Thr Thr Thr Leu Thr Ile Ser Gly Val Gln Ala Glu Asp
65 70 75 80
Glu Ala Asp Tyr Tyr Cys Gly Thr Ala Leu Thr Gly Lys Tyr Val Phe
85 90 95
Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gln Pro Lys Ala Ala Pro
100 105 110
Ser Val Thr Leu Phe Pro Pro Ser Ser Glu Glu Leu Gln Ala Asn Lys
115 120 125
Ala Thr Leu Val Cys Leu Ile Ser Asp Phe Tyr Pro Gly Ala Val Thr
130 135 140
Val Ala Trp Lys Ala Asp Ser Ser Pro Val Lys Ala Gly Val Glu Thr
145 150 155 160
Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys Tyr Ala Ala Ser Ser Tyr
165 170 175
Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser His Arg Ser Tyr Ser Cys
180 185 190
Gln Val Thr His Glu Gly Ser Thr Val Glu Lys Thr Val Ala Pro Thr
195 200 205
Glu Cys
210

<210> 22
<211> 450
<212> PRT
<213> Artificial Sequence

<220>
<223> Antibody heavy chain

<400> 22
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Thr Tyr

			20					25				30				
Ala	Met	Gly	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Phe	Val	
		35					40					45				
Ala	Ala	Ile	Arg	Asn	Asp	Gly	Ser	Trp	Thr	Gly	Tyr	Pro	Pro	Pro	Leu	
	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	Ser	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	
			85						90					95		
Ala	Lys	Tyr	Thr	Gly	Ser	Ser	Gly	Gly	Ser	Ile	Gly	Ala	Trp	Gly	Gln	
			100					105					110			
Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Ala	Ser	Thr	Lys	Gly	Pro	Ser	Val	
		115					120					125				
Phe	Pro	Leu	Ala	Pro	Ser	Ser	Lys	Ser	Thr	Ser	Gly	Gly	Thr	Ala	Ala	
	130					135					140					
Leu	Gly	Cys	Leu	Val	Lys	Asp	Tyr	Phe	Pro	Glu	Pro	Val	Thr	Val	Ser	
145					150					155					160	
Trp	Asn	Ser	Gly	Ala	Leu	Thr	Ser	Gly	Val	His	Thr	Phe	Pro	Ala	Val	
			165					170						175		
Leu	Gln	Ser	Ser	Gly	Leu	Tyr	Ser	Leu	Ser	Ser	Val	Val	Thr	Val	Pro	
		180						185					190			
Ser	Ser	Ser	Leu	Gly	Thr	Gln	Thr	Tyr	Ile	Cys	Asn	Val	Asn	His	Lys	
	195					200					205					
Pro	Ser	Asn	Thr	Lys	Val	Asp	Lys	Lys	Val	Glu	Pro	Lys	Ser	Cys	Asp	
	210					215				220						
Lys	Thr	His	Thr	Cys	Pro	Pro	Cys	Pro	Ala	Pro	Glu	Leu	Leu	Gly	Gly	
225					230					235					240	
Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro	Lys	Pro	Lys	Asp	Thr	Leu	Met	Ile	
			245					250						255		
Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys	Val	Val	Val	Asp	Val	Ser	His	Glu	
		260						265					270			
Asp	Pro	Glu	Val	Lys	Phe	Asn	Trp	Tyr	Val	Asp	Gly	Val	Glu	Val	His	
		275					280					285				
Asn	Ala	Lys	Thr	Lys	Pro	Arg	Glu	Glu	Gln	Tyr	Asn	Ser	Thr	Tyr	Arg	
	290					295					300					
Val	Val	Ser	Val	Leu	Thr	Val	Leu	His	Gln	Asp	Trp	Leu	Asn	Gly	Lys	
305					310					315					320	
Glu	Tyr	Lys	Cys	Lys	Val	Ser	Asn	Lys	Ala	Leu	Pro	Ala	Pro	Ile	Glu	
			325						330					335		
Lys	Thr	Ile	Ser	Lys	Ala	Lys	Gly	Gln	Pro	Arg	Glu	Pro	Gln	Val	Tyr	
		340						345					350			
Thr	Leu	Pro	Pro	Ser	Arg	Asp	Glu	Leu	Thr	Lys	Asn	Gln	Val	Ser	Leu	
		355					360					365				
Thr	Cys	Leu	Val	Lys	Gly	Phe	Tyr	Pro	Ser	Asp	Ile	Ala	Val	Glu	Trp	
	370					375					380					
Glu	Ser	Asn	Gly	Gln	Pro	Glu	Asn	Asn	Tyr	Lys	Thr	Thr	Pro	Pro	Val	
385					390					395					400	
Leu	Asp	Ser	Asp	Gly	Ser	Phe	Phe	Leu	Tyr	Ser	Lys	Leu	Thr	Val	Asp	
			405						410					415		
Lys	Ser	Arg	Trp	Gln	Gln	Gly	Asn	Val	Phe	Ser	Cys	Ser	Val	Met	His	

		420					425				430			
Glu	Ala	Leu	His	Asn	His	Tyr	Thr	Gln	Lys	Ser	Leu	Ser	Leu	Ser
		435					440					445		Pro
Gly	Lys													
		450												

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

<220>
 <223> Antibody light chain

<400> 23
 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 Gly Asn Arg Asn Tyr Tyr Tyr Gly
 20 25 30
 Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Thr Val Ile Tyr Ala
 35 40 45
 Asn Asp Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser Asn
 50 55 60
 Ser Gly Ser Thr Thr Thr Leu Thr Ile Ser Gly Val Gln Ala Glu Asp
 65 70 75 80
 Glu Ala Asp Tyr Tyr Cys Gly Thr Ala Tyr Thr Gly Lys Tyr Val Phe
 85 90 95
 Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gln Pro Lys Ala Ala Pro
 100 105 110
 Ser Val Thr Leu Phe Pro Pro Ser Ser Glu Glu Leu Gln Ala Asn Lys
 115 120 125
 Ala Thr Leu Val Cys Leu Ile Ser Asp Phe Tyr Pro Gly Ala Val Thr
 130 135 140
 Val Ala Trp Lys Ala Asp Ser Ser Pro Val Lys Ala Gly Val Glu Thr
 145 150 155 160
 Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys Tyr Ala Ala Ser Ser Tyr
 165 170 175
 Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser His Arg Ser Tyr Ser Cys
 180 185 190
 Gln Val Thr His Glu Gly Ser Thr Val Glu Lys Thr Val Ala Pro Thr
 195 200 205
 Glu Cys
 210

<210> 24
 <211> 17
 <212> PRT
 <213> Artificial Sequence

<220>

<223> HCDR

<400> 24

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

<210> 25

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> LCDR

<400> 25

Gly Thr Ala Asp Thr Gly Lys Tyr Val
1 5

<210> 26

<211> 450

<212> PRT

<213> Artificial Sequence

<220>

<223> Antibody heavy chain

<400> 26

Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Thr Tyr
20 25 30
Ala Met Gly Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Phe Val
35 40 45
Ala Ala Ile Arg Asn Asp Gly Ser Trp Thr Gly Tyr Gly Ala Ala Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Lys Tyr Thr Gly Ser Ser Gly Gly Ser Ile Gly Ala Trp Gly Gln
100 105 110
Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val
115 120 125
Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala

130		135		140
Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser				
145		150		155
Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val				
	165		170	
Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro				
	180		185	
Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys				
	195		200	
Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp				
	210		215	
Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly				
225		230		235
Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile				
	245		250	
Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu				
	260		265	
Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His				
	275		280	
Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg				
	290		295	
Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys				
305		310		315
Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu				
	325		330	
Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr				
	340		345	
Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu				
	355		360	
Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp				
	370		375	
Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val				
385		390		395
Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp				
	405		410	
Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His				
	420		425	
Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro				
	435		440	
Gly Lys			445	
450				

<210> 27
 <211> 210
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Antibody light chain

<400> 27

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 Gly Asn Arg Asn Tyr Tyr Tyr Gly
20 25 30
Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Thr Val Ile Tyr Ala
35 40 45
Asn Asp Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser Asn
50 55 60
Ser Gly Ser Thr Thr Thr Leu Thr Ile Ser Gly Val Gln Ala Glu Asp
65 70 75 80
Glu Ala Asp Tyr Tyr Cys Gly Thr Ala Asp Thr Gly Lys Tyr Val Phe
85 90 95
Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gln Pro Lys Ala Ala Pro
100 105 110
Ser Val Thr Leu Phe Pro Pro Ser Ser Glu Glu Leu Gln Ala Asn Lys
115 120 125
Ala Thr Leu Val Cys Leu Ile Ser Asp Phe Tyr Pro Gly Ala Val Thr
130 135 140
Val Ala Trp Lys Ala Asp Ser Ser Pro Val Lys Ala Gly Val Glu Thr
145 150 155 160
Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys Tyr Ala Ala Ser Ser Tyr
165 170 175
Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser His Arg Ser Tyr Ser Cys
180 185 190
Gln Val Thr His Glu Gly Ser Thr Val Glu Lys Thr Val Ala Pro Thr
195 200 205
Glu Cys
210

<210> 28

<211> 450

<212> PRT

<213> Artificial Sequence

<220>

<223> Antibody heavy chain

<400> 28

Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Thr Tyr
20 25 30
Ala Met Gly Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Phe Val
35 40 45
Ala Ala Ile Arg Asn Asp Gly Ser Trp Thr Gly Tyr Gly Ala Ala 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	Ser	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys
				85					90					95	
Ala	Lys	Tyr	Thr	Gly	Ser	Ser	Gly	Gly	Ser	Ile	Gly	Ala	Trp	Gly	Gln
			100					105					110		
Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Ala	Ser	Thr	Lys	Gly	Pro	Ser	Val
		115					120					125			
Phe	Pro	Leu	Ala	Pro	Ser	Ser	Lys	Ser	Thr	Ser	Gly	Gly	Thr	Ala	Ala
	130					135					140				
Leu	Gly	Cys	Leu	Val	Lys	Asp	Tyr	Phe	Pro	Glu	Pro	Val	Thr	Val	Ser
145					150					155					160
Trp	Asn	Ser	Gly	Ala	Leu	Thr	Ser	Gly	Val	His	Thr	Phe	Pro	Ala	Val
				165					170					175	
Leu	Gln	Ser	Ser	Gly	Leu	Tyr	Ser	Leu	Ser	Ser	Val	Val	Thr	Val	Pro
			180					185					190		
Ser	Ser	Ser	Leu	Gly	Thr	Gln	Thr	Tyr	Ile	Cys	Asn	Val	Asn	His	Lys
		195				200					205				
Pro	Ser	Asn	Thr	Lys	Val	Asp	Lys	Lys	Val	Glu	Pro	Lys	Ser	Cys	Asp
	210					215				220					
Lys	Thr	His	Thr	Cys	Pro	Pro	Cys	Pro	Ala	Pro	Glu	Leu	Leu	Gly	Gly
225				230						235				240	
Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro	Lys	Pro	Lys	Asp	Thr	Leu	Met	Ile
			245					250					255		
Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys	Val	Val	Val	Asp	Val	Ser	His	Glu
		260					265					270			
Asp	Pro	Glu	Val	Lys	Phe	Asn	Trp	Tyr	Val	Asp	Gly	Val	Glu	Val	His
	275					280					285				
Asn	Ala	Lys	Thr	Lys	Pro	Arg	Glu	Glu	Gln	Tyr	Asn	Ser	Thr	Tyr	Arg
	290					295				300					
Val	Val	Ser	Val	Leu	Thr	Val	Leu	His	Gln	Asp	Trp	Leu	Asn	Gly	Lys
305				310					315					320	
Glu	Tyr	Lys	Cys	Lys	Val	Ser	Asn	Lys	Ala	Leu	Pro	Ala	Pro	Ile	Glu
			325					330					335		
Lys	Thr	Ile	Ser	Lys	Ala	Lys	Gly	Gln	Pro	Arg	Glu	Pro	Gln	Val	Tyr
		340					345						350		
Thr	Leu	Pro	Ser	Arg	Asp	Glu	Leu	Thr	Lys	Asn	Gln	Val	Ser	Leu	
	355				360					365					
Thr	Cys	Leu	Val	Lys	Gly	Phe	Tyr	Pro	Ser	Asp	Ile	Ala	Val	Glu	Trp
	370				375				380						
Glu	Ser	Asn	Gly	Gln	Pro	Glu	Asn	Asn	Tyr	Lys	Thr	Thr	Pro	Pro	Val
385				390					395				400		
Leu	Asp	Ser	Asp	Gly	Ser	Phe	Phe	Leu	Tyr	Ser	Lys	Leu	Thr	Val	Asp
			405					410					415		
Lys	Ser	Arg	Trp	Gln	Gln	Gly	Asn	Val	Phe	Ser	Cys	Ser	Val	Met	His
		420					425					430			
Glu	Ala	Leu	His	Asn	His	Tyr	Thr	Gln	Lys	Ser	Leu	Ser	Leu	Ser	Pro
	435					440					445				
Gly	Lys														
	450														

<210> 29
 <211> 663
 <212> PRT
 <213> Homo sapiens

<400> 29

Met	Ala	Gln	Gly	Thr	Leu	Ile	Arg	Val	Thr	Pro	Glu	Gln	Pro	Thr	His
1			5						10					15	
Ala	Val	Cys	Val	Leu	Gly	Thr	Leu	Thr	Gln	Leu	Asp	Ile	Cys	Ser	Ser
		20						25					30		
Ala	Pro	Glu	Asp	Cys	Thr	Ser	Phe	Ser	Ile	Asn	Ala	Ser	Pro	Gly	Val
		35					40					45			
Val	Val	Asp	Ile	Ala	His	Gly	Pro	Pro	Ala	Lys	Lys	Lys	Ser	Thr	Gly
	50					55					60				
Ser	Ser	Thr	Trp	Pro	Leu	Asp	Pro	Gly	Val	Glu	Val	Thr	Leu	Thr	Met
65					70					75					80
Lys	Val	Ala	Ser	Gly	Ser	Thr	Gly	Asp	Gln	Lys	Val	Gln	Ile	Ser	Tyr
			85					90						95	
Tyr	Gly	Pro	Lys	Thr	Pro	Pro	Val	Lys	Ala	Leu	Leu	Tyr	Leu	Thr	Gly
			100					105					110		
Val	Glu	Ile	Ser	Leu	Cys	Ala	Asp	Ile	Thr	Arg	Thr	Gly	Lys	Val	Lys
	115						120					125			
Pro	Thr	Arg	Ala	Val	Lys	Asp	Gln	Arg	Thr	Trp	Thr	Trp	Gly	Pro	Cys
	130					135					140				
Gly	Gln	Gly	Ala	Ile	Leu	Leu	Val	Asn	Cys	Asp	Arg	Asp	Asn	Leu	Glu
145					150					155					160
Ser	Ser	Ala	Met	Asp	Cys	Glu	Asp	Asp	Glu	Val	Leu	Asp	Ser	Glu	Asp
			165						170					175	
Leu	Gln	Asp	Met	Ser	Leu	Met	Thr	Leu	Ser	Thr	Lys	Thr	Pro	Lys	Asp
		180						185					190		
Phe	Phe	Thr	Asn	His	Thr	Leu	Val	Leu	His	Val	Ala	Arg	Ser	Glu	Met
	195						200					205			
Asp	Lys	Val	Arg	Val	Phe	Gln	Ala	Thr	Arg	Gly	Lys	Leu	Ser	Ser	Lys
	210					215					220				
Cys	Ser	Val	Val	Leu	Gly	Pro	Lys	Trp	Pro	Ser	His	Tyr	Leu	Met	Val
225					230					235					240
Pro	Gly	Gly	Lys	His	Asn	Met	Asp	Phe	Tyr	Val	Glu	Ala	Leu	Ala	Phe
			245					250						255	
Pro	Asp	Thr	Asp	Phe	Pro	Gly	Leu	Ile	Thr	Leu	Thr	Ile	Ser	Leu	Leu
			260					265					270		
Asp	Thr	Ser	Asn	Leu	Glu	Leu	Pro	Glu	Ala	Val	Val	Phe	Gln	Asp	Ser
		275					280					285			
Val	Val	Phe	Arg	Val	Ala	Pro	Trp	Ile	Met	Thr	Pro	Asn	Thr	Gln	Pro
	290					295					300				
Pro	Gln	Glu	Val	Tyr	Ala	Cys	Ser	Ile	Phe	Glu	Asn	Glu	Asp	Phe	Leu
305					310					315					320
Lys	Ser	Val	Thr	Thr	Leu	Ala	Met	Lys	Ala	Lys	Cys	Lys	Leu	Thr	Ile
			325						330					335	
Cys	Pro	Glu	Glu	Glu	Asn	Met	Asp	Asp	Gln	Trp	Met	Gln	Asp	Glu	Met

				340				345				350					
Glu	Ile	Gly	Tyr	Ile	Gln	Ala	Pro	His	Lys	Thr	Leu	Pro	Val	Val	Phe		
		355					360					365					
Asp	Ser	Pro	Arg	Asn	Arg	Gly	Leu	Lys	Glu	Phe	Pro	Ile	Lys	Arg	Val		
		370				375					380						
Met	Gly	Pro	Asp	Phe	Gly	Tyr	Val	Thr	Arg	Gly	Pro	Gln	Thr	Gly	Gly		
385					390					395					400		
Ile	Ser	Gly	Leu	Asp	Ser	Phe	Gly	Asn	Leu	Glu	Val	Ser	Pro	Pro	Val		
				405				410						415			
Thr	Val	Arg	Gly	Lys	Glu	Tyr	Pro	Leu	Gly	Arg	Ile	Leu	Phe	Gly	Asp		
			420					425					430				
Ser	Cys	Tyr	Pro	Ser	Asn	Asp	Ser	Arg	Gln	Met	His	Gln	Ala	Leu	Gln		
		435					440					445					
Asp	Phe	Leu	Ser	Ala	Gln	Gln	Val	Gln	Ala	Pro	Val	Lys	Leu	Tyr	Ser		
	450					455					460						
Asp	Trp	Leu	Ser	Val	Gly	His	Val	Asp	Glu	Phe	Leu	Ser	Phe	Val	Pro		
465					470					475					480		
Ala	Pro	Asp	Arg	Lys	Gly	Phe	Arg	Leu	Leu	Leu	Ala	Ser	Pro	Arg	Ser		
				485				490						495			
Cys	Tyr	Lys	Leu	Phe	Gln	Glu	Gln	Gln	Asn	Glu	Gly	His	Gly	Glu	Ala		
		500					505						510				
Leu	Leu	Phe	Glu	Gly	Ile	Lys	Lys	Lys	Lys	Gln	Gln	Lys	Ile	Lys	Asn		
	515						520					525					
Ile	Leu	Ser	Asn	Lys	Thr	Leu	Arg	Glu	His	Asn	Ser	Phe	Val	Glu	Arg		
	530					535					540						
Cys	Ile	Asp	Trp	Asn	Arg	Glu	Leu	Leu	Lys	Arg	Glu	Leu	Gly	Leu	Ala		
545					550					555					560		
Glu	Ser	Asp	Ile	Ile	Asp	Ile	Pro	Gln	Leu	Phe	Lys	Leu	Lys	Glu	Phe		
				565				570						575			
Ser	Lys	Ala	Glu	Ala	Phe	Phe	Pro	Asn	Met	Val	Asn	Met	Leu	Val	Leu		
			580					585					590				
Gly	Lys	His	Leu	Gly	Ile	Pro	Lys	Pro	Phe	Gly	Pro	Val	Ile	Asn	Gly		
		595					600					605					
Arg	Cys	Cys	Leu	Glu	Glu	Lys	Val	Cys	Ser	Leu	Leu	Glu	Pro	Leu	Gly		
	610					615						620					
Leu	Gln	Cys	Thr	Phe	Ile	Asn	Asp	Phe	Phe	Thr	Tyr	His	Ile	Arg	His		
625					630					635					640		
Gly	Glu	Val	His	Cys	Gly	Thr	Asn	Val	Arg	Arg	Lys	Pro	Phe	Ser	Phe		
				645					650					655			
Lys	Trp	Trp	Asn	Met	Val	Pro											
				660													

<210> 30
 <211> 1353
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antibody heavy chain

<400> 30

gagggtgcagc	tggttgagtc	tgggggagga	ctgggtgcagc	ctggcggaag	cctgagactg	60
tcttgtgccg	ccagcggtt	caccttcagc	acctatgcc	tgggctgggt	gcgccaggcc	120
cctggaaaagg	gcctggaatt	tgtggccgcc	atccggaacg	atggcagctg	gacaggatat	180
ggcgccgctg	tgaagggccg	gttcaccatc	agccgggaca	acagcaagaa	caccctgtac	240
ctgcagatga	acagcctgcg	ggccgaggac	accgccgtgt	actactgtgc	caagtacacc	300
ggcagcagcg	gcggctctat	tggagcttgg	ggacagggaa	ccctgggtcac	cgtctcctca	360
gcctctacaa	agggccccag	cgtgttccct	ctggccccta	gcagcaagag	cacatctggc	420
ggaacagccg	ccctgggctg	cctcgtgaag	gactactttc	ccgagcccgt	gaccgtgtcc	480
tggaactctg	gcgctctgac	aagcggcggt	cacacctttc	cagccgtgct	gcagagcagc	540
ggcctgtact	ctctgagcag	cgctcgtgaca	gtgcccagca	gctctctggg	cacccagacc	600
tacatctgca	acgtgaacca	caagcccagc	aacaccaagg	tggacaagaa	ggtggaaccc	660
aagagctgcg	acaagaccca	cacctgtccc	ccttgtcctg	ccccgaact	gctgggaggc	720
ccttcgtgt	tcctgttccc	cccaaagccc	aaggacaccc	tgatgatcag	ccggaccccc	780
gaagtgcct	gcgtgggtgt	ggatgtgtcc	cacgaggacc	ctgaagtga	gttcaattgg	840
tacgtggacg	gcgtgggaag	gcacaacgcc	aagaccaagc	ctagagagga	acagtacaac	900
agcacctacc	gggtgggtgt	cgctcgtgaca	gtgctgcacc	aggactggct	gaacggcaaa	960
gagtacaagt	gcaagggtgt	caacaaggcc	ctgcctgccc	ccatcgagaa	aaccatcagc	1020
aaggccaagg	gccagccccg	cgaaccccag	gtgtacacac	tgcccccaag	cagggacgag	1080
ctgaccaaga	accagggtgt	cctgacctgt	ctcgtgaaag	gcttctaccc	ctccgatatc	1140
gccgtggaat	gggagagcaa	cggccagccc	gagaacaact	acaagaccac	ccccctgtg	1200
ctggacagcg	acggctcatt	cttcctgtac	agcaagctga	ccgtggacaa	gtcccgggtg	1260
cagcagggca	acgtgttcag	ctgcagcggt	atgcacgagg	ccctgcacaa	ccactacacc	1320
cagaagtccc	tgagcctgag	ccccggcaaa	tag			1353

<210> 31

<211> 633

<212> DNA

<213> Artificial Sequence

<220>

<223> Antibody light chain

<400> 31

agctatgagc	tgactcagcc	accctcgggt	tcagtgtccc	caggacagac	ggccaggatc	60
acctgctccg	gggggaatag	gaactactac	tatggctgggt	accagcagaa	gccaggccag	120
ggccctgtga	ccgtgatata	tgctaacgac	aagagaccct	cgggaatccc	tgagcgattc	180
tctggctcca	actcagggtc	aacaaccacg	ttgacctca	gtggagtcca	ggcagaagat	240
gaggctgact	attactgtgg	gaccgcagac	accgggaagt	atgtattcgg	cggagggacc	300
aagctgaccg	tcctgggtca	gccaaggct	gccccctcgg	tcactctgtt	cccgccctcc	360
tctgaggagc	ttcaagccaa	caaggccaca	ctgggtgtgt	tcataagtga	cttctacccg	420
ggagccgtga	cagtggcctg	gaaggcagat	agcagccccg	tcaaggcggg	agtggagacc	480
accacaccct	ccaaacaaag	caacaacaag	tacgcggcca	gcagctatct	gagcctgacg	540
cctgagcagt	ggaaagtccca	cagaagctac	agctgccagg	tcacgcatga	agggagcacc	600
gtggagaaga	cagtggcccc	tacagaatgt	tag			633

<210> 32

<211> 1353
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Antibody heavy chain

<400> 32
 gaagtacagc tgcttgagag tggcggaggg ttggtccaac ctggtgggtc cttacgactg 60
 agctgtgcag catctggctt caccttcagc acctatgcga tgggatgggt tcgtcaggct 120
 cccggtaaaag gcctggagtt tgtggctgcc atacgcaatg atgggtcttg gactgggtat 180
 gggactcctt ataaaactcg gtttacgatc tcaagggaca actccaagaa taccctctat 240
 ctccagatgt cttctctaag agccgaagac acagccgtgt actactgcgc caagtacact 300
 ggggtcaagtg gaggctcgat tggcgcgatgg ggtcagggaa cactgggtcac agtgtccagc 360
 gcctctacaa agggccccag cgtgttcctt ctggccccta gcagcaagag cacatctggc 420
 ggaacagccg ccctgggctg cctcgtgaag gactactttc ccgagcccgt gaccgtgtcc 480
 tggaaactctg gcgctctgac aagcggcgtg cacacctttc cagccgtgct gcagagcagc 540
 ggctgtact ctctgagcag cgtcgtgaca gtgcccagca gctctctggg caccagacc 600
 tacatctgca acgtgaacca caagcccagc aacaccaagg tggacaagaa ggtggaaccc 660
 aagagctgcg acaagaccca cacctgtccc ctttgtcttg cccccgaact gctgggaggc 720
 ccttccgtgt tcctgttccc cccaaagccc aaggacaccc tgatgatcag ccggaccccc 780
 gaagtgcact gcgtgggtgg ggatgtgtcc cacgaggacc ctgaagtga gttcaattgg 840
 tacgtggacg gcgtggaagt gcacaacgcc aagaccaagc ctagagagga acagtacaac 900
 agcacctacc ggggtgggtg cgtgctgaca gtgctgcacc aggactggct gaacggcaaa 960
 gagtacaagt gcaagggtgc caacaaggcc ctgcctgccc ccatcgagaa aaccatcagc 1020
 aaggccaagg gccagccccg cgaaccccag gtgtacacac tgcccccaag cagggacgag 1080
 ctgaccaaga accagggtgc cctgacctgt ctcgtgaaag gcttctaccc ctccgatatc 1140
 gccgtggaat gggagagcaa cggccagccc gagaacaact acaagaccac cccccctgtg 1200
 ctggacagcg acggctcatt cttcctgtac agcaagctga ccgtggacaa gtcccgggtg 1260
 cagcagggca acgtgttcag ctgcagcgtg atgcacgagg ccctgcacaa ccactacacc 1320
 cagaagtccc tgagcctgag ccccggaaca tga 1353

<210> 33
 <211> 633
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Antibody light chain

<400> 33
 tcgtatgagc tgacacaacc tccctcagt tccgtaagtc caggacagac tgcgagaatc 60
 acctgctctg gaggcaatcg caactactac tatgggtgggt atcagcagaa acccggacaa 120
 gctcctgtga ccgtcatcta tgccaacgac aaacggccat caggcattcc ggagagggtc 180
 agcggtagca attccgggtc taccaccact ctcacgataa gtgggggttca ggctgaagat 240
 gaagccgact actactgtgg cacagcaacc acaggcaagt acgtgtttgg tggaggcact 300
 aagctgacag tccttgggtc gcccaaggct gccccctcgg tcaactctgtt cccgccctcc 360
 tctgaggagc ttcaagccaa caaggccaca ctggtgtgtc tcataagtga cttctacccg 420
 ggagccgtga cagtggcctg gaaggcagat agcagccccg tcaaggcggg agtggagacc 480

accacaccct	ccaaacaaaag	caacaacaag	tacgcggcca	gcagctatct	gagcctgacg	540
cctgagcagt	ggaagtccca	cagaagctac	agctgccagg	tcacgcatga	agggagcacc	600
gtggagaaga	cagtggcccc	tacagaatgt	tag			633

<210> 34
 <211> 1353
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Antibody heavy chain

<400>	34	
gaagtacagc	tgcttgagag	60
agctgtgcag	catctggctt	120
cccggtaaaag	gcctggagtt	180
agtgtgaatg	ctaaaacgcg	240
ctccagatgt	cttctctaag	300
gggtcaagtg	gaggctcgat	360
gcctctacaa	agggccccag	420
ggaacagccg	ccctgggctg	480
tggaactctg	gcgctctgac	540
ggcctgtact	ctctgagcag	600
tacatctgca	acgtgaacca	660
aagagctgcg	acaagaccca	720
ccttcctgtg	tcctgttccc	780
gaagtgacct	gcgtgggtgt	840
tacgtggacg	gcgtgggaagt	900
agcacctacc	gggtgggtgtc	960
gagtacaagt	gcaagggtgtc	1020
aaggccaagg	gccagccccg	1080
ctgaccaaga	accaggtgtc	1140
gccgtggaat	gggagagcaa	1200
ctggacagcg	acggctcatt	1260
cagcagggca	acgtgttcag	1320
cagaagtccc	tgagcctgag	1353

<210> 35
 <211> 633
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Antibody light chain

<400>	35	
tcgtatgagc	tgacacaacc	60
acctgctctg	gaggcaatcg	120

gctcctgtga	ccgtcatcta	tgccaacgac	aaacggccat	caggcattcc	ggagagggttc	180
agcggttagca	attccgggtc	taccaccact	ctcacgataa	gtgggggttca	ggctgaagat	240
gaagccgact	actactgtgg	cacagcaacc	acaggcaagt	acgtgtttgg	tggaggcact	300
aagctgacag	tccttgggtca	gcccgaaggct	gccccctcgg	tcactctgtt	cccgccctcc	360
tctgaggagc	ttcaagccaa	caaggccaca	ctggtgtgtc	tcataagtga	cttctacccg	420
ggagccgtga	cagtggcctg	gaaggcagat	agcagccccg	tcaaggcggg	agtggagacc	480
accacaccct	ccaaacaaaag	caacaacaag	tacgcggcca	gcagctatct	gagcctgacg	540
cctgagcagt	ggaagtccca	cagaagctac	agctgccagg	tcacgcatga	agggagcacc	600
gtggagaaga	cagtggcccc	tacagaatgt	tag			633

<210> 36
 <211> 1353
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Antibody heavy chain

<400>	36	
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agctgtgcag	catctggctt	caccttcagc
cccggtaaaag	gcctggagtt	tgtggctgcc
ggttataatc	agaaaatctcg	gtttacgatc
ctccagatgt	cttctctaag	agccgaagac
gggtcaagtg	gaggctcgat	tggcgcgatg
gcctctacaa	agggccccag	cgtgttccct
ggaacagccg	ccctgggctg	cctcgtgaag
tggaaactctg	gcgctctgac	aagcggcgtg
ggcctgtact	ctctgagcag	cgctcgtgaca
tacatctgca	acgtgaacca	caagcccagc
aagagctgcg	acaagaccca	cacctgtccc
ccttccgtgt	tcctgttccc	cccaaagccc
gaagtgacct	gcgtgggtgg	ggatgtgtcc
tacgtggacg	gcgtggaagt	gcacaacgcc
agcacctacc	gggtgggtgtc	cgtgctgaca
gagtacaagt	gcaagggtgtc	caacaaggcc
aaggccaagg	gccagccccg	cgaaccccag
ctgaccaaga	accagggtgtc	cctgacctgt
gccgtggaat	gggagagcaa	cggccagccc
ctggacagcg	acggctcatt	cttcctgtac
cagcagggca	acgtgttcag	ctgcagcgtg
cagaagtccc	tgagcctgag	ccccggcaaa
		tga

<210> 37
 <211> 633
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Antibody light chain

<400> 37

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gctcctgtga	ccgtcatcta	tgccaacgac	aaacggccat	caggcattcc	ggagagggtc	180
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tctgaggagc	ttcaagccaa	caaggccaca	ctggtgtgtc	tcataagtga	cttctacccg	420
ggagccgtga	cagtggcctg	gaaggcagat	agcagccccg	tcaaggcggg	agtggagacc	480
accacaccct	ccaaacaaag	caacaacaag	tacgcggcca	gcagctatct	gagcctgacg	540
cctgagcagt	ggaaagtcca	cagaagctac	agctgccagg	tcacgcatga	agggagcacc	600
gtggagaaga	cagtggcccc	tacagaatgt	tag			633

<210> 38

<211> 1353

<212> DNA

<213> Artificial Sequence

<220>

<223> Antibody heavy chain

<400> 38

gaagtacagc	tgcttgagag	tggcggaggg	ttggtccaac	ctggtgggtc	cttacgactg	60
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cccggtaaag	gcctggagtt	tgtggctgcc	atacgcaatg	atgggtcttg	gactgggtat	180
cctcctcctc	ttaaaggctg	gtttacgatc	tcaagggaca	actccaagaa	taccctctat	240
ctccagatgt	cttctctaag	agccgaagac	acagccgtgt	actactgcgc	caagtacact	300
gggtcaagtg	gaggctcgat	tggcgcgatg	ggtcaggga	cactgggtcac	agtgtccagc	360
gcctctacaa	agggccccag	cgtgttccct	ctggccccct	gcagcaagag	cacatctggc	420
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aaggccaagg	gccagccccg	cgaaccccag	gtgtacacac	tgcccccaag	cagggacgag	1080
ctgaccaaga	accagggtgtc	cctgacctgt	ctcgtgaaag	gcttctaccc	ctccgatatc	1140
gccgtggaat	gggagagcaa	cggccagccc	gagaacaact	acaagaccac	ccccctgtg	1200
ctggacagcg	acggctcatt	cttcctgtac	agcaagctga	ccgtggacaa	gtcccgggtg	1260
cagcagggca	acgtgttcag	ctgcagcgtg	atgcacgagg	ccctgcacaa	ccactacacc	1320
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<210> 39
 <211> 633
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Antibody light chain

<400> 39
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 gctcctgtga ccgtcatcta tgccaacgac aaacggccat caggcattcc ggagagggtc 180
 agcggtagca attccgggtc taccaccact ctcacgataa gtgggggttca ggctgaagat 240
 gaagccgact actactgtgg cacagcatac acaggcaagt acgtgtttgg tggaggcact 300
 aagctgacag tccttgggtca gcccgaaggct gcccctcgg tcaactctgtt cccgccctcc 360
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 ggagccgtga cagtggcctg gaaggcagat agcagccccg tcaaggcggg agtggagacc 480
 accacaccct ccaaacaaag caacaacaag tacgcggcca gcagctatct gagcctgacg 540
 cctgagcagt ggaagtccca cagaagctac agctgccagg tcacgcatga agggagcacc 600
 gtggagaaga cagtggcccc tacagaatgt tag 633

<210> 40
 <211> 1353
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Antibody heavy chain

<400> 40
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 cctggaaagg gcctggaatt tgtggccgcc atccggaacg atggcagctg gacaggatat 180
 ggcgccgctg tgaagggccg gttcaccatc agccgggaca acagcaagaa caccctgtac 240
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 ggaacagccg ccctgggctg cctcgtgaag gactactttc ccgagcccgt gaccgtgtcc 480
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 ggctgtact ctctgagcag cgtcgtgaca gtgcccagca gctctctggg caccagacc 600
 tacatctgca acgtgaacca caagcccagc aacaccaagg tggacaagaa ggtggaaccc 660
 aagagctgcg acaagaccca cacctgtccc ccttgtcctg ccccggaact gctgggaggc 720
 ccttccgtgt tcctgttccc cccaaagccc aaggacaccc tgatgatcag ccggaccccc 780
 gaagtgcact gcgtggtggt ggatgtgtcc cacgaggacc ctgaagtga gttcaattgg 840
 tacgtggacg gcgtggaagt gcacaacgcc aagaccaagc ctgagagga acagtacaac 900
 agcacctacc ggggtggtgtc cgtgctgaca gtgctgcacc aggactggct gaacggcaaa 960
 gagtacaagt gcaagggtgtc caacaaggcc ctgcctgccc ccatcgagaa aaccatcagc 1020
 aaggccaagg gccagccccg cgaaccccag gtgtacacac tgcccccaag cagggacgag 1080

ctgaccaaga	accaggtgtc	cctgacctgt	ctcgtgaaag	gcttctaccc	ctccgatatc	1140
gccgtggaat	gggagagcaa	cggccagccc	gagaacaact	acaagaccac	ccccctgtg	1200
ctggacagcg	acggctcatt	cttcctgtac	agcaagctga	ccgtggacaa	gtcccgggtgg	1260
cagcagggca	acgtgttcag	ctgcagcgtg	atgcacgagg	ccctgcacaa	ccactacacc	1320
cagaagtccc	tgagcctgag	ccccggcaaa	tga			1353