

SEQUENCE LISTING

<110> WuXi Biologics (Shanghai) CO., LTD.
WUXI BIOLOGICS (CAYMAN) INC.

<120> NOVEL BISPECIFIC CD3/CD19 POLYPEPTIDE COMPLEXES

<130> IEC180126PCT

<160> 40

<170> PatentIn version 3.5

<210> 1

<211> 116

<212> PRT

<213> artificial sequence

<220>

<223> synthetic

<400> 1

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

<210> 2

<211> 87

<212> PRT

<213> artificial sequence

<220>

<223> synthetic

<400> 2

```
Ala Val Tyr Gln Leu Arg Asp Ser Lys Ser Ser Asp Lys Ser Val Cys
1          5          10          15
Leu Phe Thr Asp Phe Asp Ser Gln Thr Gln Val Ser Gln Ser Lys Asp
20          25          30
Ser Asp Val Tyr Ile Thr Asp Lys Cys Val Leu Asp Met Arg Ser Met
35          40          45
Asp Phe Lys Ser Asn Ser Ala Val Ala Trp Ser Gln Lys Ser Asp Phe
50          55          60
Ala Cys Ala Asn Ala Phe Gln Asn Ser Ile Ile Pro Glu Asp Thr Phe
```

65 70 75 80
Phe Pro Ser Pro Glu Ser Ser
 85

```
<210> 3
<211> 10
<212> PRT
<213> Mus musculus
<400> 3
Gly Phe Ala Phe Thr Asp Tyr Tyr Ile His
1 5 10
```

```
<210> 4
<211> 17
<212> PRT
<213> Mus musculus
<400> 4
Trp Ile Ser Pro Gly Asn Val Asn Thr Lys Tyr Asn Glu Asn Phe Lys
1          5          10          15
Gly
```

```
<210> 5
<211> 10
<212> PRT
<213> Mus musculus
<400> 5
Asp Gly Tyr Ser Leu Tyr Tyr Phe Asp Tyr
1          5          10
```

```
<210> 6
<211> 17
<212> PRT
<213> Mus musculus
<400> 6
Lys Ser Ser Gln Ser Leu Leu Asn Ser Arg Thr Arg Lys Asn Tyr Leu
1          5          10         15
Ala
```

```

<210> 7
<211> 7
<212> PRT
<213> Mus musculus
<400> 7
Trp Ala Ser Thr Arg Gln Ser
1                               5

```

$\langle 210 \rangle$	8
$\langle 211 \rangle$	8

<212> PRT
<213> Mus musculus
<400> 8
Thr Gln Ser His Thr Leu Arg Thr
1 5

<210> 9
<211> 10
<212> PRT
<213> Mus musculus
<400> 9
Gly Tyr Ala Phe Thr Ser Tyr Asn Met Tyr
1 5 10

<210> 10
<211> 17
<212> PRT
<213> artificial sequence
<220>
<223> synthetic
<400> 10
Tyr Ile Asp Pro Tyr Asn Ala Asp Thr Thr Tyr Asn Gln Lys Phe Lys
1 5 10 15
Gly

<210> 11
<211> 7
<212> PRT
<213> Mus musculus
<400> 11
Thr Ala Tyr Ala Met Asp Tyr
1 5

<210> 12
<211> 10
<212> PRT
<213> Mus musculus
<400> 12
Ser Ala Ser Ser Thr Val Asn Tyr Met His
1 5 10

<210> 13
<211> 7
<212> PRT
<213> Mus musculus
<400> 13
Ser Thr Ser Asn Leu Ala Ser
1 5

<210> 14
 <211> 9
 <212> PRT
 <213> Mus musculus
 <400> 14
 His Gln Trp Ser Ser Tyr Pro Tyr Thr
 1 5

<210> 15
 <211> 119
 <212> PRT
 <213> artificial sequence
 <220>
 <223> synthetic
 <400> 15
 Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1 5 10 15
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Phe Ala Phe Thr Asp Tyr
 20 25 30
 Tyr Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
 35 40 45
 Gly Trp Ile Ser Pro Gly Asn Val Asn Thr Lys Tyr Asn Glu Asn Phe
 50 55 60
 Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala 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 Gly Tyr Ser Leu Tyr Tyr Phe Asp Tyr Trp Gly Gln Gly
 100 105 110
 Thr Leu Val Thr Val Ser Ser
 115

<210> 16
 <211> 357
 <212> DNA
 <213> artificial sequence
 <220>
 <223> synthetic
 <400> 16
 caggtgcagc ttgtgcagtc tggggcagaa gtgaagaagc ctgggtctag tgtcaaggtg 60
 tcatgcaagg ctagcgggtt cgcctttact gactactaca tccactgggt gcggcaggct 120
 cccggacaag gggttgagtg gatgggatgg atctccccag gcaatgtcaa cacaaagtac 180
 aacgagaact tcaaaggccg cgtcaccatt accgccgaca agagcacctc cacagcctac 240
 atggagctgt ccagcctcag aagcgaggac actgccgtct actactgtgc cagggatggg 300
 tactccctgt attactttga ttactggggc cagggcacac tggtgacagt gagctcc 357

<210> 17
 <211> 112
 <212> PRT
 <213> artificial sequence

<220>

<223> synthetic

<400> 17

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

<210> 18

<211> 336

<212> DNA

<213> artificial sequence

<220>

<223> synthetic

<400> 18

gatatcgtga	tgacccagag	cccagactcc	cttgctgtct	ccctcggcga	aagagcaacc	60
atcaactgca	agagctccca	aagcctgctg	aactccagga	ccaggaagaa	ttacctggcc	120
tggtatcagc	agaagcccgg	ccagcctcct	aagctgctca	tctactgggc	ctccaccg	180
cagtctgggg	tgcccgatcg	gtttagtggg	tctgggagcg	ggacagactt	cacattgaca	240
attagctcac	tcgaggccga	ggacgtggcc	gtctactact	gtactcagag	ccacactctc	300
cgcacattcg	gcggaggggac	taaagtggag	attaag			336

<210> 19

<211> 116

<212> PRT

<213> artificial sequence

<220>

<223> synthetic

<400> 19

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

				85					90					95			
Leu	Thr	Thr	Ala	Tyr	Ala	Met	Asp	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	Val		
			100					105					110				
Thr	Val	Ser	Ser														
			115														

<210> 20
 <211> 348
 <212> DNA
 <213> artificial sequence
 <220>
 <223> synthetic
 <400> 20

caaatgcagc	tcgtccagtc	tggacctgaa	gtgaagaagc	ccgggacatc	cgtaaggctc	60
tcatgtaagg	ctagcgggta	cgcattcact	tcctacaaca	tgtactgggt	gcgccaggcc	120
agaggacaga	ggttggagtg	gatcggctac	atcgacccat	acaacgccga	tactacctac	180
aatcagaagt	ttaaagggcg	ggtgaccatt	acccgggata	tgtccacctc	caccgcctac	240
atggagctga	gcagcctgag	gagcgaggac	acagccgtgt	actactgcct	gacaacagcc	300
tatgccatgg	actattgggg	ccagggcaca	cttgtgactg	tgagcagt		348

<210> 21
 <211> 106
 <212> PRT
 <213> artificial sequence
 <220>
 <223> synthetic
 <400> 21

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

<210> 22
 <211> 318
 <212> DNA
 <213> artificial sequence
 <220>
 <223> synthetic
 <400> 22

gacatccagc	tcaccaatc	cccttctttc	ctctccgcaa	gtgtcggaga	tagggtgact	60
------------	-----------	------------	------------	------------	------------	----

atcacctgct	cagcttcttc	aaccgtgaac	tacatgcatt	ggtaccagca	gaagcccggg	120
aaagcccca	agctgctgat	ctacagcacc	tccaatctgg	ccagtggagt	gccaagccgg	180
tttagcggga	gcggtccgg	cactgaattc	actttgacaa	ttagcagcct	tcagcctgag	240
gactttgcca	catattactg	tcaccagtgg	tccagctacc	cctacacatt	cgggcagggc	300
acaaagctgg	agattaag					318

<210> 23
 <211> 10
 <212> PRT
 <213> artificial sequence
 <220>
 <223> synthetic
 <400> 23
 Leu Glu Asp Leu Lys Asn Val Phe Pro Pro
 1 5 10

<210> 24
 <211> 9
 <212> PRT
 <213> artificial sequence
 <220>
 <223> synthetic
 <400> 24
 Lys Pro Asp Ile Gln Asn Pro Asp Pro
 1 5

<210> 25
 <211> 17
 <212> PRT
 <213> artificial sequence
 <220>
 <223> synthetic
 <400> 25
 Tyr Gly Pro Pro Cys Pro Pro Cys Pro Ala Pro Glu Phe Leu Gly Gly
 1 5 10 15
 Pro

<210> 26
 <211> 207
 <212> PRT
 <213> artificial sequence
 <220>
 <223> synthetic
 <400> 26
 Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Leu Gly
 1 5 10 15
 Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Leu Leu Asn Ser
 20 25 30
 Arg Thr Arg Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln

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

<210> 27
 <211> 472
 <212> PRT
 <213> artificial sequence
 <220>
 <223> synthetic
 <400> 27

Gln	Val	Gln	Leu	Val	Gln	Ser	Gly	Ala	Glu	Val	Lys	Lys	Pro	Gly	Ser
1			5					10					15		
Ser	Val	Lys	Val	Ser	Cys	Lys	Ala	Ser	Gly	Phe	Ala	Phe	Thr	Asp	Tyr
			20				25					30			
Tyr	Ile	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Gln	Gly	Leu	Glu	Trp	Met
		35				40					45				
Gly	Trp	Ile	Ser	Pro	Gly	Asn	Val	Asn	Thr	Lys	Tyr	Asn	Glu	Asn	Phe
	50				55					60					
Lys	Gly	Arg	Val	Thr	Ile	Thr	Ala	Asp	Lys	Ser	Thr	Ser	Thr	Ala	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	Gly	Tyr	Ser	Leu	Tyr	Tyr	Phe	Asp	Tyr	Trp	Gly	Gln	Gly
			100				105					110			
Thr	Leu	Val	Thr	Val	Leu	Glu	Asp	Leu	Lys	Asn	Val	Phe	Pro	Pro	Glu
		115				120					125				
Val	Ala	Val	Phe	Glu	Pro	Ser	Glu	Ala	Glu	Ile	Ser	His	Thr	Gln	Lys
	130					135					140				
Ala	Thr	Leu	Val	Cys	Leu	Ala	Thr	Gly	Phe	Tyr	Pro	Asp	His	Val	Glu
145				150						155				160	
Leu	Ser	Trp	Trp	Val	Asn	Gly	Lys	Glu	Val	His	Ser	Gly	Val	Cys	Thr

				165					170					175			
Asp	Pro	Gln	Pro	Leu	Lys	Glu	Gln	Pro	Ala	Leu	Gln	Asp	Ser	Arg	Tyr		
			180					185					190				
Ala	Leu	Ser	Ser	Arg	Leu	Arg	Val	Ser	Ala	Thr	Phe	Trp	Gln	Asn	Pro		
		195					200					205					
Arg	Asn	His	Phe	Arg	Cys	Gln	Val	Gln	Phe	Tyr	Gly	Leu	Ser	Glu	Asn		
	210					215					220						
Asp	Glu	Trp	Thr	Gln	Asp	Arg	Ala	Lys	Pro	Val	Thr	Gln	Ile	Val	Ser		
225					230					235					240		
Ala	Glu	Ala	Trp	Gly	Arg	Tyr	Gly	Pro	Pro	Cys	Pro	Pro	Cys	Pro	Ala		
				245				250						255			
Pro	Glu	Phe	Leu	Gly	Gly	Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro	Lys	Pro		
			260					265						270			
Lys	Asp	Thr	Leu	Met	Ile	Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys	Val	Val		
	275						280					285					
Val	Asp	Val	Ser	Gln	Glu	Asp	Pro	Glu	Val	Gln	Phe	Asn	Trp	Tyr	Val		
	290					295					300						
Asp	Gly	Val	Glu	Val	His	Asn	Ala	Lys	Thr	Lys	Pro	Arg	Glu	Glu	Gln		
305					310					315					320		
Phe	Asn	Ser	Thr	Tyr	Arg	Val	Val	Ser	Val	Leu	Thr	Val	Leu	His	Gln		
				325					330					335			
Asp	Trp	Leu	Asn	Gly	Lys	Glu	Tyr	Lys	Cys	Lys	Val	Ser	Asn	Lys	Gly		
		340						345				350					
Leu	Pro	Ser	Ser	Ile	Glu	Lys	Thr	Ile	Ser	Lys	Ala	Lys	Gly	Gln	Pro		
	355						360					365					
Arg	Glu	Pro	Gln	Val	Tyr	Thr	Leu	Pro	Pro	Cys	Gln	Glu	Glu	Met	Thr		
	370					375					380						
Lys	Asn	Gln	Val	Ser	Leu	Trp	Cys	Leu	Val	Lys	Gly	Phe	Tyr	Pro	Ser		
385					390					395					400		
Asp	Ile	Ala	Val	Glu	Trp	Glu	Ser	Asn	Gly	Gln	Pro	Glu	Asn	Asn	Tyr		
			405						410					415			
Lys	Thr	Thr	Pro	Pro	Val	Leu	Asp	Ser	Asp	Gly	Ser	Phe	Phe	Leu	Tyr		
			420					425					430				
Ser	Arg	Leu	Thr	Val	Asp	Lys	Ser	Arg	Trp	Gln	Glu	Gly	Asn	Val	Phe		
	435					440						445					
Ser	Cys	Ser	Val	Met	His	Glu	Ala	Leu	His	Asn	His	Tyr	Thr	Gln	Lys		
	450					455					460						
Ser	Leu	Ser	Leu	Ser	Leu	Gly	Lys										
465					470												

<210> 28

<211> 213

<212> PRT

<213> artificial sequence

<220>

<223> synthetic

<400> 28

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

Asp	Arg	Val	Thr	Ile	Thr	Cys	Ser	Ala	Ser	Ser	Thr	Val	Asn	Tyr	Met		
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	--	--

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

<210> 29

<211> 443

<212> PRT

<213> artificial sequence

<220>

<223> synthetic

<400> 29

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

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

<210> 30

<211> 667

<212> PRT

<213> artificial sequence

<220>

<223> synthetic

<400> 30

Gln Met Gln Leu Val Gln	Ser Gly Pro Glu Val	Lys Lys Pro Gly Thr
1	5	10
Ser Val Lys Val Ser Cys	Lys Ala Ser Gly Tyr	Ala Phe Thr Ser Tyr

			20					25					30				
Asn	Met	Tyr	Trp	Val	Arg	Gln	Ala	Arg	Gly	Gln	Arg	Leu	Glu	Trp	Ile		
		35					40					45					
Gly	Tyr	Ile	Asp	Pro	Tyr	Asn	Gly	Asp	Thr	Thr	Tyr	Asn	Gln	Lys	Phe		
	50					55					60						
Lys	Gly	Arg	Val	Thr	Ile	Thr	Arg	Asp	Met	Ser	Thr	Ser	Thr	Ala	Tyr		
65					70					75					80		
Met	Glu	Leu	Ser	Ser	Leu	Arg	Ser	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys		
			85					90					95				
Leu	Thr	Thr	Ala	Tyr	Ala	Met	Asp	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	Val		
			100				105					110					
Thr	Val	Ser	Ser	Ala	Ser	Thr	Lys	Gly	Pro	Ser	Val	Phe	Pro	Leu	Ala		
		115					120					125					
Pro	Cys	Ser	Arg	Ser	Thr	Ser	Glu	Ser	Thr	Ala	Ala	Leu	Gly	Cys	Leu		
	130					135				140							
Val	Lys	Asp	Tyr	Phe	Pro	Glu	Pro	Val	Thr	Val	Ser	Trp	Asn	Ser	Gly		
145					150					155					160		
Ala	Leu	Thr	Ser	Gly	Val	His	Thr	Phe	Pro	Ala	Val	Leu	Gln	Ser	Ser		
				165				170						175			
Gly	Leu	Tyr	Ser	Leu	Ser	Ser	Val	Val	Thr	Val	Pro	Ser	Ser	Ser	Leu		
		180					185					190					
Gly	Thr	Lys	Thr	Tyr	Thr	Cys	Asn	Val	Asp	His	Lys	Pro	Ser	Asn	Thr		
	195					200					205						
Lys	Val	Asp	Lys	Arg	Val	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser		
	210					215				220							
Gln	Met	Gln	Leu	Val	Gln	Ser	Gly	Pro	Glu	Val	Lys	Lys	Pro	Gly	Thr		
225					230					235					240		
Ser	Val	Lys	Val	Ser	Cys	Lys	Ala	Ser	Gly	Tyr	Ala	Phe	Thr	Ser	Tyr		
				245				250						255			
Asn	Met	Tyr	Trp	Val	Arg	Gln	Ala	Arg	Gly	Gln	Arg	Leu	Glu	Trp	Ile		
		260					265					270					
Gly	Tyr	Ile	Asp	Pro	Tyr	Asn	Gly	Asp	Thr	Thr	Tyr	Asn	Gln	Lys	Phe		
	275					280					285						
Lys	Gly	Arg	Val	Thr	Ile	Thr	Arg	Asp	Met	Ser	Thr	Ser	Thr	Ala	Tyr		
	290					295				300							
Met	Glu	Leu	Ser	Ser	Leu	Arg	Ser	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys		
305					310					315					320		
Leu	Thr	Thr	Ala	Tyr	Ala	Met	Asp	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	Val		
			325					330					335				
Thr	Val	Ser	Ser	Ala	Ser	Thr	Lys	Gly	Pro	Ser	Val	Phe	Pro	Leu	Ala		
		340					345					350					
Pro	Cys	Ser	Arg	Ser	Thr	Ser	Glu	Ser	Thr	Ala	Ala	Leu	Gly	Cys	Leu		
	355					360						365					
Val	Lys	Asp	Tyr	Phe	Pro	Glu	Pro	Val	Thr	Val	Ser	Trp	Asn	Ser	Gly		
	370					375				380							
Ala	Leu	Thr	Ser	Gly	Val	His	Thr	Phe	Pro	Ala	Val	Leu	Gln	Ser	Ser		
385					390					395					400		
Gly	Leu	Tyr	Ser	Leu	Ser	Ser	Val	Val	Thr	Val	Pro	Ser	Ser	Ser	Leu		
			405					410					415				
Gly	Thr	Lys	Thr	Tyr	Thr	Cys	Asn	Val	Asp	His	Lys	Pro	Ser	Asn	Thr		

			420					425					430				
Lys	Val	Asp	Lys	Arg	Val	Glu	Ser	Lys	Tyr	Gly	Pro	Pro	Cys	Pro	Pro		
		435						440					445				
Cys	Pro	Ala	Pro	Glu	Phe	Leu	Gly	Gly	Pro	Ser	Val	Phe	Leu	Phe	Pro		
	450					455					460						
Pro	Lys	Pro	Lys	Asp	Thr	Leu	Met	Ile	Ser	Arg	Thr	Pro	Glu	Val	Thr		
465					470					475					480		
Cys	Val	Val	Val	Asp	Val	Ser	Gln	Glu	Asp	Pro	Glu	Val	Gln	Phe	Asn		
				485					490					495			
Trp	Tyr	Val	Asp	Gly	Val	Glu	Val	His	Asn	Ala	Lys	Thr	Lys	Pro	Arg		
			500					505					510				
Glu	Glu	Gln	Phe	Asn	Ser	Thr	Tyr	Arg	Val	Val	Ser	Val	Leu	Thr	Val		
		515						520				525					
Leu	His	Gln	Asp	Trp	Leu	Asn	Gly	Lys	Glu	Tyr	Lys	Cys	Lys	Val	Ser		
	530					535					540						
Asn	Lys	Gly	Leu	Pro	Ser	Ser	Ile	Glu	Lys	Thr	Ile	Ser	Lys	Ala	Lys		
545					550					555					560		
Gly	Gln	Pro	Arg	Glu	Pro	Gln	Val	Cys	Thr	Leu	Pro	Pro	Ser	Gln	Glu		
				565				570						575			
Glu	Met	Thr	Lys	Asn	Gln	Val	Ser	Leu	Ser	Cys	Ala	Val	Lys	Gly	Phe		
			580					585					590				
Tyr	Pro	Ser	Asp	Ile	Ala	Val	Glu	Trp	Glu	Ser	Asn	Gly	Gln	Pro	Glu		
		595					600				605						
Asn	Asn	Tyr	Lys	Thr	Thr	Pro	Pro	Val	Leu	Asp	Ser	Asp	Gly	Ser	Phe		
	610					615				620							
Phe	Leu	Val	Ser	Arg	Leu	Thr	Val	Asp	Lys	Ser	Arg	Trp	Gln	Glu	Gly		
625					630				635					640			
Asn	Val	Phe	Ser	Cys	Ser	Val	Met	His	Glu	Ala	Leu	His	Asn	His	Tyr		
			645					650					655				
Thr	Gln	Lys	Ser	Leu	Ser	Leu	Ser	Leu	Gly	Lys							
			660					665									

<210> 31

<211> 142

<212> PRT

<213> Homo sapiens

<400> 31

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

			100					105					110			
Phe	Gln	Asn	Leu	Ser	Val	Ile	Gly	Phe	Arg	Ile	Leu	Leu	Leu	Lys	Val	
		115					120					125				
Ala	Gly	Phe	Asn	Leu	Leu	Met	Thr	Leu	Arg	Leu	Trp	Ser	Ser			
	130					135					140					

<210> 32
 <211> 95
 <212> PRT
 <213> artificial sequence
 <220>
 <223> synthetic
 <400> 32

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

<210> 33
 <211> 177
 <212> PRT
 <213> Homo sapiens
 <400> 33

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

145		150		155		160									
Val	Leu	Val	Ser	Ala	Leu	Val	Leu	Met	Ala	Met	Val	Lys	Arg	Lys	Asp
				165					170					175	
Phe															

<210> 34
 <211> 130
 <212> PRT
 <213> artificial sequence

<220>
 <223> synthetic
 <400> 34

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

<210> 35
 <211> 95
 <212> PRT
 <213> artificial sequence

<220>
 <223> synthetic
 <400> 35

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

85

90

95

<210> 36

<211> 95

<212> PRT

<213> artificial sequence

<220>

<223> synthetic

<400> 36

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

<210> 37

<211> 95

<212> PRT

<213> artificial sequence

<220>

<223> synthetic

<400> 47

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

<210> 38

<211> 129

<212> PRT

<213> Homo sapiens

<400> 38

Glu	Asp	Leu	Asn	Lys	Val	Phe	Pro	Pro	Glu	Val	Ala	Val	Phe	Glu	Pro
1				5				10						15	
Ser	Glu	Ala	Glu	Ile	Ser	His	Thr	Gln	Lys	Ala	Thr	Leu	Val	Cys	Leu

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

Ala

<210> 39
 <211> 130
 <212> PRT
 <213> artificial sequence

<220>
 <223> synthetic

<400> 39
 Leu Glu Asp Leu Lys Asn Val Phe Pro Pro Glu Val Ala Val Phe Glu
 1 5 10 15
 Pro Ser Glu Ala Glu Ile Ser His Thr Gln Lys Ala Thr Leu Val Cys
 20 25 30
 Leu Ala Thr Gly Phe Tyr Pro Asp His Val Glu Leu Ser Trp Trp Val
 35 40 45
 Asn Gly Lys Glu Val His Ser Gly Val Cys Thr Asp Pro Gln Pro Leu
 50 55 60
 Lys Glu Gln Pro Ala Leu Asn Asp Ser Arg Tyr Ala Leu Ser Ser Arg
 65 70 75 80
 Leu Arg Val Ser Ala Thr Phe Trp Gln Asn Pro Arg Asn His Phe Arg
 85 90 95
 Cys Gln Val Gln Phe Tyr Gly Leu Ser Glu Asn Asp Glu Trp Thr Gln
 100 105 110
 Asp Arg Ala Lys Pro Val Thr Gln Ile Val Ser Ala Glu Ala Trp Gly
 115 120 125
 Arg Ala
 130

<210> 40
 <211> 130
 <212> PRT
 <213> artificial sequence

<220>
 <223> synthetic

<400> 40
 Leu Glu Asp Leu Lys Asn Val Phe Pro Pro Glu Val Ala Val Phe Glu

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