

SEQUENCE LISTING

<110> Eureka Therapeutics, Inc.

<120> ANTIBODY/T-CELL RECEPTOR CHIMERIC
CONSTRUCTS AND USES THEREOF

<130> 750042000340

<140> Not Yet Assigned

<141> Concurrently Herewith

<150> US 62/245,944

<151> 2015-10-23

<150> US 62/304,918

<151> 2016-03-07

<150> US 62/345,649

<151> 2016-06-03

<150> US 62/369,694

<151> 2016-08-01

<160> 82

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 20

<212> PRT

<213> Homo sapiens

<220>

<223> TCRalpha transmembrane domain

<400> 1

Ile Leu Leu Leu Lys Val Ala Gly Phe Asn Leu Leu Met Thr Leu Arg

1

5

10

15

Leu Trp Ser Ser

20

<210> 2

<211> 23

<212> PRT

<213> Homo sapiens

<220>

<223> TCRbeta transmembrane domain

<400> 2

Thr Ile Leu Tyr Glu Ile Leu Leu Gly Lys Ala Thr Leu Tyr Ala Val
 1 5 10 15
 Leu Val Ser Ala Leu Val Leu
 20

<210> 3
 <211> 20
 <212> PRT
 <213> Homo sapiens

<220>
 <223> TCRdelta transmembrane domain

<400> 3
 Met Leu Phe Ala Lys Thr Val Ala Val Asn Phe Leu Leu Thr Ala Lys
 1 5 10 15
 Leu Phe Phe Leu
 20

<210> 4
 <211> 23
 <212> PRT
 <213> Homo sapiens

<220>
 <223> TCRgamma transmembrane domain

<400> 4
 Tyr Tyr Met Tyr Leu Leu Leu Leu Leu Lys Ser Val Val Tyr Phe Ala
 1 5 10 15
 Ile Ile Thr Cys Cys Leu Leu
 20

<210> 5
 <211> 30
 <212> PRT
 <213> Homo sapiens

<220>
 <223> TCRalpha connecting peptide

<400> 5
 Glu Ser Ser Cys Asp Val Lys Leu Val Glu Lys Ser Phe Glu Thr Asp
 1 5 10 15
 Thr Asn Leu Asn Phe Gln Asn Leu Ser Val Ile Gly Phe Arg
 20 25 30

<210> 6
 <211> 17
 <212> PRT

<213> Homo sapiens

<220>

<223> TCRbeta connecting peptide

<400> 6

Ala	Asp	Cys	Gly	Phe	Thr	Ser	Val	Ser	Tyr	Gln	Gln	Gly	Val	Leu	Ser
1				5					10					15	
Ala															

<210> 7

<211> 41

<212> PRT

<213> Homo sapiens

<220>

<223> TCRdelta connecting peptide

<400> 7

Asp	His	Val	Lys	Pro	Lys	Glu	Thr	Glu	Asn	Thr	Lys	Gln	Pro	Ser	Lys
1				5					10					15	
Ser	Cys	His	Lys	Pro	Lys	Ala	Ile	Val	His	Thr	Glu	Lys	Val	Asn	Met
			20					25					30		
Met	Ser	Leu	Thr	Val	Leu	Gly	Leu	Arg							
		35					40								

<210> 8

<211> 24

<212> PRT

<213> Homo sapiens

<220>

<223> TCRgamma connecting peptide

<400> 8

Met	Asp	Pro	Lys	Asp	Asn	Cys	Ser	Lys	Asp	Ala	Asn	Asp	Thr	Leu	Leu
1				5					10					15	
Leu	Gln	Leu	Thr	Asn	Thr	Ser	Ala								
				20											

<210> 9

<211> 40

<212> PRT

<213> Homo sapiens

<220>

<223> TCRalpha connecting peptide MD

<400> 9

Ile	Pro	Glu	Asp	Thr	Phe	Phe	Pro	Ser	Pro	Glu	Ser	Ser	Cys	Asp	Val
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

1		5		10		15									
Lys	Leu	Val	Glu	Lys	Ser	Phe	Glu	Thr	Asp	Thr	Asn	Leu	Asn	Phe	Gln
			20					25					30		
Asn	Leu	Ser	Val	Ile	Gly	Phe	Arg								
		35					40								

<210> 10
 <211> 19
 <212> PRT
 <213> Homo sapiens

<220>
 <223> TCRbeta connecting peptide MD

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

<210> 11
 <211> 48
 <212> PRT
 <213> Homo sapiens

<220>
 <223> TCRdelta connecting peptide MD

<400> 11
Glu Val Lys Thr Asp Ser Thr Asp His Val Lys Pro Lys Glu Thr Glu
1 5 10 15
Asn Thr Lys Gln Pro Ser Lys Ser Cys His Lys Pro Lys Ala Ile Val
20 25 30
His Thr Glu Lys Val Asn Met Met Ser Leu Thr Val Leu Gly Leu Arg
35 40 45

<210> 12
 <211> 32
 <212> PRT
 <213> Homo sapiens

<220>
 <223> TCRgamma connecting peptide MD

<400> 12
Pro Ile Lys Thr Asp Val Ile Thr Met Asp Pro Lys Asp Asn Cys Ser
1 5 10 15
Lys Asp Ala Asn Asp Thr Leu Leu Leu Gln Leu Thr Asn Thr Ser Ala
20 25 30

<210> 13
<211> 9
<212> PRT
<213> Homo sapiens

<220>
<223> TCRbeta intracellular domain

<400> 13
Met Ala Met Val Lys Arg Lys Asp Phe
1 5

<210> 14
<211> 12
<212> PRT
<213> Homo sapiens

<220>
<223> TCRgamma intracellular domain

<400> 14
Arg Arg Thr Ala Phe Cys Cys Asn Gly Glu Lys Ser
1 5 10

<210> 15
<211> 50
<212> PRT
<213> Homo sapiens

<220>
<223> TCRD alpha

<400> 15
Glu Ser Ser Cys Asp Val Lys Leu Val Glu Lys Ser Phe Glu Thr Asp
1 5 10 15
Thr Asn Leu Asn Phe Gln Asn Leu Ser Val Ile Gly Phe Arg Ile Leu
20 25 30
Leu Leu Lys Val Ala Gly Phe Asn Leu Leu Met Thr Leu Arg Leu Trp
35 40 45
Ser Ser
50

<210> 16
<211> 49
<212> PRT
<213> Homo sapiens

<220>
<223> TCRD beta

<400> 16

Ala	Asp	Cys	Gly	Phe	Thr	Ser	Val	Ser	Tyr	Gln	Gln	Gly	Val	Leu	Ser
1				5					10					15	
Ala	Thr	Ile	Leu	Tyr	Glu	Ile	Leu	Leu	Gly	Lys	Ala	Thr	Leu	Tyr	Ala
			20					25					30		
Val	Leu	Val	Ser	Ala	Leu	Val	Leu	Met	Ala	Met	Val	Lys	Arg	Lys	Asp
		35					40					45			

Phe

<210> 17
 <211> 60
 <212> PRT
 <213> Homo sapiens

<220>
 <223> TCRD alpha MD

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

<210> 18
 <211> 51
 <212> PRT
 <213> Homo sapiens

<220>
 <223> TCRD beta MD

Gly	Arg	Ala	Asp	Cys	Gly	Phe	Thr	Ser	Val	Ser	Tyr	Gln	Gln	Gly	Val
1				5					10					15	
Leu	Ser	Ala	Thr	Ile	Leu	Tyr	Glu	Ile	Leu	Leu	Gly	Lys	Ala	Thr	Leu
			20					25					30		
Tyr	Ala	Val	Leu	Val	Ser	Ala	Leu	Val	Leu	Met	Ala	Met	Val	Lys	Arg
		35					40					45			
Lys	Asp	Phe													
	50														

<210> 19
 <211> 61
 <212> PRT
 <213> Homo sapiens

<220>

<223> TCRD delta

<400> 19

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

<210> 20

<211> 59

<212> PRT

<213> Homo sapiens

<220>

<223> TCRD gamma

<400> 20

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

<210> 21

<211> 68

<212> PRT

<213> Homo sapiens

<220>

<223> TCRD delta MD

<400> 21

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

<210> 22

<211> 67
 <212> PRT
 <213> Homo sapiens

<220>
 <223> TCRD gamma MD

<400> 22
 Pro Ile Lys Thr Asp Val Ile Thr Met Asp Pro Lys Asp Asn Cys Ser
 1 5 10 15
 Lys Asp Ala Asn Asp Thr Leu Leu Leu Gln Leu Thr Asn Thr Ser Ala
 20 25 30
 Tyr Tyr Met Tyr Leu Leu Leu Leu Lys Ser Val Val Tyr Phe Ala
 35 40 45
 Ile Ile Thr Cys Cys Leu Leu Arg Arg Thr Ala Phe Cys Cys Asn Gly
 50 55 60
 Glu Lys Ser
 65

<210> 23
 <211> 270
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> anti-AFP158/HLA-A*02:01-abTCR-3 alpha

<400> 23
 Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
 1 5 10 15
 Ser Leu Thr Ile Ser Cys Lys Ala Ser Gly Tyr Ser Phe Pro Asn Tyr
 20 25 30
 Trp Ile Thr Trp Val Arg Gln Met Ser Gly Gly Gly Leu Glu Trp Met
 35 40 45
 Gly Arg Ile Asp Pro Gly Asp Ser Tyr Thr Thr Tyr Asn Pro Ser Phe
 50 55 60
 Gln Gly His Val Thr Ile Ser Ile Asp Lys Ser Thr Asn Thr Ala Tyr
 65 70 75 80
 Leu His Trp Asn Ser Leu Lys Ala Ser Asp Thr Ala Met Tyr Tyr Cys
 85 90 95
 Ala Arg Tyr Tyr Val Ser Leu Val Asp Ile Trp Gly Gln Gly Thr Leu
 100 105 110
 Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu
 115 120 125
 Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys
 130 135 140
 Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser
 145 150 155 160
 Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser
 165 170 175
 Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser
 180 185 190
 Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn

<210> 25
<211> 266
<212> PRT
<213> Artificial Sequence

<220>
<223> anti-AFP158/HLA-A*02:01-abTCR-4 alpha

<400> 25
Gln Ser Val 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 Asp Val Gly Gly Tyr
20 25 30
Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu
35 40 45
Met Ile Tyr Asp Val Asn Asn Arg Pro Ser Glu Val Ser Asn 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 Thr Gly
85 90 95
Ser Arg Ala Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gln
100 105 110
Pro Lys Ala Asn Pro Thr Val Thr Leu Phe Pro Pro Ser Ser Glu Glu
115 120 125
Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp Phe Tyr
130 135 140
Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Gly Ser Pro Val Lys
145 150 155 160
Ala Gly Val Glu Thr Thr Lys Pro Ser Lys Gln Ser Asn Asn Lys Tyr
165 170 175
Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser His
180 185 190
Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val Glu Lys
195 200 205
Thr Val Ala Pro Thr Glu Cys Ser Glu Ser Ser Cys Asp Val Lys Leu
210 215 220
Val Glu Lys Ser Phe Glu Thr Asp Thr Asn Leu Asn Phe Gln Asn Leu
225 230 235 240
Ser Val Ile Gly Phe Arg Ile Leu Leu Leu Lys Val Ala Gly Phe Asn
245 250 255
Leu Leu Met Thr Leu Arg Leu Trp Ser Ser
260 265

<210> 26
<211> 269
<212> PRT
<213> Artificial Sequence

<220>
<223> anti-AFP158/HLA-A*02:01-abTCR-4 beta

<400> 26

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

<210> 27

<211> 276

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-AFP158/HLA-A*02:01-abTCR-4MD alpha

<400> 27

Gln	Ser	Val	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	Asp	Val	Gly	Gly	Tyr
			20					25					30		
Asn	Tyr	Val	Ser	Trp	Tyr	Gln	Gln	His	Pro	Gly	Lys	Ala	Pro	Lys	Leu
		35				40					45				
Met	Ile	Tyr	Asp	Val	Asn	Asn	Arg	Pro	Ser	Glu	Val	Ser	Asn	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 Thr Gly					
	85		90		95
Ser Arg Ala Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gln					
	100		105		110
Pro Lys Ala Asn Pro Thr Val Thr Leu Phe Pro Pro Ser Ser Glu Glu					
	115		120		125
Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp Phe Tyr					
	130		135		140
Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Gly Ser Pro Val Lys					
145		150		155	160
Ala Gly Val Glu Thr Thr Lys Pro Ser Lys Gln Ser Asn Asn Lys Tyr					
	165		170		175
Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser His					
	180		185		190
Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val Glu Lys					
	195		200		205
Thr Val Ala Pro Thr Glu Cys Ser Ile Pro Glu Asp Thr Phe Phe Pro					
	210		215		220
Ser Pro Glu Ser Ser Cys Asp Val Lys Leu Val Glu Lys Ser Phe Glu					
225		230		235	240
Thr Asp Thr Asn Leu Asn Phe Gln Asn Leu Ser Val Ile Gly Phe Arg					
	245		250		255
Ile Leu Leu Leu Lys Val Ala Gly Phe Asn Leu Leu Met Thr Leu Arg					
	260		265		270
Leu Trp Ser Ser					
	275				

<210> 28

<211> 271

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-AFP158/HLA-A*02:01-abTCR-4MD beta

<400> 28

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

Val	Thr	Val	Ser	Ser	Ala	Ser	Thr	Lys	Gly	Pro	Ser	Val	Phe	Pro	Leu
		115					120					125			
Ala	Pro	Ser	Ser	Lys	Ser	Thr	Ser	Gly	Gly	Thr	Ala	Ala	Leu	Gly	Cys
	130					135					140				
Leu	Val	Lys	Asp	Tyr	Phe	Pro	Glu	Pro	Val	Thr	Val	Ser	Trp	Asn	Ser
145					150					155					160
Gly	Ala	Leu	Thr	Ser	Gly	Val	His	Thr	Phe	Pro	Ala	Val	Leu	Gln	Ser
				165					170					175	
Ser	Gly	Leu	Tyr	Ser	Leu	Ser	Ser	Val	Val	Thr	Val	Pro	Ser	Ser	Ser
		180						185				190			
Leu	Gly	Thr	Gln	Thr	Tyr	Ile	Cys	Asn	Val	Asn	His	Lys	Pro	Ser	Asn
		195					200					205			
Thr	Lys	Val	Asp	Lys	Arg	Val	Glu	Pro	Lys	Ser	Cys	Gly	Arg	Ala	Asp
		210				215					220				
Cys	Gly	Phe	Thr	Ser	Val	Ser	Tyr	Gln	Gln	Gly	Val	Leu	Ser	Ala	Thr
225					230					235					240
Ile	Leu	Tyr	Glu	Ile	Leu	Leu	Gly	Lys	Ala	Thr	Leu	Tyr	Ala	Val	Leu
				245					250					255	
Val	Ser	Ala	Leu	Val	Leu	Met	Ala	Met	Val	Lys	Arg	Lys	Asp	Phe	
			260					265					270		

<210> 29

<211> 277

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-AFP158/HLA-A*02:01-abTCR-5 delta

<400> 29

Gln	Ser	Val	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	Asp	Val	Gly	Gly	Tyr
			20					25					30		
Asn	Tyr	Val	Ser	Trp	Tyr	Gln	Gln	His	Pro	Gly	Lys	Ala	Pro	Lys	Leu
		35				40						45			
Met	Ile	Tyr	Asp	Val	Asn	Asn	Arg	Pro	Ser	Glu	Val	Ser	Asn	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	Thr	Gly
				85					90					95	
Ser	Arg	Ala	Val	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Thr	Val	Leu	Gly	Gln
			100					105					110		
Pro	Lys	Ala	Asn	Pro	Thr	Val	Thr	Leu	Phe	Pro	Pro	Ser	Ser	Glu	Glu
		115						120					125		
Leu	Gln	Ala	Asn	Lys	Ala	Thr	Leu	Val	Cys	Leu	Ile	Ser	Asp	Phe	Tyr
	130					135					140				
Pro	Gly	Ala	Val	Thr	Val	Ala	Trp	Lys	Ala	Asp	Gly	Ser	Pro	Val	Lys
145					150					155					160
Ala	Gly	Val	Glu	Thr	Lys	Pro	Ser	Lys	Gln	Ser	Asn	Asn	Lys	Lys	Tyr
				165					170					175	
Ala	Ala	Ser	Ser	Tyr	Leu	Ser	Leu	Thr	Pro	Glu	Gln	Trp	Lys	Ser	His

<210> 32
 <211> 287
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> anti-AFP158/HLA-A*02:01-abTCR-5MD gamma

<400> 32
 Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
 1 5 10 15
 Ser Leu Thr Ile Ser Cys Lys Ala Ser Gly Tyr Ser Phe Pro Asn Tyr
 20 25 30
 Trp Ile Thr Trp Val Arg Gln Met Ser Gly Gly Gly Leu Glu Trp Met
 35 40 45
 Gly Arg Ile Asp Pro Gly Asp Ser Tyr Thr Thr Tyr Asn Pro Ser Phe
 50 55 60
 Gln Gly His Val Thr Ile Ser Ile Asp Lys Ser Thr Asn Thr Ala Tyr
 65 70 75 80
 Leu His Trp Asn Ser Leu Lys Ala Ser Asp Thr Ala Met Tyr Tyr Cys
 85 90 95
 Ala Arg Tyr Tyr Val Ser Leu Val Asp Ile Trp Gly Gln Gly Thr Leu
 100 105 110
 Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu
 115 120 125
 Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys
 130 135 140
 Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser
 145 150 155 160
 Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser
 165 170 175
 Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser
 180 185 190
 Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn
 195 200 205
 Thr Lys Val Asp Lys Arg Val Glu Pro Lys Ser Cys Pro Ile Lys Thr
 210 215 220
 Asp Val Ile Thr Met Asp Pro Lys Asp Asn Cys Ser Lys Asp Ala Asn
 225 230 235 240
 Asp Thr Leu Leu Leu Gln Leu Thr Asn Thr Ser Ala Tyr Tyr Met Tyr
 245 250 255
 Leu Leu Leu Leu Leu Lys Ser Val Val Tyr Phe Ala Ile Ile Thr Cys
 260 265 270
 Cys Leu Leu Arg Arg Thr Ala Phe Cys Cys Asn Gly Glu Lys Ser
 275 280 285

<210> 33
 <211> 281
 <212> PRT
 <213> Artificial Sequence

<220>

<223> anti-AFP158/HLA-A*02:01-abTCR-6 delta

<400> 33

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

<210> 34

<211> 275

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-AFP158/HLA-A*02:01-abTCR-6 gamma

<400> 34

Gln	Ser	Val	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	Asp	Val	Gly	Gly	Tyr
			20					25					30		

Asn	Tyr	Val	Ser	Trp	Tyr	Gln	Gln	His	Pro	Gly	Lys	Ala	Pro	Lys	Leu
	35					40						45			
Met	Ile	Tyr	Asp	Val	Asn	Asn	Arg	Pro	Ser	Glu	Val	Ser	Asn	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	Thr	Gly
			85						90					95	
Ser	Arg	Ala	Val	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Thr	Val	Leu	Gly	Gln
			100					105					110		
Pro	Lys	Ala	Asn	Pro	Thr	Val	Thr	Leu	Phe	Pro	Pro	Ser	Ser	Glu	Glu
		115					120					125			
Leu	Gln	Ala	Asn	Lys	Ala	Thr	Leu	Val	Cys	Leu	Ile	Ser	Asp	Phe	Tyr
	130					135					140				
Pro	Gly	Ala	Val	Thr	Val	Ala	Trp	Lys	Ala	Asp	Gly	Ser	Pro	Val	Lys
145					150					155					160
Ala	Gly	Val	Glu	Thr	Thr	Lys	Pro	Ser	Lys	Gln	Ser	Asn	Asn	Lys	Tyr
				165					170					175	
Ala	Ala	Ser	Ser	Tyr	Leu	Ser	Leu	Thr	Pro	Glu	Gln	Trp	Lys	Ser	His
			180					185					190		
Arg	Ser	Tyr	Ser	Cys	Gln	Val	Thr	His	Glu	Gly	Ser	Thr	Val	Glu	Lys
		195					200					205			
Thr	Val	Ala	Pro	Thr	Glu	Cys	Ser	Met	Asp	Pro	Lys	Asp	Asn	Cys	Ser
	210					215					220				
Lys	Asp	Ala	Asn	Asp	Thr	Leu	Leu	Leu	Gln	Leu	Thr	Asn	Thr	Ser	Ala
225					230					235					240
Tyr	Tyr	Met	Tyr	Leu	Leu	Leu	Leu	Leu	Lys	Ser	Val	Val	Tyr	Phe	Ala
				245					250					255	
Ile	Ile	Thr	Cys	Cys	Leu	Leu	Arg	Arg	Thr	Ala	Phe	Cys	Cys	Asn	Gly
			260					265					270		
Glu	Lys	Ser													
		275													

<210> 35

<211> 288

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-AFP158/HLA-A*02:01-abTCR-6MD delta

<400> 35

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

				85				90					95				
Ala	Arg	Tyr	Tyr	Val	Ser	Leu	Val	Asp	Ile	Trp	Gly	Gln	Gly	Thr	Leu		
			100					105					110				
Val	Thr	Val	Ser	Ser	Ala	Ser	Thr	Lys	Gly	Pro	Ser	Val	Phe	Pro	Leu		
		115					120					125					
Ala	Pro	Ser	Ser	Lys	Ser	Thr	Ser	Gly	Gly	Thr	Ala	Ala	Leu	Gly	Cys		
		130				135					140						
Leu	Val	Lys	Asp	Tyr	Phe	Pro	Glu	Pro	Val	Thr	Val	Ser	Trp	Asn	Ser		
145					150					155					160		
Gly	Ala	Leu	Thr	Ser	Gly	Val	His	Thr	Phe	Pro	Ala	Val	Leu	Gln	Ser		
			165					170						175			
Ser	Gly	Leu	Tyr	Ser	Leu	Ser	Ser	Val	Val	Thr	Val	Pro	Ser	Ser	Ser		
		180						185					190				
Leu	Gly	Thr	Gln	Thr	Tyr	Ile	Cys	Asn	Val	Asn	His	Lys	Pro	Ser	Asn		
		195					200					205					
Thr	Lys	Val	Asp	Lys	Arg	Val	Glu	Pro	Lys	Ser	Cys	Glu	Val	Lys	Thr		
	210					215					220						
Asp	Ser	Thr	Asp	His	Val	Lys	Pro	Lys	Glu	Thr	Glu	Asn	Thr	Lys	Gln		
225					230					235					240		
Pro	Ser	Lys	Ser	Cys	His	Lys	Pro	Lys	Ala	Ile	Val	His	Thr	Glu	Lys		
				245					250					255			
Val	Asn	Met	Met	Ser	Leu	Thr	Val	Leu	Gly	Leu	Arg	Met	Leu	Phe	Ala		
		260						265					270				
Lys	Thr	Val	Ala	Val	Asn	Phe	Leu	Leu	Thr	Ala	Lys	Leu	Phe	Phe	Leu		
		275					280						285				

<210> 36

<211> 283

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-AFP158/HLA-A*02:01-abTCR-6MD gamma

<400> 36

Gln	Ser	Val	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	Asp	Val	Gly	Gly	Tyr		
		20					25					30					
Asn	Tyr	Val	Ser	Trp	Tyr	Gln	Gln	His	Pro	Gly	Lys	Ala	Pro	Lys	Leu		
		35				40						45					
Met	Ile	Tyr	Asp	Val	Asn	Asn	Arg	Pro	Ser	Glu	Val	Ser	Asn	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	Thr	Gly		
			85					90					95				
Ser	Arg	Ala	Val	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Thr	Val	Leu	Gly	Gln		
		100						105					110				
Pro	Lys	Ala	Asn	Pro	Thr	Val	Thr	Leu	Phe	Pro	Pro	Ser	Ser	Glu	Glu		
		115					120					125					
Leu	Gln	Ala	Asn	Lys	Ala	Thr	Leu	Val	Cys	Leu	Ile	Ser	Asp	Phe	Tyr		
		130				135					140						

Pro	Gly	Ala	Val	Thr	Val	Ala	Trp	Lys	Ala	Asp	Gly	Ser	Pro	Val	Lys
145					150					155					160
Ala	Gly	Val	Glu	Thr	Thr	Lys	Pro	Ser	Lys	Gln	Ser	Asn	Asn	Lys	Tyr
				165					170					175	
Ala	Ala	Ser	Ser	Tyr	Leu	Ser	Leu	Thr	Pro	Glu	Gln	Trp	Lys	Ser	His
			180					185					190		
Arg	Ser	Tyr	Ser	Cys	Gln	Val	Thr	His	Glu	Gly	Ser	Thr	Val	Glu	Lys
	195						200					205			
Thr	Val	Ala	Pro	Thr	Glu	Cys	Ser	Pro	Ile	Lys	Thr	Asp	Val	Ile	Thr
	210					215					220				
Met	Asp	Pro	Lys	Asp	Asn	Cys	Ser	Lys	Asp	Ala	Asn	Asp	Thr	Leu	Leu
225					230					235					240
Leu	Gln	Leu	Thr	Asn	Thr	Ser	Ala	Tyr	Tyr	Met	Tyr	Leu	Leu	Leu	Leu
				245					250					255	
Leu	Lys	Ser	Val	Val	Tyr	Phe	Ala	Ile	Ile	Thr	Cys	Cys	Leu	Leu	Arg
			260					265					270		
Arg	Thr	Ala	Phe	Cys	Cys	Asn	Gly	Glu	Lys	Ser					
		275					280								

<210> 37

<211> 471

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-AFP158/HLA-A*02:01-scFv CAR

<400> 37

Gln	Ser	Val	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	Asp	Val	Gly	Gly	Tyr
			20				25					30			
Asn	Tyr	Val	Ser	Trp	Tyr	Gln	Gln	His	Pro	Gly	Lys	Ala	Pro	Lys	Leu
		35				40					45				
Met	Ile	Tyr	Asp	Val	Asn	Asn	Arg	Pro	Ser	Glu	Val	Ser	Asn	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	Thr	Gly
			85					90					95		
Ser	Arg	Ala	Val	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Thr	Val	Leu	Gly	Ser
			100				105						110		
Arg	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser
	115					120						125			
Leu	Glu	Met	Ala	Glu	Val	Gln	Leu	Val	Gln	Ser	Gly	Ala	Glu	Val	Lys
	130					135					140				
Lys	Pro	Gly	Glu	Ser	Leu	Thr	Ile	Ser	Cys	Lys	Ala	Ser	Gly	Tyr	Ser
145					150					155					160
Phe	Pro	Asn	Tyr	Trp	Ile	Thr	Trp	Val	Arg	Gln	Met	Ser	Gly	Gly	Gly
				165					170					175	
Leu	Glu	Trp	Met	Gly	Arg	Ile	Asp	Pro	Gly	Asp	Ser	Tyr	Thr	Thr	Tyr
			180				185					190			
Asn	Pro	Ser	Phe	Gln	Gly	His	Val	Thr	Ile	Ser	Ile	Asp	Lys	Ser	Thr

Gln	Gly	His	Val	Thr	Ile	Ser	Ile	Asp	Lys	Ser	Thr	Asn	Thr	Ala	Tyr
65					70					75					80
Leu	His	Trp	Asn	Ser	Leu	Lys	Ala	Ser	Asp	Thr	Ala	Met	Tyr	Tyr	Cys
			85						90					95	
Ala	Arg	Tyr	Tyr	Val	Ser	Leu	Val	Asp	Ile	Trp	Gly	Gln	Gly	Thr	Leu
			100					105					110		
Val	Thr	Val	Ser	Ser											
			115												

<210> 39
 <211> 103
 <212> PRT
 <213> Homo sapiens

<220>
 <223> IgG1 CH1 domain

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

<210> 40
 <211> 110
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> IgVL domain of AFP158/HLA-A*02:01 antibody

Gln	Ser	Val	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	Asp	Val	Gly	Gly	Tyr
			20					25					30		
Asn	Tyr	Val	Ser	Trp	Tyr	Gln	Gln	His	Pro	Gly	Lys	Ala	Pro	Lys	Leu
		35					40					45			
Met	Ile	Tyr	Asp	Val	Asn	Asn	Arg	Pro	Ser	Glu	Val	Ser	Asn	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	Thr	Gly
				85					90					95	
Ser	Arg	Ala	Val	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Thr	Val	Leu		
			100					105					110		

<210> 41
 <211> 106
 <212> PRT
 <213> Homo sapiens

<220>
 <223> IgCL domain

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

<210> 42
 <211> 301
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> anti-CD19-abTCR-6MD delta

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

Trp	Trp	Tyr	Asn	Met	Asp	Ser	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val
		115					120					125			
Ser	Ser	Ala	Ser	Thr	Lys	Gly	Pro	Ser	Val	Phe	Pro	Leu	Ala	Pro	Ser
		130				135					140				
Ser	Lys	Ser	Thr	Ser	Gly	Gly	Thr	Ala	Ala	Leu	Gly	Cys	Leu	Val	Lys
145					150					155					160
Asp	Tyr	Phe	Pro	Glu	Pro	Val	Thr	Val	Ser	Trp	Asn	Ser	Gly	Ala	Leu
				165					170					175	
Thr	Ser	Gly	Val	His	Thr	Phe	Pro	Ala	Val	Leu	Gln	Ser	Ser	Gly	Leu
			180					185						190	
Tyr	Ser	Leu	Ser	Ser	Val	Val	Thr	Val	Pro	Ser	Ser	Ser	Leu	Gly	Thr
		195					200					205			
Gln	Thr	Tyr	Ile	Cys	Asn	Val	Asn	His	Lys	Pro	Ser	Asn	Thr	Lys	Val
		210				215					220				
Asp	Lys	Arg	Val	Glu	Pro	Lys	Ser	Cys	Glu	Val	Lys	Thr	Asp	Ser	Thr
225					230				235						240
Asp	His	Val	Lys	Pro	Lys	Glu	Thr	Glu	Asn	Thr	Lys	Gln	Pro	Ser	Lys
				245					250					255	
Ser	Cys	His	Lys	Pro	Lys	Ala	Ile	Val	His	Thr	Glu	Lys	Val	Asn	Met
			260					265					270		
Met	Ser	Leu	Thr	Val	Leu	Gly	Leu	Arg	Met	Leu	Phe	Ala	Lys	Thr	Val
		275					280					285			
Ala	Val	Asn	Phe	Leu	Leu	Thr	Ala	Lys	Leu	Phe	Phe	Leu			
		290				295					300				

<210> 43

<211> 281

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-CD19-abTCR-6MD gamma

<400> 43

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

145					150					155				160
Val	Glu	Thr	Thr	Lys	Pro	Ser	Lys	Gln	Ser	Asn	Asn	Lys	Tyr	Ala
				165					170					175
Ser	Ser	Tyr	Leu	Ser	Leu	Thr	Pro	Glu	Gln	Trp	Lys	Ser	His	Arg
			180					185					190	
Tyr	Ser	Cys	Gln	Val	Thr	His	Glu	Gly	Ser	Thr	Val	Glu	Lys	Thr
		195					200				205			
Ala	Pro	Thr	Glu	Cys	Ser	Pro	Ile	Lys	Thr	Asp	Val	Ile	Thr	Met
	210					215				220				Asp
Pro	Lys	Asp	Asn	Cys	Ser	Lys	Asp	Ala	Asn	Asp	Thr	Leu	Leu	Leu
225				230					235					240
Leu	Thr	Asn	Thr	Ser	Ala	Tyr	Tyr	Met	Tyr	Leu	Leu	Leu	Leu	Lys
			245					250						255
Ser	Val	Val	Tyr	Phe	Ala	Ile	Ile	Thr	Cys	Cys	Leu	Leu	Arg	Arg
			260					265					270	Thr
Ala	Phe	Cys	Cys	Asn	Gly	Glu	Lys	Ser						
		275					280							

<210> 44

<211> 482

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-CD19-scFv CAR

<400> 44

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

Ala	Tyr	Leu	Gln	Trp	Ser	Ser	Leu	Lys	Ala	Ser	Asp	Thr	Ala	Met	Tyr
210						215					220				
Tyr	Cys	Ala	Arg	Gln	Val	Trp	Gly	Trp	Gln	Gly	Gly	Met	Tyr	Pro	Arg
225					230					235					240
Ser	Asn	Trp	Trp	Tyr	Asn	Met	Asp	Ser	Trp	Gly	Gln	Gly	Thr	Leu	Val
				245					250					255	
Thr	Val	Ser	Ser	Ala	Ala	Ala	Ile	Glu	Val	Met	Tyr	Pro	Pro	Pro	Tyr
			260					265					270		
Leu	Asp	Asn	Glu	Lys	Ser	Asn	Gly	Thr	Ile	Ile	His	Val	Lys	Gly	Lys
		275					280					285			
His	Leu	Cys	Pro	Ser	Pro	Leu	Phe	Pro	Gly	Pro	Ser	Lys	Pro	Phe	Trp
290						295					300				
Val	Leu	Val	Val	Val	Gly	Gly	Val	Leu	Ala	Cys	Tyr	Ser	Leu	Leu	Val
305					310					315					320
Thr	Val	Ala	Phe	Ile	Ile	Phe	Trp	Val	Arg	Ser	Lys	Arg	Ser	Arg	Leu
				325					330					335	
Leu	His	Ser	Asp	Tyr	Met	Asn	Met	Thr	Pro	Arg	Arg	Pro	Gly	Pro	Thr
			340					345					350		
Arg	Lys	His	Tyr	Gln	Pro	Tyr	Ala	Pro	Pro	Arg	Asp	Phe	Ala	Ala	Tyr
		355					360					365			
Arg	Ser	Arg	Val	Lys	Phe	Ser	Arg	Ser	Ala	Asp	Ala	Pro	Ala	Tyr	Gln
370						375					380				
Gln	Gly	Gln	Asn	Gln	Leu	Tyr	Asn	Glu	Leu	Asn	Leu	Gly	Arg	Arg	Glu
385					390					395					400
Glu	Tyr	Asp	Val	Leu	Asp	Lys	Arg	Arg	Gly	Arg	Asp	Pro	Glu	Met	Gly
			405						410				415		
Gly	Lys	Pro	Arg	Arg	Lys	Asn	Pro	Gln	Glu	Gly	Leu	Tyr	Asn	Glu	Leu
			420					425					430		
Gln	Lys	Asp	Lys	Met	Ala	Glu	Ala	Tyr	Ser	Glu	Ile	Gly	Met	Lys	Gly
		435					440					445			
Glu	Arg	Arg	Arg	Gly	Lys	Gly	His	Asp	Gly	Leu	Tyr	Gln	Gly	Leu	Ser
450						455					460				
Thr	Ala	Thr	Lys	Asp	Thr	Tyr	Asp	Ala	Leu	His	Met	Gln	Ala	Leu	Pro
465					470					475					480
Pro	Arg														

<210> 45

<211> 130

<212> PRT

<213> Artificial Sequence

<220>

<223> IgVH domain of anti-CD19 antibody

<400> 45

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

50		55		60
Gln Gly Gln Val Thr	Ile Ser Ala Asp Lys Ser	Ile Ser Thr Ala Tyr		
65	70	75	80	
Leu Gln Trp Ser Ser	Leu Lys Ala Ser Asp Thr	Ala Met Tyr Tyr Cys		
	85	90	95	
Ala Arg Gln Val Trp	Gly Trp Gln Gly Gly Met Tyr	Pro Arg Ser Asn		
	100	105	110	
Trp Trp Tyr Asn Met	Asp Ser Trp Gly Gln Gly Thr	Leu Val Thr Val		
	115	120	125	
Ser Ser				
130				

<210> 46
 <211> 108
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> IgVL domain of anti-CD19 antibody

<400> 46
Leu Pro Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys
1 5 10 15
Thr Ala Arg Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Ser Val
20 25 30
His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Val Tyr
35 40 45
Asp Asp Ser Asn Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60
Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly
65 70 75 80
Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Glu Tyr
85 90 95
Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 47
 <211> 107
 <212> PRT
 <213> Homo sapiens

<220>
 <223> fragment of CD28

<400> 47
Ile Glu Val Met Tyr Pro Pro Pro Tyr Leu Asp Asn Glu Lys Ser Asn
1 5 10 15
Gly Thr Ile Ile His Val Lys Gly Lys His Leu Cys Pro Ser Pro Leu
20 25 30
Phe Pro Gly Pro Ser Lys Pro Phe Trp Val Leu Val Val Gly Gly
35 40 45
Val Leu Ala Cys Tyr Ser Leu Leu Val Thr Val Ala Phe Ile Ile Phe

50		55		60											
Trp	Val	Arg	Ser	Lys	Arg	Ser	Arg	Leu	Leu	His	Ser	Asp	Tyr	Met	Asn
65				70						75					80
Met	Thr	Pro	Arg	Arg	Pro	Gly	Pro	Thr	Arg	Lys	His	Tyr	Gln	Pro	Tyr
			85						90					95	
Ala	Pro	Pro	Arg	Asp	Phe	Ala	Ala	Tyr	Arg	Ser					
			100					105							

<210> 48
 <211> 112
 <212> PRT
 <213> Homo sapiens

<220>
 <223> fragment of CD3-zeta

<400> 48
Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly
1 5 10 15
Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr
20 25 30
Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys
35 40 45
Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys
50 55 60
Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg
65 70 75 80
Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala
85 90 95
Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
100 105 110

<210> 49
 <211> 20
 <212> PRT
 <213> Homo sapiens

<220>
 <223> Signal peptide

<400> 49
Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
1 5 10 15
Gly Ser Thr Gly
20

<210> 50
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>

<223> HA tag

<400> 50

Tyr Pro Tyr Asp Val Pro Asp Tyr Ala
1 5

<210> 51

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> 3x Flag tag

<400> 51

Asp Tyr Lys Asp His Asp Gly Asp Tyr Lys Asp His Asp Ile Asp Tyr
1 5 10 15
Lys Asp Asp Asp Asp Lys
20

<210> 52

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> myc tag

<400> 52

Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu
1 5 10

<210> 53

<211> 9

<212> PRT

<213> Homo sapiens

<220>

<223> AFP158

<400> 53

Phe Met Asn Lys Phe Ile Tyr Glu Ile
1 5

<210> 54

<211> 281

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-CD19 clone 5 abTCR-6MD gamma

<400> 54

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

<210> 55

<211> 301

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-CD19 clone 5-9 abTCR-6MD delta

<400> 55

```
Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
 1          5          10          15
Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe Thr Ser Tyr
```

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

<210> 56

<211> 301

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-CD19 clone 5-13 abTCR-6MD delta

<400> 56

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

Gln	Gly	Gln	Val	Thr	Ile	Ser	Ala	Asp	Lys	Ser	Ile	Ser	Thr	Ala	Tyr	65	70	75	80
Leu	Gln	Trp	Ser	Ser	Leu	Lys	Ala	Ser	Asp	Thr	Ala	Met	Tyr	Tyr	Cys		85	90	95
Ala	Arg	Gln	Val	Trp	Gly	Trp	Gln	Gly	Gly	Met	Tyr	Pro	Arg	Ser	Asn		100	105	110
Trp	Trp	Tyr	Asn	Leu	Asp	Ser	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val		115	120	125
Ser	Ser	Ala	Ser	Thr	Lys	Gly	Pro	Ser	Val	Phe	Pro	Leu	Ala	Pro	Ser		130	135	140
Ser	Lys	Ser	Thr	Ser	Gly	Gly	Thr	Ala	Ala	Leu	Gly	Cys	Leu	Val	Lys		145	150	155
Asp	Tyr	Phe	Pro	Glu	Pro	Val	Thr	Val	Ser	Trp	Asn	Ser	Gly	Ala	Leu		165	170	175
Thr	Ser	Gly	Val	His	Thr	Phe	Pro	Ala	Val	Leu	Gln	Ser	Ser	Gly	Leu		180	185	190
Tyr	Ser	Leu	Ser	Ser	Val	Val	Thr	Val	Pro	Ser	Ser	Ser	Leu	Gly	Thr		195	200	205
Gln	Thr	Tyr	Ile	Cys	Asn	Val	Asn	His	Lys	Pro	Ser	Asn	Thr	Lys	Val		210	215	220
Asp	Lys	Arg	Val	Glu	Pro	Lys	Ser	Cys	Glu	Val	Lys	Thr	Asp	Ser	Thr		225	230	235
Asp	His	Val	Lys	Pro	Lys	Glu	Thr	Glu	Asn	Thr	Lys	Gln	Pro	Ser	Lys		245	250	255
Ser	Cys	His	Lys	Pro	Lys	Ala	Ile	Val	His	Thr	Glu	Lys	Val	Asn	Met		260	265	270
Met	Ser	Leu	Thr	Val	Leu	Gly	Leu	Arg	Met	Leu	Phe	Ala	Lys	Thr	Val		275	280	285
Ala	Val	Asn	Phe	Leu	Leu	Thr	Ala	Lys	Leu	Phe	Phe	Leu					290	295	300

<210> 57

<211> 108

<212> PRT

<213> Artificial Sequence

<220>

<223> IgVL domain of anti-CD19 antibody clone 5

<400> 57

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

<210> 58
 <211> 130
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> IgVH domain of anti-CD19 antibody clone 5-9

<400> 58
 Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
 1 5 10 15
 Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe Thr Ser Tyr
 20 25 30
 Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Trp Met
 35 40 45
 Gly Ile Ile Tyr Pro Gly Asp Ser Asp Thr Arg Tyr Ser Pro Phe Phe
 50 55 60
 Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser Thr Ala Tyr
 65 70 75 80
 Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met Tyr Tyr Cys
 85 90 95
 Ala Arg Gln Val Trp Gly Trp Gln Gly Gly Met Tyr Pro Arg Ser Asn
 100 105 110
 Trp Trp Tyr Asn Met Asp Ser Trp Gly Gln Gly Thr Leu Val Thr Val
 115 120 125
 Ser Ser
 130

<210> 59
 <211> 130
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> IgVH domain of anti-CD19 antibody clone 5-13

<400> 59
 Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
 1 5 10 15
 Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe Thr Ser Tyr
 20 25 30
 Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Trp Met
 35 40 45
 Gly Ile Ile Tyr Pro Gly Asp Ser Asp Thr Arg Tyr Ser Pro Ser Phe
 50 55 60
 Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser Thr Ala Tyr
 65 70 75 80
 Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met Tyr Tyr Cys
 85 90 95
 Ala Arg Gln Val Trp Gly Trp Gln Gly Gly Met Tyr Pro Arg Ser Asn

100

<210> 62
<211> 103
<212> PRT
<213> Homo sapiens

<220>
<223> IgG2-2C CH1

<400> 62
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg
1 5 10 15
Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
20 25 30
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45
Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
50 55 60
Leu Ser Ser Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr
65 70 75 80
Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
85 90 95
Thr Val Glu Arg Lys Cys Cys
100

<210> 63
<211> 103
<212> PRT
<213> Homo sapiens

<220>
<223> IgG3 CH1

<400> 63
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg
1 5 10 15
Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
20 25 30
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45
Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
50 55 60
Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65 70 75 80
Tyr Thr Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
85 90 95
Arg Val Glu Leu Lys Thr Pro
100

<210> 64

<211> 103
 <212> PRT
 <213> Homo sapiens

<220>
 <223> IgG4 CH1

<400> 64
 Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg
 1 5 10 15
 Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
 20 25 30
 Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
 35 40 45
 Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
 50 55 60
 Leu Ser Ser Val Val Thr Val Pro Ser Ser Leu Gly Thr Lys Thr
 65 70 75 80
 Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
 85 90 95
 Arg Val Glu Ser Lys Tyr Gly
 100

<210> 65
 <211> 121
 <212> PRT
 <213> Homo sapiens

<220>
 <223> IgA1 CH1

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

<210> 66
 <211> 108
 <212> PRT

<213> Homo sapiens

<220>

<223> IgA2 CH1

<400> 66

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

<210> 67

<211> 159

<212> PRT

<213> Homo sapiens

<220>

<223> IgD CH1

<400> 67

Ala	Pro	Thr	Lys	Ala	Pro	Asp	Val	Phe	Pro	Ile	Ile	Ser	Gly	Cys	Arg
1				5				10						15	
His	Pro	Lys	Asp	Asn	Ser	Pro	Val	Val	Leu	Ala	Cys	Leu	Ile	Thr	Gly
			20					25					30		
Tyr	His	Pro	Thr	Ser	Val	Thr	Val	Thr	Trp	Tyr	Met	Gly	Thr	Gln	Ser
		35					40					45			
Gln	Pro	Gln	Arg	Thr	Phe	Pro	Glu	Ile	Gln	Arg	Arg	Asp	Ser	Tyr	Tyr
	50					55				60					
Met	Thr	Ser	Ser	Gln	Leu	Ser	Thr	Pro	Leu	Gln	Gln	Trp	Arg	Gln	Gly
65					70				75						80
Glu	Tyr	Lys	Cys	Val	Val	Gln	His	Thr	Ala	Ser	Lys	Ser	Lys	Lys	Glu
				85				90						95	
Ile	Phe	Arg	Trp	Pro	Glu	Ser	Pro	Lys	Ala	Gln	Ala	Ser	Ser	Val	Pro
			100					105					110		
Thr	Ala	Gln	Pro	Gln	Ala	Glu	Gly	Ser	Leu	Ala	Lys	Ala	Thr	Thr	Ala
		115					120					125			
Pro	Ala	Thr	Thr	Arg	Asn	Thr	Gly	Arg	Gly	Gly	Glu	Glu	Lys	Lys	Lys
	130					135					140				
Glu	Lys	Glu	Lys	Glu	Glu	Gln	Glu	Glu	Arg	Glu	Thr	Lys	Thr	Pro	
145					150				155						

<210> 68

<211> 103
<212> PRT
<213> Homo sapiens

<220>
<223> IgE CH1

<400> 68
Ala Ser Thr Gln Ser Pro Ser Val Phe Pro Leu Thr Arg Cys Cys Lys
1 5 10 15
Asn Ile Pro Ser Asn Ala Thr Ser Val Thr Leu Gly Cys Leu Ala Thr
20 25 30
Gly Tyr Phe Pro Glu Pro Val Met Val Thr Trp Asp Thr Gly Ser Leu
35 40 45
Asn Gly Thr Thr Met Thr Leu Pro Ala Thr Thr Leu Thr Leu Ser Gly
50 55 60
His Tyr Ala Thr Ile Ser Leu Leu Thr Val Ser Gly Ala Trp Ala Lys
65 70 75 80
Gln Met Phe Thr Cys Arg Val Ala His Thr Pro Ser Ser Thr Asp Trp
85 90 95
Val Asp Asn Lys Thr Phe Ser
100

<210> 69
<211> 104
<212> PRT
<213> Homo sapiens

<220>
<223> IgM CH1

<400> 69
Gly Ser Ala Ser Ala Pro Thr Leu Phe Pro Leu Val Ser Cys Glu Asn
1 5 10 15
Ser Pro Ser Asp Thr Ser Ser Val Ala Val Gly Cys Leu Ala Gln Asp
20 25 30
Phe Leu Pro Asp Ser Ile Thr Leu Ser Trp Lys Tyr Lys Asn Asn Ser
35 40 45
Asp Ile Ser Ser Thr Arg Gly Phe Pro Ser Val Leu Arg Gly Gly Lys
50 55 60
Tyr Ala Ala Thr Ser Gln Val Leu Leu Pro Ser Lys Asp Val Met Gln
65 70 75 80
Gly Thr Asp Glu His Val Val Cys Lys Val Gln His Pro Asn Gly Asn
85 90 95
Lys Glu Lys Asn Val Pro Leu Pro
100

<210> 70
<211> 41
<212> PRT
<213> Homo sapiens

<220>

<223> CD28 co-stimulatory fragment

<400> 70

```
Arg Ser Lys Arg Ser Arg Leu Leu His Ser Asp Tyr Met Asn Met Thr
 1           5           10           15
Pro Arg Arg Pro Gly Pro Thr Arg Lys His Tyr Gln Pro Tyr Ala Pro
      20           25           30
Pro Arg Asp Phe Ala Ala Tyr Arg Ser
      35           40
```

<210> 71

<211> 42

<212> PRT

<213> Homo sapiens

<220>

<223> 4-1BB co-stimulatory fragment

<400> 71

```
Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met
 1           5           10           15
Arg Pro Val Gln Thr Thr Gln Glu Glu Asp Gly Cys Ser Cys Arg Phe
      20           25           30
Pro Glu Glu Glu Glu Gly Gly Cys Glu Leu
      35           40
```

<210> 72

<211> 117

<212> PRT

<213> Artificial Sequence

<220>

<223> IgVH domain of anti-NY-ESO-1/HLA-A*02:01
antibody clone 35

<400> 72

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

<210> 73
 <211> 111
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> IgVL domain of anti-NY-ESO-1/HLA-A*02:01
 antibody clone 35

<400> 73
 Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln
 1 5 10 15
 Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn
 20 25 30
 Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
 35 40 45
 Ile Tyr Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser
 50 55 60
 Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln
 65 70 75 80
 Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu
 85 90 95
 Ser Ala Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly
 100 105 110

<210> 74
 <211> 21
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> scFv linker

<400> 74
 Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
 1 5 10 15
 Ser Leu Glu Met Ala
 20

<210> 75
 <211> 284
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> anti-CD19-cTCR delta

<400> 75
 Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu

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

<210> 76

<211> 282

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-CD19-cTCR gamma

<400> 76

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

Asn	Ser	Gly	Asn	Thr	Ala	Thr	Leu	Thr	Ile	Ser	Arg	Val	Glu	Ala	Gly
65					70					75					80
Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Gln	Val	Trp	Asp	Ser	Ser	Ser	Asp	Tyr
				85					90					95	
Val	Val	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Thr	Val	Leu	Gly	Asp	Lys	Gln
			100					105					110		
Leu	Asp	Ala	Asp	Val	Ser	Pro	Lys	Pro	Thr	Ile	Phe	Leu	Pro	Ser	Ile
		115					120					125			
Ala	Glu	Thr	Lys	Leu	Gln	Lys	Ala	Gly	Thr	Tyr	Leu	Cys	Leu	Leu	Glu
	130					135					140				
Lys	Phe	Phe	Pro	Asp	Val	Ile	Lys	Ile	His	Trp	Gln	Glu	Lys	Lys	Ser
145					150					155					160
Asn	Thr	Ile	Leu	Gly	Ser	Gln	Glu	Gly	Asn	Thr	Met	Lys	Thr	Asn	Asp
				165					170						175
Thr	Tyr	Met	Lys	Phe	Ser	Trp	Leu	Thr	Val	Pro	Glu	Lys	Ser	Leu	Asp
			180					185					190		
Lys	Glu	His	Arg	Cys	Ile	Val	Arg	His	Glu	Asn	Asn	Lys	Asn	Gly	Val
		195					200					205			
Asp	Gln	Glu	Ile	Ile	Phe	Pro	Pro	Ile	Lys	Thr	Asp	Val	Ile	Thr	Met
	210					215					220				
Asp	Pro	Lys	Asp	Asn	Cys	Ser	Lys	Asp	Ala	Asn	Asp	Thr	Leu	Leu	Leu
225					230					235					240
Gln	Leu	Thr	Asn	Thr	Ser	Ala	Tyr	Tyr	Met	Tyr	Leu	Leu	Leu	Leu	Leu
				245					250					255	
Lys	Ser	Val	Val	Tyr	Phe	Ala	Ile	Ile	Thr	Cys	Cys	Leu	Leu	Arg	Arg
			260				265						270		
Thr	Ala	Phe	Cys	Cys	Asn	Gly	Glu	Lys	Ser						
		275					280								

<210> 77

<211> 142

<212> PRT

<213> Homo sapiens

<220>

<223> TCRalpha constant domain

<400> 77

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> 78
 <211> 177
 <212> PRT
 <213> Homo sapiens

<220>
 <223> TCRbeta constant domain

<400> 78
 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> 79
 <211> 153
 <212> PRT
 <213> Homo sapiens

<220>
 <223> TCRdelta constant domain

<400> 79
 Ser Gln Pro His Thr Lys Pro Ser Val Phe Val Met Lys Asn Gly Thr
 1 5 10 15
 Asn Val Ala Cys Leu Val Lys Glu Phe Tyr Pro Lys Asp Ile Arg Ile
 20 25 30
 Asn Leu Val Ser Ser Lys Lys Ile Thr Glu Phe Asp Pro Ala Ile Val

		35				40				45					
Ile	Ser	Pro	Ser	Gly	Lys	Tyr	Asn	Ala	Val	Lys	Leu	Gly	Lys	Tyr	Glu
	50					55					60				
Asp	Ser	Asn	Ser	Val	Thr	Cys	Ser	Val	Gln	His	Asp	Asn	Lys	Thr	Val
65					70					75					80
His	Ser	Thr	Asp	Phe	Glu	Val	Lys	Thr	Asp	Ser	Thr	Asp	His	Val	Lys
			85					90					95		
Pro	Lys	Glu	Thr	Glu	Asn	Thr	Lys	Gln	Pro	Ser	Lys	Ser	Cys	His	Lys
		100					105						110		
Pro	Lys	Ala	Ile	Val	His	Thr	Glu	Lys	Val	Asn	Met	Met	Ser	Leu	Thr
		115					120					125			
Val	Leu	Gly	Leu	Arg	Met	Leu	Phe	Ala	Lys	Thr	Val	Ala	Val	Asn	Phe
	130					135					140				
Leu	Leu	Thr	Ala	Lys	Leu	Phe	Phe	Leu							
145						150									

<210> 80

<211> 173

<212> PRT

<213> Homo sapiens

<220>

<223> TCRgamma constant domain

<400> 80

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

<210> 81

<211> 271

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-AFP158/HLA-A*02:01 abTCR-7 delta

<400> 81

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

<210> 82

<211> 283

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-AFP158/HLA-A*02:01 abTCR-7 gamma

<400> 82

Gln	Ser	Val	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	Asp	Val	Gly	Gly	Tyr
			20					25					30		

Asn	Tyr	Val	Ser	Trp	Tyr	Gln	Gln	His	Pro	Gly	Lys	Ala	Pro	Lys	Leu
		35				40						45			
Met	Ile	Tyr	Asp	Val	Asn	Asn	Arg	Pro	Ser	Glu	Val	Ser	Asn	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	Thr	Gly
				85					90					95	
Ser	Arg	Ala	Val	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Thr	Val	Leu	Asp	Lys
			100					105					110		
Gln	Leu	Asp	Ala	Asp	Val	Ser	Pro	Lys	Pro	Thr	Ile	Phe	Leu	Pro	Ser
		115					120					125			
Ile	Ala	Glu	Thr	Lys	Leu	Gln	Lys	Ala	Gly	Thr	Tyr	Leu	Cys	Leu	Leu
	130					135					140				
Glu	Lys	Phe	Phe	Pro	Asp	Val	Ile	Lys	Ile	His	Trp	Gln	Glu	Lys	Lys
145					150					155					160
Ser	Asn	Thr	Ile	Leu	Gly	Ser	Gln	Glu	Gly	Asn	Thr	Met	Lys	Thr	Asn
				165					170					175	
Asp	Thr	Tyr	Met	Lys	Phe	Ser	Trp	Leu	Thr	Val	Pro	Glu	Lys	Ser	Leu
			180					185					190		
Asp	Lys	Glu	His	Arg	Cys	Ile	Val	Arg	His	Glu	Asn	Asn	Lys	Asn	Gly
		195					200					205			
Val	Asp	Gln	Glu	Ile	Ile	Phe	Pro	Pro	Ile	Lys	Thr	Asp	Val	Ile	Thr
		210				215					220				
Met	Asp	Pro	Lys	Asp	Asn	Cys	Ser	Lys	Asp	Ala	Asn	Asp	Thr	Leu	Leu
225					230					235					240
Leu	Gln	Leu	Thr	Asn	Thr	Ser	Ala	Tyr	Tyr	Met	Tyr	Leu	Leu	Leu	Leu
				245					250					255	
Leu	Lys	Ser	Val	Val	Tyr	Phe	Ala	Ile	Ile	Thr	Cys	Cys	Leu	Leu	Arg
			260					265					270		
Arg	Thr	Ala	Phe	Cys	Cys	Asn	Gly	Glu	Lys	Ser					
		275					280								