

pctgb2016050795-seq1
SEQUENCE LISTING

<110> UCL Business PLC

<120> CHIMERIC ANTIGEN RECEPTOR

<130> P106296PCT

<150> GB 1504840.8

<151> 2015-03-23

<160> 48

<170> PatentIn version 3.5

<210> 1

<211> 45

<212> PRT

<213> Artificial Sequence

<220>

<223> coiled coil domain

<400> 1

Asp Leu Gly Pro Gln Met Leu Arg Glu Leu Gln Glu Thr Asn Ala Ala
1 5 10 15

Leu Gln Asp Val Arg Glu Leu Leu Arg Gln Gln Val Arg Glu Ile Thr
20 25 30

Phe Leu Lys Asn Thr Val Met Glu Cys Asp Ala Cys Gly
35 40 45

<210> 2

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> signal peptide derived from TCR beta chain

<400> 2

Met Gly Thr Ser Leu Leu Cys Trp Met Ala Leu Cys Leu Leu Gly Ala
1 5 10 15

Asp His Ala Asp Gly
20

<210> 3

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> signal peptide derived from IgG1

<400> 3

Met Ser Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

pctgb2016050795-seq1

His Ala Ala Arg Pro
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<210> 4
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> signal peptide derived from CD8a

<400> 4

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

Asp Ala Arg Cys
20

<210> 5
<211> 112
<212> PRT
<213> Artificial Sequence

<220>
<223> CD3 Z endodomain

<400> 5

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> 6
<211> 152
<212> PRT
<213> Artificial Sequence

<220>
<223> CD28 and CD3 Zeta endodomains

pctgb2016050795-seq1

<400> 6

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

<210> 7

<211> 188

<212> PRT

<213> Artificial Sequence

<220>

<223> CD28, OX40 and CD3 Zeta endodomains

<400> 7

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

pctgb2016050795-seq1

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

Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly Gln Asn Gln Leu
85 90 95

Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr Asp Val Leu Asp
100 105 110

Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys Pro Arg Arg Lys
115 120 125

Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys Asp Lys Met Ala
130 135 140

Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg Arg Arg Gly Lys
145 150 155 160

Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala Thr Lys Asp Thr
165 170 175

Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
180 185

<210> 8
<211> 38
<212> PRT
<213> Artificial Sequence

<220>
<223> ICOS endodomain

<400> 8

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

Leu Thr Asp Val Thr Leu
35

<210> 9
<211> 48
<212> PRT
<213> Artificial Sequence

<220>
<223> CD27 endodomain

<400> 9

Gln Arg Arg Lys Tyr Arg Ser Asn Lys Gly Glu Ser Pro Val Glu Pro
1 5 10 15

pctgb2016050795-seq1

Ala Glu Pro Cys His Tyr Ser Cys Pro Arg Glu Glu Glu Gly Ser Thr
20 25 30

Ile Pro Ile Gln Glu Asp Tyr Arg Lys Pro Glu Pro Ala Cys Ser Pro
35 40 45

<210> 10
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
<223> BTLA endodomain

<400> 10

Arg Arg His Gln Gly Lys Gln Asn Glu Leu Ser Asp Thr Ala Gly Arg
1 5 10 15

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

Ser Thr Arg Gln Asn Ser Gln Val Leu Leu Ser Glu Thr Gly Ile Tyr
35 40 45

Asp Asn Asp Pro Asp Leu Cys Phe Arg Met Gln Glu Gly Ser Glu Val
50 55 60

Tyr Ser Asn Pro Cys Leu Glu Glu Asn Lys Pro Gly Ile Val Tyr Ala
65 70 75 80

Ser Leu Asn His Ser Val Ile Gly Pro Asn Ser Arg Leu Ala Arg Asn
85 90 95

Val Lys Glu Ala Pro Thr Glu Tyr Ala Ser Ile Cys Val Arg Ser
100 105 110

<210> 11
<211> 188
<212> PRT
<213> Artificial Sequence

<220>
<223> CD30 endodomain

<400> 11

His Arg Arg Ala Cys Arg Lys Arg Ile Arg Gln Lys Leu His Leu Cys
1 5 10 15

Tyr Pro Val Gln Thr Ser Gln Pro Lys Leu Glu Leu Val Asp Ser Arg
20 25 30

Pro Arg Arg Ser Ser Thr Gln Leu Arg Ser Gly Ala Ser Val Thr Glu
35 40 45

pctgb2016050795-seq1

Pro Val Ala Glu Glu Arg Gly Leu Met Ser Gln Pro Leu Met Glu Thr
50 55 60

Cys His Ser Val Gly Ala Ala Tyr Leu Glu Ser Leu Pro Leu Gln Asp
65 70 75 80

Ala Ser Pro Ala Gly Gly Pro Ser Ser Pro Arg Asp Leu Pro Glu Pro
85 90 95

Arg Val Ser Thr Glu His Thr Asn Asn Lys Ile Glu Lys Ile Tyr Ile
100 105 110

Met Lys Ala Asp Thr Val Ile Val Gly Thr Val Lys Ala Glu Leu Pro
115 120 125

Glu Gly Arg Gly Leu Ala Gly Pro Ala Glu Pro Glu Leu Glu Glu Glu
130 135 140

Leu Glu Ala Asp His Thr Pro His Tyr Pro Glu Gln Glu Thr Glu Pro
145 150 155 160

Pro Leu Gly Ser Cys Ser Asp Val Met Leu Ser Val Glu Glu Glu Gly
165 170 175

Lys Glu Asp Pro Leu Pro Thr Ala Ala Ser Gly Lys
180 185

<210> 12
<211> 58
<212> PRT
<213> Artificial Sequence

<220>
<223> GITR endodomain

<400> 12

Gln Leu Gly Leu His Ile Trp Gln Leu Arg Ser Gln Cys Met Trp Pro
1 5 10 15

Arg Glu Thr Gln Leu Leu Leu Glu Val Pro Pro Ser Thr Glu Asp Ala
20 25 30

Arg Ser Cys Gln Phe Pro Glu Glu Glu Arg Gly Glu Arg Ser Ala Glu
35 40 45

Glu Lys Gly Arg Leu Gly Asp Leu Trp Val
50 55

<210> 13
<211> 60
<212> PRT
<213> Artificial Sequence

pctgb2016050795-seq1

<220>

<223> HVEM endodomain

<400> 13

Cys Val Lys Arg Arg Lys Pro Arg Gly Asp Val Val Lys Val Ile Val
1 5 10 15

Ser Val Gln Arg Lys Arg Gln Glu Ala Glu Gly Glu Ala Thr Val Ile
20 25 30

Glu Ala Leu Gln Ala Pro Pro Asp Val Thr Thr Val Ala Val Glu Glu
35 40 45

Thr Ile Pro Ser Phe Thr Gly Arg Ser Pro Asn His
50 55 60

<210> 14

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> 2A-like sequence

<400> 14

Tyr His Ala Asp Tyr Tyr Lys Gln Arg Leu Ile His Asp Val Glu Met
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Asn Pro Gly Pro
20

<210> 15

<211> 20

<212> PRT

<213> Artificial Sequence

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<223> 2A-like sequence

<400> 15

His Tyr Ala Gly Tyr Phe Ala Asp Leu Leu Ile His Asp Ile Glu Thr
1 5 10 15

Asn Pro Gly Pro
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<210> 16

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> 2A-like sequence

<400> 16

Gln Cys Thr Asn Tyr Ala Leu Leu Lys Leu Ala Gly Asp Val Glu Ser
Page 7

1 5 15

Asn Pro Gly Pro
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<210> 17
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<212> PRT
<213> Artificial Sequence

<220>
<223> 2A-like sequence

<400> 17

Ala Thr Asn Phe Ser Leu Leu Lys Gln Ala Gly Asp Val Glu Glu Asn
1 5 10 15

Pro Gly Pro

<210> 18
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> 2A-like sequence

<400> 18

Ala Ala Arg Gln Met Leu Leu Leu Leu Ser Gly Asp Val Glu Thr Asn
1 5 10 15

Pro Gly Pro

<210> 19
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> 2A-like sequence

<400> 19

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

Asn Pro Gly Pro
20

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

<220>
<223> 2A-like sequence

pctgb2016050795-seq1

<400> 20

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

Asn Pro Gly Pro
20

<210> 21

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> 2A-like sequence

<400> 21

Thr Arg Ala Glu Ile Glu Asp Glu Leu Ile Arg Ala Asp Ile Glu Ser
1 5 10 15

Asn Pro Gly Pro
20

<210> 22

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> 2A-like sequence

<400> 22

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

Asn Pro Gly Pro
20

<210> 23

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> 2A-like sequence

<400> 23

Ser Ser Ile Ile Arg Thr Lys Met Leu Val Ser Gly Asp Val Glu Glu
1 5 10 15

Asn Pro Gly Pro
20

<210> 24

<211> 20

<212> PRT

pctgb2016050795-seq1

<213> Artificial sequence

<220>

<223> 2A-like sequence

<400> 24

Cys Asp Ala Gln Arg Gln Lys Leu Leu Leu Ser Gly Asp Ile Glu Gln
1 5 10 15

Asn Pro Gly Pro
20

<210> 25

<211> 20

<212> PRT

<213> Artificial sequence

<220>

<223> 2A-like sequence

<400> 25

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

Asn Pro Gly Pro
20

<210> 26

<211> 647

<212> PRT

<213> Artificial sequence

<220>

<223> amino acid sequence of the ORF of the anti-CD33 COMP CAR

<400> 26

Met Gly Thr Ser Leu Leu Cys Trp Met Ala Leu Cys Leu Leu Gly Ala
1 5 10 15

Asp His Ala Asp Ala Cys Pro Tyr Ser Asn Pro Ser Leu Cys Ser Gly
20 25 30

Gly Gly Gly Ser Glu Leu Pro Thr Gln Gly Thr Phe Ser Asn Val Ser
35 40 45

Thr Asn Val Ser Pro Ala Lys Pro Thr Thr Thr Ala Cys Pro Tyr Ser
50 55 60

Asn Pro Ser Leu Cys Ser Gly Gly Gly Gly Ser Pro Ala Pro Arg Pro
65 70 75 80

Pro Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu Arg Pro
85 90 95

Glu Ala Cys Arg Pro Ala Ala Gly Gly Ala Val His Thr Arg Gly Leu

pctgb2016050795-seq1

100

105

110

Asp Phe Ala Cys Asp Ile Tyr Ile Trp Ala Pro Leu Ala Gly Thr Cys
 115 120 125
 Gly Val Leu Leu Leu Ser Leu Val Ile Thr Leu Tyr Cys Asn His Arg
 130 135 140
 Asn Arg Arg Arg Val Cys Lys Cys Pro Arg Pro Val Val Arg Ala Glu
 145 150 155 160
 Gly Arg Gly Ser Leu Leu Thr Cys Gly Asp Val Glu Glu Asn Pro Gly
 165 170 175
 Pro Met Ala Val Pro Thr Gln Val Leu Gly Leu Leu Leu Leu Trp Leu
 180 185 190
 Thr Asp Ala Arg Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu
 195 200 205
 Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Glu
 210 215 220
 Asp Ile Tyr Phe Asn Leu Val Trp Tyr Gln Gln Lys Pro Gly Lys Ala
 225 230 235 240
 Pro Lys Leu Leu Ile Tyr Asp Thr Asn Arg Leu Ala Asp Gly Val Pro
 245 250 255
 Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Gln Tyr Thr Leu Thr Ile
 260 265 270
 Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His Tyr
 275 280 285
 Lys Asn Tyr Pro Leu Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
 290 295 300
 Arg Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
 305 310 315 320
 Ser Gly Gly Gly Gly Ser Arg Ser Glu Val Gln Leu Val Glu Ser Gly
 325 330 335
 Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala
 340 345 350
 Ser Gly Phe Thr Leu Ser Asn Tyr Gly Met His Trp Ile Arg Gln Ala
 355 360 365
 Pro Gly Lys Gly Leu Glu Trp Val Ser Ser Ile Ser Leu Asn Gly Gly

pctgb2016050795-seq1

370

375

380

Ser Thr Tyr Tyr Arg Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg
385 390 395 400

Asp Asn Ala Lys Ser Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala
405 410 415

Glu Asp Thr Ala Val Tyr Tyr Cys Ala Ala Gln Asp Ala Tyr Thr Gly
420 425 430

Gly Tyr Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
435 440 445

Met Asp Pro Ala Gly Ser Asp Leu Gly Pro Gln Met Leu Arg Glu Leu
450 455 460

Gln Glu Thr Asn Ala Ala Leu Gln Asp Val Arg Glu Leu Leu Arg Gln
465 470 475 480

Gln Val Arg Glu Ile Thr Phe Leu Lys Asn Thr Val Met Glu Cys Asp
485 490 495

Ala Cys Gly Ser Gly Lys Lys Asp Pro Lys Phe Trp Val Leu Val Val
500 505 510

Val Gly Gly Val Leu Ala Cys Tyr Ser Leu Leu Val Thr Val Ala Phe
515 520 525

Ile Ile Phe Trp Val Arg Ser Arg Val Lys Phe Ser Arg Ser Ala Asp
530 535 540

Ala Pro Ala Tyr Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn
545 550 555 560

Leu Gly Arg Arg Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg
565 570 575

Asp Pro Glu Met Gly Gly Lys Pro Arg Arg Lys Asn Pro Gln Glu Gly
580 585 590

Leu Tyr Asn Glu Leu Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu
595 600 605

Ile Gly Met Lys Gly Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu
610 615 620

Tyr Gln Gly Leu Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu His
625 630 635 640

Met Gln Ala Leu Pro Pro Arg

<210> 27
 <211> 638
 <212> PRT
 <213> Artificial sequence
 <220>
 <223> amino acid sequence of the ORF of the anti-ROR-1 COMP CAR
 <400> 27
 Met Gly Thr Ser Leu Leu Cys Trp Met Ala Leu Cys Leu Leu Gly Ala
 1 5 10 15
 Asp His Ala Asp Ala Cys Pro Tyr Ser Asn Pro Ser Leu Cys Ser Gly
 20 25 30
 Gly Gly Gly Ser Glu Leu Pro Thr Gln Gly Thr Phe Ser Asn Val Ser
 35 40 45
 Thr Asn Val Ser Pro Ala Lys Pro Thr Thr Thr Ala Cys Pro Tyr Ser
 50 55 60
 Asn Pro Ser Leu Cys Ser Gly Gly Gly Gly Ser Pro Ala Pro Arg Pro
 65 70 75 80
 Pro Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu Arg Pro
 85 90 95
 Glu Ala Cys Arg Pro Ala Ala Gly Gly Ala Val His Thr Arg Gly Leu
 100 105 110
 Asp Phe Ala Cys Asp Ile Tyr Ile Trp Ala Pro Leu Ala Gly Thr Cys
 115 120 125
 Gly Val Leu Leu Leu Ser Leu Val Ile Thr Leu Tyr Cys Asn His Arg
 130 135 140
 Asn Arg Arg Arg Val Cys Lys Cys Pro Arg Pro Val Val Arg Ala Glu
 145 150 155 160
 Gly Arg Gly Ser Leu Leu Thr Cys Gly Asp Val Glu Glu Asn Pro Gly
 165 170 175
 Pro Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val
 180 185 190
 Pro Gly Ser Thr Gly Gln Ser Val Lys Glu Ser Glu Gly Asp Leu Val
 195 200 205
 Thr Pro Ala Gly Asn Leu Thr Leu Thr Cys Thr Ala Ser Gly Ser Asp
 210 215 220

pctgb2016050795-seq1

Ile Asn Asp Tyr Pro Ile Ser Trp Val Arg Gln Ala Pro Gly Lys Gly
225 230 235 240

Leu Glu Trp Ile Gly Phe Ile Asn Ser Gly Gly Ser Thr Trp Tyr Ala
245 250 255

Ser Trp Val Lys Gly Arg Phe Thr Ile Ser Arg Thr Ser Thr Thr Val
260 265 270

Asp Leu Lys Met Thr Ser Leu Thr Thr Asp Asp Thr Ala Thr Tyr Phe
275 280 285

Cys Ala Arg Gly Tyr Ser Thr Tyr Tyr Gly Asp Phe Asn Ile Trp Gly
290 295 300

Pro Gly Thr Leu Val Thr Ile Ser Ser Gly Gly Gly Gly Ser Gly Gly
305 310 315 320

Gly Gly Ser Gly Gly Gly Gly Ser Glu Leu Val Met Thr Gln Thr Pro
325 330 335

Ser Ser Thr Ser Gly Ala Val Gly Gly Thr Val Thr Ile Asn Cys Gln
340 345 350

Ala Ser Gln Ser Ile Asp Ser Asn Leu Ala Trp Phe Gln Gln Lys Pro
355 360 365

Gly Gln Pro Pro Thr Leu Leu Ile Tyr Arg Ala Ser Asn Leu Ala Ser
370 375 380

Gly Val Pro Ser Arg Phe Ser Gly Ser Arg Ser Gly Thr Glu Tyr Thr
385 390 395 400

Leu Thr Ile Ser Gly Val Gln Arg Glu Asp Ala Ala Thr Tyr Tyr Cys
405 410 415

Leu Gly Gly Val Gly Asn Val Ser Tyr Arg Thr Ser Phe Gly Gly Gly
420 425 430

Thr Glu Val Val Val Lys Arg Ser Asp Pro Ala Gly Ser Asp Leu Gly
435 440 445

Pro Gln Met Leu Arg Glu Leu Gln Glu Thr Asn Ala Ala Leu Gln Asp
450 455 460

Val Arg Glu Leu Leu Arg Gln Gln Val Arg Glu Ile Thr Phe Leu Lys
465 470 475 480

Asn Thr Val Met Glu Cys Asp Ala Cys Gly Ser Gly Lys Lys Asp Pro
485 490 495

pctgb2016050795-seq1

Lys Phe Trp Val₅₀₀ Leu Val Val Val Gly₅₀₅ Gly Val Leu Ala Cys₅₁₀ Tyr Ser

Leu Leu Val₅₁₅ Thr Val Ala Phe Ile₅₂₀ Ile Phe Trp Val Arg₅₂₅ Ser Arg Val

Lys Phe₅₃₀ Ser Arg Ser Ala Asp₅₃₅ Ala Pro Ala Tyr Gln₅₄₀ Gln Gly Gln Asn

Gln₅₄₅ Leu Tyr Asn Glu Leu₅₅₀ Asn Leu Gly Arg Arg₅₅₅ Glu Glu Tyr Asp Val₅₆₀

Leu Asp Lys Arg Arg₅₆₅ Gly Arg Asp Pro Glu₅₇₀ Met Gly Gly Lys Pro₅₇₅ Arg

Arg Lys Asn Pro₅₈₀ Gln Glu Gly Leu Tyr₅₈₅ Asn Glu Leu Gln Lys₅₉₀ Asp Lys

Met Ala Glu₅₉₅ Ala Tyr Ser Glu Ile₆₀₀ Gly Met Lys Gly Glu₆₀₅ Arg Arg Arg

Gly Lys₆₁₀ Gly His Asp Gly Leu₆₁₅ Tyr Gln Gly Leu Ser₆₂₀ Thr Ala Thr Lys

Asp Thr Tyr Asp Ala Leu₆₃₀ His Met Gln Ala Leu₆₃₅ Pro Pro Arg

<210> 28
<211> 1944
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA sequence of the ORF of the anti-CD33 COMP CAR

<400> 28
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cagggcacct tctccaacgt gtccaccaac gtgagcccag ccaagcccac caccaccgcc 180
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pctgb2016050795-seq1

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gcaacctatt	attgtcaaca	ctataagaat	tatccgctca	cgttcgggtca	ggggaccaag	900
ctggaaatca	aaagatctgg	tggcggaggg	tcaggaggcg	gaggcagcgg	aggcgggtggc	960
tcgggaggcg	gaggctcgag	atctgagggtg	cagttgggtg	agtctggggg	cggcttggtg	1020
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aaaatggccg	aggcctattc	cgagatcggc	atgaagggag	agagaagacg	cggaaagggc	1860
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atgcaggccc	tgccaccag	atga				1944

<210> 29
 <211> 1914
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DNA sequence of the ORF of the anti-ROR-1 COMP CAR

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cagggcacct	tctccaacgt	gtccaccaac	gtgagcccag	ccaagcccac	caccaccgcc	180
tgtccttatt	ccaatccttc	cctgtgtagc	ggagggggag	gcagcccagc	ccccagacct	240
cccaccccag	ccccaccat	cgccagccag	cctctgagcc	tgagaccgga	ggcctgccgc	300
ccagccgccg	gcggcgccgt	gcacaccaga	ggcctggatt	tcgcctgcga	tatctacatc	360
tgggccccac	tggccggcac	ctgtggcggtg	ctgctgctga	gcctgggtgat	caccctgtac	420

pctgb2016050795-seq1

tgcaaccacc gcaaccgcag gcgcgtgtgc aagtgcccca ggcccgtggt gagagccgag	480
ggcagaggca gcctgctgac ctgcggcgac gtggaggaga acccaggccc catggagacc	540
gacaccctgc tgctgtgggt gctgctgctg tgggtgcccc gcagcaccgg ccagagcgtg	600
aaggagagcg agggcgacct ggtgacccca gccggcaacc tgaccctgac ctgcaccgcc	660
agcggcagcg acatcaacga ctaccccatc agctgggtgc ggcaggcccc aggcaagggc	720
ctggagtgga tcggcttcat caacagcggc ggcagcacct ggtacgccag ctgggtgaag	780
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aacatctggg gacccggcac cctggtgacc atcagcagcg gaggcggagg gtctgggggc	960
ggcggtagcg gcggaggagg gagcgagctg gtgatgacct agaccccaag cagcaccagc	1020
ggcgccgtgg gcggcaccgt gaccatcaac tgccaggcca gccagagcat cgacagcaac	1080
ctggcctggt tccagcagaa gcctggccag ccaccaccc tgctgatcta ccgggccagc	1140
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ctgaccatca gcggcgtgca gcgggaggac gccgccacct actactgcct gggcggagtg	1260
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gccctgcagg acgtgcgcga gctgctgaga cagcaggtgc gggagattac attcctgaag	1440
aacaccgtga tggagtgcga tgcctgcgga tctgggaaga aggaccccaa gttctgggtc	1500
ctggtggtgg tgggaggcgt gctggcctgt tactctctcc tggtgaccgt ggccttcac	1560
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cagggccaga atcagctgta caatgaactg aacctgggca ggcgggagga gtacgacgtg	1680
ctggataagc ggagaggcag agaccccgag atgggcggca aaccacggcg caaaaatccc	1740
caggagggac tctataacga gctgcagaag gacaaaatgg ccgaggccta ttccgagatc	1800
ggcatgaagg gagagagaag acgcggaaaag ggccacgacg gcctgtatca gggattgtcc	1860
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<210> 30

<211> 57

<212> PRT

<213> Artificial sequence

<220>

<223> Kinesin motor protein: parallel homodimer

<400> 30

Met	His	Ala	Ala	Leu	Ser	Thr	Glu	Val	Val	His	Leu	Arg	Gln	Arg	Thr
1				5					10					15	

Glu	Glu	Leu	Leu	Arg	Cys	Asn	Glu	Gln	Gln	Ala	Ala	Glu	Leu	Glu	Thr
			20					25					30		

pctgb2016050795-seq1

Cys Lys Glu Gln Leu Phe Gln Ser Asn Met Glu Arg Lys Glu Leu His
35 40 45

Asn Thr Val Met Asp Leu Arg Gly Asn
50 55

<210> 31
<211> 50
<212> PRT
<213> Artificial sequence

<220>
<223> Hepatitis D delta antigen: parallel homodimer

<400> 31

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

Glu Glu Leu Glu Arg Asp Leu Arg Lys Leu Lys Lys Lys Ile Lys Lys
20 25 30

Leu Glu Glu Asp Asn Pro Trp Leu Gly Asn Ile Lys Gly Ile Ile Gly
35 40 45

Lys Tyr
50

<210> 32
<211> 61
<212> PRT
<213> Artificial sequence

<220>
<223> Archaeal box C/D SRNP core protein: anti-parallel heterodimer

<400> 32

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

Ile Asn Met Leu Asn Glu Lys Leu Glu Asp Ile Arg Ala Val Lys Glu
20 25 30

Ser Glu Ile Thr Glu Lys Phe Glu Lys Lys Ile Arg Glu Leu Arg Glu
35 40 45

Leu Arg Arg Asp Val Glu Arg Glu Ile Glu Glu Val Met
50 55 60

<210> 33
<211> 31
<212> PRT
<213> Artificial sequence

<220>
<223> Mannose-binding protein A: parallel homotrimer

pctgb2016050795-seq1

<400> 33

Ala Ile Glu Val Lys Leu Ala Asn Met Glu Ala Glu Ile Asn Thr Leu
1 5 10 15

Lys Ser Lys Leu Glu Leu Thr Asn Lys Leu His Ala Phe Ser Met
20 25 30

<210> 34

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<223> Coiled-coil serine-rich protein 1: parallel homotrimer

<400> 34

Glu Trp Glu Ala Leu Glu Lys Lys Leu Ala Ala Leu Glu Ser Lys Leu
1 5 10 15

Gln Ala Leu Glu Lys Lys Leu Glu Ala Leu Glu His Gly
20 25

<210> 35

<211> 24

<212> PRT

<213> Artificial Sequence

<220>

<223> Polypeptide release factor 2: anti-parallel heterotrimer Chain A

<400> 35

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

Val Leu Arg Gly Tyr Leu Asp Tyr
20

<210> 36

<211> 51

<212> PRT

<213> Artificial Sequence

<220>

<223> Polypeptide release factor 2: anti-parallel heterotrimer Chain B

<400> 36

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

Gly Leu Leu Glu Leu Ala Val Glu Ala Asp Asp Glu Glu Thr Phe Asn
20 25 30

Glu Ala Val Ala Glu Leu Asp Ala Leu Glu Glu Lys Leu Ala Gln Leu
35 40 45

pctgb2016050795-seq1

Glu Phe Arg
50

<210> 37
<211> 51
<212> PRT
<213> Artificial Sequence

<220>
<223> SNAP-25 and SNARE: parallel heterotetramer Chain A

<400> 37

Ile Glu Thr Arg His Ser Glu Ile Ile Lys Leu Glu Asn Ser Ile Arg
1 5 10 15

Glu Leu His Asp Met Phe Met Asp Met Ala Met Leu Val Glu Ser Gln
20 25 30

Gly Glu Met Ile Asp Arg Ile Glu Tyr Asn Val Glu His Ala Val Asp
35 40 45

Tyr Val Glu
50

<210> 38
<211> 67
<212> PRT
<213> Artificial Sequence

<220>
<223> SNAP-25 and SNARE: parallel heterotetramer Chain B

<400> 38

Ala Leu Ser Glu Ile Glu Thr Arg His Ser Glu Ile Ile Lys Leu Glu
1 5 10 15

Asn Ser Ile Arg Glu Leu His Asp Met Phe Met Asp Met Ala Met Leu
20 25 30

Val Glu Ser Gln Gly Glu Met Ile Asp Arg Ile Glu Tyr Asn Val Glu
35 40 45

His Ala Val Asp Tyr Val Glu Arg Ala Val Ser Asp Thr Lys Lys Ala
50 55 60

Val Lys Tyr
65

<210> 39
<211> 69
<212> PRT
<213> Artificial Sequence

<220>
<223> SNAP-25 and SNARE: parallel heterotetramer Chain C

pctgb2016050795-seq1

<400> 39

Glu Leu Glu Glu Met Gln Arg Arg Ala Asp Gln Leu Ala Asp Glu Ser
1 5 10 15

Leu Glu Ser Thr Arg Arg Met Leu Gln Leu Val Glu Glu Ser Lys Asp
20 25 30

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

Glu Arg Ile Glu Glu Gly Met Asp Gln Ile Asn Lys Asp Met Lys Glu
50 55 60

Ala Glu Lys Asn Leu
65

<210> 40

<211> 51

<212> PRT

<213> Artificial sequence

<220>

<223> SNAP-25 and SNARE: parallel heterotetramer chain D

<400> 40

Ile Glu Thr Arg His Ser Glu Ile Ile Lys Leu Glu Asn Ser Ile Arg
1 5 10 15

Glu Leu His Asp Met Phe Met Asp Met Ala Met Leu Val Glu Ser Gln
20 25 30

Gly Glu Met Ile Asp Arg Ile Glu Tyr Asn Val Glu His Ala Val Asp
35 40 45

Tyr Val Glu
50

<210> 41

<211> 20

<212> PRT

<213> Artificial sequence

<220>

<223> Lac repressor: parallel homotetramer

<400> 41

Ser Pro Arg Ala Leu Ala Asp Ser Leu Met Gln Leu Ala Arg Gln Val
1 5 10 15

Ser Arg Leu Glu
20

<210> 42

pctgb2016050795-seq1

<211> 136
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Apolipoprotein E: anti-parallel heterotetramer

<400> 42

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

Arg Trp Val Gln Thr Leu Ser Glu Gln Val Gln Glu Glu Leu Leu Ser
 20 25 30

Ser Gln Val Thr Gln Glu Leu Arg Ala Leu Met Asp Glu Thr Met Lys
 35 40 45

Glu Leu Lys Ala Tyr Lys Ser Glu Leu Glu Glu Gln Leu Thr Ala Arg
 50 55 60

Leu Ser Lys Glu Leu Gln Ala Ala Gln Ala Arg Leu Gly Ala Asp Met
 65 70 75 80

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

Met Leu Gly Gln Ser Thr Glu Glu Leu Arg Val Arg Leu Ala Ser His
 100 105 110

Leu Arg Lys Leu Arg Lys Arg Leu Leu Arg Asp Ala Asp Asp Leu Gln
 115 120 125

Lys Arg Leu Ala Val Tyr Gln Ala
 130 135

<210> 43
 <211> 29
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> heterodimerization domain

<400> 43

Gln Leu Glu Lys Glu Leu Gln Ala Leu Glu Lys Glu Asn Ala Gln Leu
 1 5 10 15

Glu Trp Glu Leu Gln Ala Leu Glu Lys Glu Leu Ala Gln
 20 25

<210> 44
 <211> 29
 <212> PRT
 <213> Artificial Sequence

pctgb2016050795-seq1

<220>

<223> heterodimerization domain

<400> 44

Gln Leu Glu Lys Lys Leu Gln Ala Leu Lys Lys Lys Asn Ala Gln Leu
1 5 10 15

Lys Trp Lys Leu Gln Ala Leu Lys Lys Lys Leu Ala Gln
20 25

<210> 45

<211> 44

<212> PRT

<213> Artificial Sequence

<220>

<223> dimerization and docking domain (DDD1)

<400> 45

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

Thr Val Glu Val Leu Arg Gln Gln Pro Pro Asp Leu Val Glu Phe Ala
20 25 30

Val Glu Tyr Phe Thr Arg Leu Arg Glu Ala Arg Ala
35 40

<210> 46

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> anchoring domain (AD1)

<400> 46

Val Gln Ile Glu Tyr Leu Ala Lys Gln Ile Val Asp Asn Ala Ile Gln
1 5 10 15

Gln Ala

<210> 47

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> truncated COMP

<400> 47

Gln Gln Val Arg Glu Ile Thr Phe Leu Lys Asn Thr Val Met Glu Cys
1 5 10 15

Asp Ala Cys Gly

<210> 48
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> consensus Tobacco Etch Virus (TEV) cleavage site

<400> 48
Glu Asn Leu Tyr Phe Gln Ser
1 5