

12827_563_228_Sequence_Listing
SEQUENCE LISTING

<110> Celgene Corporation

<120> ANTI-CD47 ANTIBODIES AND USES THEREOF

<130> 12827-563-228

<140>

<141>

<160> 39

<170> PatentIn version 3.5

<210> 1

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> Anti-CD47 antibody AB6.12 heavy chain variable region

<400> 1

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

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Phe Asn Ile Lys Asp Tyr
20 25 30

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

Gly Trp Ile Asp Pro Asp Gln Gly Asp Thr Glu Tyr Ala Gln Lys Phe
50 55 60

Gln Asp Arg Val Thr Ile Thr Arg Asp Arg Ser Met Ser Thr Ala Tyr
65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Met Tyr Tyr Cys
85 90 95

Asn Ala Ala Tyr Gly Ser Ser Ser Tyr Pro Met Asp Tyr Trp Gly Gln
100 105 110

Gly Thr Thr Val Thr Val
115

<210> 2

<211> 451

<212> PRT

<213> Artificial Sequence

<220>

<223> Anti-CD47 antibody IgG1 heavy chain

<400> 2

Met Gln Met Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Thr Gly
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1 5 10 15 12827_563_228_Sequence_Listing

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275

280

285

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
290 295 300

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
305 310 315 320

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
325 330 335

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val
340 345 350

Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser
355 360 365

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
370 375 380

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385 390 395 400

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
405 410 415

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
420 425 430

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
435 440 445

Pro Gly Lys
450

<210> 3

<211> 448

<212> PRT

<213> Artificial Sequence

<220>

<223> Anti-CD47 antibody IgG4P heavy chain

<400> 3

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

Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Phe Asn Ile Lys Asp
20 25 30

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

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Met Gly Trp Ile Asp Pro Asp Gln Gly Asp Thr Glu Tyr Ala Gln Lys
50 55 60

Phe Gln Asp Arg Val Thr Ile Thr Arg Asp Arg Ser Met Ser Thr Ala
65 70 75 80

Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Met Tyr Tyr
85 90 95

Cys Asn Ala Ala Tyr Gly Ser Ser Ser Tyr Pro Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
115 120 125

Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala
130 135 140

Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
145 150 155 160

Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
165 170 175

Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
180 185 190

Pro Ser Ser Ser Leu Gly Thr Lys Thr Tyr Thr Cys Asn Val Asp His
195 200 205

Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Ser Lys Tyr Gly
210 215 220

Pro Pro Cys Pro Pro Cys Pro Ala Pro Glu Phe Leu Gly Gly Pro Ser
225 230 235 240

Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
245 250 255

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser Gln Glu Asp Pro
260 265 270

Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
275 280 285

Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Tyr Arg Val Val
290 295 300

Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
305 310 315 320

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Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ser Ser Ile Glu Lys Thr
325 330 335

Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu
340 345 350

Pro Pro Ser Gln Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys
355 360 365

Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
370 375 380

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
385 390 395 400

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Arg Leu Thr Val Asp Lys Ser
405 410 415

Arg Trp Gln Glu Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
420 425 430

Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Leu Gly Lys
435 440 445

<210> 4

<211> 448

<212> PRT

<213> Artificial Sequence

<220>

<223> Anti-CD47 antibody IgG4PE heavy chain (comprising S228P and L235E substitutions)

<400> 4

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

Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Phe Asn Ile Lys Asp
20 25 30

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

Met Gly Trp Ile Asp Pro Asp Gln Gly Asp Thr Glu Tyr Ala Gln Lys
50 55 60

Phe Gln Asp Arg Val Thr Ile Thr Arg Asp Arg Ser Met Ser Thr Ala
65 70 75 80

Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Met Tyr Tyr
85 90 95

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Cys Asn Ala Ala Tyr Gly Ser Ser Ser Tyr Pro Met Asp Tyr Trp Gly
 100 105 110
 Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
 115 120 125
 Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala
 130 135 140
 Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
 145 150 155 160
 Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
 165 170 175
 Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
 180 185 190
 Pro Ser Ser Ser Leu Gly Thr Lys Thr Tyr Thr Cys Asn Val Asp His
 195 200 205
 Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Ser Lys Tyr Gly
 210 215 220
 Pro Pro Cys Pro Pro Cys Pro Ala Pro Glu Phe Glu Gly Gly Pro Ser
 225 230 235 240
 Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
 245 250 255
 Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser Gln Glu Asp Pro
 260 265 270
 Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
 275 280 285
 Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Tyr Arg Val Val
 290 295 300
 Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
 305 310 315 320
 Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ser Ser Ile Glu Lys Thr
 325 330 335
 Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu
 340 345 350
 Pro Pro Ser Gln Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys
 355 360 365

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Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
370 375 380

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
385 390 395 400

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Arg Leu Thr Val Asp Lys Ser
405 410 415

Arg Trp Gln Glu Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
420 425 430

Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Leu Gly Lys
435 440 445

<210> 5
<211> 451
<212> PRT
<213> Artificial sequence

<220>
<223> Anti-CD47 antibody IgG1-13m heavy chain

<400> 5

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

Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Phe Asn Ile Lys Asp
20 25 30

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

Met Gly Trp Ile Asp Pro Asp Gln Gly Asp Thr Glu Tyr Ala Gln Lys
50 55 60

Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala
65 70 75 80

Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Asn Ala Ala Tyr Gly Ser Ser Ser Tyr Pro Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
115 120 125

Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala
130 135 140

Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
145 150 155 160

12827_563_228_Sequence_Listing

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

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His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
435 440 445

Pro Gly Lys
450

<210> 6
<211> 451
<212> PRT
<213> Artificial Sequence

<220>
<223> Anti-CD47 antibody IgG1-13mZ heavy chain

<400> 6

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

Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Phe Asn Ile Lys Asp
20 25 30

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

Met Gly Trp Ile Asp Pro Asp Gln Gly Asp Thr Glu Tyr Ala Gln Lys
50 55 60

Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala
65 70 75 80

Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Asn Ala Ala Tyr Gly Ser Ser Ser Tyr Pro Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
115 120 125

Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala
130 135 140

Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
145 150 155 160

Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
165 170 175

Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
180 185 190

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Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His
195 200 205

Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys
210 215 220

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly
225 230 235 240

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
245 250 255

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
260 265 270

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
275 280 285

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
290 295 300

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
305 310 315 320

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
325 330 335

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val
340 345 350

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser
355 360 365

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
370 375 380

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385 390 395 400

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
405 410 415

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
420 425 430

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
435 440 445

Pro Gly Lys
450

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<210> 7

<211> 451

<212> PRT

<213> Artificial sequence

<220>

<223> Anti-CD47 antibody IgG1-5m heavy chain

<400> 7

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

Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Phe Asn Ile Lys Asp
20 25 30

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

Met Gly Trp Ile Asp Pro Asp Gln Gly Asp Thr Glu Tyr Ala Gln Lys
50 55 60

Phe Gln Gly Arg Val Thr Ile Thr Arg Asp Arg Ser Thr Ser Thr Ala
65 70 75 80

Tyr Met Glu Leu Arg Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Asn Ala Ala Tyr Gly Ser Ser Ser Tyr Pro Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
115 120 125

Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala
130 135 140

Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
145 150 155 160

Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
165 170 175

Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
180 185 190

Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His
195 200 205

Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys
210 215 220

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly
225 230 235 240

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

<210> 8
 <211> 448
 <212> PRT
 <213> Artificial sequence
 <220>
 <223> Anti-CD47 antibody IgG4P-13m heavy chain
 <400> 8

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

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Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
275 280 285

Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Tyr Arg Val Val
290 295 300

Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
305 310 315 320

Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ser Ser Ile Glu Lys Thr
325 330 335

Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu
340 345 350

Pro Pro Ser Gln Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys
355 360 365

Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
370 375 380

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
385 390 395 400

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Arg Leu Thr Val Asp Lys Ser
405 410 415

Arg Trp Gln Glu Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
420 425 430

Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Leu Gly Lys
435 440 445

<210> 9

<211> 448

<212> PRT

<213> Artificial Sequence

<220>

<223> Anti-CD47 antibody IgG4P-5m heavy chain

<400> 9

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

Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Phe Asn Ile Lys Asp
20 25 30

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

Met Gly Trp Ile Asp Pro Asp Gln Gly Asp Thr Glu Tyr Ala Gln Lys
50 55 60

12827_563_228_Sequence_Listing

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

12827_563_228_Sequence_Listing

Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu
340 345 350

Pro Pro Ser Gln Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys
355 360 365

Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
370 375 380

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
385 390 395 400

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Arg Leu Thr Val Asp Lys Ser
405 410 415

Arg Trp Gln Glu Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
420 425 430

Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Leu Gly Lys
435 440 445

<210> 10
<211> 448
<212> PRT
<213> Artificial Sequence

<220>
<223> Anti-CD47 antibody IgG4PE-13m heavy chain

<400> 10

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

Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Phe Asn Ile Lys Asp
20 25 30

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

Met Gly Trp Ile Asp Pro Asp Gln Gly Asp Thr Glu Tyr Ala Gln Lys
50 55 60

Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala
65 70 75 80

Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Asn Ala Ala Tyr Gly Ser Ser Ser Tyr Pro Met Asp Tyr Trp Gly
100 105 110

12827_563_228_Sequence_Listing

Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
115 120 125

Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala
130 135 140

Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
145 150 155 160

Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
165 170 175

Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
180 185 190

Pro Ser Ser Ser Leu Gly Thr Lys Thr Tyr Thr Cys Asn Val Asp His
195 200 205

Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Ser Lys Tyr Gly
210 215 220

Pro Pro Cys Pro Pro Cys Pro Ala Pro Glu Phe Glu Gly Gly Pro Ser
225 230 235 240

Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
245 250 255

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser Gln Glu Asp Pro
260 265 270

Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
275 280 285

Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Tyr Arg Val Val
290 295 300

Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
305 310 315 320

Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ser Ser Ile Glu Lys Thr
325 330 335

Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu
340 345 350

Pro Pro Ser Gln Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys
355 360 365

Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
370 375 380

12827_563_228_Sequence_Listing

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
385 390 395 400

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Arg Leu Thr Val Asp Lys Ser
405 410 415

Arg Trp Gln Glu Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
420 425 430

Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Leu Gly Lys
435 440 445

<210> 11
<211> 448
<212> PRT
<213> Artificial sequence

<220>
<223> Anti-CD47 antibody IgG4PE-5m heavy chain

<400> 11

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

Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Phe Asn Ile Lys Asp
20 25 30

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

Met Gly Trp Ile Asp Pro Asp Gln Gly Asp Thr Glu Tyr Ala Gln Lys
50 55 60

Phe Gln Gly Arg Val Thr Ile Thr Arg Asp Arg Ser Thr Ser Thr Ala
65 70 75 80

Tyr Met Glu Leu Arg Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Asn Ala Ala Tyr Gly Ser Ser Ser Tyr Pro Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
115 120 125

Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala
130 135 140

Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
145 150 155 160

Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
165 170 175

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Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
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 Pro Ser Ser Ser Leu Gly Thr Lys Thr Tyr Thr Cys Asn Val Asp His
 195 200 205
 Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Ser Lys Tyr Gly
 210 215 220
 Pro Pro Cys Pro Pro Cys Pro Ala Pro Glu Phe Glu Gly Gly Pro Ser
 225 230 235 240
 Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
 245 250 255
 Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser Gln Glu Asp Pro
 260 265 270
 Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
 275 280 285
 Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Tyr Arg Val Val
 290 295 300
 Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
 305 310 315 320
 Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ser Ser Ile Glu Lys Thr
 325 330 335
 Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu
 340 345 350
 Pro Pro Ser Gln Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys
 355 360 365
 Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
 370 375 380
 Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
 385 390 395 400
 Ser Asp Gly Ser Phe Phe Leu Tyr Ser Arg Leu Thr Val Asp Lys Ser
 405 410 415
 Arg Trp Gln Glu Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
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12827_563_228_Sequence_Listing

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<220>
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 35 40 45
 Tyr Arg Ala Asn Arg Leu Val Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
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 Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp Glu Phe Pro Tyr
 85 90 95
 Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
 100 105

<210> 13
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 <212> PRT
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<220>
 <223> Light chain (Ig Kappa)
 <400> 13

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 Tyr Leu Ser Trp Phe Gln Gln Lys Pro Gly Lys Val Pro Lys His Leu
 35 40 45
 Ile Tyr Arg Ala Asn Arg Leu Val Ser Gly Val Pro Ser Arg Phe Ser
 50 55 60
 Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln
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Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp Glu Phe Pro
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Tyr Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala
100 105 110

Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser
115 120 125

Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu
130 135 140

Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser
145 150 155 160

Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu
165 170 175

Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val
180 185 190

Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys
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Ser Phe Asn Arg Gly Glu Cys
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<223> VH CDR1

<400> 14

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12827_563_228_Sequence_Listing

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Leu Gln Tyr Asp Glu Phe Pro Tyr Thr
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<210> 20
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 heavy chain variable region
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 <222> (1)..(1)
 <223> Xaa = any amino acid or absent

12827_563_228_Sequence_Listing

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Page 23

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<210> 21
<211> 119
<212> PRT
<213> Artificial sequence

<220>
<223> anti-CD47 antibody VH - 13m

<400> 21
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<210> 22
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<212> PRT
<213> Artificial Sequence

<220>
<223> anti-CD47 antibody VH - 5m
<400> 22

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Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Phe Asn Ile Lys Asp
20 25 30

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

Met Gly Trp Ile Asp Pro Asp Gln Gly Asp Thr Glu Tyr Ala Gln Lys
50 55 60

Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala
65 70 75 80

Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Asn Ala Ala Tyr Gly Ser Ser Ser Tyr Pro Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Thr Val Thr Val
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<213> Artificial Sequence

<220>
<223> Anti-CD47 antibody IgG1 heavy chain

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gcgccaggtc aggccttgga atggatgggc tggattgacc cggatcaagg tgacaccgaa 180
tatgccc aaa agtttcagga ccgtgtgacc atcacccgtg accgtagcat gtccaccgca 240
tatatggagc tgagcagcct gcgcagcgaa gatactgcga tgtattactg caatgcggcc 300
tatggtagca gtcctatcc gatggattac tggggccagg gtaccacggt gacgggttagc 360

12827_563_228_Sequence_Listing

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tcctggaact ctggcgcgct gaccagcggg gttcacacgt ttccggcggt tctgcagagc	540
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aaagagtaca agtgtaagggt cagcaacaag gcgctgccag caccgattga aaagaccatt	1020
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<210> 24

<211> 1347

<212> DNA

<213> Artificial sequence

<220>

<223> Anti-CD47 antibody IgG4P heavy chain

<400> 24

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gcaccgggtc aagcgttgga gtggatgggt tggatcgacc cggaccaggg tgatacggag	180
tatgcgcaga aattccagga ccgcgttacc atcaccgcg accgcagcat gagcacggcg	240
tacatggagc tgagcagcct gcgttccgaa gataccgcga tgtactactg taatgctgcg	300
tatggtagca gcagctatcc aatggactat tggggccagg gcacgacggg caccgttagc	360
agcgtagca ccaagggccc gtctgtgttt ccgttggcac cgtgcagccg tagcactagc	420
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 <212> DNA
 <213> Artificial sequence

<220>
 <223> Anti-CD47 antibody IgG4PE heavy chain

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<210> 26
 <211> 1356
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Anti-CD47 antibody IgG1-13m heavy chain

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<210> 27

12827_563_228_Sequence_Listing

<211> 1356

<212> DNA

<213> Artificial sequence

<220>

<223> Anti-CD47 antibody IgG1-13mZ heavy chain

<400> 27

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<210> 28

<211> 1356

<212> DNA

<213> Artificial sequence

<220>

<223> Anti-CD47 antibody IgG1-5m heavy chain

<400> 28

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12827_563_228_Sequence_Listing

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<210> 29
 <211> 1347
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Anti-CD47 antibody IgG4P-13m heavy chain

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agcgccagca ccaagggccc gtctgtgttt ccgttggcac cgtgcagccg tagcactagc	420
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12827_563_228_Sequence_Listing

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taccgcgtcg	ttagcgtcct	gaccgtgctg	caccaagatt	ggctgaatgg	taaagagtac	960
aagtgcagg	ttagcaataa	gggtctgccg	agcagcatcg	agaaaacat	tagcaaggcg	1020
aaaggtcaac	cgcgcgagcc	acaggtctac	acgtgccgc	cgagccaaga	agaaatgacc	1080
aaaaatcagg	ttagcctgac	ttgtctggtg	aaaggcttct	acccgagcga	tattgcagtt	1140
gaatgggaga	gcaacggcca	gcctgagaac	aactataaga	cgaccccgcc	agtgtctggac	1200
agcgatggca	gcttcttttt	gtattctcgt	ctgaccgtgg	acaagtcccg	ttggcaagag	1260
ggcaatgtgt	tcagctgttc	tgtcatgcac	gaagcgctgc	ataaccatta	caccagagaag	1320
tccctgagcc	tgctgctggg	caaataa				1347

<210> 30
 <211> 1347
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Anti-CD47 antibody IgG4P-5m heavy chain

<400> 30	
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gcgccaggtc	aggccttgga atggatgggc tggattgacc cggatcaagg tgacaccgaa 180
tatgccc aaa	agtttcaggg tcgtgtgacc atcaccctgt accgtagcac ctccaccgca 240
tatatggagc	tgcgtagcct gcgcagcgaa gatactgcgg tgtattactg caatgcggcc 300
tatggtagca	gtcctatcc gatggattac tggggccagg gtaccacggg gacgggttagc 360
agcgcaagca	ccaagggccc gtctgtgttt ccgttggcac cgtgcagccg tagcactagc 420
gaatccactg	cagcgctggg ttgcctggtt aaggactatt tcccggagcc gggtaccgtg 480
tcctggaact	ctggcgccct gaccagcgg
agcggctctgt	acagcctgag ctcgggtggtg accgttccga gcagctctct gggtacaaaa 600
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gtattcctgt	tcccgccgaa accgaaagat accttgatga ttagccgtac gccagaggtc 780
acgtgctgcg	tggtggacgt tagccaagag gatccggaag tccaattcaa ctggtacgtg 840

12827_563_228_Sequence_Listing

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aaaaatcagg ttagcctgac ttgtctggtg aaaggcttct acccgagcga tattgcagtt	1140
gaatgggaga gcaacggcca gcctgagaac aactataaga cgaccccgcc agtgctggac	1200
agcgatggca gcttcttttt gtattctcgt ctgaccgtgg acaagtcccg ttggcaagag	1260
ggcaatgtgt tcagctgttc tgtcatgcac gaagcgctgc ataaccatta caccagaag	1320
tccctgagcc tgctgctggg caaataa	1347

<210> 31
 <211> 1347
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Anti-CD47 antibody IgG4PE-13m heavy chain

<400> 31 atgcaagtcc aattggtcca gagcgggtgc gaagtcaaga aaccgggtgc aagcgtcaaa	60
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gctccggggc aaggcctgga gtggatgggt tggatcgatc cggaccaggg cgacacggag	180
tacgctcaga agctgcaggg tcgtgttacc atgaccaccg acaccagcac gagcaccgcg	240
tacatggaac tgcgctctct gcgttcggat gataccgcgg tgtactattg caacgccgcg	300
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agcgccagca ccaagggccc gtctgtgttt ccgttggcac cgtgcagccg tagcactagc	420
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tcctggaact ctggcgccct gaccagcgggt gttcacacgt ttccagccgt cctgcagagc	540
agcggctctgt acagcctgag ctcggtggtg accgttccga gcagctctct gggtagcaaa	600
acctatacct gtaatgtcga tcacaaaccg tctaacacga aggtcgataa acgtgttgaa	660
agcaagtacg gtccgccttg tccgccgtgc ccggcaccgg agtttgaggg cgggccgtcc	720
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acgtgcgtcg tgggtggacgt tagccaagag gatccggaag tccaattcaa ctggtacgtg	840
gacggtgtcg aggtgcacaa tgccaaaacc aagccgcgtg aagaacagtt taacagcact	900
taccgcgtcg ttagcgtcct gaccgtgctg caccaagatt ggctgaatgg taaagagtac	960
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aaaggtcaac cgcgcgagcc acaggtctac acgctgccgc cgagccaaga agaaatgacc	1080
aaaaatcagg ttagcctgac ttgtctggtg aaaggcttct acccgagcga tattgcagtt	1140
gaatgggaga gcaacggcca gcctgagaac aactataaga cgaccccgcc agtgctggac	1200

12827_563_228_Sequence_Listing

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tccctgagcc tgtcgctggg caaataa	1347

<210> 32
 <211> 1347
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Anti-CD47 antibody IgG4PE-5m heavy chain

<400> 32 atgcaaagtc aattggtaca aagcgggtgcg gaagtaaaga aaccgggttc gtcggtaaag	60
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gcgccaggtc aggccttgga atggatgggc tggattgacc cggatcaagg tgacaccgaa	180
tatgccc aaa agtttcaggg tcgtgtgacc atcaccctg accgtagcac ctccaccgca	240
tatatggagc tgcgtagcct gcgcagcgaa gatactgcgg tgtattactg caatgcggcc	300
tatggtagca gtcctatcc gatggattac tggggccagg gtaccacggg gacgggttagc	360
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gaatccactg cagcgctggg ttgcctggtt aaggactatt tcccggagcc gggtaccgtg	480
tcctggaact ctggcgccct gaccagcggg gttcacacgt ttccagccgt cctgcagagc	540
agcgggtctgt acagcctgag ctcggtggtg accgttccga gcagctctct ggggtacaaa	600
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agcaagtacg gtccgccttg tccgccgtgc ccggcaccgg agtttgaggg cgggtccgtcc	720
gtattcctgt tcccgccgaa accgaaagat accttgatga ttagccgtac gccagagggtc	780
acgtgcgtcg tgggtggacgt tagccaagag gatccggaag tccaattcaa ctggtacgtg	840
gacgggtgtcg aggtgcacaa tgccaaaacc aagccgcgtg aagaacagtt taacagcact	900
taccgcgtcg ttagcgtcct gaccgtgctg caccaagatt ggctgaatgg taaagagtac	960
aagtgaagg ttagcaataa ggggtctgcc agcagcatcg agaaaaccat tagcaaggcg	1020
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aaaaatcagg ttagcctgac ttgtctggtg aaaggcttct acccgagcga tattgcagtt	1140
gaatgggaga gcaacggcca gcctgagaac aactataaga cgaccccgcc agtgctggac	1200
agcgatggca gcttcttttt gtattctcgt ctgaccgtgg acaagtcccg ttggcaagag	1260
ggcaatgtgt tcagctgttc tgtcatgcac gaagcgctgc ataaccatta caccagaag	1320
tccctgagcc tgtcgctggg caaataa	1347

<210> 33
 <211> 648
 <212> DNA
 <213> Artificial Sequence

12827_563_228_Sequence_Listing

<220>

<223> Anti-CD47 antibody (Igk) light chain

<400> 33

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ccgggcaagg ttcctaagca tctgatttac cgcgcgaacc gcttggttag cgggtgttccg      180
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ccggaagatt ttgcgacgta ctactgcctg cagtatgacg agttcccgtg tacctttggt      300
ggtggtacga aggtggaaat caaacgtact gtggccgctc cgagcgtttt catttttccg      360
ccgtcggatg agcaattgaa atctggtacc gcgagcgctc tttgtctgct gaacaatttc      420
taccgcgtg aggctaaggt gcaatggaag gtcgataacg cgctgcagag cggtaatagc      480
caggaaagcg tcaccgaaca ggatagcaaa gacagcacct actctttgag cagcaccctg      540
accctgagca aggccgacta tgagaaacac aaagtttacg catgtgaggt cacgcaccag      600
ggcctgagca gcccggtgac caaaagcttc aatcgtggcg aatgctaa      648
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<210> 34

<211> 330

<212> PRT

<213> Homo sapiens

<220>

<223> human IgG1 isotype

<400> 34

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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

Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
          100          105          110

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

<210> 35
 <211> 326
 <212> PRT
 <213> Homo sapiens

<220>
 <223> human IgG2 isotype

<400> 35

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
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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 Val Glu Cys Pro Pro Cys Pro Ala Pro
100 105 110

Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp
115 120 125

Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp
130 135 140

Val Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly
145 150 155 160

Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn
165 170 175

Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp
180 185 190

Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro
195 200 205

Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu
210 215 220

Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn
225 230 235 240

Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile
245 250 255

Ser Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr
260 265 270

Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys
275 280 285

Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys

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290

295

300

Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu
305 310 315 320

Ser Leu Ser Pro Gly Lys
325

<210> 36
<211> 377
<212> PRT
<213> Homo sapiens

<220>
<223> human IgG3 isotype
<400> 36

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 Leu Gly Asp Thr Thr His Thr Cys Pro
100 105 110

Arg Cys Pro Glu Pro Lys Ser Cys Asp Thr Pro Pro Pro Cys Pro Arg
115 120 125

Cys Pro Glu Pro Lys Ser Cys Asp Thr Pro Pro Pro Cys Pro Arg Cys
130 135 140

Pro Glu Pro Lys Ser Cys Asp Thr Pro Pro Pro Cys Pro Arg Cys Pro
145 150 155 160

Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
165 170 175

Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
180 185 190

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Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe Lys Trp Tyr
195 200 205

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
210 215 220

Gln Tyr Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Leu His
225 230 235 240

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
245 250 255

Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln
260 265 270

Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met
275 280 285

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
290 295 300

Ser Asp Ile Ala Val Glu Trp Glu Ser Ser Gly Gln Pro Glu Asn Asn
305 310 315 320

Tyr Asn Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu
325 330 335

Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Ile
340 345 350

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn Arg Phe Thr Gln
355 360 365

Lys Ser Leu Ser Leu Ser Pro Gly Lys
370 375

<210> 37
<211> 327
<212> PRT
<213> Homo sapiens

<220>
<223> human IgG4 isotype

<400> 37

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
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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 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 Pro Pro Cys Pro Ser Cys Pro Ala Pro
100 105 110

Glu Phe Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys
115 120 125

Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
130 135 140

Asp Val Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp
145 150 155 160

Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe
165 170 175

Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp
180 185 190

Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu
195 200 205

Pro Ser Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg
210 215 220

Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys
225 230 235 240

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp
245 250 255

Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
260 265 270

Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser
275 280 285

Arg Leu Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe Ser
290 295 300

Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser

305 310 12827_563_228_Sequence_Listing 315 320

Leu Ser Leu Ser Leu Gly Lys
325

<210> 38
<211> 323
<212> PRT
<213> Homo sapiens

<220>
<223> exemplary human CD47 (GenBank Accession No. Q08722.1
(GI:1171879))

<400> 38

Met Trp Pro Leu Val Ala Ala Leu Leu Leu Gly Ser Ala Cys Cys Gly
1 5 10 15

Ser Ala Gln Leu Leu Phe Asn Lys Thr Lys Ser Val Glu Phe Thr Phe
20 25 30

Cys Asn Asp Thr Val Val Ile Pro Cys Phe Val Thr Asn Met Glu Ala
35 40 45

Gln Asn Thr Thr Glu Val Tyr Val Lys Trp Lys Phe Lys Gly Arg Asp
50 55 60

Ile Tyr Thr Phe Asp Gly Ala Leu Asn Lys Ser Thr Val Pro Thr Asp
65 70 75 80

Phe Ser Ser Ala Lys Ile Glu Val Ser Gln Leu Leu Lys Gly Asp Ala
85 90 95

Ser Leu Lys Met Asp Lys Ser Asp Ala Val Ser His Thr Gly Asn Tyr
100 105 110

Thr Cys Glu Val Thr Glu Leu Thr Arg Glu Gly Glu Thr Ile Ile Glu
115 120 125

Leu Lys Tyr Arg Val Val Ser Trp Phe Ser Pro Asn Glu Asn Ile Leu
130 135 140

Ile Val Ile Phe Pro Ile Phe Ala Ile Leu Leu Phe Trp Gly Gln Phe
145 150 155 160

Gly Ile Lys Thr Leu Lys Tyr Arg Ser Gly Gly Met Asp Glu Lys Thr
165 170 175

Ile Ala Leu Leu Val Ala Gly Leu Val Ile Thr Val Ile Val Ile Val
180 185 190

Gly Ala Ile Leu Phe Val Pro Gly Glu Tyr Ser Leu Lys Asn Ala Thr
195 200 205

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Gly Leu Gly Leu Ile Val Thr Ser Thr Gly Ile Leu Ile Leu Leu His
 210 215 220

Tyr Tyr Val Phe Ser Thr Ala Ile Gly Leu Thr Ser Phe Val Ile Ala
 225 230 235 240

Ile Leu Val Ile Gln Val Ile Ala Tyr Ile Leu Ala Val Val Gly Leu
 245 250 255

Ser Leu Cys Ile Ala Ala Cys Ile Pro Met His Gly Pro Leu Leu Ile
 260 265 270

Ser Gly Leu Ser Ile Leu Ala Leu Ala Gln Leu Leu Gly Leu Val Tyr
 275 280 285

Met Lys Phe Val Ala Ser Asn Gln Lys Thr Ile Gln Pro Pro Arg Lys
 290 295 300

Ala Val Glu Glu Pro Leu Asn Ala Phe Lys Glu Ser Lys Gly Met Met
 305 310 315 320

Asn Asp Glu

<210> 39
 <211> 305
 <212> PRT
 <213> Homo sapiens

<220>
 <223> exemplary human CD47 excluding signal sequence
 <400> 39

Gln Leu Leu Phe Asn Lys Thr Lys Ser Val Glu Phe Thr Phe Cys Asn
 1 5 10 15

Asp Thr Val Val Ile Pro Cys Phe Val Thr Asn Met Glu Ala Gln Asn
 20 25 30

Thr Thr Glu Val Tyr Val Lys Trp Lys Phe Lys Gly Arg Asp Ile Tyr
 35 40 45

Thr Phe Asp Gly Ala Leu Asn Lys Ser Thr Val Pro Thr Asp Phe Ser
 50 55 60

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

Lys Met Asp Lys Ser Asp Ala Val Ser His Thr Gly Asn Tyr Thr Cys
 85 90 95

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Glu Val Thr Glu Leu Thr Arg Glu Gly Glu Thr Ile Ile Glu Leu Lys
 100 105 110
 Tyr Arg Val Val Ser Trp Phe Ser Pro Asn Glu Asn Ile Leu Ile Val
 115 120 125
 Ile Phe Pro Ile Phe Ala Ile Leu Leu Phe Trp Gly Gln Phe Gly Ile
 130 135 140
 Lys Thr Leu Lys Tyr Arg Ser Gly Gly Met Asp Glu Lys Thr Ile Ala
 145 150 155 160
 Leu Leu Val Ala Gly Leu Val Ile Thr Val Ile Val Ile Val Gly Ala
 165 170 175
 Ile Leu Phe Val Pro Gly Glu Tyr Ser Leu Lys Asn Ala Thr Gly Leu
 180 185 190
 Gly Leu Ile Val Thr Ser Thr Gly Ile Leu Ile Leu Leu His Tyr Tyr
 195 200 205
 Val Phe Ser Thr Ala Ile Gly Leu Thr Ser Phe Val Ile Ala Ile Leu
 210 215 220
 Val Ile Gln Val Ile Ala Tyr Ile Leu Ala Val Val Gly Leu Ser Leu
 225 230 235 240
 Cys Ile Ala Ala Cys Ile Pro Met His Gly Pro Leu Leu Ile Ser Gly
 245 250 255
 Leu Ser Ile Leu Ala Leu Ala Gln Leu Leu Gly Leu Val Tyr Met Lys
 260 265 270
 Phe Val Ala Ser Asn Gln Lys Thr Ile Gln Pro Pro Arg Lys Ala Val
 275 280 285
 Glu Glu Pro Leu Asn Ala Phe Lys Glu Ser Lys Gly Met Met Asn Asp
 290 295 300
 Glu
 305