SEQUENCE LISTING

<110> UCL Business PLC
Syncona Partners LLP

<120> CHIMERIC PROTEIN

<130> P106629PCT

<150> GB 1503133.9
<151> 2015-02-24

<160> 17

<170> PatentIn version 3.5

<210> 1
<211> 517
<212> PRT
<213> Artificial Sequence

<220>
<223> Chimeric protein FRB-FKBP12-L3-dCasp9

<400> 1

Met Ala Ser Arg Ile Leu Trp His Glu Met Trp His Glu Gly Leu Glu
1 5 10 15

Glu Ala Ser Arg Leu Tyr Phe Gly Glu Arg Asn Val Lys Gly Met Phe
20 25 30

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

Leu Lys Glu Thr Ser Phe Asn Gln Ala Tyr Gly Arg Asp Leu Met Glu
50 55 60

Ala Gln Glu Trp Cys Arg Lys Tyr Met Lys Ser Gly Asn Val Lys Asp
65 70 75 80

Leu Leu Gln Ala Trp Asp Leu Tyr Tyr His Val Phe Arg Arg Ile Ser
85 90 95

Lys Leu Glu Tyr Ser Gly Gly Gly Ser Leu Glu Gly Val Gln Val Glu
100 105 110

Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr
115 120 125

Cys Val Val His Tyr Thr Gly Met Leu Glu Asp Gly Lys Lys Phe Asp
130 135 140

Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln
145 150 155 160

Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly
165 170 175

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Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr
            180                 185                 190

Gly His Pro Gly Ile Ile Pro Pro His Ala Thr Leu Val Phe Asp Val
        195                 200                 205

Glu Leu Leu Lys Leu Glu Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
    210                 215                 220

Ser Gly Gly Gly Gly Ser Gly Val Asp Gly Phe Gly Asp Val Gly Ala
225                 230                 235                 240

Leu Glu Ser Leu Arg Gly Asn Ala Asp Leu Ala Tyr Ile Leu Ser Met
                245                 250                 255

Glu Pro Cys Gly His Cys Leu Ile Ile Asn Asn Val Asn Phe Cys Arg
            260                 265                 270

Glu Ser Gly Leu Arg Thr Arg Thr Gly Ser Asn Ile Asp Cys Glu Lys
        275                 280                 285

Leu Arg Arg Arg Phe Ser Ser Leu His Phe Met Val Glu Val Lys Gly
    290                 295                 300

Asp Leu Thr Ala Lys Lys Met Val Leu Ala Leu Leu Glu Leu Ala Gln
305                 310                 315                 320

Gln Asp His Gly Ala Leu Asp Cys Cys Val Val Val Ile Leu Ser His
                325                 330                 335

Gly Cys Gln Ala Ser His Leu Gln Phe Pro Gly Ala Val Tyr Gly Thr
            340                 345                 350

Asp Gly Cys Pro Val Ser Val Glu Lys Ile Val Asn Ile Phe Asn Gly
        355                 360                 365

Thr Ser Cys Pro Ser Leu Gly Gly Lys Pro Lys Leu Phe Phe Ile Gln
    370                 375                 380

Ala Cys Gly Gly Glu Gln Lys Asp His Gly Phe Glu Val Ala Ser Thr
385                 390                 395                 400

Ser Pro Glu Asp Glu Ser Pro Gly Ser Asn Pro Glu Pro Asp Ala Thr
                405                 410                 415

Pro Phe Gln Glu Gly Leu Arg Thr Phe Asp Gln Leu Asp Ala Ile Ser
            420                 425                 430

Ser Leu Pro Thr Pro Ser Asp Ile Phe Val Ser Tyr Ser Thr Phe Pro
        435                 440                 445
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Gly Phe Val Ser Trp Arg Asp Pro Lys Ser Gly Ser Trp Tyr Val Glu
450 455 460

Thr Leu Asp Asp Ile Phe Glu Gln Trp Ala His Ser Glu Asp Leu Gln
465 470 475 480

Ser Leu Leu Leu Arg Val Ala Asn Ala Val Ser Val Lys Gly Ile Tyr
485 490 495

Lys Gln Met Pro Gly Cys Phe Asn Phe Leu Arg Lys Lys Leu Phe Phe
500 505 510

Lys Thr Ser Ala Ser
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<210> 2
<211> 402
<212> PRT
<213> Artificial Sequence

<220>
<223> Chimeric protein FKBP12-dCasp9

<400> 2

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

Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met
20 25 30

Leu Glu Asp Gly Lys Lys Phe Asp Ser Ser Arg Asp Arg Asn Lys Pro
35 40 45

Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu
50 55 60

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

Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro
85 90 95

His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Gly
100 105 110

Gly Gly Ser Gly Val Asp Gly Phe Gly Asp Val Gly Ala Leu Glu Ser
115 120 125

Leu Arg Gly Asn Ala Asp Leu Ala Tyr Ile Leu Ser Met Glu Pro Cys
130 135 140

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Gly His Cys Leu Ile Ile Asn Asn Val Asn Phe Cys Arg Glu Ser Gly
145                 150                 155                 160

Leu Arg Thr Arg Thr Gly Ser Asn Ile Asp Cys Glu Lys Leu Arg Arg
                165                 170                 175

Arg Phe Ser Ser Leu His Phe Met Val Glu Val Lys Gly Asp Leu Thr
            180                 185                 190

Ala Lys Lys Met Val Leu Ala Leu Leu Glu Leu Ala Gln Gln Asp His
        195                 200                 205

Gly Ala Leu Asp Cys Cys Val Val Val Ile Leu Ser His Gly Cys Gln
    210                 215                 220

Ala Ser His Leu Gln Phe Pro Gly Ala Val Tyr Gly Thr Asp Gly Cys
225                 230                 235                 240

Pro Val Ser Val Glu Lys Ile Val Asn Ile Phe Asn Gly Thr Ser Cys
                245                 250                 255

Pro Ser Leu Gly Gly Lys Pro Lys Leu Phe Phe Ile Gln Ala Cys Gly
            260                 265                 270

Gly Glu Gln Lys Asp His Gly Phe Glu Val Ala Ser Thr Ser Pro Glu
        275                 280                 285

Asp Glu Ser Pro Gly Ser Asn Pro Glu Pro Asp Ala Thr Pro Phe Gln
    290                 295                 300

Glu Gly Leu Arg Thr Phe Asp Gln Leu Asp Ala Ile Ser Ser Leu Pro
305                 310                 315                 320

Thr Pro Ser Asp Ile Phe Val Ser Tyr Ser Thr Phe Pro Gly Phe Val
                325                 330                 335

Ser Trp Arg Asp Pro Lys Ser Gly Ser Trp Tyr Val Glu Thr Leu Asp
            340                 345                 350

Asp Ile Phe Glu Gln Trp Ala His Ser Glu Asp Leu Gln Ser Leu Leu
        355                 360                 365

Leu Arg Val Ala Asn Ala Val Ser Val Lys Gly Ile Tyr Lys Gln Met
    370                 375                 380

Pro Gly Cys Phe Asn Phe Leu Arg Lys Lys Leu Phe Phe Lys Thr Ser
385                 390                 395                 400

Ala Ser
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<210> 3
<211> 392
<212> PRT
<213> Artificial Sequence

<220>
<223> Chimeric protein FRB-dCasp9

<400> 3

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Glu Ala Ser Arg Leu Tyr Phe Gly Glu Arg Asn Val Lys Gly Met Phe
20 25 30

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

Leu Lys Glu Thr Ser Phe Asn Gln Ala Tyr Gly Arg Asp Leu Met Glu
50 55 60

Ala Gln Glu Trp Cys Arg Lys Tyr Met Lys Ser Gly Asn Val Lys Asp
65 70 75 80

Leu Leu Gln Ala Trp Asp Leu Tyr Tyr His Val Phe Arg Arg Ile Ser
85 90 95

Lys Leu Glu Tyr Ser Gly Gly Gly Ser Gly Val Asp Gly Phe Gly Asp
100 105 110

Val Gly Ala Leu Glu Ser Leu Arg Gly Asn Ala Asp Leu Ala Tyr Ile
115 120 125

Leu Ser Met Glu Pro Cys Gly His Cys Leu Ile Ile Asn Asn Val Asn
130 135 140

Phe Cys Arg Glu Ser Gly Leu Arg Thr Arg Thr Gly Ser Asn Ile Asp
145 150 155 160

Cys Glu Lys Leu Arg Arg Arg Phe Ser Ser Leu His Phe Met Val Glu
165 170 175

Val Lys Gly Asp Leu Thr Ala Lys Lys Met Val Leu Ala Leu Leu Glu
180 185 190

Leu Ala Gln Gln Asp His Gly Ala Leu Asp Cys Cys Val Val Val Ile
195 200 205

Leu Ser His Gly Cys Gln Ala Ser His Leu Gln Phe Pro Gly Ala Val
210 215 220

Tyr Gly Thr Asp Gly Cys Pro Val Ser Val Glu Lys Ile Val Asn Ile
225 230 235 240

```
Phe Asn Gly Thr Ser Cys Pro Ser Leu Gly Gly Lys Pro Lys Leu Phe
                245                 250                 255

Phe Ile Gln Ala Cys Gly Gly Glu Gln Lys Asp His Gly Phe Glu Val
            260                 265                 270

Ala Ser Thr Ser Pro Glu Asp Glu Ser Pro Gly Ser Asn Pro Glu Pro
        275                 280                 285

Asp Ala Thr Pro Phe Gln Glu Gly Leu Arg Thr Phe Asp Gln Leu Asp
    290                 295                 300

Ala Ile Ser Ser Leu Pro Thr Pro Ser Asp Ile Phe Val Ser Tyr Ser
305                 310                 315                 320

Thr Phe Pro Gly Phe Val Ser Trp Arg Asp Pro Lys Ser Gly Ser Trp
                325                 330                 335

Tyr Val Glu Thr Leu Asp Asp Ile Phe Glu Gln Trp Ala His Ser Glu
            340                 345                 350

Asp Leu Gln Ser Leu Leu Leu Arg Val Ala Asn Ala Val Ser Val Lys
        355                 360                 365

Gly Ile Tyr Lys Gln Met Pro Gly Cys Phe Asn Phe Leu Arg Lys Lys
    370                 375                 380

Leu Phe Phe Lys Thr Ser Ala Ser
385                 390


<210>  4
<211>  651
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Chimeric protein FKBP12-dCasp9-2A-FRB-FRBw

<400>  4

Met Leu Glu Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg
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Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met
            20                  25                  30

Leu Glu Asp Gly Lys Lys Phe Asp Ser Ser Arg Asp Arg Asn Lys Pro
        35                  40                  45

Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu
    50                  55                  60
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Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser
65                  70                  75                  80

Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro
                85                  90                  95

His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Gly
            100                 105                 110

Gly Gly Ser Gly Val Asp Gly Phe Gly Asp Val Gly Ala Leu Glu Ser
        115                 120                 125

Leu Arg Gly Asn Ala Asp Leu Ala Tyr Ile Leu Ser Met Glu Pro Cys
    130                 135                 140

Gly His Cys Leu Ile Ile Asn Asn Val Asn Phe Cys Arg Glu Ser Gly
145                 150                 155                 160

Leu Arg Thr Arg Thr Gly Ser Asn Ile Asp Cys Glu Lys Leu Arg Arg
                165                 170                 175

Arg Phe Ser Ser Leu His Phe Met Val Glu Val Lys Gly Asp Leu Thr
            180                 185                 190

Ala Lys Lys Met Val Leu Ala Leu Leu Glu Leu Ala Gln Gln Asp His
        195                 200                 205

Gly Ala Leu Asp Cys Cys Val Val Val Ile Leu Ser His Gly Cys Gln
    210                 215                 220

Ala Ser His Leu Gln Phe Pro Gly Ala Val Tyr Gly Thr Asp Gly Cys
225                 230                 235                 240

Pro Val Ser Val Glu Lys Ile Val Asn Ile Phe Asn Gly Thr Ser Cys
                245                 250                 255

Pro Ser Leu Gly Gly Lys Pro Lys Leu Phe Phe Ile Gln Ala Cys Gly
            260                 265                 270

Gly Glu Gln Lys Asp His Gly Phe Glu Val Ala Ser Thr Ser Pro Glu
        275                 280                 285

Asp Glu Ser Pro Gly Ser Asn Pro Glu Pro Asp Ala Thr Pro Phe Gln
    290                 295                 300

Glu Gly Leu Arg Thr Phe Asp Gln Leu Asp Ala Ile Ser Ser Leu Pro
305                 310                 315                 320

Thr Pro Ser Asp Ile Phe Val Ser Tyr Ser Thr Phe Pro Gly Phe Val
                325                 330                 335
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Ser Trp Arg Asp Pro Lys Ser Gly Ser Trp Tyr Val Glu Thr Leu Asp
            340                 345                 350

Asp Ile Phe Glu Gln Trp Ala His Ser Glu Asp Leu Gln Ser Leu Leu
        355                 360                 365

Leu Arg Val Ala Asn Ala Val Ser Val Lys Gly Ile Tyr Lys Gln Met
    370                 375                 380

Pro Gly Cys Phe Asn Phe Leu Arg Lys Lys Leu Phe Phe Lys Thr Ser
385                 390                 395                 400

Ala Ser Gln Cys Thr Asn Tyr Ala Leu Leu Lys Leu Ala Gly Asp Val
                405                 410                 415

Glu Ser Asn Pro Gly Pro Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            420                 425                 430

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        435                 440                 445

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    450                 455                 460

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
465                 470                 475                 480

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                485                 490                 495

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            500                 505                 510

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        515                 520                 525

Glu Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Met Leu Glu Gly
    530                 535                 540

Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro Lys
545                 550                 555                 560

Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp Gly
                565                 570                 575

Lys Lys Phe Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys Phe Met
            580                 585                 590

Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala Gln
        595                 600                 605
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Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr Ala
610 615 620

Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr Leu
625 630 635 640

Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser
645 650

<210> 5
<211> 416
<212> PRT
<213> Homo sapiens

<400> 5

Met Asp Glu Ala Asp Arg Arg Leu Leu Arg Arg Cys Arg Leu Arg Leu
1 5 10 15

Val Glu Glu Leu Gln Val Asp Gln Leu Trp Asp Ala Leu Leu Ser Ser
20 25 30

Glu Leu Phe Arg Pro His Met Ile Glu Asp Ile Gln Arg Ala Gly Ser
35 40 45

Gly Ser Arg Arg Asp Gln Ala Arg Gln Leu Ile Ile Asp Leu Glu Thr
50 55 60

Arg Gly Ser Gln Ala Leu Pro Leu Phe Ile Ser Cys Leu Glu Asp Thr
65 70 75 80

Gly Gln Asp Met Leu Ala Ser Phe Leu Arg Thr Asn Arg Gln Ala Ala
85 90 95

Lys Leu Ser Lys Pro Thr Leu Glu Asn Leu Thr Pro Val Val Leu Arg
100 105 110

Pro Glu Ile Arg Lys Pro Glu Val Leu Arg Pro Glu Thr Pro Arg Pro
115 120 125

Val Asp Ile Gly Ser Gly Gly Phe Gly Asp Val Gly Ala Leu Glu Ser
130 135 140

Leu Arg Gly Asn Ala Asp Leu Ala Tyr Ile Leu Ser Met Glu Pro Cys
145 150 155 160

Gly His Cys Leu Ile Ile Asn Asn Val Asn Phe Cys Arg Glu Ser Gly
165 170 175

Leu Arg Thr Arg Thr Gly Ser Asn Ile Asp Cys Glu Lys Leu Arg Arg
180 185 190

Arg Phe Ser Ser Pro His Phe Met Val Glu Val Lys Gly Asp Leu Thr

195 200 205

Ala Lys Lys Met Val Leu Ala Leu Leu Glu Leu Ala Gln Gln Asp His
210 215 220

Gly Ala Leu Asp Cys Cys Val Val Val Ile Leu Ser His Gly Cys Gln
225 230 235 240

Ala Ser His Leu Gln Phe Pro Gly Ala Val Tyr Gly Thr Asp Gly Cys
245 250 255

Pro Val Ser Val Glu Lys Ile Val Asn Ile Phe Asn Gly Thr Ser Cys
260 265 270

Pro Ser Leu Gly Gly Lys Pro Lys Leu Phe Phe Ile Gln Ala Cys Gly
275 280 285

Gly Glu Gln Lys Asp His Gly Phe Glu Val Ala Ser Thr Ser Pro Glu
290 295 300

Asp Glu Ser Pro Gly Ser Asn Pro Glu Pro Asp Ala Thr Pro Phe Gln
305 310 315 320

Glu Gly Leu Arg Thr Phe Asp Gln Leu Asp Ala Ile Ser Ser Leu Pro
325 330 335

Thr Pro Ser Asp Ile Phe Val Ser Tyr Ser Thr Phe Pro Gly Phe Val
340 345 350

Ser Trp Arg Asp Pro Lys Ser Gly Ser Trp Tyr Val Glu Thr Leu Asp
355 360 365

Asp Ile Phe Glu Gln Trp Ala His Ser Glu Asp Leu Gln Ser Leu Leu
370 375 380

Leu Arg Val Ala Asn Ala Val Ser Val Lys Gly Ile Tyr Lys Gln Met
385 390 395 400

Pro Gly Cys Phe Asn Phe Leu Arg Lys Lys Leu Phe Phe Lys Thr Ser
405 410 415

<210> 6
<211> 282
<212> PRT
<213> Homo sapiens

<400> 6

Gly Phe Gly Asp Val Gly Ala Leu Glu Ser Leu Arg Gly Asn Ala Asp
1 5 10 15

Leu Ala Tyr Ile Leu Ser Met Glu Pro Cys Gly His Cys Leu Ile Ile
20 25 30

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Asn Asn Val Asn Phe Cys Arg Glu Ser Gly Leu Arg Thr Arg Thr Gly
        35                  40                  45

Ser Asn Ile Asp Cys Glu Lys Leu Arg Arg Arg Phe Ser Ser Leu His
    50                  55                  60

Phe Met Val Glu Val Lys Gly Asp Leu Thr Ala Lys Lys Met Val Leu
65                  70                  75                  80

Ala Leu Leu Glu Leu Ala Gln Gln Asp His Gly Ala Leu Asp Cys Cys
                85                  90                  95

Val Val Val Ile Leu Ser His Gly Cys Gln Ala Ser His Leu Gln Phe
            100                 105                 110

Pro Gly Ala Val Tyr Gly Thr Asp Gly Cys Pro Val Ser Val Glu Lys
        115                 120                 125

Ile Val Asn Ile Phe Asn Gly Thr Ser Cys Pro Ser Leu Gly Gly Lys
    130                 135                 140

Pro Lys Leu Phe Phe Ile Gln Ala Cys Gly Gly Glu Gln Lys Asp His
145                 150                 155                 160

Gly Phe Glu Val Ala Ser Thr Ser Pro Glu Asp Glu Ser Pro Gly Ser
                165                 170                 175

Asn Pro Glu Pro Asp Ala Thr Pro Phe Gln Glu Gly Leu Arg Thr Phe
            180                 185                 190

Asp Gln Leu Asp Ala Ile Ser Ser Leu Pro Thr Pro Ser Asp Ile Phe
        195                 200                 205

Val Ser Tyr Ser Thr Phe Pro Gly Phe Val Ser Trp Arg Asp Pro Lys
    210                 215                 220

Ser Gly Ser Trp Tyr Val Glu Thr Leu Asp Asp Ile Phe Glu Gln Trp
225                 230                 235                 240

Ala His Ser Glu Asp Leu Gln Ser Leu Leu Leu Arg Val Ala Asn Ala
                245                 250                 255

Val Ser Val Lys Gly Ile Tyr Lys Gln Met Pro Gly Cys Phe Asn Phe
            260                 265                 270

Leu Arg Lys Lys Leu Phe Phe Lys Thr Ser
        275                 280
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<210> 7
<211> 108

<212> PRT
<213> Artificial Sequence

<220>
<223> FKBP12 domain

<400> 7

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Phe Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

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

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu
100 105

<210> 8
<211> 100
<212> PRT
<213> Artificial Sequence

<220>
<223> wild-type FRB segment of mTOR

<400> 8

Met Ala Ser Arg Ile Leu Trp His Glu Met Trp His Glu Gly Leu Glu
1 5 10 15

Glu Ala Ser Arg Leu Tyr Phe Gly Glu Arg Asn Val Lys Gly Met Phe
20 25 30

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

Leu Lys Glu Thr Ser Phe Asn Gln Ala Tyr Gly Arg Asp Leu Met Glu
50 55 60

Ala Gln Glu Trp Cys Arg Lys Tyr Met Lys Ser Gly Asn Val Lys Asp
65 70 75 80

Leu Thr Gln Ala Trp Asp Leu Tyr Tyr His Val Phe Arg Arg Ile Ser
85 90 95

Lys Leu Glu Ser
100

<210> 9
<211> 100
<212> PRT
<213> Artificial Sequence

<220>
<223> FRB with T to L substitution at 2098 which allows binding to AP21967

<400> 9

Met Ala Ser Arg Ile Leu Trp His Glu Met Trp His Glu Gly Leu Glu
1 5 10 15

Glu Ala Ser Arg Leu Tyr Phe Gly Glu Arg Asn Val Lys Gly Met Phe
20 25 30

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

Leu Lys Glu Thr Ser Phe Asn Gln Ala Tyr Gly Arg Asp Leu Met Glu
50 55 60

Ala Gln Glu Trp Cys Arg Lys Tyr Met Lys Ser Gly Asn Val Lys Asp
65 70 75 80

Leu Leu Gln Ala Trp Asp Leu Tyr Tyr His Val Phe Arg Arg Ile Ser
85 90 95

Lys Leu Glu Ser
100

<210> 10
<211> 100
<212> PRT
<213> Artificial Sequence

<220>
<223> FRB segment of mTOR with T to H substitution at 2098 and to W at F at residue 2101 of the full mTOR

<400> 10

Met Ala Ser Arg Ile Leu Trp His Glu Met Trp His Glu Gly Leu Glu
1 5 10 15

Glu Ala Ser Arg Leu Tyr Phe Gly Glu Arg Asn Val Lys Gly Met Phe
20 25 30

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

Leu Lys Glu Thr Ser Phe Asn Gln Ala Tyr Gly Arg Asp Leu Met Glu
50 55 60

Ala Gln Glu Trp Cys Arg Lys Tyr Met Lys Ser Gly Asn Val Lys Asp
65 70 75 80

Leu His Gln Ala Phe Asp Leu Tyr Tyr His Val Phe Arg Arg Ile Ser
85 90 95

Lys Leu Glu Ser
100

<210> 11
<211> 100
<212> PRT
<213> Artificial Sequence

<220>
<223> FRB segment of mTOR with K to P substitution at residue 2095 of the full mTOR

<400> 11

Met Ala Ser Arg Ile Leu Trp His Glu Met Trp His Glu Gly Leu Glu
1 5 10 15

Glu Ala Ser Arg Leu Tyr Phe Gly Glu Arg Asn Val Lys Gly Met Phe
20 25 30

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

Leu Lys Glu Thr Ser Phe Asn Gln Ala Tyr Gly Arg Asp Leu Met Glu
50 55 60

Ala Gln Glu Trp Cys Arg Lys Tyr Met Lys Ser Gly Asn Val Pro Asp
65 70 75 80

Leu Thr Gln Ala Trp Asp Leu Tyr Tyr His Val Phe Arg Arg Ile Ser
85 90 95

Lys Leu Glu Ser
100

<210> 12
<211> 1554
<212> DNA
<213> Artificial Sequence

<220>
<223> FRB-FKBP12-L3-Casp9 nucleotide sequence

<400> 12
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ttgtactttg gggaaaggaa cgtgaaaggc atgtttgagg tgctggagcc cttgcatgct 120

atgatggaac ggggccccca gactctgaag gaaacatcct ttaatcaggc ctatggtcga 180

gatttaatgg aggcccaaga gtggtgcagg aagtacatga aatcagggaa tgtcaaggac 240

ctcctccaag cctgggacct ctattatcat gtgttccgac gaatctcaaa gctcgagtat 300

agcggcggcg gcagcctgga gggcgtgcag gtggagacca tcagcccagg cgacggcaga 360

accttcccca agagaggcca gacctgcgtg gtgcactata ccggcatgct ggaggacggc 420

aagaagttcg acagcagccg cgaccgcaat aagcccttca agttcatgct gggcaagcag 480

gaggtgatca gaggctggga ggagggcgtg gcccagatga gcgtgggcca gagagccaag 540

ctgaccatca gccccgacta cgcctatggc gccaccggcc accccggcat catcccaccc 600

cacgccaccc tggtgtttga tgtggagctg ctgaagctgg agtccggcgg aggcgggtct 660

ggaggaggcg gcagcggcgg cggcgggtca ggcgtggatg gcttcggcga cgtgggagcc 720

ctggagagcc tgagaggcaa cgccgatctg gcctacatcc tgagcatgga gccctgtggc 780

cactgcctga tcatcaacaa cgtgaacttc tgccgggaga gcggcctgcg gacccggacc 840

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agccacctgc agttccccgg agccgtgtac ggcaccgacg gctgtcccgt gtccgtggag 1080

aagatcgtga acatcttcaa cggcacctcc tgcccctccc tgggcggcaa gcccaagctg 1140

ttctttatcc aggcctgtgg cggcgagcag aaggaccacg gctttgaggt ggccagcacc 1200

tcccccgagg acgagagccc aggcagcaac cccgagcccg acgccacccc cttccaggag 1260

ggcctgcgca ccttcgacca gctggacgcc atcagcagcc tgcccacccc cagcgacatc 1320

ttcgtgagct acagcacctt tcccggcttc gtgagctggc gcgatcccaa gtccggctct 1380

tggtatgtgg agaccctgga cgacatcttt gagcagtggg ctcatagcga ggacctgcag 1440

agcctgctgc tgcgcgtggc caatgccgtg agcgtgaagg gcatctacaa gcagatgcca 1500

ggctgcttca acttcctgcg gaagaagctg ttcttcaaga ccagcgcctc ctga 1554

<210> 13
<211> 1209
<212> DNA
<213> Artificial Sequence

<220>
<223> FKBP12-dCasp9 nucleotide sequence

<400> 13
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agaggccaga cctgcgtggt gcactatacc ggcatgctgg aggacggcaa gaagttcgac 120

agcagccgcg accgcaataa gcccttcaag ttcatgctgg gcaagcagga ggtgatcaga 180

ggctgggagg agggcgtggc ccagatgagc gtgggccaga gagccaagct gaccatcagc 240

cccgactacg cctatggcgc caccggccac cccggcatca tcccacccca cgccaccctg 300

gtgtttgatg tggagctgct gaagctggag tccggaggcg gctccggcgt ggatggcttc 360

ggcgacgtgg gagccctgga gagcctgaga ggcaacgccg atctggccta catcctgagc 420

atggagccct gtggccactg cctgatcatc aacaacgtga acttctgccg ggagagcggc 480

ctgcggaccc ggaccggcag caacatcgac tgcgagaagc tgaggaggcg cttctcctcc 540

ctgcacttta tggtggaggt gaaaggcgat ctgactgcca agaaaatggt gctggccctg 600

ctggagctgg cccagcagga ccacggagcc ctggattgct gtgtggtggt gatcctgtcc 660

cacggctgcc aggccagcca cctgcagttc cccggagccg tgtacggcac cgacggctgt 720

cccgtgtccg tggagaagat cgtgaacatc ttcaacggca cctcctgccc ctccctgggc 780

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<400> 16

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<213> Foot-and-mouth disease virus

<400> 17

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