

558-33 PCT sequence listing_30 11 2010_ST25.txt
SEQUENCE LISTING

<110> LUDWIG-MAXIMILIANS-UNIVERSITY AND UNIVERSITY OF BAYREUTH
<120> SILK PARTICLES FOR CONTROLLED AND SUSTAINED DELIVERY OF COMPOUNDS
<130> 588-33 PCT
<150> US 61/265,344
<151> 2009-11-30
<160> 96
<170> PatentIn version 3.5
<210> 1
<211> 636
<212> PRT
<213> Araneus diadematus

<220>
<221> PEPTIDE
<222> (1)..(636)
<223> ADF-3

<400> 1

Ala Arg Ala Gly Ser Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly
1 5 10 15

Gln Gln Gly Pro Gly Gln Gln Gly Pro Tyr Gly Pro Gly Ala Ser Ala
20 25 30

Ala Ala Ala Ala Ala Gly Gly Tyr Gly Pro Gly Ser Gly Gln Gln Gly
35 40 45

Pro Ser Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro
50 55 60

Tyr Gly Pro Gly Ala Ser Ala Ala Ala Ala Ala Ala Gly Gly Tyr Gly
65 70 75 80

Pro Gly Ser Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro Tyr Gly Pro
85 90 95

Gly Ser Ser Ala Ala Ala Ala Ala Ala Gly Gly Asn Gly Pro Gly Ser
100 105 110

Gly Gln Gln Gly Ala Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly
115 120 125

Ala Ser Ala Ala Ala Ala Ala Ala Gly Gly Tyr Gly Pro Gly Ser Gly
130 135 140

Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro Tyr Gly
145 150 155 160

558-33 PCT sequence listing_30 11 2010_ST25.txt

Pro Gly Ala Ser Ala Ala Ala Ala Ala Ala Gly Gly Tyr Gly Pro Gly
165 170 175

Ser Gly Gln Gly Pro Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro Tyr
180 185 190

Gly Pro Gly Ala Ser Ala Ala Ala Ala Ala Ala Gly Gly Tyr Gly Pro
195 200 205

Gly Ser Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly
210 215 220

Pro Gly Gly Gln Gly Pro Tyr Gly Pro Gly Ala Ser Ala Ala Ala Ala
225 230 235 240

Ala Ala Gly Gly Tyr Gly Pro Gly Tyr Gly Gln Gln Gly Pro Gly Gln
245 250 255

Gln Gly Pro Gly Gly Gln Gly Pro Tyr Gly Pro Gly Ala Ser Ala Ala
260 265 270

Ser Ala Ala Ser Gly Gly Tyr Gly Pro Gly Ser Gly Gln Gln Gly Pro
275 280 285

Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro Tyr Gly Pro Gly Ala Ser
290 295 300

Ala Ala Ala Ala Ala Ala Gly Gly Tyr Gly Pro Gly Ser Gly Gln Gln
305 310 315 320

Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly
325 330 335

Pro Gly Gly Gln Gly Pro Tyr Gly Pro Gly Ala Ser Ala Ala Ala Ala
340 345 350

Ala Ala Gly Gly Tyr Gly Pro Gly Ser Gly Gln Gln Gly Pro Gly Gln
355 360 365

Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln
370 375 380

Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly
385 390 395 400

Pro Gly Gln Gln Gly Pro Gly Gly Gln Gly Ala Tyr Gly Pro Gly Ala
405 410 415

Ser Ala Ala Ala Gly Ala Ala Gly Gly Tyr Gly Pro Gly Ser Gly Gln
420 425 430

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln
435 440 445

Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly
450 455 460

Pro Gly Gln Gln Gly Pro Tyr Gly Pro Gly Ala Ser Ala Ala Ala Ala
465 470 475 480

Ala Ala Gly Gly Tyr Gly Pro Gly Ser Gly Gln Gln Gly Pro Gly Gln
485 490 495

Gln Gly Pro Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro Tyr Gly Pro
500 505 510

Gly Ala Ala Ser Ala Ala Val Ser Val Gly Gly Tyr Gly Pro Gln Ser
515 520 525

Ser Ser Val Pro Val Ala Ser Ala Val Ala Ser Arg Leu Ser Ser Pro
530 535 540

Ala Ala Ser Ser Arg Val Ser Ser Ala Val Ser Ser Leu Val Ser Ser
545 550 555 560

Gly Pro Thr Lys His Ala Ala Leu Ser Asn Thr Ile Ser Ser Val Val
565 570 575

Ser Gln Val Ser Ala Ser Asn Pro Gly Leu Ser Gly Cys Asp Val Leu
580 585 590

Val Gln Ala Leu Leu Glu Val Val Ser Ala Leu Val Ser Ile Leu Gly
595 600 605

Ser Ser Ser Ile Gly Gln Ile Asn Tyr Gly Ala Ser Ala Gln Tyr Thr
610 615 620

Gln Met Val Gly Gln Ser Val Ala Gln Ala Leu Ala
625 630 635

<210> 2
<211> 410
<212> PRT
<213> Araneus diadematus

<220>
<221> PEPTIDE
<222> (1)..(410)
<223> ADF-4

<400> 2

Ala Gly Ser Ser Ala Ala Ala Ala Ala Ala Ala Ala Ser Gly Ser Gly Gly
1 5 10 15

558-33 PCT sequence listing_30 11 2010_ST25.txt

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

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Pro Ser Gly Pro Gly Tyr Gln Gly Pro Ser Gly Pro Gly Ala Tyr
290 295 300

Gly Pro Ser Pro Ser Ala Ser Ala Ser Val Ala Ala Ser Val Tyr Leu
305 310 315 320

Arg Leu Gln Pro Arg Leu Glu Val Ser Ser Ala Val Ser Ser Leu Val
325 330 335

Ser Ser Gly Pro Thr Asn Gly Ala Ala Val Ser Gly Ala Leu Asn Ser
340 345 350

Leu Val Ser Gln Ile Ser Ala Ser Asn Pro Gly Leu Ser Gly Cys Asp
355 360 365

Ala Leu Val Gln Ala Leu Leu Glu Leu Val Ser Ala Leu Val Ala Ile
370 375 380

Leu Ser Ser Ala Ser Ile Gly Gln Val Asn Val Ser Ser Val Ser Gln
385 390 395 400

Ser Thr Gln Met Ile Ser Gln Ala Leu Ser
405 410

<210> 3
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<220>
<221> REPEAT
<222> (1)..(5)
<223> consensus peptide motif

<400> 3

Gly Pro Gly Xaa Xaa
1 5

<210> 4
<211> 5
<212> PRT
<213> Araneus diadematus

<220>
<221> VARIANT
<222> (4)..(4)
<223> Q at position 4 may also be alanine, serine, glycine, tyrosine,
proline, or glutamine

<220>
<221> VARIANT
<222> (5)..(5)

<223> Q at position 5 may also be alanine, serine, glycine, tyrosine, proline, or glutamine

<400> 4

Gly Pro Gly Gln Gln
1 5

<210> 5

<211> 5

<212> PRT

<213> Araneus diadematus

<220>

<221> REPEAT

<222> (1)..(5)

<223> peptide motif (ADF-3)

<400> 5

Gly Pro Gly Ala Ser
1 5

<210> 6

<211> 5

<212> PRT

<213> Araneus diadematus

<220>

<221> REPEAT

<222> (1)..(5)

<223> peptide motif (ADF-3)

<400> 6

Gly Pro Gly Ser Gly
1 5

<210> 7

<211> 5

<212> PRT

<213> Araneus diadematus

<220>

<221> REPEAT

<222> (1)..(5)

<223> peptide motif (ADF-4)

<400> 7

Gly Pro Gly Gly Tyr
1 5

<210> 8

<211> 5

<212> PRT

<213> Araneus diadematus

<220>

<221> REPEAT

558-33 PCT sequence listing_30 11 2010_ST25.txt

<222> (1)..(5)
<223> peptide motif (ADF-4)

<400> 8

Gly Pro Gly Gly Pro
1 5

<210> 9
<211> 5
<212> PRT
<213> *Nephila clavipes*

<220>
<221> REPEAT
<222> (1)..(5)
<223> peptide motif (flagelliform protein)

<400> 9

Gly Pro Gly Gly Ala
1 5

<210> 10
<211> 5
<212> PRT
<213> *Arthropoda*

<220>
<221> REPEAT
<222> (1)..(5)
<223> peptide motif (resilin)

<400> 10

Gly Pro Gly Gly Gly
1 5

<210> 11
<211> 5
<212> PRT
<213> *Nephila clavipes*

<220>
<221> REPEAT
<222> (1)..(5)
<223> peptide motif (flagelliform protein)

<400> 11

Gly Pro Gly Gly Ser
1 5

<210> 12
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

558-33 PCT sequence listing_30 11 2010_ST25.txt

<220>
 <221> REPEAT
 <222> (1)..(5)
 <223> Ax peptide motif

<400> 12

Ala Ala Ala Ala Ala
 1 5

<210> 13
 <211> 6
 <212> PRT
 <213> Araneus diadematus

<220>
 <221> REPEAT
 <222> (1)..(6)
 <223> Ax peptide motif (ADF 3)

<400> 13

Ala Ala Ala Ala Ala Ala
 1 5

<210> 14
 <211> 7
 <212> PRT
 <213> Araneus diadematus

<220>
 <221> REPEAT
 <222> (1)..(7)
 <223> Ax peptide motif (ADF-4)

<400> 14

Ala Ala Ala Ala Ala Ala Ala
 1 5

<210> 15
 <211> 8
 <212> PRT
 <213> Araneus diadematus

<220>
 <221> REPEAT
 <222> (1)..(8)
 <223> Ax peptide motif (ADF-4)

<400> 15

Ala Ala Ala Ala Ala Ala Ala Ala
 1 5

<210> 16
 <211> 9
 <212> PRT
 <213> Artificial Sequence

558-33 PCT sequence listing_30 11 2010_ST25.txt

<220>

<223> synthetic

<220>

<221> REPEAT

<222> (1)..(9)

<223> Ax peptide motif

<400> 16

Ala Ala Ala Ala Ala Ala Ala Ala
1 5

<210> 17

<211> 10

<212> PRT

<213> Araneus diadematus

<220>

<221> REPEAT

<222> (1)..(10)

<223> Ax peptide motif (ADF-4)

<400> 17

Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala
1 5 10

<210> 18

<211> 9

<212> PRT

<213> Arthropoda

<220>

<221> REPEAT

<222> (1)..(9)

<223> peptide motif (based on resilin)

<400> 18

Gly Gly Arg Pro Ser Asp Thr Tyr Gly
1 5

<210> 19

<211> 9

<212> PRT

<213> Arthropoda

<220>

<221> REPEAT

<222> (1)..(9)

<223> peptide motif (based on resilin)

<400> 19

Gly Gly Arg Pro Ser Ser Ser Tyr Gly
1 5

<210> 20

<211> 24

558-33 PCT sequence listing_30 11 2010_ST25.txt

<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<220>
<221> DOMAIN
<222> (1)..(24)
<223> Module A (ADF-3)

<400> 20

Gly Pro Tyr Gly Pro Gly Ala Ser Ala Ala Ala Ala Ala Gly Gly
1 5 10 15

Tyr Gly Pro Gly Ser Gly Gln Gln
20

<210> 21
<211> 35
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<220>
<221> DOMAIN
<222> (1)..(35)
<223> Module C (ADF-4)

<400> 21

Gly Ser Ser Ala Ala Ala Ala Ala Ala Ala Ser Gly Pro Gly Gly
1 5 10 15

Tyr Gly Pro Glu Asn Gln Gly Pro Ser Gly Pro Gly Gly Tyr Gly Pro
20 25 30

Gly Gly Pro
35

<210> 22
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<220>
<221> DOMAIN
<222> (1)..(20)
<223> Module Q (ADF-3)

<400> 22

Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly
1 5 10 15

558-33 PCT sequence listing_30 11 2010_ST25.txt

Pro Gly Gln Gln
20

<210> 23
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<220>
<221> DOMAIN
<222> (1)..(27)
<223> Module K (flagelliform protein)

<400> 23

Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly Ala Gly Gly
1 5 10 15

Pro Tyr Gly Pro Gly Gly Ala Gly Gly Pro Tyr
20 25

<210> 24
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<220>
<221> DOMAIN
<222> (1)..(28)
<223> Module sp (flagelliform protein)

<400> 24

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

Asp Gly Pro Ile Thr Ile Ser Glu Glu Leu Thr Ile
20 25

<210> 25
<211> 34
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<220>
<221> DOMAIN
<222> (1)..(34)
<223> Module S (Resilin)

558-33 PCT sequence listing_30 11 2010_ST25.txt

<400> 25

Pro Gly Ser Ser Ala Ala Ala Ala Ala Ala Ala Ala Ser Gly Pro Gly
1 5 10 15

Gln Gly Gln Gly Gln Gly Gln Gly Gln Gly Gly Arg Pro Ser Asp Thr
20 25 30

Tyr Gly

<210> 26

<211> 39

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<220>

<221> DOMAIN

<222> (1)..(39)

<223> Module R (Resilin)

<400> 26

Ser Ala Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly Gly Gly Asn Gly
1 5 10 15

Gly Arg Pro Ser Asp Thr Tyr Gly Ala Pro Gly Gly Gly Asn Gly Gly
20 25 30

Arg Pro Ser Ser Ser Tyr Gly
35

<210> 27

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<220>

<221> DOMAIN

<222> (1)..(18)

<223> Module X (flagelliform protein)

<400> 27

Gly Gly Ala Gly Gly Ala Gly Gly Ala Gly Gly Ser Gly Gly Ala Gly
1 5 10 15

Gly Ser

<210> 28

<211> 30

558-33 PCT sequence listing_30 11 2010_ST25.txt

<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<220>
<221> DOMAIN
<222> (1)..(30)
<223> Module Y (flagelliform protein)

<400> 28

Gly Pro Gly Gly Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly
1 5 10 15

Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr
20 25 30

<210> 29
<211> 24
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<220>
<221> DOMAIN
<222> (1)..(24)
<223> Module Ac

<400> 29

Gly Pro Tyr Gly Pro Gly Ala Ser Ala Ala Ala Ala Ala Ala Gly Gly
1 5 10 15

Tyr Gly Pro Gly Cys Gly Gln Gln
20

<210> 30
<211> 24
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<220>
<221> DOMAIN
<222> (1)..(24)
<223> Module Ak

<400> 30

Gly Pro Tyr Gly Pro Gly Ala Ser Ala Ala Ala Ala Ala Ala Gly Gly
1 5 10 15

Tyr Gly Pro Gly Lys Gly Gln Gln
20

558-33 PCT sequence listing_30 11 2010_ST25.txt

<210> 31
 <211> 35
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<220>
 <221> DOMAIN
 <222> (1)..(35)
 <223> Module Cc

<400> 31

Gly Ser Ser Ala Ala Ala Ala Ala Ala Ala Ala Ser Gly Pro Gly Gly
 1 5 10 15

Tyr Gly Pro Glu Asn Gln Gly Pro Cys Gly Pro Gly Gly Tyr Gly Pro
 20 25 30

Gly Gly Pro
 35

<210> 32
 <211> 35
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<220>
 <221> DOMAIN
 <222> (1)..(35)
 <223> Module Ck1

<400> 32

Gly Ser Ser Ala Ala Ala Ala Ala Ala Ala Ala Ser Gly Pro Gly Gly
 1 5 10 15

Tyr Gly Pro Glu Asn Gln Gly Pro Lys Gly Pro Gly Gly Tyr Gly Pro
 20 25 30

Gly Gly Pro
 35

<210> 33
 <211> 35
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<220>

558-33 PCT sequence listing_30 11 2010_ST25.txt

<221> DOMAIN
<222> (1)..(35)
<223> Module Ck2

<400> 33

Gly Ser Ser Ala Ala Ala Ala Ala Ala Ala Ala Ser Gly Pro Gly Gly
1 5 10 15

Tyr Gly Pro Lys Asn Gln Gly Pro Ser Gly Pro Gly Gly Tyr Gly Pro
20 25 30

Gly Gly Pro
35

<210> 34
<211> 35
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<220>
<221> DOMAIN
<222> (1)..(35)
<223> Module Ckc

<400> 34

Gly Ser Ser Ala Ala Ala Ala Ala Ala Ala Ala Ser Gly Pro Gly Gly
1 5 10 15

Tyr Gly Pro Lys Asn Gln Gly Pro Cys Gly Pro Gly Gly Tyr Gly Pro
20 25 30

Gly Gly Pro
35

<210> 35
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<220>
<221> DOMAIN
<222> (1)..(13)
<223> TAG cys1

<400> 35

Gly Cys Gly Gly Gly Gly Gly Gly Gly Ser Gly Gly Gly Gly
1 5 10

<210> 36
<211> 8

558-33 PCT sequence listing_30 11 2010_ST25.txt

<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<220>
<221> DOMAIN
<222> (1)..(8)
<223> TAG cys2

<400> 36

Gly Cys Gly Gly Gly Gly Gly Gly
1 5

<210> 37
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<220>
<221> DOMAIN
<222> (1)..(14)
<223> TAG cys3

<400> 37

Gly Cys Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
1 5 10

<210> 38
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<220>
<221> DOMAIN
<222> (1)..(13)
<223> TAG lys1

<400> 38

Gly Lys Gly Gly Gly Gly Gly Gly Ser Gly Gly Gly Gly
1 5 10

<210> 39
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<220>

558-33 PCT sequence listing_30 11 2010_ST25.txt

<221> DOMAIN
<222> (1)..(8)
<223> TAG lys2

<400> 39

Gly Lys Gly Gly Gly Gly Gly Gly
1 5

<210> 40
<211> 5
<212> PRT
<213> Arthropoda

<220>
<221> REPEAT
<222> (1)..(5)
<223> peptide motif (resilin)

<400> 40

Gly Pro Gly Gln Gly
1 5

<210> 41
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> based on ADF-3

<220>
<221> DOMAIN
<222> (1)..(124)
<223> NR3 (ADF-3)

<400> 41

Gly Ala Ala Ser Ala Ala Val Ser Val Gly Gly Tyr Gly Pro Gln Ser
1 5 10 15

Ser Ser Ala Pro Val Ala Ser Ala Ala Ala Ser Arg Leu Ser Ser Pro
20 25 30

Ala Ala Ser Ser Arg Val Ser Ser Ala Val Ser Ser Leu Val Ser Ser
35 40 45

Gly Pro Thr Asn Gln Ala Ala Leu Ser Asn Thr Ile Ser Ser Val Val
50 55 60

Ser Gln Val Ser Ala Ser Asn Pro Gly Leu Ser Gly Cys Asp Val Leu
65 70 75 80

Val Gln Ala Leu Leu Glu Val Val Ser Ala Leu Val Ser Ile Leu Gly
85 90 95

Ser Ser Ser Ile Gly Gln Ile Asn Tyr Gly Ala Ser Ala Gln Tyr Thr
Page 17

Gln Met Val Gly Gln Ser Val Ala Gln Ala Leu Ala
115 120

<210> 42
<211> 109
<212> PRT
<213> Artificial Sequence

<220>
<223> based on ADF-4

<220>
<221> DOMAIN
<222> (1)..(109)
<223> NR4 (ADF-4)

<400> 42

Gly Ala Tyr Gly Pro Ser Pro Ser Ala Ser Ala Ser Val Ala Ala Ser
1 5 10 15

Arg Leu Ser Ser Pro Ala Ala Ser Ser Arg Val Ser Ser Ala Val Ser
20 25 30

Ser Leu Val Ser Ser Gly Pro Thr Asn Gly Ala Ala Val Ser Gly Ala
35 40 45

Leu Asn Ser Leu Val Ser Gln Ile Ser Ala Ser Asn Pro Gly Leu Ser
50 55 60

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

Val Ala Ile Leu Ser Ser Ala Ser Ile Gly Gln Val Asn Val Ser Ser
85 90 95

Val Ser Gln Ser Thr Gln Met Ile Ser Gln Ala Leu Ser
100 105

<210> 43
<211> 747
<212> PRT
<213> Araneus diadematus

<220>
<221> PEPTIDE
<222> (1)..(747)
<223> MaSp I

<400> 43

Gln Gly Ala Gly Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly
1 5 10 15

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Tyr Gly Gly 20 Leu Gly Gly Gln 25 Gly Ala Gly Gln Gly 30 Gly Tyr Gly

Gly Leu Gly 35 Gly Gln Gly Ala 40 Gly Gln Gly Ala Gly 45 Ala Ala Ala Ala

Ala Ala Ala Gly Gly Ala 50 Gly 55 Gln Gly Gly Tyr 60 Gly Gly Leu Gly Ser

Gln Gly Ala Gly Arg 65 Gly 70 Gly Gln Gly Ala 75 Gly Ala Ala Ala Ala Ala Ala

Ala Gly Gly Ala 85 Gly Gln Gly Gly Tyr 90 Gly Gly Leu Gly Ser 95 Gln Gly

Ala Gly Arg 100 Gly Gly Leu Gly Gly 105 Gly Ala Gly Ala 110 Ala Ala Ala

Ala Ala Ala Gly Gly Ala 115 Gly 120 Gln Gly Gly Tyr Gly 125 Gly Leu Gly Asn

Gln Gly Ala Gly Arg 130 Gly 135 Gln Gly Ala Ala 140 Ala Ala Ala Ala Gly

Gly Ala Gly Gln Gly 145 Gly 150 Tyr Gly Gly Leu 155 Gly Ser Gln Gly Ala 160 Gly

Arg Gly Gly Leu 165 Gly Gly Gln Gly Ala 170 Gly Ala Ala Ala Ala 175 Ala Ala

Gly Gly Ala 180 Gly Gln Gly Gly Tyr 185 Gly Gly Leu Gly Gly 190 Gln Gly Ala

Gly Gln Gly 195 Gly Tyr Gly Gly 200 Leu Gly Ser Gln Gly 205 Ala Gly Arg Gly

Gly Leu 210 Gly Gly Gln Gly 215 Gly Ala Ala Ala 220 Ala Ala Ala Ala Gly

Gly Ala Gly Gln Gly 225 Gly 230 Leu Gly Gly Gln 235 Gly Ala Gly Gln Gly Ala 240

Gly Ala Ser Ala 245 Ala Ala Ala Gly Gly 250 Gly Gln Gly Gly Tyr 255 Gly

Gly Leu Gly 260 Ser Gln Gly Ala Gly 265 Arg Gly Gly Glu Gly 270 Ala Gly Ala

Ala Ala 275 Ala Ala Gly Gly 280 Gly Gln Gly Gly Tyr 285 Gly Gly Leu

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Gly Gln Gly Ala Gly Gln Gly Gly Tyr Gly Gly Leu Gly Ser Gln
290 295 300

Gly Ala Gly Arg Gly Gly Leu Gly Gly Gln Gly Ala Gly Ala Ala Ala
305 310 315 320

Ala Gly Gly Ala Gly Gln Gly Gly Leu Gly Gly Gln Gly Ala Gly Gln
325 330 335

Gly Ala Gly Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly
340 345 350

Tyr Gly Gly Leu Gly Ser Gln Gly Ala Gly Arg Gly Gly Leu Gly Gly
355 360 365

Gln Gly Ala Gly Ala Val Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln
370 375 380

Gly Gly Tyr Gly Gly Leu Gly Ser Gln Gly Ala Gly Arg Gly Gly Gln
385 390 395 400

Gly Ala Gly Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln Arg Gly
405 410 415

Tyr Gly Gly Leu Gly Asn Gln Gly Ala Gly Arg Gly Gly Leu Gly Gly
420 425 430

Gln Gly Ala Gly Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln
435 440 445

Gly Gly Tyr Gly Gly Leu Gly Asn Gln Gly Ala Gly Arg Gly Gly Gln
450 455 460

Gly Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Gly
465 470 475 480

Leu Gly Ser Gln Gly Ala Gly Arg Gly Gly Gln Gly Ala Gly Ala Ala
485 490 495

Ala Ala Ala Ala Val Gly Ala Gly Gln Glu Gly Ile Arg Gly Gln Gly
500 505 510

Ala Gly Gln Gly Gly Tyr Gly Gly Leu Gly Ser Gln Gly Ser Gly Arg
515 520 525

Gly Gly Leu Gly Gly Gln Gly Ala Gly Ala Ala Ala Ala Ala Ala Gly
530 535 540

Gly Ala Gly Gln Gly Gly Leu Gly Gly Gln Gly Ala Gly Gln Gly Ala
545 550 555 560

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Ala Ala Ala Ala Ala Ala Gly Gly Val Arg Gln Gly Gly Tyr Gly
565 570 575

Gly Leu Gly Ser Gln Gly Ala Gly Arg Gly Gly Gln Gly Ala Gly Ala
580 585 590

Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Gly Leu
595 600 605

Gly Gly Gln Gly Val Gly Arg Gly Gly Leu Gly Gly Gln Gly Ala Gly
610 615 620

Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Gly Val Gly
625 630 635 640

Ser Gly Ala Ser Ala Ala Ser Ala Ala Ala Ser Arg Leu Ser Ser Pro
645 650 655

Gln Ala Ser Ser Arg Val Ser Ser Ala Val Ser Asn Leu Val Ala Ser
660 665 670

Gly Pro Thr Asn Ser Ala Ala Leu Ser Ser Thr Ile Ser Asn Val Val
675 680 685

Ser Gln Ile Gly Ala Ser Asn Pro Gly Leu Ser Gly Cys Asp Val Leu
690 695 700

Ile Gln Ala Leu Leu Glu Val Val Ser Ala Leu Ile Gln Ile Leu Gly
705 710 715 720

Ser Ser Ser Ile Gly Gln Val Asn Tyr Gly Ser Ala Gly Gln Ala Thr
725 730 735

Gln Ile Val Gly Gln Ser Val Tyr Gln Ala Leu
740 745

<210> 44
<211> 627
<212> PRT
<213> Araneus diadematus

<220>
<221> PEPTIDE
<222> (1)..(627)
<223> MaSp II

<400> 44

Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro
1 5 10 15

Gly Gln Gln Gly Pro Ser Gly Pro Gly Ser Ala Ala Ala Ala Ala Ala
20 25 30

558-33 PCT sequence listing_30 11 2010_ST25.txt

Ala Ala Ala Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro
35 40 45

Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Gly Arg Tyr Gly Pro Gly
50 55 60

Gln Gln Gly Pro Ser Gly Pro Gly Ser Ala Ala Ala Ala Ala Gly
65 70 75 80

Ser Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro Arg Gln Gln Gly Pro
85 90 95

Gly Gly Tyr Gly Gln Gly Gln Gln Gly Pro Ser Gly Pro Gly Ser Ala
100 105 110

Ala Ala Ala Ser Ala Ala Ala Ser Ala Glu Ser Gly Gln Gln Gly Pro
115 120 125

Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly
130 135 140

Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Ser Gly
145 150 155 160

Pro Gly Ser Ala Ala Ala Ala Ala Ala Ala Ala Ser Gly Pro Gly Gln
165 170 175

Gln Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr
180 185 190

Gly Pro Gly Gln Gln Gly Pro Ser Gly Pro Gly Ser Ala Ala Ala Ala
195 200 205

Ala Ala Ala Ala Ser Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly
210 215 220

Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Leu
225 230 235 240

Ser Gly Pro Gly Ser Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly Gln
245 250 255

Gln Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Ser Gly Pro
260 265 270

Gly Ser Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly Gly Tyr
275 280 285

Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly
290 295 300

558-33 PCT sequence listing_30 11 2010_ST25.txt

Pro Ser Gly Ala Gly Ser Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly
305 310 315 320

Gln Gln Gly Leu Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gly
325 330 335

Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly Ser Ala
340 345 350

Ser Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly Gln Gln Gly Pro Gly Gly
355 360 365

Tyr Gly Pro Gly Gln Gln Gly Pro Ser Gly Pro Gly Ser Ala Ser Ala
370 375 380

Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gln
385 390 395 400

Gln Gly Pro Gly Gly Tyr Ala Pro Gly Gln Gln Gly Pro Ser Gly Pro
405 410 415

Gly Ser Ala Ser Ala Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly Gly
420 425 430

Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Ala Pro Gly Gln Gln
435 440 445

Gly Pro Ser Gly Pro Gly Ser Ala Ala Ala Ala Ala Ala Ala Ala Ala
450 455 460

Gly Pro Gly Gly Tyr Gly Pro Ala Gln Gln Gly Pro Ser Gly Pro Gly
465 470 475 480

Ile Ala Ala Ser Ala Ala Ser Ala Gly Pro Gly Gly Tyr Gly Pro Ala
485 490 495

Gln Gln Gly Pro Ala Gly Tyr Gly Pro Gly Ser Ala Val Ala Ala Ser
500 505 510

Ala Gly Ala Gly Ser Ala Gly Tyr Gly Pro Gly Ser Gln Ala Ser Ala
515 520 525

Ala Ala Ser Arg Leu Ala Ser Pro Asp Ser Gly Ala Arg Val Ala Ser
530 535 540

Ala Val Ser Asn Leu Val Ser Ser Gly Pro Thr Ser Ser Ala Ala Leu
545 550 555 560

Ser Ser Val Ile Ser Asn Ala Val Ser Gln Ile Gly Ala Ser Asn Pro
565 570 575

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Leu Ser Gly Cys Asp Val Leu Ile Gln Ala Leu Leu Glu Ile Val
580 585 590

Ser Ala Cys Val Thr Ile Leu Ser Ser Ser Ser Ile Gly Gln Val Asn
595 600 605

Tyr Gly Ala Ala Ser Gln Phe Ala Gln Val Val Gly Gln Ser Val Leu
610 615 620

Ser Ala Phe
625

<210> 45
<211> 140
<212> PRT
<213> Araneus diadematus (NR3 from ADF-3)

<400> 45

Met Ala Ser Met Thr Gly Gly Gln Gln Met Gly Arg Gly Ser Met Gly
1 5 10 15

Ala Ala Ser Ala Ala Val Ser Val Gly Gly Tyr Gly Pro Gln Ser Ser
20 25 30

Ser Ala Pro Val Ala Ser Ala Ala Ala Ser Arg Leu Ser Ser Pro Ala
35 40 45

Ala Ser Ser Arg Val Ser Ser Ala Val Ser Ser Leu Val Ser Ser Gly
50 55 60

Pro Thr Asn Gln Ala Ala Leu Ser Asn Thr Ile Ser Ser Val Val Ser
65 70 75 80

Gln Val Ser Ala Ser Asn Pro Gly Leu Ser Gly Cys Asp Val Leu Val
85 90 95

Gln Ala Leu Leu Glu Val Val Ser Ala Leu Val Ser Ile Leu Gly Ser
100 105 110

Ser Ser Ile Gly Gln Ile Asn Tyr Gly Ala Ser Ala Gln Tyr Thr Gln
115 120 125

Met Val Gly Gln Ser Val Ala Gln Ala Leu Ala Gly
130 135 140

<210> 46
<211> 125
<212> PRT
<213> Araneus diadematus (NR4 from ADF-4)

<400> 46

Met Ala Ser Met Thr Gly Gly Gln Gln Met Gly Arg Gly Ser Met Gly
Page 24

1 558-33 PCT sequence listing_30 11 2010_ST25.txt
5 10 15

Ala Tyr Gly Pro Ser Pro Ser Ala Ser Ala Ser Val Ala Ala Ser Arg
20 25 30

Leu Ser Ser Pro Ala Ala Ser Ser Arg Val Ser Ser Ala Val Ser Ser
35 40 45

Leu Val Ser Ser Gly Pro Thr Asn Gly Ala Ala Val Ser Gly Ala Leu
50 55 60

Asn Ser Leu Val Ser Gln Ile Ser Ala Ser Asn Pro Gly Leu Ser Gly
65 70 75 80

Cys Asp Ala Leu Val Gln Ala Leu Leu Glu Leu Val Ser Ala Leu Val
85 90 95

Ala Leu Leu Ser Ser Ala Ser Ile Gly Gln Val Asn Val Ser Ser Val
100 105 110

Ser Gln Ser Thr Gln Met Ile Ser Gln Ala Leu Ser Gly
115 120 125

<210> 47
<211> 652
<212> PRT
<213> Araneus diadematus (ADF-3)
<400> 47

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

Ala Arg Ala Gly Ser Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly
20 25 30

Gln Gln Gly Pro Gly Gln Gln Gly Pro Tyr Gly Pro Gly Ala Ser Ala
35 40 45

Ala Ala Ala Ala Ala Gly Gly Tyr Gly Pro Gly Ser Gly Gln Gln Gly
50 55 60

Pro Ser Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro
65 70 75 80

Tyr Gly Pro Gly Ala Ser Ala Ala Ala Ala Ala Ala Gly Gly Tyr Gly
85 90 95

Pro Gly Ser Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro Tyr Gly Gly
100 105 110

Ser Ser Ala Ala Ala Ala Ala Ala Gly Gly Asn Gly Pro Gly Ser Gly
115 120 125

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Ala
130 135 140

Ser Ala Ala Ala Ala Ala Ala Gly Gly Tyr Gly Pro Gly Ser Gly Gln
145 150 155 160

Gln Gly Pro Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro Tyr Gly Pro
165 170 175

Gly Ala Ser Ala Ala Ala Ala Ala Gly Gly Tyr Gly Pro Gly Ser
180 185 190

Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro Tyr
195 200 205

Gly Pro Gly Ala Ser Ala Ala Ala Ala Ala Gly Gly Tyr Gly Pro
210 215 220

Gly Ser Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly
225 230 235 240

Pro Gly Gly Gln Gly Pro Tyr Gly Pro Gly Ala Ser Ala Ala Ala Ala
245 250 255

Ala Ala Gly Gly Tyr Gly Pro Gly Tyr Gly Gln Gln Gly Pro Gly Gln
260 265 270

Gln Gly Pro Gly Gly Gln Gly Pro Tyr Gly Pro Gly Ala Ser Ala Ala
275 280 285

Ser Ala Ala Ser Gly Gly Tyr Gly Pro Gly Ser Gly Gln Gln Gly Pro
290 295 300

Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro Tyr Gly Pro Gly Ala Ser
305 310 315 320

Ala Ala Ala Ala Ala Ala Gly Gly Tyr Gly Pro Gly Ser Gly Gln Gln
325 330 335

Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly
340 345 350

Pro Gly Gly Gln Gly Pro Tyr Gly Pro Gly Ala Ser Ala Ala Ala Ala
355 360 365

Ala Ala Gly Gly Tyr Gly Pro Gly Ser Gly Gln Gln Gly Pro Gly Gln
370 375 380

Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln
385 390 395 400

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly
405 410 415

Pro Gly Gln Gln Gly Pro Gly Gly Gln Gly Ala Tyr Gly Pro Gly Ala
420 425 430

Ser Ala Ala Ala Gly Ala Ala Gly Gly Tyr Gly Pro Gly Ser Gly Gln
435 440 445

Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln
450 455 460

Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly
465 470 475 480

Pro Gly Gln Gln Gly Pro Tyr Gly Pro Gly Ala Ser Ala Ala Ala Ala
485 490 495

Ala Ala Gly Gly Tyr Gly Pro Gly Ser Gly Gln Gln Gly Pro Gly Gln
500 505 510

Gln Gly Pro Gly Gln Gln Gly Pro Val Gly Gln Gly Pro Tyr Gly Pro
515 520 525

Gly Ala Ala Ser Ala Ala Val Ser Val Gly Gly Tyr Gly Pro Gln Ser
530 535 540

Ser Ser Ala Pro Val Ala Ser Ala Ala Ala Ser Arg Leu Ser Ser Pro
545 550 555 560

Ala Ala Ser Ser Arg Val Ser Ser Ala Val Ser Ser Leu Val Ser Ser
565 570 575

Gly Pro Thr Asn Gln Ala Ala Leu Ser Asn Thr Ile Ser Ser Val Val
580 585 590

Ser Gln Val Ser Ala Ser Asn Pro Gly Leu Ser Gly Cys Asp Val Leu
595 600 605

Val Gln Ala Leu Leu Glu Val Val Ser Ala Leu Val Ser Ile Leu Gly
610 615 620

Ser Ser Ser Ile Gly Gln Ile Asn Tyr Gly Ala Ser Ala Gln Tyr Thr
625 630 635 640

Gln Met Val Gly Gln Ser Val Ala Gln Ala Leu Ala
645 650

<210> 48
<211> 672

558-33 PCT sequence listing_30 11 2010_ST25.txt

<212> PRT

<213> Araneus diadematus (ADF-4)

<400> 48

Met Ala Ser Met Thr Gly Gly Gln Gln Met Gly Arg Ala Ala Arg Ala
1 5 10 15

Gly Ser Ser Ala Ala Ala Ala Ala Ala Ser Gly Ser Gly Gly Tyr
20 25 30

Gly Pro Glu Asn Gln Gly Pro Ser Gly Pro Val Ala Tyr Gly Pro Gly
35 40 45

Gly Pro Val Ser Ser Ala Ala Ala Ala Ala Ala Ala Gly Ser Gly Pro
50 55 60

Gly Gly Tyr Gly Pro Glu Asn Gln Gly Pro Ser Gly Pro Gly Gly Tyr
65 70 75 80

Gly Pro Gly Gly Ser Gly Ser Ser Ala Ala Ala Ala Ala Ala Ala Ala
85 90 95

Ser Gly Pro Gly Gly Tyr Gly Pro Gly Ser Gln Gly Pro Ser Gly Pro
100 105 110

Gly Gly Ser Gly Gly Tyr Gly Pro Gly Ser Gln Gly Pro Ser Gly Pro
115 120 125

Gly Ala Ser Ser Ala Ala Ala Ala Ala Ala Ala Ala Ser Gly Pro Gly
130 135 140

Gly Tyr Gly Pro Gly Ser Gln Gly Pro Ser Gly Pro Gly Ala Tyr Gly
145 150 155 160

Pro Gly Gly Pro Gly Ser Ser Ala Ala Ala Ser Gly Pro Gly Gly Tyr
165 170 175

Gly Pro Gly Ser Gln Gly Pro Ser Gly Pro Gly Gly Ser Gly Gly Tyr
180 185 190

Gly Pro Gly Ser Gln Gly Pro Ser Gly Pro Gly Gly Pro Gly Ala Ser
195 200 205

Ala Ala Ala Ala Ala Ala Ala Ala Ala Ser Gly Pro Gly Gly Tyr Gly
210 215 220

Pro Gly Ser Gln Gly Pro Ser Gly Pro Gly Ala Tyr Gly Pro Gly Gly
225 230 235 240

Pro Gly Ser Ser Ala Ala Ala Ser Gly Pro Gly Gly Tyr Gly Pro Gly
245 250 255

558-33 PCT sequence listing_30 11 2010_ST25.txt

Ser Gln Gly Pro Ser Gly Pro Gly Ala Tyr Gly Pro Gly Gly Pro Gly
260 265 270

Ser Ser Ala Ala Ala Ala Ala Ala Gly Ser Gly Pro Gly Gly Tyr
275 280 285

Gly Pro Gly Asn Gln Gly Pro Ser Gly Pro Gly Gly Tyr Gly Pro Gly
290 295 300

Gly Pro Gly Ser Ser Ala Ala Ala Ala Ala Ala Ala Ser Gly Pro Gly
305 310 315 320

Gly Tyr Gly Pro Gly Ser Gln Gly Pro Ser Gly Pro Gly Val Tyr Gly
325 330 335

Pro Gly Gly Pro Gly Ser Ser Ala Ala Ala Ala Ala Ala Gly Ser
340 345 350

Gly Pro Gly Gly Tyr Gly Pro Gly Asn Gln Gly Pro Ser Gly Pro Gly
355 360 365

Gly Tyr Gly Pro Gly Gly Ser Gly Ser Ser Ala Ala Ala Ala Ala Ala
370 375 380

Ala Ala Ser Gly Pro Gly Gly Tyr Gly Pro Gly Ser Gln Gly Pro Ser
385 390 395 400

Gly Pro Gly Gly Ser Gly Gly Tyr Gly Pro Gly Ser Gln Gly Pro Ser
405 410 415

Gly Pro Gly Ala Ser Ser Ala Ala Ala Ala Ala Ala Ala Ser Gly
420 425 430

Pro Gly Gly Tyr Gly Pro Gly Ser Gln Gly Pro Ser Gly Pro Gly Ala
435 440 445

Tyr Gly Pro Gly Gly Pro Gly Ser Ser Ala Ala Ala Ser Gly Pro Gly
450 455 460

Gly Tyr Gly Pro Gly Ser Gln Gly Pro Ser Gly Pro Gly Ala Tyr Gly
465 470 475 480

Pro Gly Gly Pro Gly Ser Ser Ala Ala Ala Ala Ala Ala Ser Gly
485 490 495

Pro Gly Gly Tyr Gly Pro Gly Ser Gln Gly Pro Ser Gly Pro Gly Gly
500 505 510

Ser Arg Gly Tyr Gly Pro Gly Ser Gln Gly Pro Gly Gly Pro Gly Ala
515 520 525

558-33 PCT sequence listing_30 11 2010_ST25.txt

Ser Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ser Gly Pro Gly Gly Tyr
530 535 540

Gly Pro Gly Ser Gln Gly Pro Ser Gly Pro Gly Tyr Gln Gly Pro Ser
545 550 555 560

Gly Pro Gly Ala Tyr Gly Pro Ser Pro Ser Ala Ser Ala Ser Val Ala
565 570 575

Ala Ser Arg Leu Ser Ser Pro Ala Ala Ser Ser Arg Val Ser Ser Ala
580 585 590

Val Ser Ser Leu Val Ser Ser Gly Pro Thr Asn Gly Ala Ala Val Ser
595 600 605

Gly Ala Leu Asn Ser Leu Val Ser Gln Ile Ser Ala Ser Asn Pro Gly
610 615 620

Leu Ser Gly Cys Asp Ala Leu Val Gln Ala Leu Leu Glu Leu Val Ser
625 630 635 640

Ala Leu Val Ala Ile Leu Ser Ser Ala Ser Ile Gly Gln Val Asn Val
645 650 655

Ser Ser Val Ser Gln Ser Thr Gln Met Ile Ser Gln Ala Leu Ser Gly
660 665 670

<210> 49

<211> 360

<212> PRT

<213> Araneus diadematus (Fibroin 1)

<400> 49

His Glu Ser Ser Tyr Ala Ala Ala Met Ala Ala Ser Thr Arg Asn Ser
1 5 10 15

Asp Phe Ile Arg Asn Met Ser Tyr Gln Met Gly Arg Leu Leu Ser Asn
20 25 30

Ala Gly Ala Ile Thr Glu Ser Thr Ala Ser Ser Ala Ala Ser Ser Ala
35 40 45

Ser Ser Thr Val Thr Glu Ser Ile Arg Thr Tyr Gly Pro Ala Ala Ile
50 55 60

Phe Ser Gly Ala Gly Ala Gly Ala Gly Val Gly Val Gly Gly Ala Gly
65 70 75 80

Gly Tyr Gly Gln Gly Tyr Gly Ala Gly Ala Gly Ala Gly Ala Gly Ala
85 90 95

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Ala Gly Ala Gly Gly Ala Gly Gly Tyr Gly Gln Gly Tyr Gly Ala
100 105 110

Gly Ala Ala Ala Ala Gly Ala Gly Ala Gly Ala Ala Gly Gly Tyr
115 120 125

Gly Gly Gly Ser Gly Ala Gly Ala Gly Gly Ala Gly Gly Tyr Gly Gln
130 135 140

Gly Tyr Gly Ala Gly Ser Gly Ala Gly Ala Gly Ala Ala Ala Ala Ala
145 150 155 160

Gly Ala Ser Ala Gly Ala Ala Gly Gly Tyr Gly Gly Gly Ala Gly Val
165 170 175

Gly Ala Gly Ala Gly Ala Gly Ala Ala Gly Gly Tyr Gly Gln Ser Tyr
180 185 190

Gly Ser Gly Ala Gly Ala Gly Ala Gly Ala Gly Ala Ala Ala Ala Ala
195 200 205

Gly Ala Gly Ala Arg Ala Ala Gly Gly Tyr Gly Gly Gly Tyr Gly Ala
210 215 220

Gly Ala Gly Ala Gly Ala Gly Ala Ala Ala Ser Ala Gly Ala Ser Gly
225 230 235 240

Gly Tyr Gly Gly Gly Tyr Gly Gly Gly Ala Gly Ala Gly Ala Val Ala
245 250 255

Gly Ala Ser Ala Gly Ser Tyr Gly Gly Ala Val Asn Arg Leu Ser Ser
260 265 270

Ala Gly Ala Ala Ser Arg Val Ser Ser Asn Val Ala Ala Ile Ala Ser
275 280 285

Ala Gly Ala Ala Ala Leu Pro Asn Val Ile Ser Asn Ile Tyr Ser Gly
290 295 300

Val Leu Ser Ser Gly Val Ser Ser Ser Glu Ala Leu Ile Gln Ala Leu
305 310 315 320

Leu Glu Val Ile Ser Ala Leu Ile His Val Leu Gly Ser Ala Ser Ile
325 330 335

Gly Asn Val Ser Ser Val Gly Val Asn Ser Ala Leu Asn Ala Val Gln
340 345 350

Asn Ala Val Gly Ala Tyr Ala Gly
355 360

558-33 PCT sequence listing_30 11 2010_ST25.txt

<210> 50

<211> 294

<212> PRT

<213> Araneus diadematus (Fibroin 2)

<400> 50

Gly Ser Gln Gly Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Ala Gly
1 5 10 15

Gly Gly Gly Ala Ala Ala Ala Ala Ala Ala Val Gly Ala Gly Gly
20 25 30

Gly Gly Gln Gly Gly Leu Gly Ser Gly Gly Ala Gly Gln Gly Tyr Gly
35 40 45

Ala Gly Leu Gly Gly Gln Gly Gly Ala Ser Ala Ala Ala Ala Ala
50 55 60

Gly Gly Gln Gly Gly Gln Gly Gly Gln Gly Gly Tyr Gly Gly Leu Gly
65 70 75 80

Ser Gln Gly Ala Gly Gly Ala Gly Gln Leu Gly Tyr Gly Ala Gly Gln
85 90 95

Glu Ser Ala Ala Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gly Gly
100 105 110

Gly Gln Gly Gly Leu Gly Ala Gly Gly Ala Gly Gln Gly Tyr Gly Ala
115 120 125

Ala Gly Leu Gly Gly Gln Gly Gly Ala Gly Gln Gly Gly Gly Ser Gly
130 135 140

Ala Ala Ala Ala Ala Gly Gly Gln Gly Gly Gln Gly Gly Tyr Gly Gly
145 150 155 160

Leu Gly Pro Gln Gly Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Gly
165 170 175

Gly Ser Leu Gln Tyr Gly Gly Gln Gly Gln Ala Gln Ala Ala Ala Ala
180 185 190

Ser Ala Ala Ala Ser Arg Leu Ser Ser Pro Ser Ala Ala Ala Arg Val
195 200 205

Ser Ser Ala Val Ser Leu Val Ser Asn Gly Gly Pro Thr Ser Pro Ala
210 215 220

Ala Leu Ser Ser Ser Ile Ser Asn Val Val Ser Gln Ile Ser Ala Ser
225 230 235 240

Asn Pro Gly Leu Ser Gly Cys Asp Ile Leu Val Gln Ala Leu Leu Glu
Page 32

Ile Ile Ser Ala Leu Val His Ile Leu Gly Ser Ala Asn Ile Gly Pro
260 265 270

Val Asn Ser Ser Ser Ala Gly Gln Ser Ala Ser Ile Val Gly Gln Ser
275 280 285

Val Tyr Arg Ala Leu Ser
290

<210> 51
<211> 636
<212> PRT
<213> Araneus diadematus (Fibroin 3)

<400> 51

Ala Arg Ala Gly Ser Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly
1 5 10 15

Gln Gln Gly Pro Gly Gln Gln Gly Pro Tyr Gly Pro Gly Ala Ser Ala
20 25 30

Ala Ala Ala Ala Ala Gly Gly Tyr Gly Pro Gly Ser Gly Gln Gln Gly
35 40 45

Pro Ser Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro
50 55 60

Tyr Gly Pro Gly Ala Ser Ala Ala Ala Ala Ala Ala Gly Gly Tyr Gly
65 70 75 80

Pro Gly Ser Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro Tyr Gly Pro
85 90 95

Gly Ser Ser Ala Ala Ala Ala Ala Ala Gly Gly Asn Gly Pro Gly Ser
100 105 110

Gly Gln Gln Gly Ala Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly
115 120 125

Ala Ser Ala Ala Ala Ala Ala Ala Gly Gly Tyr Gly Pro Gly Ser Gly
130 135 140

Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro Tyr Gly
145 150 155 160

Pro Gly Ala Ser Ala Ala Ala Ala Ala Ala Gly Gly Tyr Gly Pro Gly
165 170 175

Ser Gly Gln Gly Pro Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro Tyr
180 185 190

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Pro Gly Ala Ser Ala Ala Ala Ala Ala Gly Gly Tyr Gly Pro
195 200 205

Gly Ser Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly
210 215 220

Pro Gly Gly Gln Gly Pro Tyr Gly Pro Gly Ala Ser Ala Ala Ala Ala
225 230 235 240

Ala Ala Gly Gly Tyr Gly Pro Gly Tyr Gly Gln Gln Gly Pro Gly Gln
245 250 255

Gln Gly Pro Gly Gly Gln Gly Pro Tyr Gly Pro Gly Ala Ser Ala Ala
260 265 270

Ser Ala Ala Ser Gly Gly Tyr Gly Pro Gly Ser Gly Gln Gln Gly Pro
275 280 285

Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro Tyr Gly Pro Gly Ala Ser
290 295 300

Ala Ala Ala Ala Ala Ala Gly Gly Tyr Gly Pro Gly Ser Gly Gln Gln
305 310 315 320

Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly
325 330 335

Pro Gly Gly Gln Gly Pro Tyr Gly Pro Gly Ala Ser Ala Ala Ala Ala
340 345 350

Ala Ala Gly Gly Tyr Gly Pro Gly Ser Gly Gln Gln Gly Pro Gly Gln
355 360 365

Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln
370 375 380

Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly
385 390 395 400

Pro Gly Gln Gln Gly Pro Gly Gly Gln Gly Ala Tyr Gly Pro Gly Ala
405 410 415

Ser Ala Ala Ala Gly Ala Ala Gly Gly Tyr Gly Pro Gly Ser Gly Gln
420 425 430

Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln
435 440 445

Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly
450 455 460

558-33 PCT sequence listing_30 11 2010_ST25.txt

Pro Gly Gln Gln Gly Pro Tyr Gly Pro Gly Ala Ser Ala Ala Ala Ala
465 470 475 480

Ala Ala Gly Gly Tyr Gly Pro Gly Ser Gly Gln Gln Gly Pro Gly Gln
485 490 495

Gln Gly Pro Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro Tyr Gly Pro
500 505 510

Gly Ala Ala Ser Ala Ala Val Ser Val Gly Gly Tyr Gly Pro Gln Ser
515 520 525

Ser Ser Val Pro Val Ala Ser Ala Val Ala Ser Arg Leu Ser Ser Pro
530 535 540

Ala Ala Ser Ser Arg Val Ser Ser Ala Val Ser Ser Leu Val Ser Ser
545 550 555 560

Gly Pro Thr Lys His Ala Ala Leu Ser Asn Thr Ile Ser Ser Val Val
565 570 575

Ser Gln Val Ser Ala Ser Asn Pro Gly Leu Ser Gly Cys Asp Val Leu
580 585 590

Val Gln Ala Leu Leu Glu Val Val Ser Ala Leu Val Ser Ile Leu Gly
595 600 605

Ser Ser Ser Ile Gly Gln Ile Asn Tyr Gly Ala Ser Ala Gln Tyr Thr
610 615 620

Gln Met Val Gly Gln Ser Val Ala Gln Ala Leu Ala
625 630 635

<210> 52
<211> 410
<212> PRT
<213> Araneus diadematus (Fibroin 4)

<400> 52

Ala Gly Ser Ser Ala Ala Ala Ala Ala Ala Ala Ser Gly Ser Gly Gly
1 5 10 15

Tyr Gly Pro Glu Asn Gln Gly Pro Ser Gly Pro Val Ala Tyr Gly Pro
20 25 30

Gly Gly Pro Val Ser Ser Ala Ala Ala Ala Ala Ala Ala Gly Ser Gly
35 40 45

Pro Gly Gly Tyr Gly Pro Glu Asn Gln Gly Pro Ser Gly Pro Gly Gly
50 55 60

558-33 PCT sequence listing_30 11 2010_ST25.txt

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

558-33 PCT sequence listing_30 11 2010_ST25.txt

Ser Ser Gly Pro Thr Asn Gly Ala Ala Val Ser Gly Ala Leu Asn Ser
340 345 350

Leu Val Ser Gln Ile Ser Ala Ser Asn Pro Gly Leu Ser Gly Cys Asp
355 360 365

Ala Leu Val Gln Ala Leu Leu Glu Leu Val Ser Ala Leu Val Ala Ile
370 375 380

Leu Ser Ser Ala Ser Ile Gly Gln Val Asn Val Ser Ser Val Ser Gln
385 390 395 400

Ser Thr Gln Met Ile Ser Gln Ala Leu Ser
405 410

<210> 53
<211> 251
<212> PRT
<213> Nephila clavipes (MaSp I)
<400> 53

Ala Gly Gln Gly Gly Leu Gly Gly Gln Gly Ala Gly Gln Gly Ala Gly
1 5 10 15

Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Gly
20 25 30

Leu Gly Ser Gln Gly Ala Gly Arg Gly Gly Leu Gly Gly Gln Gly Ala
35 40 45

Gly Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly
50 55 60

Gly Leu Gly Gly Gln Gly Ala Gly Gln Gly Ala Gly Gln Gly Gly Tyr
65 70 75 80

Gly Gly Leu Gly Ser Gln Gly Ala Gly Arg Gly Gly Gln Gly Ala Gly
85 90 95

Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Gly
100 105 110

Leu Gly Gly Gln Gly Val Gly Arg Gly Gly Leu Gly Gly Gln Gly Ala
115 120 125

Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Gly Val Gly Ser
130 135 140

Gly Ala Ser Ala Ala Ser Ala Ala Ala Ser Arg Leu Ser Ser Pro Gln
145 150 155 160

558-33 PCT sequence listing_30 11 2010_ST25.txt

Ala Ser Ser Arg Val Ser Ser Ala Val Ser Asn Leu Val Ala Ser Gly
165 170 175

Pro Thr Asn Ser Ala Ala Leu Ser Ser Thr Ile Ser Asn Val Val Ser
180 185 190

Gln Ile Gly Ala Ser Asn Pro Gly Leu Ser Gly Cys Asp Val Leu Ile
195 200 205

Gln Ala Leu Leu Glu Val Val Ser Ala Leu Ile His Ile Leu Gly Ser
210 215 220

Ser Ser Ile Gly Gln Val Asn Tyr Gly Ser Ala Gly Gln Ala Thr Gln
225 230 235 240

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

<210> 54
<211> 379
<212> PRT
<213> Nephila clavipes (MaSp I)
<400> 54

Gly Gly Gln Gly Ala Gly Arg Gly Ala Gly Ala Ala Ala Ala Ala Ala
1 5 10 15

Gly Gly Ala Gly Gln Gly Gly Tyr Gly Gly Leu Gly Gly Gln Gly Ala
20 25 30

Gly Gln Gly Ala Gly Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln
35 40 45

Gly Gly Tyr Gly Gly Leu Gly Ser Gln Gly Ala Gly Arg Gly Gly Tyr
50 55 60

Gly Gly Gln Gly Ala Glu Ala Ala Ala Ala Ala Ala Ala Gly Gly Ala
65 70 75 80

Ala Gln Gly Gly Gln Gly Leu Gly Gly Gln Gly Ala Ala Ala Ala Ala
85 90 95

Gly Gly Ala Gly Gln Gly Gly Phe Gly Gly Leu Gly Gly Gln Gly Ala
100 105 110

Gly Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly
115 120 125

Gly Leu Gly Ser Gln Gly Ala Gly Arg Gly Ala Gly Ala Ala Ala Ala
130 135 140

Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Gly Leu Gly Gly Gln
Page 38

558-33 PCT sequence listing_30 11 2010_ST25.txt

145 150 155 160

Gly Ala Gly Arg Gly Ala Gly Ala Ala Ala Ala Ala Gly Gly Ala
165 170 175

Ala Gln Gly Gly Tyr Gly Asp Leu Gly Ser Gln Gly Ala Gly Ala Ala
180 185 190

Ala Ala Ala Ala Gly Ser Ala Gly Gln Gly Gly Tyr Gly Gly Leu Gly
195 200 205

Gly Gln Gly Ala Gly Gln Gly Ala Gly Ala Ala Ala Ala Ala Gly
210 215 220

Ser Ala Gly Gln Gly Gly Leu Gly Gly Arg Ala Gly Gln Gly Ala Gly
225 230 235 240

Ala Ala Ser Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Gly
245 250 255

Leu Gly Gly Gln Gly Ala Gly Gln Gly Gly Tyr Gly Gly Val Gly Ser
260 265 270

Gly Ala Ser Ala Ala Ser Ser Ala Ala Ser Arg Leu Ser Ser Pro Glu
275 280 285

Ala Ser Ser Arg Val Ser Ser Ala Val Ser Asn Leu Val Ser Ser Gly
290 295 300

Pro Thr Asn Ser Ala Ala Leu Ser Ser Thr Ile Ser Asn Val Val Ser
305 310 315 320

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

Gln Ala Leu Leu Glu Val Val Ser Ala Leu Ile His Ile Leu Gly Ser
340 345 350

Ser Ser Ile Gly Gln Val Asn Tyr Gly Ser Ala Gly Gln Ala Thr Gln
355 360 365

Ile Val Gly Gln Ser Ile Tyr Gln Ala Leu Gly
370 375

<210> 55
<211> 387
<212> PRT
<213> Nephila clavipes (MaSp I)

<400> 55

Ala Gly Ala Ala Ala Ala Ala Gly Ser Ala Gly Gln Gly Gly Tyr Gly
1 5 10 15

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Gln Gly Ala Gly Gln Gly Gly Tyr Gly Gly Leu Gly Ser Gln Gly
20 25 30

Ala Gly Arg Gly Gly Leu Gly Gly Gln Gly Ala Gly Ala Ala Ala
35 40 45

Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Leu Gly Gly Gln Gly Ala
50 55 60

Gly Gln Gly Ala Gly Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln
65 70 75 80

Gly Gly Tyr Gly Gly Leu Gly Asn Gln Gly Ala Gly Arg Gly Gly Gln
85 90 95

Gly Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly
100 105 110

Gly Leu Gly Ser Gln Gly Ala Gly Arg Gly Gly Leu Gly Gly Gln Gly
115 120 125

Ala Gly Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr
130 135 140

Gly Gly Leu Gly Gly Gln Gly Ala Gly Gln Gly Gly Tyr Gly Gly Leu
145 150 155 160

Gly Ser Gln Gly Ser Gly Arg Gly Gly Leu Gly Gly Gln Gly Ala Gly
165 170 175

Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Leu Gly Gly
180 185 190

Gln Gly Ala Gly Gln Gly Ala Gly Ala Ala Ala Ala Ala Ala Gly Gly
195 200 205

Val Arg Gln Gly Gly Tyr Gly Gly Leu Gly Ser Gln Gly Ala Gly Arg
210 215 220

Gly Gly Gln Gly Ala Gly Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly
225 230 235 240

Gln Gly Gly Tyr Gly Gly Leu Gly Gly Gln Gly Val Gly Arg Gly Gly
245 250 255

Leu Gly Gly Gln Gly Ala Gly Ala Ala Ala Ala Gly Gly Ala Gly Gln
260 265 270

Gly Gly Tyr Gly Gly Val Gly Ser Gly Ala Ser Ala Ala Ser Ala Ala
275 280 285

558-33 PCT sequence listing_30 11 2010_ST25.txt

Ala Ser Arg Leu Ser Ser Pro Gln Ala Ser Ser Arg Val Ser Ser Ala
290 295 300

Val Ser Asn Leu Val Ala Ser Gly Pro Thr Asn Ser Ala Ala Leu Ser
305 310 315 320

Ser Thr Ile Ser Asn Val Val Ser Gln Ile Gly Ala Ser Asn Pro Gly
325 330 335

Leu Ser Gly Cys Asp Val Leu Ile Gln Ala Leu Leu Glu Val Val Ser
340 345 350

Ala Leu Ile His Ile Leu Gly Ser Ser Ser Ile Gly Gln Val Asn Tyr
355 360 365

Gly Ser Ala Gly Gln Ala Thr Gln Ile Val Gly Gln Ser Val Tyr Gln
370 375 380

Ala Leu Gly
385

<210> 56
<211> 431
<212> PRT
<213> Nephila clavipes (MaSp I)

<400> 56

Gly Gly Leu Gly Ile Gln Gly Ser Gly Arg Gly Gly Leu Gly Gly Gln
1 5 10 15

Gly Ala Val Ala Ala Ala Ala Ala Ala Gly Gly Ala Val Gln Val
20 25 30

Val Leu Gly Gly Gln Gly Ala Gly Gln Gly Ala Gly Ala Ala Ala Ala
35 40 45

Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Gly Leu Gly Ser Gln
50 55 60

Gly Ala Gly Arg Gly Gly Gln Gly Ala Gly Ala Arg Thr Ala Ala Ala
65 70 75 80

Val Gly Ala Gly Gln Gly Gly Tyr Gly Gly Gln Gly Ala Gly Gln Gly
85 90 95

Gly Tyr Gly Gly Leu Gly Ser Gln Gly Ala Gly Arg Gly Gly Leu Gly
100 105 110

Gly Gln Gly Ala Gly Ala Ala Ala Ala Ala Ala Gly Ser Ala Glu
115 120 125

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gln Gly Leu Gly Gly Gln Gly Ala Gly Gln Gly Ala Gly Ala Ala Ala
130 135 140

Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Gly Leu Gly Ser
145 150 155 160

Gln Gly Ala Gly Arg Gly Gly Leu Gly Gly Gln Gly Ala Gly Ala Ala
165 170 175

Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Gly Leu Gly
180 185 190

Gly Gln Gly Ala Gly Gln Gly Gly Tyr Gly Gly Leu Gly Ser Gln Gly
195 200 205

Ser Gly Arg Gly Gly Leu Gly Gly Gln Gly Ala Gly Ala Ala Ala Ala
210 215 220

Ala Ala Gly Gly Ala Gly Gln Gly Gly Leu Gly Gly Gln Gly Ala Gly
225 230 235 240

Gln Gly Ala Gly Ala Ala Ala Ala Ala Ala Gly Gly Val Arg Gln Gly
245 250 255

Gly Tyr Gly Gly Leu Gly Ser Gln Gly Ala Gly Arg Gly Gly Gln Gly
260 265 270

Ala Gly Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr
275 280 285

Gly Gly Leu Gly Gly Gln Gly Val Gly Arg Gly Gly Leu Gly Gly Gln
290 295 300

Gly Ala Gly Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly
305 310 315 320

Gly Val Gly Ser Gly Ala Ser Ala Ala Ser Ala Ala Ala Ser Arg Leu
325 330 335

Ser Ser Pro Gln Ala Ser Ser Arg Val Ser Ser Ala Val Ser Asn Leu
340 345 350

Val Ala Ser Gly Pro Thr Asn Ser Ala Ala Leu Ser Ser Thr Ile Ser
355 360 365

Asn Val Val Ser Gln Ile Gly Ala Ser Asn Pro Gly Leu Ser Gly Cys
370 375 380

Asp Val Leu Ile Gln Ala Leu Leu Glu Val Val Ser Ala Leu Ile His
385 390 395 400

558-33 PCT sequence listing_30 11 2010_ST25.txt

Ile Leu Gly Ser Ser Ser Ile Gly Gln Val Asn Tyr Gly Ser Ala Gly
405 410 415

Gln Ala Thr Gln Ile Val Gly Gln Ser Val Tyr Gln Ala Leu Gly
420 425 430

<210> 57
<211> 255
<212> PRT
<213> Nephila clavipes (MaSp I)

<400> 57

Gln Gly Thr Asp Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly
1 5 10 15

Gly Tyr Gly Gly Leu Gly Gly Gln Gly Ala Gly Gln Gly Gly Tyr Gly
20 25 30

Gly Leu Gly Ser Gln Gly Ser Gly Arg Gly Gly Leu Gly Gly Gln Gly
35 40 45

Ala Gly Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Ala Gly
50 55 60

Gln Gly Ala Gly Ala Ala Ala Ala Ala Gly Gly Val Arg Gln Gly
65 70 75 80

Gly Tyr Gly Gly Leu Gly Ser Gln Gly Ala Gly Arg Gly Gly Gln Gly
85 90 95

Ala Gly Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr
100 105 110

Gly Gly Leu Gly Gly Gln Gly Val Gly Arg Gly Gly Leu Gly Gly Gln
115 120 125

Gly Ala Gly Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly
130 135 140

Gly Val Gly Ser Gly Ala Ser Ala Ala Ser Ala Ala Ala Ser Arg Leu
145 150 155 160

Ser Ser Pro Gln Ala Ser Ser Arg Val Ser Ser Ala Val Ser Asn Leu
165 170 175

Val Ala Ser Gly Pro Thr Asn Ser Ala Ala Leu Ser Ser Thr Ile Ser
180 185 190

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

558-33 PCT sequence listing_30 11 2010_ST25.txt

Asp Val Leu Ile Gln Ala Leu Leu Glu Val Val Ser Ala Leu Ile Gln
210 215 220

Ile Leu Gly Ser Ser Ser Ile Gly Gln Val Asn Tyr Gly Ser Ala Gly
225 230 235 240

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

<210> 58
<211> 331
<212> PRT
<213> Nephila clavipes (MaSp I)
<400> 58

Gly Gln Gly Ala Gly Gln Gly Ala Gly Ala Ala Ala Ala Ala Gly
1 5 10 15

Gly Ala Gly Gln Gly Gly Tyr Gly Gly Leu Gly Asn Gln Gly Ala Gly
20 25 30

Arg Gly Gly Gln Gly Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln
35 40 45

Gly Gly Tyr Gly Gly Leu Gly Ser Gln Gly Ala Gly Arg Gly Gly Leu
50 55 60

Gly Gly Gln Gly Ala Gly Ala Ala Ala Ala Ala Gly Gly Ala Gly
65 70 75 80

Gln Gly Gly Tyr Gly Gly Leu Gly Gly Gln Gly Ala Gly Gln Gly Ala
85 90 95

Gly Gln Gly Gly Tyr Gly Gly Leu Gly Ile Gln Gly Ser Gly Arg Gly
100 105 110

Gly Leu Gly Gly Gln Gly Ala Gly Ala Ala Ala Ala Ala Gly Gly
115 120 125

Ala Gly Gln Gly Gly Leu Gly Gly Gln Gly Ala Gly Gln Gly Ala Gly
130 135 140

Ala Ala Ala Ala Ala Ala Gly Gly Val Arg Gln Gly Gly Tyr Gly Gly
145 150 155 160

Leu Gly Ser Gln Gly Ala Gly Arg Gly Gly Gln Gly Ala Gly Ala Ala
165 170 175

Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Gly Leu Gly
180 185 190

Gly Gln Gly Val Gly Arg Gly Gly Leu Gly Gly Gln Gly Ala Gly Ala

Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Gly Val Gly Ser
210 215 220

Gly Ala Ser Ala Ala Ser Ala Ala Ala Ser Arg Leu Ser Ser Pro Gln
225 230 235 240

Ala Ser Ser Arg Val Ser Ser Ala Val Ser Asn Leu Val Ala Ser Gly
245 250 255

Pro Thr Asn Ser Ala Ala Leu Ser Ser Thr Ile Ser Asn Val Val Ser
260 265 270

Gln Ile Gly Ala Ser Asn Pro Gly Leu Ser Gly Cys Asp Val Leu Ile
275 280 285

Gln Ala Leu Leu Glu Val Val Ser Ala Leu Ile Gln Ile Leu Gly Ser
290 295 300

Ser Ser Ile Gly Gln Val Asn Tyr Gly Ser Ala Gly Gln Ala Thr Gln
305 310 315 320

Ile Val Gly Gln Ser Val Tyr Gln Ala Leu Gly
325 330

<210> 59
<211> 233
<212> PRT
<213> Nephila madagascariensis (MaSp I)
<400> 59

Gly Leu Gly Gly Gln Gly Ala Gly Gln Gly Ala Gly Ala Ala Ala Ala
1 5 10 15

Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Gly Leu Gly Ser Gln
20 25 30

Gly Ala Gly Arg Gly Gly Tyr Gly Gly Gln Gly Ala Gly Ala Ala Ala
35 40 45

Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Gly Leu Gly
50 55 60

Ser Gln Gly Ala Gly Gln Gly Gly Tyr Gly Gly Leu Gly Gly Gln Gly
65 70 75 80

Ala Gly Gln Gly Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln
85 90 95

Gly Gly Tyr Gly Gly Leu Gly Ser Gln Gly Ala Gly Arg Gly Gly Tyr
100 105 110

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Gly Gln Gly Ala Gly Ala Ala Ala Ala Ala Thr Gly Gly Ala Gly
115 120 125

Gln Gly Gly Tyr Gly Gly Val Gly Ser Gly Ala Ser Ala Ala Ser Ala
130 135 140

Ala Ala Ser Arg Leu Ser Ser Pro Gln Ala Ser Ser Arg Val Ser Ser
145 150 155 160

Ala Val Ser Asn Leu Val Ala Ser Gly Pro Thr Asn Ser Ala Ala Leu
165 170 175

Ser Ser Thr Ile Ser Asn Ala Val Ser Gln Ile Gly Ala Ser Asn Pro
180 185 190

Gly Leu Ser Gly Cys Asp Val Leu Ile Gln Ala Leu Leu Glu Val Val
195 200 205

Ser Ala Leu Ile His Ile Leu Gly Ser Ser Ser Ile Gly Gln Val Asn
210 215 220

Tyr Gly Ser Ala Gly Gln Ala Thr Gln
225 230

<210> 60
<211> 284
<212> PRT
<213> Tetragnatha kauaiensis (MaSp I)

<220>
<221> misc_feature
<222> (23)..(23)
<223> xaa can be any naturally occurring amino acid

<400> 60

Ser Gly Leu Gly Gly Ala Gly Gln Gly Ala Gly Gln Gly Ala Ser Ala
1 5 10 15

Ala Ala Ala Ala Ala Ala Xaa Gly Gly Leu Gly Gly Gly Gln Gly Ala
20 25 30

Gly Gln Gly Gly Gln Gln Gly Ala Gly Gln Gly Gly Tyr Gly Ser Gly
35 40 45

Leu Gly Gly Ala Gly Gln Gly Ala Ser Ala Ala Ala Ala Ala Ala Ala
50 55 60

Ala Gly Gly Leu Gly Gly Gly Gln Gly Ala Gly Gln Gly Gly Gln Gln
65 70 75 80

Gly Ala Gly Gln Gly Gly Tyr Gly Ser Gly Leu Gly Gly Ala Gly Gln
Page 46

Gly Ala Ser Ala Ala Ala Ala Ala Ala Ala Ala Gly Gly Leu Gly Gly
100 105 110

Gly Gln Gly Ala Gly Gln Gly Gly Gln Gln Gly Ala Gly Gln Gly Gly
115 120 125

Tyr Gly Ser Gly Leu Gly Gly Ala Gly Gln Gly Ala Gly Gln Gly Ala
130 135 140

Ser Ala Ala Ala Ala Ala Ala Ala Gly Gly Leu Gly Gly Gly Gln Gly
145 150 155 160

Gly Tyr Gly Ser Gly Leu Gly Gly Val Gly Gln Gly Gly Gln Gly Ala
165 170 175

Leu Gly Gly Ser Arg Asn Ser Ala Thr Asn Ala Ile Ser Asn Ser Ala
180 185 190

Ser Asn Ala Val Ser Leu Leu Ser Ser Pro Ala Ser Asn Ala Arg Ile
195 200 205

Ser Ser Ala Val Ser Ala Leu Ala Ser Gly Ala Ala Ser Gly Pro Gly
210 215 220

Tyr Leu Ser Ser Val Ile Ser Asn Val Val Ser Gln Val Ser Ser Asn
225 230 235 240

Ser Gly Gly Leu Val Gly Cys Asp Thr Leu Val Gln Ala Leu Leu Glu
245 250 255

Ala Ala Ala Ala Leu Val His Val Leu Ala Ser Ser Ser Gly Gly Gln
260 265 270

Val Asn Leu Asn Thr Ala Gly Tyr Thr Ser Gln Leu
275 280

<210> 61
<211> 253
<212> PRT
<213> Nephila senegalensis (MaSp I)

<400> 61

Gly Leu Gly Gly Gln Gly Ala Gly Arg Gly Ala Gly Ala Ala Ala Ala
1 5 10 15

Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Gly Leu Gly Gly Gln
20 25 30

Gly Ala Gly Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly
35 40 45

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gln Gly Leu Gly Gly Arg Gly Ala Ala Ala Ala Gly Gly Ala Gly Gln
50 55 60

Gly Gly Tyr Gly Gly Leu Gly Gly Gln Gly Ala Gly Arg Gly Ala Gly
65 70 75 80

Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Gly
85 90 95

Leu Gly Gly Gln Gly Ala Gly Ala Ala Ala Ala Ala Ala Ala Gly
100 105 110

Gly Ala Gly Gln Gly Gly Tyr Gly Gly Leu Gly Ser Gln Gly Ala Gly
115 120 125

Arg Gly Gly Tyr Gly Gly Gln Gly Ala Gly Ala Ala Val Ala Ala Ile
130 135 140

Gly Gly Val Gly Gln Gly Gly Tyr Gly Gly Val Gly Ser Gly Ala Ser
145 150 155 160

Ala Ala Ser Ala Ala Ala Ser Arg Leu Ser Ser Pro Glu Ala Ser Ser
165 170 175

Arg Val Ser Ser Ala Val Ser Asn Leu Val Ser Ser Gly Pro Thr Asn
180 185 190

Ser Ala Ala Leu Ser Ser Thr Ile Ser Asn Val Val Ser Gln Ile Gly
195 200 205

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

Leu Glu Val Val Ser Ala Leu Val His Ile Leu Gly Ser Ser Ser Ile
225 230 235 240

Gly Gln Val Asn Tyr Gly Ser Ala Gly Gln Ala Thr Gln
245 250

<210> 62

<211> 178

<212> PRT

<213> Tetragnatha versicolor (MaSp I)

<400> 62

Ser Gly Gln Gly Ala Ser Ala Ala Ala Ala Ala Ala Gly Gly Leu Gly
1 5 10 15

Gly Gly Gln Gly Gly Tyr Gly Ser Gly Leu Gly Gly Ala Gly Gln Gly
20 25 30

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Gln Gln Gly Ala Gly Gln Gly Ala Ala Ala Ala Ala Ala Ser Ala
35 40 45

Ala Ala Gly Gly Leu Gly Gly Gly Gln Gly Gly Gln Gln Gly Ala Gly
50 55 60

Arg Gly Gly Leu Gln Gly Ala Gly Gln Gly Gly Gln Gly Ala Leu Gly
65 70 75 80

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

Ala Ser Asn Ala Arg Ile Ser Ser Ala Val Ser Ala Leu Ala Ser Gly
100 105 110

Gly Ala Ser Ser Pro Gly Tyr Leu Ser Ser Ile Ile Ser Asn Val Val
115 120 125

Ser Gln Val Ser Ser Asn Asn Asp Gly Leu Ser Gly Cys Asp Thr Val
130 135 140

Val Gln Ala Leu Leu Glu Val Ala Ala Ala Leu Val His Val Leu Ala
145 150 155 160

Ser Ser Asn Ile Gly Gln Val Asn Leu Asn Thr Ala Gly Tyr Thr Ser
165 170 175

Gln Leu

<210> 63
<211> 360
<212> PRT
<213> Latrodectus geometricus (MaSp I)
<400> 63

Ala Gly Ser Gly Gln Gly Gly Tyr Gly Gln Gly Tyr Gly Glu Gly Gly
1 5 10 15

Ala Gly Gln Gly Gly Ala Gly Ala Ala Ala Ala Ala Ala Ala Ala
20 25 30

Gly Gly Ala Gly Gln Gly Gly Gln Gly Gly Tyr Gly Gln Gly Tyr Gly
35 40 45

Gln Gly Gly Ala Gly Gln Gly Gly Ala Gly Ala Ala Ala Ala Ala Ala
50 55 60

Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Arg Gly Gly Ala Gly Gln
65 70 75 80

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Ala Ala Ala Ala Ala Ala Ala Ala Ala Gly Ser Gly Gln Gly Gly Gln
85 90 95

Gly Gly Tyr Gly Gln Gly Tyr Gly Gln Gly Gly Ala Gly Gln Gly Gly
100 105 110

Ala Gly Ala Ala Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly
115 120 125

Gly Tyr Gly Arg Gly Gly Ala Gly Gln Gly Gly Ala Ala Ala Ala Ala
130 135 140

Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Gln Gly Gly Tyr Gly Gln
145 150 155 160

Gly Tyr Gly Gln Gly Gly Ala Gly Gln Gly Gly Ala Gly Ala Ala Ala
165 170 175

Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Arg Gly
180 185 190

Gly Ala Gly Gln Gly Gly Ser Ala Ala Ala Ala Ala Ala Ala Gly Gly
195 200 205

Ala Gly Gln Gly Gly Tyr Gly Arg Gly Gly Ala Gly Gln Gly Gly Ala
210 215 220

Gly Ser Ala Ala Ala Ala Ala Ala Ala Gly Gly Ser Gly Gln Gly Gly
225 230 235 240

Gln Gly Gly Tyr Gly Gln Gly Tyr Gly Gln Gly Gly Ala Gly Gln Gly
245 250 255

Gly Ala Ala Ala Ala Ala Ser Ala Leu Ala Ala Pro Ala Thr Ser Ala
260 265 270

Arg Ile Ser Ser His Ala Ser Thr Leu Leu Ser Asn Gly Pro Thr Asn
275 280 285

Pro Ala Ser Ile Ser Asn Val Ile Ser Asn Ala Val Ser Gln Ile Ser
290 295 300

Ser Ser Asn Pro Gly Ala Ser Ser Cys Asp Val Leu Val Gln Ala Leu
305 310 315 320

Leu Glu Leu Val Thr Ala Leu Leu Thr Ile Ile Gly Ser Ser Asn Val
325 330 335

Gly Asn Val Asn Tyr Asp Ser Ser Gly Gln Tyr Ala Gln Val Val Ser
340 345 350

558-33 PCT sequence listing_30 11 2010_ST25.txt
 Gln Ser Val Gln Asn Ala Phe Val
 355 360

<210> 64
 <211> 648
 <212> PRT
 <213> Argiope trifasciata (MaSp I)
 <400> 64

Ala Ala Ala Ala Ala Ala Ala Ala Ala Gly Gly Gln Gly Gly Gln Gly
 1 5 10 15

Gly Tyr Asp Gly Leu Gly Ser Gln Gly Ala Gly Gln Gly Gly Tyr Gly
 20 25 30

Gln Gly Gly Ala Ala Ala Ala Ala Ala Ala Ala Ser Gly Ala Gly Ser
 35 40 45

Ala Gln Arg Gly Gly Leu Gly Ala Gly Gly Ala Gly Gln Gly Tyr Gly
 50 55 60

Ala Gly Ser Gly Gly Gln Gly Gly Ala Gly Gln Gly Gly Ala Ala Ala
 65 70 75 80

Ala Thr Ala Ala Ala Ala Gly Gly Gln Gly Gly Gln Gly Gly Tyr Gly
 85 90 95

Gly Leu Gly Ser Gln Gly Ser Gly Gln Gly Gly Tyr Gly Gln Gly Gly
 100 105 110

Ala Ala Ala Ala Ala Ala Ala Ala Ala Ser Gly Asp Gly Gly Ala Gly Gln
 115 120 125

Glu Gly Leu Gly Ala Gly Gly Ala Gly Gln Gly Tyr Gly Ala Gly Leu
 130 135 140

Gly Gly Gln Gly Gly Ala Gly Gln Gly Gly Ala Ala Ala Ala Ala Ala
 145 150 155 160

Ala Ala Ala Gly Gly Gln Gly Gly Gln Gly Tyr Gly Gly Leu Gly
 165 170 175

Ser Gln Gly Ala Gly Gln Gly Gly Tyr Gly Gln Gly Gly Ala Ala Ala
 180 185 190

Ala Ala Ala Ala Ala Ser Gly Ala Gly Gly Ala Gly Gln Gly Gly Leu
 195 200 205

Gly Ala Ala Gly Ala Gly Gln Gly Tyr Gly Ala Gly Ser Gly Gly Gln
 210 215 220

Gly Gly Ala Gly Gln Gly Gly Ala Ala Ala Ala Ala Ala Ala Ala Ala
 Page 51

225

230

235

240

Gly Gly Gln Gly Gly Gln Gly Gly Tyr Gly Gly Leu Gly Ser Gln Gly
 245 250 255

Ala Gly Gln Gly Gly Tyr Gly Gln Gly Gly Val Ala Ala Ala Ala Ala
 260 265 270

Ala Ala Ser Gly Ala Gly Gly Ala Gly Arg Gly Gly Leu Gly Ala Gly
 275 280 285

Gly Ala Gly Gln Glu Tyr Gly Ala Val Ser Gly Gly Gln Gly Gly Ala
 290 295 300

Gly Gln Gly Gly Glu Ala Ala Ala Ala Ala Ala Ala Gly Gly Gln
 305 310 315 320

Gly Gly Gln Gly Gly Tyr Gly Gly Leu Gly Ser Gln Gly Ala Gly Gln
 325 330 335

Gly Gly Tyr Gly Gln Gly Gly Ala Ala Ala Ala Ala Ala Ala Ser
 340 345 350

Gly Ala Gly Gly Ala Arg Arg Gly Gly Leu Gly Ala Gly Gly Ala Gly
 355 360 365

Gln Gly Tyr Gly Ala Gly Leu Gly Gly Gln Gly Gly Ala Gly Gln Gly
 370 375 380

Ser Ala Ser Ala Ala Ala Ala Ala Ala Ala Ala Gly Gly Gln Gly Gly Gln
 385 390 395 400

Gly Gly Tyr Gly Gly Leu Gly Ser Gln Gly Ser Gly Gln Gly Gly Tyr
 405 410 415

Gly Gln Gly Gly Ala Ala Ala Ala Ala Ala Ala Ala Ser Gly Ala Gly
 420 425 430

Gly Ala Gly Arg Gly Ser Leu Gly Ala Gly Gly Ala Gly Gln Gly Tyr
 435 440 445

Gly Ala Gly Leu Gly Gly Gln Gly Gly Ala Gly Gln Gly Gly Ala Ala
 450 455 460

Ala Ala Ala Ser Ala Ala Ala Gly Gly Gln Gly Gly Gln Gly Gly Tyr
 465 470 475 480

Gly Gly Leu Gly Ser Gln Gly Ala Gly Gln Gly Gly Tyr Gly Gln Gly
 485 490 495

Gly Ala Ala Ala Ala Ala Ala Ser Ala Gly Gly Gln Gly Gly Gln Gly
 Page 52

Gly Tyr Gly Gly Leu Gly Ser Gln Gly Ala Gly Gln Gly Gly Tyr Gly
515 520 525

Gly Gly Ala Phe Ser Gly Gln Gln Gly Gly Ala Ala Ser Val Ala Thr
530 535 540

Ala Ser Ala Ala Ala Ser Arg Leu Ser Ser Pro Gly Ala Ala Ser Arg
545 550 555 560

Val Ser Ser Ala Val Thr Ser Leu Val Ser Ser Gly Gly Pro Thr Asn
565 570 575

Ser Ala Ala Leu Ser Asn Thr Ile Ser Asn Val Val Ser Gln Ile Ser
580 585 590

Ser Ser Asn Pro Gly Leu Ser Gly Cys Asp Val Leu Val Gln Ala Leu
595 600 605

Leu Glu Ile Val Ser Ala Leu Val His Ile Leu Gly Ser Ala Asn Ile
610 615 620

Gly Gln Val Asn Ser Ser Gly Val Gly Arg Ser Ala Ser Ile Val Gly
625 630 635 640

Gln Ser Ile Asn Gln Ala Phe Ser
645

<210> 65
<211> 236
<212> PRT
<213> Nephila clavipes (MaSp II)

<400> 65

Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly
1 5 10 15

Gln Gln Gly Pro Ser Gly Ser Gly Ser Ala Ala Ala Ala Ala Ala Ala
20 25 30

Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly
35 40 45

Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Ser Gly Pro Gly Ser
50 55 60

Ala Ala Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly Gly Tyr Gly Pro
65 70 75 80

Ala Gln Gln Gly Pro Ser Gly Pro Gly Ile Ala Ala Ser Ala Ala Ser
85 90 95

558-33 PCT sequence listing_30 11 2010_ST25.txt

Ala Gly Pro Gly Gly Tyr Gly Pro Ala Gln Gln Gly Pro Ala Gly Tyr
100 105 110

Gly Pro Gly Ser Ala Val Ala Ala Ser Ala Gly Ala Gly Ser Ala Gly
115 120 125

Tyr Gly Pro Gly Ser Gln Ala Ser Ala Ala Ala Ser Arg Leu Ala Ser
130 135 140

Pro Asp Ser Gly Ala Arg Val Ala Ser Ala Val Ser Asn Leu Val Ser
145 150 155 160

Ser Gly Pro Thr Ser Ser Ala Ala Leu Ser Ser Val Ile Ser Asn Ala
165 170 175

Val Ser Gln Ile Gly Ala Ser Asn Pro Gly Leu Ser Gly Cys Asp Val
180 185 190

Leu Ile Gln Ala Leu Leu Glu Ile Val Ser Ala Cys Val Thr Ile Leu
195 200 205

Ser Ser Ser Ser Ile Gly Gln Val Asn Tyr Gly Ala Ala Ser Gln Phe
210 215 220

Ala Gln Val Val Gly Gln Ser Val Leu Ser Ala Phe
225 230 235

<210> 66
<211> 296
<212> PRT
<213> Nephila clavipes (MaSp II)
<400> 66

Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Ser Gly Ala Gly Ser
1 5 10 15

Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly Gln Gln Gly Leu Gly Gly
20 25 30

Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln
35 40 45

Gly Pro Gly Gly Tyr Gly Pro Gly Ser Ala Ser Ala Ala Ala Ala Ala
50 55 60

Ala Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln
65 70 75 80

Gly Pro Ser Gly Pro Gly Ser Ala Ser Ala Ala Ala Ala Ala Ala Ala
85 90 95

558-33 PCT sequence listing_30 11 2010_ST25.txt

Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr
100 105 110

Ala Pro Gly Gln Gln Gly Pro Ser Gly Pro Gly Ser Ala Ala Ala Ala
115 120 125

Ala Ala Ala Ala Ala Gly Pro Gly Gly Tyr Gly Pro Ala Gln Gln Gly
130 135 140

Pro Ser Gly Pro Gly Ile Ala Ala Ser Ala Ala Ser Ala Gly Pro Gly
145 150 155 160

Gly Tyr Gly Pro Ala Gln Gln Gly Pro Ala Gly Tyr Gly Pro Gly Ser
165 170 175

Ala Val Ala Ala Ser Ala Gly Ala Gly Ser Ala Gly Tyr Gly Pro Gly
180 185 190

Ser Gln Ala Ser Ala Ala Ala Ser Arg Leu Ala Ser Pro Asp Ser Gly
195 200 205

Ala Arg Val Ala Ser Ala Val Ser Asn Leu Val Ser Ser Gly Pro Thr
210 215 220

Ser Ser Ala Ala Leu Ser Ser Val Ile Ser Asn Ala Val Ser Gln Ile
225 230 235 240

Gly Ala Ser Asn Pro Gly Leu Ser Gly Cys Asp Val Leu Ile Gln Ala
245 250 255

Leu Leu Glu Ile Val Ser Ala Cys Val Thr Ile Leu Ser Ser Ser
260 265 270

Ile Gly Gln Val Asn Tyr Gly Ala Ala Ser Gln Phe Ala Gln Val Val
275 280 285

Gly Gln Ser Val Leu Ser Ala Phe
290 295

<210> 67
<211> 332
<212> PRT
<213> Nephila clavipes (MaSp II)

<400> 67

Gly Pro Gly Gly Tyr Arg Pro Gly Gln Gln Gly Pro Ser Gly Pro Gly
1 5 10 15

Ser Ala Ala Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly Gly Tyr Gly
20 25 30

558-33 PCT sequence listing_30 11 2010_ST25.txt

Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro
35 40 45

Ser Gly Ala Gly Ser Ala Ala Ala Ala Ala Ala Gly Pro Gly Gln
50 55 60

Gln Gly Leu Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr
65 70 75 80

Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly Ser Ala Ser
85 90 95

Ala Ala Ala Ala Ala Ala Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr
100 105 110

Gly Pro Gly Gln Gln Gly Pro Ser Gly Pro Gly Ser Ala Ser Ala Ala
115 120 125

Ala Ala Ala Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro
130 135 140

Gly Gly Tyr Ala Pro Gly Gln Gln Gly Pro Ser Gly Pro Gly Ser Ala
145 150 155 160

Ala Ala Ala Ala Ala Ala Ala Arg Ala Gly Pro Gly Gly Tyr Gly Pro
165 170 175

Ala Gln Gln Gly Pro Ser Gly Pro Gly Ile Ala Ala Ser Ala Ala Ser
180 185 190

Ala Gly Pro Gly Gly Tyr Gly Pro Ala Gln Gln Gly Pro Ala Gly Tyr
195 200 205

Gly Pro Gly Ser Ala Val Ala Ala Ser Ala Gly Ala Gly Ser Ala Gly
210 215 220

Tyr Gly Pro Gly Ser Gln Ala Ser Ala Ala Ala Ser Arg Leu Ala Ser
225 230 235 240

Pro Asp Ser Gly Ala Arg Val Ala Ser Ala Val Ser Asn Leu Val Ser
245 250 255

Ser Gly Pro Thr Ser Ser Ala Ala Leu Ser Ser Val Ile Ser Asn Ala
260 265 270

Val Ser Gln Ile Gly Ala Ser Asn Pro Gly Leu Ser Gly Cys Asp Val
275 280 285

Leu Ile Gln Ala Leu Leu Glu Ile Val Ser Ala Cys Val Thr Ile Leu
290 295 300

Ser Ser Ser Ser Ile Gly Gln Val Asn Tyr Gly Ala Ala Ser Gln Phe
 305 310 315 320

Ala Gln Val Val Gly Gln Ser Val Leu Ser Ala Phe
 325 330

<210> 68
 <211> 313
 <212> PRT
 <213> Nephila clavipes (MaSp II)

<400> 68

Gly Arg Gly Ala Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly Gln
 1 5 10 15

Gln Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Ser Gly Pro
 20 25 30

Gly Ser Ala Ala Ala Ala Ala Ala Ala Ala Ser Gly Pro Gly Gln Gln
 35 40 45

Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly
 50 55 60

Pro Gly Gln Gln Ser Pro Ser Gly Pro Gly Ser Ala Ala Ala Ala Ala
 65 70 75 80

Ala Ala Ala Ala Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro
 85 90 95

Gly Gln Gln Gly Pro Ser Gly Pro Gly Ser Ala Ser Ala Ala Ala Ala
 100 105 110

Ala Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gly
 115 120 125

Tyr Ala Pro Gly Gln Gln Gly Pro Ser Gly Pro Gly Ser Ala Ala Ala
 130 135 140

Ala Ala Ala Ala Arg Ala Gly Pro Gly Gly Tyr Gly Pro Ala Gln Gln
 145 150 155 160

Gly Pro Ser Gly Pro Gly Ile Ala Ala Ser Ala Ala Ser Ala Gly Pro
 165 170 175

Gly Gly Tyr Gly Pro Ala Gln Gln Gly Pro Ala Gly Tyr Gly Pro Gly
 180 185 190

Ser Ala Val Ala Ala Ser Ala Gly Ala Gly Ser Ala Gly Tyr Gly Pro
 195 200 205

Gly Ser Gln Ala Ser Ala Ala Ala Ser Arg Leu Ala Ser Pro Asp Ser
 Page 57

210 558-33 PCT sequence listing_30 11 2010_ST25.txt
215 220

Gly Ala Arg Val Ala Ser Ala Val Ser Asn Leu Val Ser Ser Gly Pro
225 230 235 240

Thr Ser Ser Ala Ala Leu Ser Ser Val Ile Ser Asn Ala Val Ser Gln
245 250 255

Ile Gly Ala Ser Asn Pro Gly Leu Ser Gly Cys Asp Val Leu Ile Gln
260 265 270

Ala Leu Leu Glu Ile Val Ser Ala Cys Val Thr Ile Leu Ser Ser Ser
275 280 285

Ser Ile Gly Gln Val Asn Tyr Gly Ala Ala Ser Gln Phe Ala Gln Val
290 295 300

Val Gly Gln Ser Val Leu Ser Ala Phe
305 310

<210> 69
<211> 313
<212> PRT
<213> Nephila clavipes (MaSp II)

<400> 69

Ser Ala Ala Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly Gly Tyr Gly
1 5 10 15

Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro
20 25 30

Ser Gly Ala Gly Ser Ala Ala Ala Ala Gly Pro Gly Gln Gln Gly
35 40 45

Leu Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro
50 55 60

Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly Ser Ala Ser Ala Ala
65 70 75 80

Ala Ala Ala Ala Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro
85 90 95

Gly Gln Gln Gly Pro Ser Gly Pro Gly Ser Ala Ser Ala Ala Ala Ala
100 105 110

Ala Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gly
115 120 125

Tyr Ala Pro Gly Gln Gln Gly Pro Ser Gly Pro Gly Ser Ala Ala Ala
130 135 140

558-33 PCT sequence listing_30 11 2010_ST25.txt

Ala Ala Ala Ala Ala Ala Gly Pro Gly Gly Tyr Gly Pro Ala Gln Gln
145 150 155 160

Gly Pro Ser Gly Pro Gly Ile Ala Ala Ser Ala Ala Ser Ala Gly Pro
165 170 175

Gly Gly Tyr Gly Pro Ala Gln Gln Gly Pro Ala Gly Tyr Gly Pro Gly
180 185 190

Ser Ala Val Ala Ala Ser Ala Gly Ala Gly Ser Ala Gly Tyr Gly Pro
195 200 205

Gly Ser Gln Ala Ser Ala Ala Ala Ser Arg Leu Ala Ser Pro Asp Ser
210 215 220

Gly Ala Arg Val Ala Ser Ala Val Ser Asn Leu Val Ser Ser Gly Pro
225 230 235 240

Thr Ser Ser Ala Ala Leu Ser Ser Val Ile Ser Asn Ala Val Ser Gln
245 250 255

Ile Gly Ala Ser Asn Pro Gly Leu Ser Gly Cys Asp Val Leu Ile Gln
260 265 270

Ala Leu Leu Glu Ile Val Ser Ala Cys Val Thr Ile Leu Ser Ser Ser
275 280 285

Ser Ile Gly Gln Val Asn Tyr Gly Ala Ala Ser Gln Phe Ala Gln Val
290 295 300

Val Gly Gln Ser Val Leu Ser Ala Phe
305 310

<210> 70
<211> 230
<212> PRT
<213> Nephila senegalensis (MaSp II)

<220>
<221> misc_feature
<222> (47)..(47)
<223> Xaa can be any naturally occurring amino acid

<220>
<221> misc_feature
<222> (183)..(183)
<223> Xaa can be any naturally occurring amino acid

<220>
<221> misc_feature
<222> (204)..(204)
<223> Xaa can be any naturally occurring amino acid

<400> 70

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gln Gly Pro Gly Gly Tyr Gly Pro Ser Gly Pro Gly Ser Ala Ala Ala
1 5 10 15

Ala Ser Ala Ala Ala Gly Pro Gly Gln Gln Gly Pro Gly Ala Tyr Gly
20 25 30

Pro Ser Gly Pro Gly Ser Ala Ala Ala Ala Gly Pro Gly Xaa Tyr
35 40 45

Gly Pro Gly Gln Gln Gly Pro Ser Gly Pro Gly Ala Ala Ala Ala Ala
50 55 60

Ala Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly Ala Ala
65 70 75 80

Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly Gln Gln Gly Pro Val Ala
85 90 95

Tyr Gly Pro Ser Gly Pro Gly Ser Ala Ala Ser Ala Ala Gly Pro Gly
100 105 110

Gly Tyr Gly Pro Ala Arg Tyr Gly Pro Ser Gly Ser Ala Ala Ala Ala
115 120 125

Ala Ala Ala Gly Ala Gly Ser Ala Gly Tyr Gly Pro Gly Pro Gln Ala
130 135 140

Ser Ala Ala Ala Ser Arg Leu Ala Ser Pro Asp Ser Gly Ala Arg Val
145 150 155 160

Ala Ser Ala Val Ser Asn Leu Val Ser Ser Gly Pro Thr Ser Ser Ala
165 170 175

Ala Leu Ser Ser Val Ile Xaa Asn Ala Val Ser Gln Ile Gly Ala Ser
180 185 190

Asn Pro Gly Leu Ser Gly Cys Asp Val Leu Ile Xaa Ala Leu Leu Glu
195 200 205

Ile Val Ser Ala Cys Val Thr Ile Leu Ser Ser Ser Ser Ile Gly Gln
210 215 220

Val Asn Tyr Gly Ala Ala
225 230

<210> 71
<211> 563
<212> PRT
<213> Nephila madagascariensis (MaSp II)
<400> 71

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gln Gly Pro Ser Gly Pro Gly Ser Ala Ala Ala Ala Ala Ala Gly
1 5 10 15

Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro
20 25 30

Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Ser Gly Pro Gly Ser Ala
35 40 45

Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly Gln Gln Gly Pro
50 55 60

Gly Gly Tyr Gly Pro Gly Pro Gln Gly Pro Gly Gly Tyr Gly Pro Gly
65 70 75 80

Gln Gln Gly Pro Ser Gly Tyr Gly Pro Gly Gln Gln Gly Pro Ser Gly
85 90 95

Pro Gly Ser Ala Ala Ser Ala Ala Ala Ala Ala Gly Ser Gly Gln Gln
100 105 110

Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly
115 120 125

Pro Gly Gln Gln Gly Pro Ser Gly Pro Gly Ser Ala Ala Ala Ala Ala
130 135 140

Ala Ala Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly Gln
145 150 155 160

Gln Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Ser Gly Pro
165 170 175

Gly Ser Ala Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly Gln Gln Gly
180 185 190

Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro
195 200 205

Gly Gln Gln Gly Pro Ser Gly Pro Gly Ser Ala Ala Ala Ala Ala Ala
210 215 220

Ala Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln
225 230 235 240

Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Ser Gly Pro Gly
245 250 255

Ser Ala Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly Gln Gln Gly
260 265 270

558-33 PCT sequence listing_30 11 2010_ST25.txt

Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro
275 280 285

Ser Gly Pro Gly Ser Ala Ala Ala Ala Ala Ala Gly Pro Gly Pro
290 295 300

Gln Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr
305 310 315 320

Gly Pro Ser Gly Pro Gly Ser Ala Ala Ala Ala Ala Ala Ala Gly
325 330 335

Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Arg Pro
340 345 350

Ser Gly Tyr Gly Pro Gly Gln Gln Gly Pro Ser Gly Pro Gly Ser Ala
355 360 365

Ala Ala Ala Ala Ala Ala Gly Pro Gly Gln Gln Gly Pro Gly Ala Tyr
370 375 380

Gly Pro Ser Gly Pro Gly Ser Ala Ala Ala Ala Gly Leu Gly Gly
385 390 395 400

Tyr Gly Pro Ala Gln Gln Gly Pro Ser Gly Ala Gly Ser Ala Ala Ala
405 410 415

Ala Ala Ala Ala Gly Pro Gly Gly Tyr Gly Pro Val Gln Gln Gly Pro
420 425 430

Ser Gly Pro Gly Ser Ala Ala Gly Pro Gly Gly Tyr Gly Pro Ala Gln
435 440 445

Gln Gly Pro Ala Arg Tyr Gly Pro Gly Ser Ala Ala Ala Ala Ala Ala
450 455 460

Ala Ala Gly Ser Ala Gly Tyr Gly Pro Gly Pro Gln Ala Ser Ala Ala
465 470 475 480

Ala Ser Arg Leu Ala Ser Pro Asp Ser Gly Ala Arg Val Ala Ser Ala
485 490 495

Val Ser Asn Leu Val Ser Ser Gly Pro Thr Ser Ser Ala Ala Leu Ser
500 505 510

Ser Val Ile Ser Asn Ala Val Ser Gln Ile Gly Ala Ser Asn Pro Gly
515 520 525

Leu Ser Gly Cys Asp Val Leu Ile Gln Ala Leu Leu Glu Ile Val Ser
530 535 540

Ala Cys Val Thr Ile Leu Ser Ser Ser Ser Ile Gly Gln Val Asn Tyr
 545 550 555 560

Gly Ala Ala

<210> 72
 <211> 399
 <212> PRT
 <213> Latrodectus geometricus (MaSp II)

<220>
 <221> misc_feature
 <222> (173)..(173)
 <223> Xaa can be any naturally occurring amino acid

<220>
 <221> misc_feature
 <222> (186)..(186)
 <223> Xaa can be any naturally occurring amino acid

<220>
 <221> misc_feature
 <222> (211)..(211)
 <223> Xaa can be any naturally occurring amino acid

<220>
 <221> misc_feature
 <222> (267)..(267)
 <223> Xaa can be any naturally occurring amino acid

<220>
 <221> misc_feature
 <222> (298)..(298)
 <223> Xaa can be any naturally occurring amino acid

<400> 72

Ala Gly Pro Gly Ser Tyr Gly Pro Ser Gly Pro Gly Gly Ser Gly Ala
 1 5 10 15

Ala Ala Ala Ala Ala Ala Ala Ser Gly Pro Gly Gly Gln Gln Gly Tyr
 20 25 30

Gly Pro Gly Gly Pro Gly Ala Ser Ala Ala Ala Ala Ala Ala Ala Gly
 35 40 45

Gly Ser Gly Pro Gly Gly Tyr Gly Gln Gly Pro Ser Gly Tyr Gly Pro
 50 55 60

Ser Gly Pro Gly Ala Gln Gln Gly Tyr Gly Pro Gly Gly Gln Gly Gly
 65 70 75 80

Ser Gly Ala Ala Ala Ala Ala Ala Ala Ala Ala Gly Ser Gly Pro Gly
 85 90 95

Gly Tyr Gly Pro Gly Ala Ala Gly Pro Gly Asn Tyr Gly Pro Ser Gly
 100 105 110

558-33 PCT sequence listing_30 11 2010_ST25.txt

Pro Gly Gly Ser Gly Ala Ala Ala Ser Ala Ala Ala Ala Ser Gly Pro
115 120 125

Gly Gly Gln Gln Gly Tyr Gly Pro Gly Gly Ser Gly Ala Ala Ala Ala
130 135 140

Ala Ala Ser Gly Gly Ala Gly Pro Gly Arg Gln Gln Gly Tyr Gly Pro
145 150 155 160

Gly Gly Ser Gly Ala Ala Ala Ala Ala Ala Ala Ala Xaa Gly Gly Ser
165 170 175

Gly Pro Gly Gly Tyr Gly Gln Gly Pro Xaa Gly Tyr Gly Pro Gly Gly
180 185 190

Gln Gly Gly Ser Gly Gly Ala Ala Ala Ala Ala Ala Ala Ala Ser Ser
195 200 205

Gly Pro Xaa Gly Tyr Gly Pro Gly Ala Ala Gly Pro Gly Asn Tyr Gly
210 215 220

Pro Ser Gly Pro Gly Gly Ser Gly Ala Ala Ala Ala Ala Ala Ala Ala
225 230 235 240

ser Gly Pro Gly Gly Gln Gln Gly Tyr Gly Pro Gly Gly Ser Gly Ala
245 250 255

Ser Ala Ala Ala Ala Ala Gly Gly Ala Gly Xaa Gly Arg Gln Gln Ala
260 265 270

Tyr Gly Pro Gly Gly Ser Gly Ala Ala Ala Ala Ala Ala Ser Gly Ser
275 280 285

Gly Gly Tyr Gly Pro Ala Gln Tyr Gly Xaa Ser Ser Val Ala Ser Ser
290 295 300

Ala Ala Ser Ala Ala Ser Ala Leu Ser Ser Pro Thr Thr His Ala Arg
305 310 315 320

Ile Ser Ser His Ala Ser Thr Leu Leu Ser Ser Gly Pro Thr Asn Ser
325 330 335

Ala Ala Ile Ser Asn Val Ile Ser Asn Ala Val Ser Gln Val Ser Ala
340 345 350

Ser Asn Pro Gly Ser Ser Ser Cys Asp Val Leu Val Gln Ala Leu Leu
355 360 365

Glu Leu Ile Thr Ala Leu Ile Ser Ile Val Asp Ser Ser Asn Ile Gly
370 375 380

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gln Val Asn Tyr Gly Ser Ser Gly Gln Tyr Ala Gln Met Val Gly
385 390 395

<210> 73
<211> 444
<212> PRT
<213> Argiope trifasciata (MaSp II)

<400> 73

Ala Gly Pro Gly Tyr Gly Pro Gly Ala Gly Gln Gln Gly Pro Gly Ser
1 5 10 15

Gln Gly Pro Gly Ser Gly Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro
20 25 30

Tyr Gly Pro Ser Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly Tyr
35 40 45

Gly Pro Gly Ala Gly Gln Gln Gly Pro Gly Ser Gly Gly Gln Gln Gly
50 55 60

Gly Gln Gly Ser Gly Gln Gln Gly Pro Gly Gly Ala Gly Gln Gly Gly
65 70 75 80

Pro Arg Gly Gln Gly Pro Tyr Gly Pro Gly Ala Ala Ala Ala Ala Ala
85 90 95

Ala Ala Gly Gly Tyr Gly Pro Gly Ala Gly Gln Gln Gly Pro Gly Ser
100 105 110

Gln Gly Pro Gly Ser Gly Gly Gln Gln Gly Pro Gly Ser Gln Gly Pro
115 120 125

Tyr Gly Pro Ser Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly Tyr
130 135 140

Gly Pro Gly Ala Gly Gln Gln Gly Pro Gly Ser Gln Gly Pro Gly Ser
145 150 155 160

Gly Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro Tyr Gly Pro Ser Asp
165 170 175

Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly Tyr Gly Pro Gly Ala Gly
180 185 190

Gln Gln Gly Pro Gly Ser Gly Gly Gln Gln Gly Gly Gln Gly Ser Gly
195 200 205

Gln Gln Gly Pro Gly Gly Ala Gly Gln Gly Gly Pro Arg Gly Gln Gly
210 215 220

558-33 PCT sequence listing_30 11 2010_ST25.txt

Pro Tyr Gly Pro Gly Ala Ala Ala Ala Ala Ala Ala Gly Gly Tyr
225 230 235 240

Gly Pro Gly Ala Gly Gln Gln Gly Pro Gly Ser Gln Gly Pro Gly Ser
245 250 255

Gly Gly Gln Gln Gly Pro Gly Ser Gln Gly Pro Tyr Gly Pro Ser Ala
260 265 270

Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly Tyr Gly Pro Gly Ala Gly
275 280 285

Gln Gln Gly Pro Gly Ser Gln Gly Pro Gly Ser Gly Gly Gln Gln Gly
290 295 300

Pro Gly Ser Gln Gly Pro Tyr Gly Pro Ser Ala Ala Ala Ala Ala Ala
305 310 315 320

Ala Ala Gly Pro Gly Tyr Gly Pro Gly Ala Gly Gln Gln Gly Pro Gly
325 330 335

Ser Gln Ala Pro Val Ala Ser Ala Ala Ala Ser Arg Leu Ser Ser Pro
340 345 350

Gln Ala Ser Ser Arg Val Ser Ser Ala Val Ser Thr Leu Val Ser Ser
355 360 365

Gly Pro Thr Asn Pro Ala Ser Leu Ser Asn Ala Ile Ser Ser Val Val
370 375 380

Ser Gln Val Ser Ser Ser Asn Pro Gly Leu Ser Gly Cys Asp Val Leu
385 390 395 400

Val Gln Ala Leu Leu Glu Ile Val Ser Ala Leu Val His Ile Leu Gly
405 410 415

Ser Ser Ser Ile Gly Gln Ile Asn Tyr Ala Ala Ser Ser Gln Tyr Ala
420 425 430

Gln Leu Val Gly Gln Ser Leu Thr Gln Ala Leu Gly
435 440

<210> 74
<211> 349
<212> PRT
<213> Argiope aurantia (MaSp II)

<220>
<221> misc_feature
<222> (39)..(39)
<223> Xaa can be any naturally occurring amino acid
<400> 74

558-33 PCT sequence listing_30 11 2010_ST25.txt

Pro Gly Gly Ala Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro Tyr Gly
1 5 10 15

Pro Gly Ala Ala Ala Ala Ala Ala Ala Gly Gly Tyr Gly Pro Gly
20 25 30

Ala Gly Gln Gln Gly Pro Xaa Gly Ala Gly Gln Gln Gly Pro Gly Ser
35 40 45

Gln Gly Pro Gly Gly Ala Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro
50 55 60

Tyr Gly Pro Gly Ala Ala Ala Ala Ala Ala Val Gly Gly Tyr Gly
65 70 75 80

Pro Gly Ala Gly Gln Gln Gly Pro Gly Ser Gln Gly Pro Gly Ser Gly
85 90 95

Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro Tyr Gly Pro Ser Ala Ala
100 105 110

Ala Ala Ala Ala Ala Ala Gly Gly Tyr Gly Pro Gly Ala Gly Gln Gln
115 120 125

Gly Pro Gly Ser Gln Gly Pro Gly Ser Gly Gly Gln Gln Gly Pro Gly
130 135 140

Gly Leu Gly Pro Tyr Gly Pro Ser Ala Ala Ala Ala Ala Ala Ala Ala
145 150 155 160

Gly Gly Tyr Gly Pro Gly Ala Gly Gln Gln Gly Pro Gly Ser Gln Gly
165 170 175

Pro Gly Ser Gly Gly Gln Gln Arg Pro Gly Gly Leu Gly Pro Tyr Gly
180 185 190

Pro Ser Ala Ala Ala Ala Ala Ala Ala Ala Ala Gly Gly Tyr Gly Pro Gly
195 200 205

Ala Gly Gln Gln Gly Pro Gly Ser Gln Gly Pro Gly Ser Gly Gly Gln
210 215 220

Gln Arg Pro Gly Gly Leu Gly Pro Tyr Gly Pro Ser Ala Ala Ala Ala
225 230 235 240

Ala Ala Ala Ala Gly Gly Tyr Gly Pro Gly Ala Gly Gln Gln Gly Pro
245 250 255

Gly Ser Gln Ala Pro Val Ala Ser Ala Ala Ala Ser Arg Leu Ser Ser
260 265 270

558-33 PCT sequence listing_30 11 2010_ST25.txt

Pro Gln Ala Ser Ser Arg Val Ser Ser Ala Val Ser Thr Leu Val Ser
275 280 285

Ser Gly Pro Thr Asn Pro Ala Ala Leu Ser Asn Ala Ile Ser Ser Val
290 295 300

Val Ser Gln Val Ser Ala Ser Asn Pro Gly Leu Ser Gly Cys Asp Val
305 310 315 320

Leu Val Gln Ala Leu Leu Glu Leu Val Ser Ala Leu Val His Ile Leu
325 330 335

Gly Ser Ser Ser Ile Gly Gln Ile Asn Tyr Ala Ala Ser
340 345

<210> 75

<211> 231

<212> PRT

<213> Argiope trifasciata (MaSp II)

<400> 75

Gly Gln Gly Ser Gly Gln Gln Arg Pro Gly Gly Ala Gly Gln Gly Gly
1 5 10 15

Leu Gly Pro Tyr Gly Pro Gly Ala Ala Ala Ala Ala Ala Ala Ala Ala
20 25 30

Gly Gly Tyr Gly Pro Gly Ala Gly Gln Gln Gly Pro Gly Ser Gln Gly
35 40 45

Pro Gly Ser Gly Gly Gln Gln Gly Pro Gly Ser Arg Gly Pro Tyr Gly
50 55 60

Pro Ser Ala Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly Tyr Gly Pro
65 70 75 80

Gly Ala Gly Gln Arg Gly Pro Arg Ser Gln Gly Pro Gly Ser Gly Gly
85 90 95

Gln Gln Gly Pro Gly Gly Gln Gly Pro Tyr Gly Pro Ser Ala Ala Ala
100 105 110

Ala Ala Ala Ala Ala Gly Pro Gly Tyr Gly Pro Gly Ala Gly Gln Gln
115 120 125

Gly Pro Gly Ser Gln Ala Pro Val Ala Ser Ala Ala Ala Ser Arg Leu
130 135 140

Ser Ser Pro Gln Ala Ser Ser Arg Val Ser Ser Ala Val Ser Thr Leu
145 150 155 160

558-33 PCT sequence listing_30 11 2010_ST25.txt

Val Ser Ser Gly Pro Thr Asn Pro Ala Ser Leu Ser Asn Ala Ile Ser
165 170 175

Ser Val Val Ser Gln Val Ser Ala Ser Asn Pro Gly Leu Ser Gly Cys
180 185 190

Asp Val Leu Val Gln Ala Leu Leu Glu Ile Val Ser Ala Leu Val His
195 200 205

Ile Leu Gly Ser Ser Ser Ile Gly Gln Ile Asn Tyr Ala Ala Ser Ser
210 215 220

Gln Tyr Ala Gln Met Val Gly
225 230

<210> 76
<211> 661
<212> PRT
<213> Argiope trifasciata (MaSp II)

<400> 76

Met Asn Trp Ser Ile Arg Leu Ala Leu Leu Gly Phe Val Val Leu Ser
1 5 10 15

Thr Gln Thr Val Phe Ser Ala Gly Gln Gly Ala Thr Pro Trp Glu Asn
20 25 30

Ser Gln Leu Ala Glu Ser Phe Ile Ser Arg Phe Leu Arg Phe Ile Gly
35 40 45

Gln Ser Gly Ala Phe Ser Pro Asn Gln Leu Asp Asp Met Ser Ser Ile
50 55 60

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

Ser Ser Lys Ser Lys Leu Gln Ala Leu Asn Met Ala Phe Ala Ser Ser
85 90 95

Met Ala Glu Ile Ala Val Ala Glu Gln Gly Gly Leu Ser Leu Glu Ala
100 105 110

Lys Thr Asn Ala Ile Ala Ser Ala Leu Ser Ala Ala Phe Leu Glu Thr
115 120 125

Thr Gly Tyr Val Asn Gln Gln Phe Val Asn Glu Ile Lys Thr Leu Ile
130 135 140

Phe Met Ile Ala Gln Ala Ser Ser Asn Glu Ile Ser Gly Ser Ala Ala
145 150 155 160

Ala Ala Gly Gly Ser Ser Gly Gly Gly Gly Gly Ser Gly Gln Gly Gly
Page 69

Tyr Gly Gln Gly Ala Tyr Ala Ser Ala Ser Ala Ala Ala Ala Tyr Gly
180 185 190

Ser Ala Pro Gln Gly Thr Gly Gly Pro Ala Ser Gln Gly Pro Ser Gln
195 200 205

Gln Gly Pro Val Ser Gln Pro Ser Tyr Gly Pro Ser Ala Thr Val Ala
210 215 220

Val Thr Ala Val Gly Gly Arg Pro Gln Gly Pro Ser Ala Pro Arg Gln
225 230 235 240

Gln Gly Pro Ser Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gly Arg
245 250 255

Gly Pro Tyr Gly Pro Ser Ala Ala Ala Ala Ala Ala Ala Ala Gly Gly
260 265 270

Tyr Gly Pro Gly Ala Gly Gln Gln Gly Gln Gln Ala Gly Gln Gly Ser
275 280 285

Gly Gln Gln Gly Pro Gly Gly Ala Gly Gln Gly Gly Pro Arg Gly Gln
290 295 300

Gly Pro Tyr Gly Pro Gly Ala Ala Thr Ala Ala Ala Ala Ala Ala Gly
305 310 315 320

Pro Gly Tyr Gly Pro Gly Ala Gly Gln Gln Gly Pro Gly Ser Gln Gly
325 330 335

Pro Gly Ser Gly Gly Gln Gln Gly Pro Gly Ser Gln Gly Pro Tyr Gly
340 345 350

Pro Ser Ala Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly Tyr Gly Pro
355 360 365

Gly Ala Gly Gln Gln Gly Pro Gly Ser Gln Gly Pro Arg Ser Gly Gly
370 375 380

Gln Gln Gly Pro Gly Gly Gln Gly Pro Tyr Gly Pro Ser Ala Ala Ala
385 390 395 400

Ala Ala Ala Ala Ala Gly Pro Gly Tyr Gly Pro Gly Ala Gly Gln Gln
405 410 415

Gly Pro Gly Ser Gly Gly Gln Gln Gly Gly Pro Gly Ser Gly Gln Gln
420 425 430

Gly Pro Gly Gly Ala Gly Gln Gly Gly Pro Arg Gly Gln Gly Pro Tyr

Gly Pro Gly Ala Ala Ala Ala Ala Ala Ala Ala Ala Gly Gly Tyr Gly
450 455 460

Pro Gly Ala Gly Gln Gln Gly Pro Gly Ser Gln Gly Pro Gly Ser Gly
465 470 475 480

Gly Gln Gln Gly Pro Gly Ser Gln Gly Pro Tyr Gly Pro Ser Ala Ala
485 490 495

Ala Ala Ala Ala Ala Ala Gly Pro Gly Tyr Gly Pro Gly Ala Gly Gln
500 505 510

Gln Gly Pro Gly Ser Gln Gly Pro Gly Ser Gly Gly Gln Gln Gly Pro
515 520 525

Gly Gly Gln Gly Pro Tyr Gly Pro Ser Ala Ala Ala Ala Ala Ala Ala
530 535 540

Ala Gly Pro Gly Tyr Gly Pro Gly Ala Gly Gln Gln Gly Pro Gly Ser
545 550 555 560

Gly Gly Gln Gln Gly Gly Gln Gly Ser Gly Gln Gln Gly Pro Gly Gly
565 570 575

Ala Gly Gln Gly Gly Pro Arg Gly Gln Gly Pro Tyr Gly Pro Gly Ala
580 585 590

Ala Ala Ala Ala Ala Ala Ala Ala Gly Gly Tyr Gly Pro Gly Ala Gly
595 600 605

Gln Gln Gly Pro Gly Ser Gln Gly Pro Gly Ser Gly Gly Gln Gln Gly
610 615 620

Pro Gly Ser Gln Gly Pro Tyr Gly Pro Ser Ala Ala Ala Ala Ala Ala
625 630 635 640

Ala Ala Gly Pro Gly Tyr Gly Pro Gly Ala Gly Gln Gln Gly Pro Gly
645 650 655

Ser Gly Gly Gln Gln
660

<210> 77
<211> 388
<212> PRT
<213> Latrodectus geometricus (MaSp II)

<400> 77

Leu Arg Trp Ser Ser Lys Asp Asn Ala Asp Arg Phe Ile Asn Ala Phe
1 5 10 15

558-33 PCT sequence listing_30 11 2010_ST25.txt

Leu Gln Ala Ala Ser Asn Ser Gly Ala Phe Ser Ser Asp Gln Val Asp
20 25 30

Asp Met Ser Val Ile Gly Asn Thr Leu Met Thr Ala Met Asp Asn Met
35 40 45

Gly Gly Arg Ile Thr Pro Ser Lys Leu Gln Ala Leu Asp Met Ala Phe
50 55 60

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

Gly Ala Thr Asn Ala Ile Ser Asn Ala Leu Arg Ser Ala Phe Tyr Gln
85 90 95

Thr Thr Gly Val Val Asn Asn Gln Phe Ile Ser Glu Ile Ser Asn Leu
100 105 110

Ile Asn Met Phe Ala Gln Val Ser Ala Asn Glu Val Ser Tyr Ala Ser
115 120 125

Gly Gly Ser Ser Ser Ala Ala Ala Ser Ala Ala Ala Ser Ala Gly Pro
130 135 140

Ala Ala Gln Gln Val Tyr Ala Pro Ser Ala Gly Ala Pro Ala Ala Ala
145 150 155 160

Thr Ala Ser Ser Gly Pro Gly Ala Tyr Gly Pro Ser Ala Pro Gly Gly
165 170 175

Pro Ser Ala Ala Ala Ala Ala Ala Ala Ser Gly Gly Ala Gly Pro Gly
180 185 190

Arg Gln Gln Ser Tyr Gly Pro Gly Gly Ser Gly Ala Ala Ala Ala Ala
195 200 205

Ala Ala Thr Gly Gly Ser Gly Pro Gly Gly Tyr Gly Gln Gly Pro Ala
210 215 220

Ser Tyr Ala Pro Ser Gly Pro Gly Gly Gln Gln Gly Tyr Gly Pro Gly
225 230 235 240

Gly Ser Gly Ala Ala Ser Ala Ala Ala Ala Ala Ala Ser Ser Gly Pro
245 250 255

Gly Gly Tyr Gly Pro Gly Ala Ser Gly Pro Gly Ser Tyr Gly Pro Ser
260 265 270

Gly Pro Gly Gly Ser Gly Ala Ala Ala Ala Ala Ala Ala Ala Ser Ala
275 280 285

558-33 PCT sequence listing_30 11 2010_ST25.txt

Pro Gly Gly Gln Gln Gly Tyr Gly Pro Gly Gly Ser Gly Ala Ala Ala
290 295 300

Ala Ala Ala Ala Gly Gly Ala Gly Pro Gly Ser Gln Gln Ala Tyr Gly
305 310 315 320

Pro Gly Gly Ser Gly Ala Ala Ala Ala Ala Ala Gly Pro Gly Ser
325 330 335

Gly Gly Gln Gln Gly Tyr Gly Pro Gly Gly Ser Ala Ala Ala Ala
340 345 350

Ala Ala Ala Ala Gly Gly Ser Gly Pro Gly Gly Tyr Gly Gln Gly Pro
355 360 365

Ala Gly Tyr Gly Pro Ser Gly Pro Gly Ala Gln Gln Gly Tyr Gly Pro
370 375 380

Gly Gly Pro Gly
385

<210> 78
<211> 342
<212> PRT
<213> Gasteracantha mammosa (MaSp II)
<400> 78

Gly Gln Gln Gly Pro Gly Ser Gln Gly Pro Tyr Gly Pro Gly Ala Ala
1 5 10 15

Ala Ala Ala Ala Ala Ala Ala Gly Gly Tyr Arg Pro Val Ser Gly Gln
20 25 30

Gln Gly Pro Gly Gln Gln Gly Pro Gly Ser Gly Gly Gln Gln Gly Pro
35 40 45

Gly Gly Gln Arg Pro Tyr Gly Pro Gly Ala Ala Ala Ala Ala Ala Ala
50 55 60

Ala Gly Gly Tyr Gly Pro Gly Ser Gly Gln Gly Gly Pro Gly Gln Gln
65 70 75 80

Gly Pro Gly Ser Gly Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro Tyr
85 90 95

Gly Pro Gly Ala Ala Ala Ala Ala Ala Ala Ala Ala Gly Gly Tyr Gly
100 105 110

Pro Gly Ser Gly Gln Gly Gly Gln Gln Gly Pro Gly Ser Gln Gly Pro
115 120 125

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Ser Gly Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro Tyr Gly Pro
130 135 140

Ser Ala Ala Ala Ala Ala Ala Ala Val Gly Gly Tyr Gly Pro Gly Ala
145 150 155 160

Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Ser Gly Gly Gln Arg
165 170 175

Gly Pro Gly Gly Gln Gly Pro Tyr Gly Pro Gly Ala Ala Ala Ala Ala
180 185 190

Ala Ala Ala Ala Gly Gly Tyr Gly Pro Ala Ser Gly Gln Gln Gly Pro
195 200 205

Gly Gln Gln Gly Pro Gly Ser Gly Gly Gln Arg Gly Pro Gly Gly Gln
210 215 220

Gly Pro Tyr Gly Pro Gly Ala Ala Ala Ala Ala Ser Ala Gly Gly Tyr
225 230 235 240

Gly Pro Gly Ser Gly Gly Ser Pro Ala Ser Gly Ala Ala Ser Arg Leu
245 250 255

Ser Ser Pro Gln Ala Gly Ala Arg Val Ser Ser Ala Val Ser Ala Leu
260 265 270

Val Ala Ser Gly Pro Thr Ser Pro Ala Ala Val Ser Ser Ala Ile Ser
275 280 285

Asn Val Ala Ser Gln Ile Ser Ala Ser Asn Pro Gly Leu Ser Gly Cys
290 295 300

Asp Val Leu Val Gln Ala Leu Leu Glu Ile Val Ser Ala Leu Val Ser
305 310 315 320

Ile Leu Ser Ser Ala Ser Ile Gly Gln Ile Asn Tyr Gly Ala Ser Gly
325 330 335

Gln Tyr Ala Ala Met Ile
340

<210> 79
<211> 251
<212> PRT
<213> Nephila clavipes (MisP)
<400> 79

Gly Ala Gly Gly Tyr Gly Arg Gly Ala Gly Ala Gly Ala Ala Ala Val
1 5 10 15

558-33 PCT sequence listing_30 11 2010_ST25.txt

Ala Gly Ala Asp Ala Gly Gly Tyr Gly Arg Asn Tyr Gly Ala Gly Thr
20 25 30

Thr Ala Tyr Ala Gly Ala Arg Ala Gly Gly Ala Gly Gly Tyr Gly Gly
35 40 45

Gln Gly Gly Tyr Ser Ser Gly Ala Gly Ala Ala Ala Ala Ser Gly Ala
50 55 60

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

Gly Ala Glu Thr Ile Gly Ala Gly Gly Tyr Gly Gly Gly Ala Gly Ser
85 90 95

Gly Ala Arg Ala Ala Ser Ala Ser Gly Ala Gly Thr Gly Tyr Gly Ser
100 105 110

Ser Gly Gly Tyr Asn Val Gly Thr Gly Ile Ser Thr Ser Ser Gly Ala
115 120 125

Ala Ser Ser Tyr Ser Val Ser Ala Gly Gly Tyr Ala Ser Thr Gly Val
130 135 140

Gly Ile Gly Ser Thr Val Thr Ser Thr Thr Ser Arg Leu Ser Ser Ala
145 150 155 160

Glu Ala Cys Ser Arg Ile Ser Ala Ala Ala Ser Thr Leu Val Ser Gly
165 170 175

Ser Leu Asn Thr Ala Ala Leu Pro Ser Val Ile Ser Asp Leu Phe Ala
180 185 190

Gln Val Ser Ala Ser Ser Pro Gly Val Ser Gly Asn Glu Val Leu Ile
195 200 205

Gln Val Leu Leu Glu Ile Val Ser Ser Leu Ile His Ile Leu Ser Ser
210 215 220

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

Ala Val Gly Gln Ser Met Gln Val Val Met Gly
245 250

<210> 80
<211> 157
<212> PRT
<213> Nephila clavipes (MiSp II)
<400> 80

Ser Tyr Gly Pro Ser Val Phe Tyr Thr Pro Thr Ser Ala Gly Ser Tyr
Page 75

Gly Ala Gly Ala Gly Gly Phe Gly Ala Gly Ala Ser Ala Gly Val Gly
20 25 30

Ala Gly Ala Gly Thr Val Ala Gly Tyr Gly Gly Gln Gly Gly Tyr Gly
35 40 45

Ala Gly Ser Ala Gly Gly Tyr Gly Arg Gly Thr Gly Ala Gly Ala Ala
50 55 60

Ala Gly Ala Gly Ala Gly Ala Thr Ala Gly Ala Gly Ala Gly Ala Ala
65 70 75 80

Ala Gly Ala Gly Ala Gly Ala Gly Asn Ser Gly Gly Tyr Ser Ala Gly
85 90 95

Val Gly Val Gly Ala Ala Ala Ala Ala Ala Gly Gly Gly Ala Gly Thr
100 105 110

Val Gly Gly Tyr Gly Arg Gly Ala Gly Val Gly Ala Gly Ala Ala Ala
115 120 125

Gly Phe Ala Ala Gly Ala Gly Gly Ala Gly Gly Tyr Arg Arg Asp Gly
130 135 140

Gly Tyr Gly Ala Gly Ala Gly Ala Gly Ala Ala Ala Ala
145 150 155

<210> 81
<211> 988
<212> PRT
<213> Nephila clavipes (Misp I)

<400> 81

Arg Gly Ala Ala Ser Gly Ala Gly Ala Ala Ala Gly Ala Gly Ala Gly
1 5 10 15

Ala Gly Gly Ala Gly Tyr Gly Gly Gln Ile Gly Tyr Gly Ala Gly Ala
20 25 30

Gly Ala Gly Ala Ala Ala Ala Ala Gly Ala Gly Ala Gly Gly Ala Ala
35 40 45

Gly Tyr Gly Arg Gly Ala Gly Ala Gly Ser Gly Ala Ala Ala Gly Ala
50 55 60

Gly Ser Gly Ala Gly Ala Gly Gly Tyr Gly Gly Gln Ala Gly Tyr Gly
65 70 75 80

Ala Gly Ala Gly Ala Gly Ser Ser Ala Gly Asn Ala Phe Ala Gln Ser
85 90 95

558-33 PCT sequence listing_30 11 2010_ST25.txt

Leu Ser Ser Asn Leu Leu Ser Ser Gly Asp Phe Val Gln Met Ile Ser
100 105 110

Ser Thr Thr Ser Thr Asp His Ala Val Ser Val Ala Thr Ser Val Ala
115 120 125

Gln Asn Val Gly Ser Gln Leu Gly Leu Asp Ala Asn Ala Met Asn Asn
130 135 140

Leu Leu Gly Ala Val Ser Gly Tyr Val Ser Thr Leu Gly Asn Ala Ile
145 150 155 160

Ser Asp Ala Ser Ala Tyr Ala Asn Ala Leu Ser Ser Ala Ile Gly Asn
165 170 175

Val Leu Ala Asn Ser Gly Ser Ile Ser Glu Ser Thr Ala Ser Ser Ala
180 185 190

Ala Ser Ser Ala Ala Ser Ser Val Thr Thr Thr Leu Thr Ser Tyr Gly
195 200 205

Pro Ala Val Phe Tyr Ala Pro Ser Ala Ser Ser Gly Gly Tyr Gly Ala
210 215 220

Gly Ala Gly Ala Val Ala Ala Ala Gly Ala Ala Gly Ala Gly Gly Tyr
225 230 235 240

Gly Arg Gly Ala Gly Gly Tyr Gly Gly Gln Gly Gly Tyr Gly Ala Gly
245 250 255

Ala Gly Ala Gly Ala Ala Ala Ala Ala Gly Ala Gly Ala Gly Gly Ala
260 265 270

Gly Gly Tyr Gly Arg Gly Ala Gly Ala Gly Ala Gly Ala Ala Ala Gly
275 280 285

Ala Gly Ala Gly Ala Gly Gly Ala Gly Tyr Gly Gly Gln Gly Gly Tyr
290 295 300

Gly Ala Gly Ala Gly Ala Gly Ala Ala Ala Ala Ala Gly Ala Gly Ala
305 310 315 320

Gly Gly Ala Gly Gly Tyr Gly Arg Gly Ala Gly Ala Gly Ala Gly Ala
325 330 335

Ala Ala Gly Ala Gly Ala Gly Gly Tyr Gly Gly Gln Gly Gly Tyr Gly
340 345 350

Ala Gly Ala Gly Ala Gly Ala Ala Ala Ala Ala Ala Gly Ala Gly Ser
355 360 365

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Gly Ala Gly Gly Tyr Gly Arg Gly Ala Gly Ala Gly Ala Gly Ala
370 375 380

Ala Ala Gly Ala Gly Ala Gly Ala Gly Ser Tyr Gly Gly Gln Gly Gly
385 390 395 400

Tyr Gly Ala Gly Ala Gly Ala Gly Ala Ala Ala Ala Gly Ala Gly
405 410 415

Ala Gly Ala Gly Gly Tyr Gly Arg Gly Ala Gly Ala Gly Ala Gly Ala
420 425 430

Gly Ala Gly Ala Ala Ala Arg Ala Gly Ala Gly Ala Gly Gly Ala Gly
435 440 445

Tyr Gly Gly Gln Gly Gly Tyr Gly Ala Gly Ala Gly Ala Gly Ala Ala
450 455 460

Ala Ala Ala Gly Ala Gly Ala Gly Gly Ala Gly Gly Tyr Gly Arg Gly
465 470 475 480

Ala Gly Ala Gly Ala Gly Ala Ala Ala Gly Ala Gly Ala Gly Ala Gly
485 490 495

Gly Tyr Gly Gly Gln Ser Gly Tyr Gly Ala Gly Ala Gly Ala Ala Ala
500 505 510

Ala Ala Gly Ala Gly Ala Gly Gly Ala Gly Gly Tyr Gly Arg Gly Ala
515 520 525

Gly Ala Gly Ala Gly Ala Ala Ala Gly Ala Gly Ala Gly Ala Ala Ala
530 535 540

Gly Ala Gly Ala Gly Gly Tyr Gly Gly Gln Gly Gly Tyr Gly Ala Gly
545 550 555 560

Ala Gly Ala Gly Ala Ala Ala Ala Ala Gly Ala Gly Ala Gly Gly Ala
565 570 575

Gly Gly Tyr Gly Arg Gly Ala Gly Ala Gly Ala Gly Val Ala Ala Gly
580 585 590

Ala Gly Ala Gly Gly Tyr Gly Gly Gln Gly Gly Tyr Gly Ala Gly Ala
595 600 605

Gly Ala Gly Ala Ala Ala Ala Ala Ala Thr Gly Ala Gly Gly Ala Gly
610 615 620

Gly Tyr Gly Arg Gly Ala Gly Ala Gly Ala Gly Ala Ala Ala Gly Ala
625 630 635 640

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Ala Gly Thr Gly Gly Ala Gly Tyr Gly Gly Gln Gly Gly Tyr Gly
645 650 655

Ala Gly Ala Gly Ala Gly Ala Ala Ala Ala Gly Ala Gly Ala Gly
660 665 670

Gly Ala Gly Tyr Gly Arg Gly Ala Gly Ala Gly Ala Gly Ala Ala Ala
675 680 685

Gly Ala Gly Ala Gly Ala Ala Gly Ala Gly Ala Gly Ala Gly Gly
690 695 700

Tyr Gly Gly Gln Gly Gly Tyr Gly Ala Gly Ala Gly Ala Gly Ala Ala
705 710 715 720

Ala Ala Ala Gly Ala Gly Ala Gly Gly Ala Ala Gly Tyr Ser Arg Gly
725 730 735

Gly Arg Ala Gly Ala Ala Gly Ala Gly Ala Gly Ala Ala Ala Gly Ala
740 745 750

Gly Ala Gly Ala Gly Gly Tyr Gly Gly Gln Gly Gly Tyr Gly Ala Gly
755 760 765

Ala Gly Ala Gly Ala Ala Ala Ala Ala Gly Ala Gly Ser Gly Gly Ala
770 775 780

Gly Gly Tyr Gly Arg Gly Ala Gly Ala Gly Ala Ala Ala Gly Ala Gly
785 790 795 800

Ala Ala Ala Gly Ala Gly Ala Gly Ala Gly Gly Tyr Gly Gly Gln Gly
805 810 815

Gly Tyr Gly Ala Gly Ala Gly Ala Ala Ala Ala Gly Ala Gly Ala
820 825 830

Gly Arg Gly Gly Tyr Gly Arg Gly Ala Gly Ala Gly Gly Tyr Gly Gly
835 840 845

Gln Gly Gly Tyr Gly Ala Gly Ala Gly Ala Gly Ala Ala Ala Ala Ala
850 855 860

Gly Ala Gly Ala Gly Gly Tyr Gly Asp Lys Glu Ile Ala Cys Trp Ser
865 870 875 880

Arg Cys Arg Tyr Thr Val Ala Ser Thr Thr Ser Arg Leu Ser Ser Ala
885 890 895

Glu Ala Ser Ser Arg Ile Ser Ser Ala Ala Ser Thr Leu Val Ser Gly
900 905 910

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Tyr Leu Asn Thr Ala Ala Leu Pro Ser Val Ile Ser Asp Leu Phe
915 920 925

Ala Gln Val Gly Ala Ser Ser Pro Gly Val Ser Asp Ser Glu Val Leu
930 935 940

Ile Gln Val Leu Leu Glu Ile Val Ser Ser Leu Ile His Ile Leu Ser
945 950 955 960

Ser Ser Ser Val Gly Gln Val Asp Phe Ser Ser Val Gly Ser Ser Ala
965 970 975

Ala Ala Val Gly Gln Ser Met Gln Val Val Met Gly
980 985

<210> 82
<211> 907
<212> PRT
<213> Nephila clavipes (flagelliform silk protein)
<400> 82

Gly Pro Gly Gly Val Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly
1 5 10 15

Pro Gly Gly Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro
20 25 30

Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly
35 40 45

Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly
50 55 60

Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Tyr
65 70 75 80

Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Thr Gly
85 90 95

Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro
100 105 110

Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly
115 120 125

Gly Phe Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly
130 135 140

Ser Gly Pro Gly Gly Ala Gly Pro Gly Gly Val Gly Pro Gly Gly Phe
145 150 155 160

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly
165 170 175

Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Pro
180 185 190

Gly Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly
195 200 205

Gly Ala Gly Pro Gly Gly Ala Gly Gly Ala Gly Gly Ala Gly Gly Ala
210 215 220

Gly Gly Ser Gly Gly Ala Gly Gly Ser Gly Gly Thr Thr Ile Ile Glu
225 230 235 240

Asp Leu Asp Ile Thr Ile Asp Gly Ala Asp Gly Pro Ile Thr Ile Ser
245 250 255

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

Gly Pro Gly Gly Val Gly Pro Gly Gly Ser Gly Pro Gly Gly Val Gly
275 280 285

Pro Gly Gly Ser Gly Pro Gly Gly Val Gly Pro Gly Gly Ser Gly Pro
290 295 300

Gly Gly Val Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly
305 310 315 320

Ser Gly Pro Gly Gly Ala Gly Gly Ala Gly Gly Pro Gly Gly Ala Tyr
325 330 335

Gly Pro Gly Gly Ser Tyr Gly Pro Gly Gly Ser Gly Gly Pro Gly Gly
340 345 350

Ala Gly Gly Pro Tyr Gly Pro Gly Gly Glu Gly Pro Gly Gly Ala Gly
355 360 365

Gly Pro Tyr Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly
370 375 380

Ala Gly Gly Pro Tyr Gly Pro Gly Gly Glu Gly Gly Pro Tyr Gly Pro
385 390 395 400

Gly Gly Ser Tyr Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly
405 410 415

Gly Pro Tyr Gly Pro Gly Gly Glu Gly Pro Gly Gly Ala Gly Gly Pro
420 425 430

558-33 PCT sequence listing_30 11 2010_ST25.txt

Tyr Gly Pro Gly Gly Val Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr
 435 440 445

 Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ala Gly
 450 455 460

 Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro
 465 470 475 480

 Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly
 485 490 495

 Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Ser Gly Gly
 500 505 510

 Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr
 515 520 525

 Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Thr Gly
 530 535 540

 Pro Gly Gly Thr Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro
 545 550 555 560

 Gly Gly Ser Gly Pro Gly Gly Ser Gly Pro Gly Gly Ser Gly Pro Gly
 565 570 575

 Gly Tyr Gly Pro Ser Gly Ser Gly Pro Gly Gly Tyr Gly Pro Ser Gly
 580 585 590

 Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr
 595 600 605

 Gly Pro Gly Gly Ser Gly Ala Gly Gly Thr Gly Pro Gly Gly Ala Gly
 610 615 620

 Gly Ala Gly Gly Ala Gly Gly Ser Gly Gly Ala Gly Gly Ser Gly Gly
 625 630 635 640

 Ala Gly Gly Ser Gly Gly Ala Gly Gly Ser Gly Gly Val Gly Gly Ser
 645 650 655

 Gly Gly Thr Thr Ile Thr Glu Asp Leu Asp Ile Thr Ile Asp Gly Ala
 660 665 670

 Asp Gly Pro Ile Thr Ile Ser Glu Glu Leu Thr Ile Ser Gly Ala Gly
 675 680 685

 Gly Ser Gly Pro Gly Gly Ala Gly Pro Gly Gly Val Gly Pro Gly Gly
 690 695 700

558-33 PCT sequence listing_30 11 2010_ST25.txt

Ser Gly Pro Gly Gly Val Gly Pro Gly Val Ser Gly Pro Gly Gly Val
705 710 715 720

Gly Pro Gly Gly Ser Gly Pro Gly Gly Val Gly Ser Gly Gly Ser Gly
725 730 735

Pro Gly Gly Val Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Ser
740 745 750

Gly Gly Val Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Gly Phe
755 760 765

Tyr Gly Pro Gly Gly Ser Glu Gly Pro Tyr Gly Pro Ser Gly Thr Tyr
770 775 780

Gly Ser Gly Gly Gly Tyr Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly
785 790 795 800

Pro Gly Ser Pro Gly Gly Ala Tyr Gly Pro Gly Ser Pro Gly Gly Ala
805 810 815

Tyr Tyr Pro Ser Ser Arg Val Pro Asp Met Val Asn Gly Ile Met Ser
820 825 830

Ala Met Gln Gly Ser Gly Phe Asn Tyr Gln Met Phe Gly Asn Met Leu
835 840 845

Ser Gln Tyr Ser Ser Gly Ser Gly Thr Cys Asn Pro Asn Asn Val Asn
850 855 860

Val Leu Met Asp Ala Leu Leu Ala Ala Leu His Cys Leu Ser Asn His
865 870 875 880

Gly Ser Ser Ser Phe Ala Pro Ser Pro Thr Pro Ala Ala Met Ser Ala
885 890 895

Tyr Ser Asn Ser Val Gly Arg Met Phe Ala Tyr
900 905

<210> 83
<211> 871
<212> PRT
<213> Nephila clavipes (flagelliform silk protein)
<400> 83

Met Gly Lys Gly Arg His Asp Thr Lys Ala Lys Ala Lys Ala Met Gln
1 5 10 15

Val Ala Leu Ala Ser Ser Ile Ala Glu Leu Val Ile Ala Glu Ser Ser
20 25 30

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Gly Asp Val Gln Arg Lys Thr Asn Val Ile Ser Asn Ala Leu Arg
35 40 45

Asn Ala Leu Met Ser Thr Thr Gly Ser Pro Asn Glu Glu Phe Val His
50 55 60

Glu Val Gln Asp Leu Ile Gln Met Leu Ser Gln Glu Gln Ile Asn Glu
65 70 75 80

Val Asp Thr Ser Gly Pro Gly Gln Tyr Tyr Arg Ser Ser Ser Ser Gly
85 90 95

Gly Gly Gly Gly Gly Gln Gly Gly Pro Val Val Thr Glu Thr Leu Thr
100 105 110

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

Ser Gly Thr Gly Gly Tyr Ala Pro Thr Gly Tyr Ala Pro Ser Gly Ser
130 135 140

Gly Ala Gly Gly Val Arg Pro Ser Ala Ser Gly Pro Ser Gly Ser Gly
145 150 155 160

Pro Ser Gly Gly Ser Arg Pro Ser Ser Ser Gly Pro Ser Gly Thr Arg
165 170 175

Pro Ser Pro Asn Gly Ala Ser Gly Ser Ser Pro Gly Gly Ile Ala Pro
180 185 190

Gly Gly Ser Asn Ser Gly Gly Ala Gly Val Ser Gly Ala Thr Gly Gly
195 200 205

Pro Ala Ser Ser Gly Ser Tyr Gly Pro Gly Ser Thr Gly Gly Thr Tyr
210 215 220

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

Pro Tyr Ser Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Gly Ala Tyr
245 250 255

Gly Pro Gly Gly Val Gly Thr Gly Gly Ala Gly Pro Gly Gly Tyr Gly
260 265 270

Pro Gly Gly Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ala Gly Pro
275 280 285

Gly Gly Tyr Gly Pro Gly Gly Ala Gly Pro Gly Gly Tyr Gly Pro Gly
290 295 300

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ala Gly Pro Gly Gly
305 310 315 320

Tyr Gly Pro Gly Gly Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gly Thr
325 330 335

Gly Pro Gly Gly Tyr Gly Pro Gly Gly Thr Gly Pro Gly Gly Val Gly
340 345 350

Pro Gly Gly Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ala Gly Pro
355 360 365

Gly Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly
370 375 380

Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gly
385 390 395 400

Ser Gly Pro Gly Gly Ala Gly Pro Ser Gly Ala Gly Leu Gly Gly Ala
405 410 415

Gly Pro Gly Gly Ala Gly Leu Gly Gly Ala Gly Pro Gly Gly Ala Gly
420 425 430

Thr Ser Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Gln
435 440 445

Gly Asp Ala Gly Pro Gly Gly Ala Gly Arg Gly Gly Ala Gly Arg Gly
450 455 460

Gly Val Gly Arg Gly Gly Ala Gly Arg Gly Gly Ala Gly Arg Gly Gly
465 470 475 480

Ala Arg Gly Ala Gly Gly Ala Gly Gly Ala Gly Gly Ala Gly Gly Ser
485 490 495

Gly Gly Thr Thr Ile Val Glu Asp Leu Asp Ile Thr Ile Asp Gly Ala
500 505 510

Asp Gly Pro Ile Thr Ile Ser Glu Glu Leu Thr Ile Gly Gly Ala Gly
515 520 525

Ala Gly Gly Ser Gly Pro Gly Gly Ala Gly Pro Gly Asn Val Gly Pro
530 535 540

Gly Arg Ser Gly Pro Gly Gly Val Gly Pro Gly Gly Ser Gly Pro Gly
545 550 555 560

Gly Val Gly Pro Gly Ser Phe Gly Pro Gly Gly Val Gly Pro Gly Gly
565 570 575

Ser Gly Pro Gly 580 Gly Val Gly Ser Gly 585 Gly Ser Gly Gln Gly Val 590
 Arg Pro Ser 595 Gly Ser Gly Pro Gly 600 Gly Val Gly Thr Gly 605 Gly Val Gly
 Pro Gly 610 Gly Ala Gly Gly Pro 615 Tyr Gly Pro Gly Gly 620 Ser Gly Pro Gly
 Ser Ala Gly Ser Ala Gly 630 Gly Thr Tyr Gly Pro 635 Gly Gly Phe Gly Gly 640
 Pro Gly Gly Phe Gly 645 Gly Pro Gly Gly Ala 650 Gly Gly Pro Tyr Gly 655 Pro
 Gly Gly Ala Gly 660 Gly Pro Tyr Gly Pro 665 Gly Gly Ala Gly Gly 670 Pro Tyr
 Gly Pro Gly 675 Gly Ala Gly Gly Pro 680 Tyr Gly Pro Gly Gly 685 Ala Gly Gly
 Pro Tyr 690 Gly Pro Gly Gly Ala 695 Gly Gly Ser Tyr Gly 700 Leu Gly Gly Ala
 Gly Gly Ser Gly Gly Val 710 Gly Pro Gly Gly Ser 715 Gly Pro Gly Gly Tyr 720
 Gly Pro Gly Gly Ala 725 Gly Pro Gly Gly Tyr 730 Gly Pro Gly Gly Ser 735 Gly
 Pro Gly Gly Tyr 740 Gly Pro Gly Gly Ser 745 Gly Ser Gly Gly Tyr 750 Gly Pro
 Gly Gly Ser 755 Gly Pro Gly Gly Ser 760 Gly Pro Gly Gly Tyr 765 Gly Pro Gly
 Gly Thr 770 Gly Pro Gly Gly Ser 775 Glu Ser Gly Gly Tyr 780 Gly Pro Gly Gly
 Ser 785 Gly Pro Gly Gly Ser 790 Gly Pro Gly Gly Ser 795 Gly Pro Gly Gly Ser 800
 Gly Pro Gly Gly Tyr 805 Gly Pro Gly Gly Ser 810 Gly Pro Ser Ser Phe Val 815
 Pro Gly Gly Ser 820 Gly Pro Gly Gly Ser 825 Gly Pro Gly Gly Ala 830 Gly Pro
 Gly Gly Ala 835 Gly Pro Gly Gly Val 840 Gly Leu Gly Gly Ala 845 Gly Arg Gly

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Ala Gly Arg Gly Gly Ala Gly Ser Val Gly Ala Gly Arg Gly Gly
850 855 860

Ala Gly Arg Gly Gly Thr Gly
865 870

<210> 84
<211> 1002
<212> PRT
<213> Argiope trifasciata (flagelliform silk protein)
<400> 84

Gly Ala Pro Gly Gly Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly
1 5 10 15

Phe Gly Pro Gly Gly Gly Ala Gly Phe Gly Pro Gly Gly Gly Ala Gly
20 25 30

Phe Gly Pro Gly Gly Ala Ala Gly Gly Pro Gly Gly Pro Gly Gly Pro
35 40 45

Gly Gly Pro Gly Gly Ala Gly Gly Tyr Gly Pro Gly Gly Ala Gly Gly
50 55 60

Tyr Gly Pro Gly Gly Val Gly Pro Gly Gly Ala Gly Gly Tyr Gly Pro
65 70 75 80

Gly Gly Ala Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Ala
85 90 95

Gly Pro Gly Gly Ala Gly Gly Glu Gly Pro Val Thr Val Asp Val Asp
100 105 110

Val Thr Val Gly Pro Glu Gly Val Gly Gly Gly Pro Gly Gly Ala Gly
115 120 125

Pro Gly Gly Ala Gly Phe Gly Pro Gly Gly Gly Ala Gly Phe Gly Pro
130 135 140

Gly Gly Ala Pro Gly Ala Pro Gly Gly Pro Gly Gly Pro Gly Gly Pro
145 150 155 160

Gly Gly Pro Gly Gly Pro Gly Gly Val Gly Pro Gly Gly Ala Gly Gly
165 170 175

Tyr Gly Pro Gly Gly Ala Gly Gly Val Gly Pro Ala Gly Thr Gly Gly
180 185 190

Phe Gly Pro Gly Gly Ala Gly Gly Phe Gly Pro Gly Gly Ala Gly Gly
195 200 205

Phe Gly Pro Gly Gly Ala Gly Gly Phe Gly Pro Gly Gly Ala Gly Gly

Tyr Gly Pro Gly Gly Val Gly Pro Gly Gly Ala Gly Gly Phe Gly Pro
225 230 235 240

Gly Gly Val Gly Pro Gly Gly Ser Gly Pro Gly Gly Ala Gly Gly Glu
245 250 255

Gly Pro Val Thr Val Asp Val Asp Val Ser Val Gly Gly Ala Pro Gly
260 265 270

Gly Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Phe Gly Pro Gly
275 280 285

Gly Gly Ala Gly Phe Gly Pro Gly Gly Gly Ala Gly Phe Gly Pro Gly
290 295 300

Gly Ala Ala Gly Gly Pro Gly Gly Pro Gly Gly Pro Gly Gly Pro Gly
305 310 315 320

Gly Ala Gly Gly Tyr Gly Pro Gly Gly Ala Gly Gly Tyr Gly Pro Gly
325 330 335

Gly Val Gly Pro Gly Gly Ala Gly Gly Tyr Gly Pro Gly Gly Ala Gly
340 345 350

Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Ala Gly Pro Gly Gly
355 360 365

Ala Gly Gly Glu Gly Pro Val Thr Val Asp Val Asp Val Thr Val Gly
370 375 380

Pro Glu Gly Val Gly Gly Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala
385 390 395 400

Gly Phe Gly Pro Gly Gly Gly Ala Gly Phe Gly Pro Gly Gly Ala Pro
405 410 415

Gly Ala Pro Gly Gly Pro Gly Gly Pro Gly Gly Pro Gly Gly Pro Gly
420 425 430

Gly Pro Gly Gly Val Gly Pro Gly Gly Ala Gly Gly Tyr Gly Pro Gly
435 440 445

Gly Ala Gly Gly Val Gly Pro Ala Gly Thr Gly Gly Phe Gly Pro Gly
450 455 460

Gly Ala Gly Gly Phe Gly Pro Gly Gly Ala Gly Gly Phe Gly Pro Gly
465 470 475 480

Gly Ala Gly Gly Phe Gly Pro Ala Gly Ala Gly Gly Tyr Gly Pro Gly

Gly Val Gly Pro Gly Gly Ala Gly Gly Phe Gly Pro Gly Gly Val Gly
500 505 510

Pro Gly Gly Ser Gly Pro Gly Gly Ala Gly Gly Glu Gly Pro Val Thr
515 520 525

Val Asp Val Asp Val Ser Val Gly Gly Ala Pro Gly Gly Gly Pro Gly
530 535 540

Gly Ala Gly Pro Gly Gly Ala Gly Phe Gly Pro Gly Gly Gly Ala Gly
545 550 555 560

Phe Gly Pro Gly Gly Gly Ala Gly Phe Gly Pro Gly Gly Ala Ala Gly
565 570 575

Gly Pro Gly Gly Pro Gly Gly Pro Gly Gly Pro Gly Gly Ala Gly Gly
580 585 590

Tyr Gly Pro Gly Gly Ala Gly Gly Tyr Gly Pro Gly Gly Val Gly Pro
595 600 605

Gly Gly Ala Gly Gly Tyr Gly Pro Gly Gly Ala Gly Gly Tyr Gly Pro
610 615 620

Gly Gly Ser Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Gly Glu
625 630 635 640

Gly Pro Val Thr Val Asp Val Asp Val Thr Val Gly Pro Glu Gly Val
645 650 655

Gly Gly Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Phe Gly Pro
660 665 670

Gly Gly Gly Ala Gly Phe Gly Pro Gly Gly Ala Pro Gly Ala Pro Gly
675 680 685

Gly Pro Gly Gly Pro Gly Gly Pro Gly Gly Pro Gly Gly Pro Gly Gly
690 695 700

Val Gly Pro Gly Gly Ala Gly Gly Tyr Gly Pro Gly Gly Ala Gly Gly
705 710 715 720

Phe Gly Pro Gly Gly Thr Gly Gly Phe Gly Pro Gly Gly Ala Gly Gly
725 730 735

Phe Gly Pro Gly Gly Ala Gly Gly Phe Gly Pro Gly Gly Ala Gly Gly
740 745 750

Phe Gly Pro Gly Gly Ala Gly Gly Tyr Gly Pro Gly Gly Val Gly Pro
755 760 765

Gly Gly Ala Gly Gly Phe Gly Pro Gly Gly Val Gly Pro Gly Gly Ser
770 775 780

Gly Pro Gly Gly Ala Gly Gly Glu Gly Pro Val Thr Val Asp Val Asp
785 790 795 800

Val Ser Val Gly Gly Ala Pro Gly Gly Gly Pro Gly Gly Ala Gly Pro
805 810 815

Gly Gly Ala Gly Phe Gly Pro Gly Gly Gly Ala Gly Phe Gly Pro Gly
820 825 830

Gly Gly Ala Gly Phe Gly Pro Gly Gly Ala Ala Gly Gly Pro Ser Gly
835 840 845

Pro Gly Gly Pro Gly Gly Pro Gly Gly Ala Gly Gly Tyr Gly Pro Gly
850 855 860

Gly Ala Gly Gly Tyr Gly Pro Gly Gly Val Gly Pro Gly Gly Ala Gly
865 870 875 880

Gly Tyr Gly Pro Gly Gly Ala Gly Gly Tyr Gly Pro Gly Gly Ser Gly
885 890 895

Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Gly Glu Gly Pro Val Thr
900 905 910

Val Asp Val Asp Val Thr Val Gly Pro Glu Gly Val Gly Gly Gly Pro
915 920 925

Gly Gly Ala Gly Pro Gly Gly Ala Gly Phe Gly Pro Gly Gly Gly Ala
930 935 940

Gly Phe Gly Pro Gly Gly Ala Pro Gly Ala Pro Gly Gly Pro Gly Gly
945 950 955 960

Pro Gly Gly Pro Gly Gly Pro Gly Gly Pro Gly Gly Val Gly Pro Gly
965 970 975

Gly Ala Gly Gly Tyr Gly Pro Gly Gly Ala Gly Gly Val Gly Pro Ala
980 985 990

Gly Thr Gly Gly Phe Gly Pro Gly Gly Ala
995 1000

<210> 85
<211> 626
<212> PRT
<213> Nephila madagascariensis (flagelliform silk protein)

<400> 85

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

Ile Asp Gly Ala Asp Gly Pro Ile Thr Ile Ser Glu Glu Leu Thr Ile
20 25 30

Ser Gly Ala Gly Ala Gly Gly Ser Gly Pro Gly Gly Ala Gly Pro Gly
35 40 45

Gly Val Gly Pro Gly Gly Ser Gly Pro Gly Gly Val Gly Pro Gly Gly
50 55 60

Ser Gly Pro Gly Gly Val Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly
65 70 75 80

Pro Gly Gly Ser Gly Pro Gly Gly Ala Gly Gly Ala Gly Gly Pro Gly
85 90 95

Gly Ala Tyr Gly Pro Gly Gly Ser Gly Gly Pro Gly Gly Ala Gly Gly
100 105 110

Pro Tyr Gly Pro Gly Gly Glu Gly Pro Gly Gly Ala Gly Gly Pro Tyr
115 120 125

Gly Pro Gly Gly Glu Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro
130 135 140

Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly Ala Gly Gly Pro Tyr
145 150 155 160

Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly Ala Gly Gly
165 170 175

Pro Tyr Gly Pro Gly Gly Val Gly Pro Gly Gly Thr Gly Pro Gly Gly
180 185 190

Tyr Gly Pro Gly Gly Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser
195 200 205

Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly
210 215 220

Pro Gly Gly Ser Gly Pro Gly Gly Phe Gly Pro Gly Gly Ser Gly Pro
225 230 235 240

Gly Gly Ser Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly
245 250 255

Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly
260 265 270

558-33 PCT sequence listing_30 11 2010_ST25.txt

Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser
 275 280 285
 Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly
 290 295 300
 Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Ala Gly Pro
 305 310 315 320
 Gly Gly Ala Gly Pro Gly Gly Val Gly Pro Gly Gly Ala Gly Pro Gly
 325 330 335
 Gly Ala Gly Pro Gly Gly Val Gly Pro Gly Gly Ala Gly Pro Gly Gly
 340 345 350
 Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Arg Gly Gly Ala
 355 360 365
 Gly Pro Gly Gly Ala Gly Gly Ala Gly Gly Ala Gly Ser Gly Gly
 370 375 380
 Ala Gly Gly Ser Gly Gly Thr Thr Val Ile Glu Asp Leu Asp Ile Thr
 385 390 395 400
 Ile Asp Gly Ala Asp Gly Pro Ile Thr Ile Ser Glu Glu Leu Thr Ile
 405 410 415
 Gly Gly Ala Gly Gly Ser Gly Pro Gly Gly Ala Gly Gly Ser Gly Pro
 420 425 430
 Gly Gly Ala Gly Pro Gly Gly Val Gly Pro Gly Gly Ser Gly Pro Gly
 435 440 445
 Gly Leu Gly Ser Gly Gly Ser Gly Pro Gly Gly Val Gly Pro Gly Gly
 450 455 460
 Ser Gly Pro Gly Gly Val Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser
 465 470 475 480
 Gly Gly Leu Tyr Gly Pro Gly Ser Tyr Gly Pro Gly Gly Ser Gly Val
 485 490 495
 Pro Tyr Gly Ser Ser Gly Thr Tyr Gly Ser Gly Gly Gly Tyr Gly Pro
 500 505 510
 Gly Gly Ala Gly Gly Ala Tyr Gly Pro Gly Ser Pro Gly Gly Ala Tyr
 515 520 525
 Gly Pro Gly Ser Gly Gly Ser Tyr Tyr Pro Ser Ser Arg Val Pro Asp
 530 535 540

558-33 PCT sequence listing_30 11 2010_ST25.txt

Met Val Asn Gly Ile Met Ser Ala Met Gln Gly Ser Gly Phe Asn Tyr
545 550 555 560

Gln Met Phe Gly Asn Met Leu Ser Gln Tyr Ser Ser Gly Ser Gly Ser
565 570 575

Cys Asn Pro Asn Asn Val Asn Val Leu Met Asp Ala Leu Leu Ala Ala
580 585 590

Leu His Cys Leu Ser Asn His Gly Ser Ser Ser Phe Ala Pro Ser Pro
595 600 605

Thr Pro Ala Ala Met Ser Ala Tyr Ser Asn Ser Val Gly Arg Met Phe
610 615 620

Ala Tyr
625

<210> 86
<211> 651
<212> PRT
<213> Argiope trifasciata (flagelliform silk protein)

<400> 86

Ala Gly Gly Pro Gly Ala Gly Gly Ala Gly Ala Gly Gly Val Gly Pro
1 5 10 15

Gly Gly Phe Gly Gly Pro Gly Gly Phe Gly Gly Ala Gly Gly Pro Gly
20 25 30

Gly Pro Gly Gly Pro Gly Gly Ala Gly Gly Gly Ala Gly Gly Ala Gly
35 40 45

Gly Leu Tyr Gly Pro Gly Gly Ala Gly Gly Leu Tyr Gly Pro Gly Gly
50 55 60

Leu Tyr Gly Pro Gly Gly Ala Gly Val Pro Gly Ala Pro Gly Ala Ser
65 70 75 80

Gly Arg Ala Gly Gly Ile Gly Gly Ala Ala Gly Gly Ala Gly Ala Gly
85 90 95

Gly Val Gly Pro Gly Gly Val Ser Gly Gly Ala Gly Gly Ala Gly Gly
100 105 110

Ser Gly Val Thr Val Val Glu Ser Val Ser Val Gly Gly Ala Gly Gly
115 120 125

Pro Gly Ala Gly Gly Val Gly Pro Gly Gly Val Gly Pro Gly Gly Val
130 135 140

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Pro Gly Gly Ile Tyr Gly Pro Gly Gly Ala Gly Gly Leu Tyr Gly
145 150 155 160

Pro Gly Ala Gly Gly Ala Phe Gly Pro Gly Gly Gly Ala Gly Ala Pro
165 170 175

Gly Gly Pro Gly Gly Pro Gly Gly Pro Gly Gly Pro Gly Gly Leu Gly
180 185 190

Gly Gly Val Gly Gly Ala Gly Thr Gly Gly Gly Val Gly Pro Gly Ala
195 200 205

Gly Gly Val Gly Pro Ser Gly Gly Ala Gly Gly Thr Gly Pro Val Ser
210 215 220

Val Ser Ser Thr Val Ser Val Gly Gly Ala Gly Gly Pro Gly Ala Gly
225 230 235 240

Gly Pro Gly Ala Gly Gly Ala Gly Ala Gly Val Gly Pro Gly Gly
245 250 255

Phe Gly Gly Pro Gly Gly Phe Gly Gly Ala Gly Gly Pro Gly Gly Pro
260 265 270

Gly Gly Pro Gly Gly Ala Gly Gly Gly Ala Gly Gly Ala Gly Gly Leu
275 280 285

Tyr Gly Pro Gly Gly Ala Gly Gly Leu Tyr Gly Pro Gly Gly Leu Tyr
290 295 300

Gly Pro Gly Gly Ala Gly Val Pro Gly Ala Pro Gly Ala Ser Gly Arg
305 310 315 320

Ala Gly Gly Ile Gly Gly Ala Ala Gly Ala Gly Gly Val Gly Pro Gly
325 330 335

Gly Val Ser Gly Gly Ala Gly Gly Ser Gly Val Ser Val Thr Glu Ser
340 345 350

Val Thr Val Gly Gly Ala Gly Gly Ala Gly Ala Gly Gly Ile Gly Gly
355 360 365

Pro Ser Gly Leu Gly Gly Ala Gly Ala Thr Gly Gly Phe Gly Gly Arg
370 375 380

Gly Gly Pro Gly Gly Pro Gly Gly Pro Gly Gly Pro Gly Arg Phe Gly
385 390 395 400

Gly Ala Ala Gly Gly Ala Gly Ala Gly Gly Val Gly Pro Gly Gly Val
405 410 415

558-33 PCT sequence listing_30 11 2010_ST25.txt

Ser Gly Gly Ala Gly Gly Ala Gly Gly Ser Gly Val Thr Val Val Glu
420 425 430

Ser Val Ser Val Gly Gly Ala Gly Gly Pro Gly Ala Gly Gly Val Gly
435 440 445

Pro Gly Gly Val Gly Pro Gly Gly Val Gly Pro Gly Gly Ile Tyr Gly
450 455 460

Pro Gly Gly Ala Gly Gly Leu Tyr Gly Pro Gly Ala Gly Gly Ala Phe
465 470 475 480

Gly Ser Gly Gly Gly Ala Gly Ala Pro Gly Gly Pro Gly Gly Pro Gly
485 490 495

Gly Pro Gly Gly Pro Gly Gly Leu Gly Gly Gly Val Gly Gly Ala Gly
500 505 510

Thr Gly Gly Gly Val Gly Pro Gly Val Gly Gly Val Gly Pro Ser Gly
515 520 525

Gly Ala Gly Gly Thr Gly Pro Val Ser Val Ser Ser Thr Ile Thr Val
530 535 540

Gly Gly Gly Gln Ser Ser Gly Gly Val Leu Pro Ser Thr Ser Tyr Ala
545 550 555 560

Pro Thr Thr Ser Gly Tyr Glu Arg Leu Pro Asn Leu Ile Asn Gly Ile
565 570 575

Lys Ser Ser Met Gln Gly Gly Gly Phe Asn Tyr Gln Asn Phe Gly Asn
580 585 590

Ile Leu Ser Gln Tyr Ala Thr Gly Ser Gly Thr Cys Asn Tyr Tyr Asp
595 600 605

Ile Asn Leu Leu Met Asp Ala Leu Leu Ala Ala Leu His Thr Leu Asn
610 615 620

Tyr Gln Gly Ala Ser Tyr Val Pro Ser Tyr Pro Ser Pro Ser Glu Met
625 630 635 640

Leu Ser Tyr Thr Glu Asn Val Arg Arg Tyr Phe
645 650

<210> 87
<211> 1884
<212> PRT
<213> Nephila madagascariensis (flagelliform silk protein)

<220>

558-33 PCT sequence listing_30 11 2010_ST25.txt

<221> misc_feature

<222> (1652)..(1652)

<223> Xaa can be any naturally occurring amino acid

<400> 87

Met Gly Lys Gly Arg His Asp Thr Lys Ala Lys Ala Lys Ala Met Gln
1 5 10 15

Val Ala Leu Ala Ser Ser Ile Ala Glu Leu Val Ile Ala Glu Ser Ser
20 25 30

Gly Gly Asp Val Gln Arg Lys Thr Asn Val Ile Ser Asn Ala Leu Arg
35 40 45

Asn Ala Leu Met Ser Thr Thr Gly Ser Pro Asn Glu Glu Phe Val His
50 55 60

Glu Val Gln Asp Leu Ile Gln Met Leu Ser Gln Glu Gln Ile Asn Glu
65 70 75 80

Val Asp Thr Ser Gly Pro Gly Gln Tyr Tyr Arg Ser Ser Ser Ser Gly
85 90 95

Gly Gly Gly Gly Gly Gly Gly Gly Pro Val Ile Thr Glu Thr Leu Thr
100 105 110

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

Ser Gly Thr Gly Gly Tyr Ala Pro Thr Gly Tyr Ala Pro Ser Gly Ser
130 135 140

Gly Pro Gly Gly Val Arg Pro Ser Ala Ser Gly Pro Ser Gly Ser Gly
145 150 155 160

Pro Ser Gly Ser Arg Pro Ser Ser Ser Gly Ser Ser Gly Thr Arg Pro
165 170 175

Ser Ala Asn Ala Ala Gly Gly Ser Ser Pro Gly Gly Ile Ala Pro Gly
180 185 190

Gly Ser Ser Pro Gly Gly Ala Gly Val Ser Gly Ala Thr Gly Gly Pro
195 200 205

Ala Ser Ser Gly Ser Tyr Gly Ser Gly Thr Thr Gly Gly Ala Tyr Gly
210 215 220

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

Tyr Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Ala Tyr Gly Pro
245 250 255

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Gly Val Gly Pro Gly Gly Ala Gly Pro Gly Gly Tyr Gly Pro Gly
260 265 270

Gly Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ala Gly Pro Gly Gly
275 280 285

Tyr Gly Pro Gly Gly Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ala
290 295 300

Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ala Gly Pro Gly Gly Tyr Gly
305 310 315 320

Pro Gly Gly Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Thr
325 330 335

Gly Gly Ala Gly Pro Gly Gly Tyr Thr Pro Gly Gly Ala Gly Pro Gly
340 345 350

Gly Tyr Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly
355 360 365

Ala Gly Ser Gly Gly Val Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ala
370 375 380

Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly
385 390 395 400

Pro Ser Gly Ala Gly Pro Gly Gly Ala Gly Thr Gly Gly Ala Gly Thr
405 410 415

Gly Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly
420 425 430

Gly Ala Gly Pro Gly Gly Ala Gly Arg Gly Gly Ala Gly Arg Gly Gly
435 440 445

Ala Gly Arg Gly Gly Ala Gly Arg Gly Gly Ala Gly Arg Gly Gly Ala
450 455 460

Gly Arg Gly Gly Ala Gly Gly Ala Gly Gly Ala Gly Gly Ala Gly Gly
465 470 475 480

Ala Gly Gly Ala Gly Gly Ala Gly Gly Ser Gly Ser Thr Thr Ile Ile
485 490 495

Glu Asp Leu Asp Ile Thr Ile Asp Gly Ala Asp Gly Pro Ile Thr Ile
500 505 510

Ser Glu Glu Leu Thr Ile Gly Gly Ala Gly Ala Gly Gly Ser Gly Pro
515 520 525

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Gly Ala Gly Pro Gly Gly Val Gly Pro Gly Arg Ser Gly Pro Gly
530 535 540

Gly Val Gly Pro Gly Gly Ser Gly Pro Gly Ser Val Gly Pro Gly Gly
545 550 555 560

Ser Gly Gln Gly Gly Leu Gly Ile Gly Arg Ser Gly Pro Gly Gly Val
565 570 575

Gly Pro Gly Gly Ser Gly Pro Gly Ser Ile Gly Pro Gly Gly Ser Gly
580 585 590

Gln Gly Gly Leu Gly Pro Gly Gly Ser Gly Gln Gly Gly Leu Gly Pro
595 600 605

Gly Gly Ser Gly Pro Gly Gly Val Gly Ser Gly Gly Val Gly Gly Pro
610 615 620

Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Val Gly Gly Ala Gly Gly
625 630 635 640

Pro Tyr Gly Pro Gly Gly Ser Gly Gly Pro Gly Gly Ala Gly Gly Pro
645 650 655

Tyr Gly Pro Gly Gly Pro Tyr Gly Pro Gly Gly Ala Gly Gly Pro Tyr
660 665 670

Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly Pro Tyr Gly
675 680 685

Pro Gly Gly Ala Gly Gly Pro Gly Gly Gly Gly Pro Gly Gly Ala Gly
690 695 700

Gly Pro Tyr Gly Pro Gly Gly Pro Gly Gly Ala Gly Pro Gly Gly Tyr
705 710 715 720

Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly
725 730 735

Pro Gly Gly Tyr Gly Pro Gly Gly Ala Gly Pro Gly Gly Tyr Gly Pro
740 745 750

Gly Gly Ala Gly Pro Gly Gly Ser Gly Pro Gly Gly Ile Gly Pro Gly
755 760 765

Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ile Gly Pro Gly Gly
770 775 780

Thr Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala
785 790 795 800

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Pro Ser Gly Ala Gly Pro Gly Gly Ala Gly Pro Ser Gly Ala Gly
805 810 815

Arg Gly Gly Ser Gly Arg Gly Ser Val Gly Arg Gly Gly Ala Gly Arg
820 825 830

Gly Gly Ala Gly Arg Gly Gly Ala Gly Gly Ala Gly Gly Ser Gly Gly
835 840 845

Ala Gly Gly Ser Gly Gly Ala Gly Gly Ser Gly Gly Thr Thr Ile Ile
850 855 860

Glu Asp Leu Asp Ile Thr Val Asp Gly Ala Asn Gly Pro Ile Thr Ile
865 870 875 880

Ser Glu Glu Leu Thr Ile Gly Gly Ala Gly Ala Gly Gly Val Gly Pro
885 890 895

Gly Gly Ser Gly Pro Gly Gly Val Gly Pro Gly Gly Ser Gly Pro Gly
900 905 910

Gly Val Gly Pro Gly Gly Ser Gly Pro Gly Gly Val Gly Ser Gly Gly
915 920 925

Ser Gly Pro Gly Gly Val Gly Pro Gly Gly Ser Gly Pro Gly Gly Val
930 935 940

Gly Ser Gly Gly Phe Gly Pro Gly Gly Ile Gly Pro Gly Gly Ser Gly
945 950 955 960

Pro Gly Gly Val Gly Pro Gly Gly Val Gly Gly Pro Tyr Gly Pro Gly
965 970 975

Gly Ser Gly Pro Gly Gly Ala Gly Gly Ala Gly Gly Ser Tyr Gly Pro
980 985 990

Gly Gly Pro Tyr Gly Pro Gly Gly Ser Gly Gly Pro Gly Gly Ala Gly
995 1000 1005

Gly Pro Tyr Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly
1010 1015 1020

Gly Pro Tyr Gly Pro Gly Gly Ala Gly Gly Pro Gly Gly Glu Gly
1025 1030 1035

Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly Pro Gly Gly
1040 1045 1050

Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ala Gly Pro Gly Gly
1055 1060 1065

558-33 PCT sequence listing_30 11 2010_ST25.txt

Tyr Gly Pro Gly Gly Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gly
 1070 1075 1080
 Ala Gly Ser Gly Gly Tyr Gly Pro Gly Gly Ala Gly Pro Gly Gly
 1085 1090 1095
 Tyr Gly Pro Gly Gly Pro Gly Pro Gly Gly Tyr Gly Pro Gly Gly
 1100 1105 1110
 Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gly Thr Gly Pro Gly Gly
 1115 1120 1125
 Ser Ala Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly
 1130 1135 1140
 Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly
 1145 1150 1155
 Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala
 1160 1165 1170
 Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala
 1175 1180 1185
 Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala
 1190 1195 1200
 Gly Pro Gly Gly Ala Gly Pro Gly Gly Val Gly Thr Gly Gly Leu
 1205 1210 1215
 Gly Arg Gly Gly Ala Gly Arg Gly Gly Ala Gly Arg Gly Gly Ala
 1220 1225 1230
 Gly Arg Gly Gly Ala Gly Arg Gly Gly Ala Gly Arg Gly Gly Thr
 1235 1240 1245
 Gly Gly Val Gly Gly Ala Gly Gly Ala Gly Gly Ala Gly Gly Val
 1250 1255 1260
 Gly Gly Ala Gly Gly Ser Gly Gly Thr Thr Val Ile Glu Asp Leu
 1265 1270 1275
 Asp Ile Thr Ile Asp Gly Ala Asp Gly Pro Ile Thr Ile Ser Glu
 1280 1285 1290
 Glu Leu Thr Ile Ser Gly Ala Gly Ala Gly Gly Ser Gly Pro Gly
 1295 1300 1305
 Gly Ala Gly Pro Gly Gly Val Gly Pro Gly Gly Ser Gly Pro Gly
 1310 1315 1320

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Val Gly Pro Gly Gly Ser Gly Pro Gly Gly Val Gly Pro Gly
1325 1330 1335

Gly Ala Gly Gly Pro Tyr Arg Pro Gly Gly Ser Gly Pro Gly Gly
1340 1345 1350

Ala Gly Gly Ala Gly Gly Pro Gly Gly Ala Tyr Gly Pro Gly Gly
1355 1360 1365

Ser Gly Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly
1370 1375 1380

Glu Gly Pro Gly Gly Ser Gly Gly Pro Tyr Gly Pro Gly Gly Glu
1385 1390 1395

Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly Ala Gly
1400 1405 1410

Gly Pro Tyr Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly
1415 1420 1425

Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly Ala Gly Pro Tyr
1430 1435 1440

Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly Ala Gly
1445 1450 1455

Gly Pro Tyr Gly Pro Gly Gly Glu Gly Pro Gly Gly Ala Gly Gly
1460 1465 1470

Pro Tyr Gly Pro Gly Gly Val Gly Pro Gly Gly Thr Gly Pro Gly
1475 1480 1485

Gly Tyr Gly Pro Gly Gly Ala Gly Pro Gly Gly Tyr Gly Pro Gly
1490 1495 1500

Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly
1505 1510 1515

Gly Phe Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly
1520 1525 1530

Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly
1535 1540 1545

Gly Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gly Thr Gly Pro Gly
1550 1555 1560

Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly
1565 1570 1575

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Tyr 1580 Gly Pro Gly Gly Ser 1585 Gly Pro Gly Gly Tyr 1590 Gly Pro Gly

Gly Ser 1595 Gly Pro Gly Gly Ala 1600 Gly Pro Gly Gly Ala 1605 Gly Pro Gly

Gly Ala 1610 Gly Pro Gly Gly Ala 1615 Gly Pro Gly Gly Val 1620 Gly Pro Gly

Gly Ala 1625 Gly Pro Gly Gly Ser 1630 Gly Pro Gly Gly Ala 1635 Gly Pro Gly

Gly Ala 1640 Gly Arg Gly Gly Ala 1645 Gly Arg Gly Gly Ala 1650 Gly Xaa Gly

Gly Ala 1655 Gly Pro Gly Gly Ala 1660 Gly Gly Ala Gly Gly 1665 Ala Gly Gly

Ser Gly 1670 Gly Ala Gly Gly Ser 1675 Gly Gly Thr Thr Val 1680 Ile Glu Asp

Leu Asp 1685 Ile Thr Ile Asp Gly 1690 Ala Asp Gly Pro Ile 1695 Thr Ile Ser

Glu Glu 1700 Leu Thr Ile Asn Gly 1705 Ala Gly Ala Gly Gly 1710 Ser Gly Pro

Gly Gly 1715 Ala Gly Pro Gly Gly 1720 Val Gly Pro Gly Gly 1725 Ser Gly Pro

Gly Gly 1730 Val Gly Pro Gly Gly 1735 Ser Gly Pro Gly Gly 1740 Val Gly Pro

Gly Gly 1745 Ala Gly Gly Pro Tyr 1750 Gly Pro Gly Gly Ser 1755 Gly Pro Gly

Gly Ala 1760 Gly Gly Ala Gly Gly 1765 Pro Gly Gly Ala Tyr 1770 Gly Pro Gly

Gly Ser 1775 Gly Gly Pro Gly Gly 1780 Ala Gly Gly Pro Tyr 1785 Gly Pro Gly

Gly Glu 1790 Gly Pro Gly Gly Ala 1795 Gly Gly Pro Tyr Gly 1800 Pro Gly Gly

Glu Gly 1805 Pro Gly Gly Ala Gly 1810 Gly Pro Tyr Gly Pro 1815 Gly Gly Ala

Gly Gly 1820 Pro Tyr Gly Pro Gly 1825 Gly Ala Gly Gly Pro 1830 Tyr Gly Pro

Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly Ala Gly Gly Pro
1835 1840 1845

Tyr Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly Ala
1850 1855 1860

Gly Gly Pro Tyr Gly Pro Gly Gly Glu Gly Pro Gly Gly Ala Gly
1865 1870 1875

Gly Pro Tyr Gly Pro Gly
1880

<210> 88

<211> 2249

<212> PRT

<213> Nephila clavipes (flagelliform silk protein)

<400> 88

Ala Gly Pro Ser Gly Thr Gly Gly Tyr Ala Pro Thr Gly Tyr Ala Pro
1 5 10 15

Ser Gly Ser Gly Ala Gly Gly Val Arg Pro Ser Ala Ser Gly Pro Ser
20 25 30

Gly Ser Gly Pro Ser Gly Gly Ser Arg Pro Ser Ser Ser Gly Pro Ser
35 40 45

Gly Thr Arg Pro Ser Pro Asn Gly Ala Ser Gly Ser Ser Pro Gly Gly
50 55 60

Ile Ala Pro Gly Gly Ser Asn Ser Gly Gly Ala Gly Val Ser Gly Ala
65 70 75 80

Thr Gly Gly Pro Ala Ser Ser Gly Ser Tyr Gly Pro Gly Ser Thr Gly
85 90 95

Gly Thr Tyr Gly Pro Ser Gly Gly Ser Glu Pro Phe Gly Pro Gly Val
100 105 110

Ala Gly Gly Pro Tyr Ser Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly
115 120 125

Gly Ala Tyr Gly Pro Gly Gly Val Gly Thr Gly Gly Ala Gly Pro Gly
130 135 140

Gly Tyr Gly Pro Gly Gly Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gly
145 150 155 160

Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ala Gly Pro Gly Gly Tyr
165 170 175

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Pro Gly Gly Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ala Gly
180 185 190

Pro Gly Gly Tyr Gly Pro Gly Gly Ala Gly Pro Gly Gly Tyr Gly Pro
195 200 205

Gly Gly Thr Gly Pro Gly Gly Tyr Gly Pro Gly Gly Thr Gly Pro Gly
210 215 220

Gly Val Gly Pro Gly Gly Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gly
225 230 235 240

Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala
245 250 255

Gly Pro Gly Gly Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly
260 265 270

Pro Gly Gly Ala Gly Pro Ser Gly Ala Gly Leu Gly Gly Ala Gly Pro
275 280 285

Gly Gly Ala Gly Leu Gly Gly Ala Gly Pro Gly Gly Ala Gly Thr Ser
290 295 300

Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Gln Gly Gly
305 310 315 320

Ala Gly Pro Gly Gly Ala Gly Arg Gly Gly Ala Gly Arg Gly Gly Val
325 330 335

Gly Arg Gly Gly Ala Gly Arg Gly Gly Ala Gly Arg Gly Gly Ala Arg
340 345 350

Gly Ala Gly Gly Ala Gly Gly Ala Gly Gly Ala Gly Gly Ser Gly Gly
355 360 365

Thr Thr Ile Val Glu Asp Leu Asp Ile Thr Ile Asp Gly Ala Asp Gly
370 375 380

Pro Ile Thr Ile Ser Glu Glu Leu Thr Ile Gly Gly Ala Gly Ala Gly
385 390 395 400

Gly Ser Gly Pro Gly Gly Ala Gly Pro Gly Asn Val Gly Pro Gly Arg
405 410 415

Ser Gly Pro Gly Gly Val Gly Pro Gly Gly Ser Gly Pro Gly Gly Val
420 425 430

Gly Pro Gly Ser Phe Gly Pro Gly Gly Val Gly Ser Gly Gly Ser Gly
435 440 445

558-33 PCT sequence listing_30 11 2010_ST25.txt

Pro Gly Gly Val Arg Pro Ser Gly Ser Gly Pro Gly Gly Val Gly Thr
450 455 460

Gly Gly Val Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly
465 470 475 480

Ser Gly Pro Gly Gly Ala Gly Ser Ala Gly Gly Thr Tyr Gly Pro Gly
485 490 495

Gly Phe Gly Gly Pro Gly Gly Phe Gly Gly Pro Gly Gly Ala Gly Gly
500 505 510

Pro Tyr Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly Ala
515 520 525

Gly Gly Pro Tyr Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly
530 535 540

Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly Ala Gly Gly Ser Tyr Gly
545 550 555 560

Leu Gly Gly Ala Gly Gly Ser Gly Gly Val Gly Pro Gly Gly Ser Gly
565 570 575

Pro Gly Gly Tyr Gly Pro Gly Gly Ala Gly Pro Gly Gly Tyr Gly Pro
580 585 590

Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Ser Gly
595 600 605

Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Ser Gly Pro Gly Gly
610 615 620

Tyr Gly Pro Gly Gly Thr Gly Pro Gly Gly Ser Glu Ser Gly Gly Tyr
625 630 635 640

Gly Pro Gly Gly Ser Gly Pro Gly Gly Ser Gly Pro Gly Gly Ser Gly
645 650 655

Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro
660 665 670

Ser Ser Phe Val Pro Gly Gly Ser Gly Pro Gly Gly Ser Gly Pro Gly
675 680 685

Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly
690 695 700

Ala Gly Pro Gly Gly Val Gly Leu Gly Gly Ala Gly Arg Gly Gly Ala
705 710 715 720

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Arg Gly Gly Ala Gly Ser Val Gly Ala Gly Arg Gly Gly Ala Gly
725 730 735

Arg Gly Gly Ala Gly Arg Gly Gly Ala Gly Arg Gly Gly Ala Gly Arg
740 745 750

Gly Gly Ala Gly Gly Ala Gly Gly Ala Gly Gly Ala Gly Gly Pro Gly
755 760 765

Gly Ala Gly Gly Ser Gly Gly Thr Thr Val Ile Glu Asp Leu Asp Ile
770 775 780

Thr Ile Asp Gly Ala Asp Gly Pro Ile Thr Ile Ser Glu Glu Leu Thr
785 790 795 800

Ile Ser Gly Ala Gly Gly Ser Gly Pro Gly Gly Ala Gly Thr Gly Gly
805 810 815

Val Gly Pro Gly Gly Ser Gly Pro Gly Gly Val Gly Pro Gly Gly Phe
820 825 830

Gly Pro Gly Gly Val Gly Pro Gly Gly Ser Gly Pro Gly Gly Val Gly
835 840 845

Pro Gly Gly Ala Gly Arg Pro Tyr Gly Pro Gly Gly Ser Gly Pro Gly
850 855 860

Gly Ala Gly Gly Ala Gly Gly Thr Gly Gly Ala Tyr Gly Pro Gly Gly
865 870 875 880

Ala Tyr Gly Pro Gly Gly Ser Gly Gly Pro Gly Gly Ala Gly Gly Pro
885 890 895

Gly Gly Glu Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly
900 905 910

Ala Gly Gly Pro Tyr Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro
915 920 925

Gly Gly Glu Gly Gly Pro Tyr Gly Pro Gly Val Ser Tyr Gly Pro Gly
930 935 940

Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly Pro Tyr Gly Pro Gly Gly
945 950 955 960

Glu Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly Val Gly
965 970 975

Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ala Gly Pro
980 985 990

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly
995 1000 1005

Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly
1010 1015 1020

Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly
1025 1030 1035

Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Ser Gly Pro Gly
1040 1045 1050

Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Thr Gly Pro Gly
1055 1060 1065

Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly
1070 1075 1080

Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly
1085 1090 1095

Gly Phe Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly
1100 1105 1110

Gly Ser Gly Pro Gly Gly Ala Gly Pro Gly Gly Val Gly Pro Gly
1115 1120 1125

Gly Phe Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Ala Pro Gly
1130 1135 1140

Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly
1145 1150 1155

Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly
1160 1165 1170

Gly Ala Gly Gly Ala Gly Gly Ala Gly Gly Ser Gly Gly Ala Gly
1175 1180 1185

Gly Ser Gly Gly Thr Thr Ile Ile Glu Asp Leu Asp Ile Thr Ile
1190 1195 1200

Asp Gly Ala Asp Gly Pro Ile Thr Ile Ser Glu Glu Leu Pro Ile
1205 1210 1215

Ser Gly Ala Gly Gly Ser Gly Pro Gly Gly Ala Gly Pro Gly Gly
1220 1225 1230

Val Gly Pro Gly Gly Ser Gly Pro Gly Gly Val Gly Pro Gly Gly
1235 1240 1245

558-33 PCT sequence listing_30 11 2010_ST25.txt

Ser Gly Pro Gly Gly Val Gly Pro Gly Gly Ser Gly Pro Gly Gly
1250 1255 1260

Val Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly Ser
1265 1270 1275

Gly Pro Gly Gly Ala Gly Gly Ala Gly Gly Pro Gly Gly Ala Tyr
1280 1285 1290

Gly Pro Gly Gly Ser Tyr Gly Pro Gly Gly Ser Gly Gly Pro Gly
1295 1300 1305

Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly Glu Gly Pro Gly Gly
1310 1315 1320

Ala Gly Gly Pro Tyr Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly
1325 1330 1335

Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly Glu Gly Gly
1340 1345 1350

Pro Tyr Gly Pro Gly Gly Ser Tyr Gly Pro Gly Gly Ala Gly Gly
1355 1360 1365

Pro Tyr Gly Pro Gly Gly Pro Tyr Gly Pro Gly Gly Glu Gly Pro
1370 1375 1380

Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly Val Gly Pro Gly
1385 1390 1395

Gly Gly Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ala Gly Pro Gly
1400 1405 1410

Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly
1415 1420 1425

Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly
1430 1435 1440

Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly
1445 1450 1455

Gly Ser Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly
1460 1465 1470

Gly Ser Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly
1475 1480 1485

Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly
1490 1495 1500

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly
1505 1510 1515

Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly
1520 1525 1530

Gly Phe Gly Pro Gly Gly Phe Gly Pro Gly Gly Ser Gly Pro Gly
1535 1540 1545

Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Ala Gly Pro Gly
1550 1555 1560

Gly Val Gly Pro Gly Gly Phe Gly Pro Gly Gly Ala Gly Pro Gly
1565 1570 1575

Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly
1580 1585 1590

Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly
1595 1600 1605

Gly Ala Gly Pro Gly Gly Ala Gly Gly Ala Gly Gly Ala Gly Gly
1610 1615 1620

Ala Gly Gly Ser Gly Gly Ala Gly Gly Ser Gly Gly Thr Thr Ile
1625 1630 1635

Ile Glu Asp Leu Asp Ile Thr Ile Asp Gly Ala Asp Gly Pro Ile
1640 1645 1650

Thr Ile Ser Glu Glu Leu Thr Ile Ser Gly Ala Gly Gly Ser Gly
1655 1660 1665

Pro Gly Gly Ala Gly Pro Gly Gly Val Gly Pro Gly Gly Ser Gly
1670 1675 1680

Pro Gly Gly Val Gly Pro Gly Gly Ser Gly Pro Gly Gly Val Gly
1685 1690 1695

Pro Gly Gly Ser Gly Pro Gly Gly Val Gly Pro Gly Gly Ala Gly
1700 1705 1710

Gly Pro Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Ala Gly Gly
1715 1720 1725

Ala Gly Gly Pro Gly Gly Ala Tyr Gly Pro Gly Gly Ser Tyr Gly
1730 1735 1740

Pro Gly Gly Ser Gly Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly
1745 1750 1755

558-33 PCT sequence listing_30 11 2010_ST25.txt

Pro Gly Gly Glu Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro
1760 1765 1770

Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly Ala Gly Gly Pro
1775 1780 1785

Tyr Gly Pro Gly Gly Glu Gly Gly Pro Tyr Gly Pro Gly Gly Ser
1790 1795 1800

Tyr Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly Pro
1805 1810 1815

Tyr Gly Pro Gly Gly Glu Gly Pro Gly Gly Ala Gly Gly Pro Tyr
1820 1825 1830

Gly Pro Gly Gly Val Gly Pro Gly Gly Gly Gly Pro Gly Gly Tyr
1835 1840 1845

Gly Pro Gly Gly Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser
1850 1855 1860

Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr
1865 1870 1875

Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser
1880 1885 1890

Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Ser
1895 1900 1905

Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr
1910 1915 1920

Gly Pro Gly Gly Ser Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr
1925 1930 1935

Gly Pro Gly Gly Ser Gly Pro Gly Gly Phe Gly Pro Gly Gly Phe
1940 1945 1950

Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser
1955 1960 1965

Gly Pro Gly Gly Ala Gly Pro Gly Gly Val Gly Pro Gly Gly Phe
1970 1975 1980

Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala
1985 1990 1995

Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala
2000 2005 2010

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala Gly Pro Gly Gly Ala
 2015 2020 2025

Gly Gly Ala Gly Gly Ala Gly Gly Ala Gly Ser Gly Gly Ala
 2030 2035 2040

Gly Gly Ser Gly Gly Thr Thr Ile Ile Glu Asp Leu Asp Ile Thr
 2045 2050 2055

Ile Asp Gly Ala Asp Gly Pro Ile Thr Ile Ser Glu Glu Leu Thr
 2060 2065 2070

Ile Ser Gly Ala Gly Gly Ser Gly Pro Gly Gly Ala Gly Pro Gly
 2075 2080 2085

Gly Val Gly Pro Gly Gly Ser Gly Pro Gly Gly Val Gly Pro Gly
 2090 2095 2100

Gly Ser Gly Pro Gly Gly Val Gly Pro Gly Gly Ser Gly Ala Gly
 2105 2110 2115

Gly Val Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly
 2120 2125 2130

Ser Gly Pro Gly Gly Ala Gly Gly Ala Gly Gly Pro Gly Gly Ala
 2135 2140 2145

Tyr Gly Pro Gly Gly Ser Tyr Gly Pro Gly Gly Ser Gly Gly Pro
 2150 2155 2160

Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly Glu Gly Pro Gly
 2165 2170 2175

Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly Ala Gly Gly Pro Tyr
 2180 2185 2190

Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly Gly Glu Gly
 2195 2200 2205

Gly Pro Tyr Gly Pro Gly Gly Ser Tyr Gly Pro Gly Gly Ala Gly
 2210 2215 2220

Gly Pro Tyr Gly Pro Gly Gly Pro Tyr Gly Pro Gly Gly Glu Gly
 2225 2230 2235

Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly
 2240 2245

<210> 89
 <211> 462
 <212> PRT

<213> Nephila clavipes (flagelliform silk protein)

<400> 89

Val Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser
 1 5 10 15

Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ala Gly Pro Gly Gly Tyr Gly
 20 25 30

Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro
 35 40 45

Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly
 50 55 60

Gly Ser Gly Pro Gly Gly Tyr Gly Ser Gly Gly Ala Gly Pro Gly Gly
 65 70 75 80

Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser
 85 90 95

Gly Pro Gly Gly Tyr Gly Pro Gly Gly Thr Gly Pro Gly Gly Thr Gly
 100 105 110

Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Pro
 115 120 125

Gly Gly Ser Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Ser
 130 135 140

Gly Ser Gly Pro Gly Gly Tyr Gly Pro Ser Gly Ser Gly Pro Gly Gly
 145 150 155 160

Tyr Gly Pro Gly Gly Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser
 165 170 175

Gly Ala Gly Gly Thr Gly Pro Gly Gly Ala Gly Gly Ala Gly Gly Ala
 180 185 190

Gly Gly Ser Gly Gly Ala Gly Gly Ser Gly Gly Ala Gly Gly Ser Gly
 195 200 205

Gly Ala Gly Gly Ser Gly Gly Val Gly Gly Ser Gly Gly Thr Thr Ile
 210 215 220

Thr Glu Asp Leu Asp Ile Thr Ile Asp Gly Ala Asp Gly Pro Ile Thr
 225 230 235 240

Ile Ser Glu Glu Leu Thr Ile Ser Gly Ala Gly Gly Ser Gly Pro Gly
 245 250 255

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Ala Gly Pro Gly Gly Val Gly Pro Gly Gly Ser Gly Pro Gly Gly
260 265 270

Val Gly Pro Gly Val Ser Gly Pro Gly Gly Val Gly Pro Gly Gly Ser
275 280 285

Gly Pro Gly Gly Val Gly Ser Gly Gly Ser Gly Pro Gly Gly Val Gly
290 295 300

Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly Ser Gly Gly Val Gly Pro
305 310 315 320

Gly Gly Tyr Gly Pro Gly Gly Ser Gly Gly Phe Tyr Gly Pro Gly Gly
325 330 335

Ser Glu Gly Pro Tyr Gly Pro Ser Gly Pro Tyr Gly Ser Gly Gly Gly
340 345 350

Tyr Gly Pro Gly Gly Ala Gly Gly Pro Tyr Gly Pro Gly Ser Pro Gly
355 360 365

Gly Ala Tyr Gly Pro Gly Ser Pro Gly Gly Ala Tyr Tyr Pro Ser Ser
370 375 380

Arg Val Pro Asp Met Val Asn Gly Ile Met Ser Ala Met Gln Gly Ser
385 390 395 400

Gly Phe Asn Tyr Gln Met Phe Gly Asn Met Leu Ser Gln Tyr Ser Ser
405 410 415

Gly Ser Gly Thr Cys Asn Pro Asn Asn Val Asn Val Leu Met Asp Ala
420 425 430

Leu Leu Ala Ala Leu His Cys Leu Ser Asn His Gly Ser Ser Ser Phe
435 440 445

Ala Pro Ser Pro Thr Pro Ala Ala Met Ser Ala Tyr Ser Asn
450 455 460

<210> 90

<211> 2834

<212> PRT

<213> Argiope trifasciata (aciniform spidroin 1)

<400> 90

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

Thr Leu Gly Ser Arg Val Leu Ser Ala Leu Leu Asn Gly Val Ser Ser
20 25 30

Ala Ala Gln Gly Leu Gly Ile Asn Val Asp Ser Gly Ser Val Gln Ser
Page 113

Asp Ile Ser Ser Ser Ser Ser Phe Leu Ser Thr Ser Ser Ser Ser Ala
50 55 60

Ser Tyr Ser Gln Ala Ser Ala Ser Ser Thr Ser Gly Ala Gly Tyr Thr
65 70 75 80

Gly Pro Ser Gly Pro Ser Thr Gly Pro Ser Gly Tyr Pro Gly Pro Leu
85 90 95

Gly Gly Gly Ala Pro Phe Gly Gln Ser Gly Phe Gly Gly Ser Asp Gly
100 105 110

Pro Gln Gly Gly Phe Gly Ala Thr Gly Gly Ala Ser Ala Gly Leu Ile
115 120 125

Ser Arg Val Ala Asn Ala Leu Ala Asn Thr Ser Thr Leu Arg Thr Val
130 135 140

Leu Arg Thr Gly Val Ser Gln Gln Ile Ala Ser Ser Val Val Gln Arg
145 150 155 160

Ala Ala Gln Ser Leu Ala Ser Thr Leu Gly Val Asp Gly Asn Asn Leu
165 170 175

Ala Arg Phe Ala Val Gln Ala Val Ser Arg Leu Pro Ala Gly Ser Asp
180 185 190

Thr Ser Ala Tyr Ala Gln Ala Phe Ser Ser Ala Leu Phe Asn Ala Gly
195 200 205

Val Leu Asn Ala Ser Asn Ile Asp Thr Leu Gly Ser Arg Val Leu Ser
210 215 220

Ala Leu Leu Asn Gly Val Ser Ser Ala Ala Gln Gly Leu Gly Ile Asn
225 230 235 240

Val Asp Ser Gly Ser Val Gln Ser Asp Ile Ser Ser Ser Ser Ser Phe
245 250 255

Leu Ser Thr Ser Ser Ser Ser Ala Ser Tyr Ser Gln Ala Ser Ala Ser
260 265 270

Ser Thr Ser Gly Ala Gly Tyr Thr Gly Pro Ser Gly Pro Ser Thr Gly
275 280 285

Pro Ser Gly Tyr Pro Gly Leu Leu Gly Gly Gly Ala Pro Phe Gly Gln
290 295 300

Ser Gly Phe Gly Gly Ser Asp Gly Pro Gln Gly Gly Phe Gly Ala Thr
Page 114

305 558-33 PCT sequence listing_30 11 2010_ST25.txt
310 315 320

Gly Gly Ala Ser Ala Gly Leu Ile Ser Arg Val Ala Asn Ala Leu Ala
325 330 335

Asn Thr Ser Thr Leu Arg Thr Val Leu Arg Thr Gly Val Ser Gln Gln
340 345 350

Ile Ala Ser Ser Val Val Gln Arg Ala Ala Gln Ser Leu Ala Ser Thr
355 360 365

Leu Gly Val Asp Gly Asn Asn Leu Ala Arg Phe Ala Val Gln Ala Val
370 375 380

Ser Arg Leu Pro Ala Gly Ser Asp Thr Ser Ala Tyr Ala Gln Ala Phe
385 390 395 400

Ser Ser Ala Leu Phe Asn Ala Gly Val Leu Asn Ala Ser Asn Ile Asp
405 410 415

Thr Leu Gly Ser Arg Val Leu Ser Ala Leu Leu Asn Gly Val Ser Ser
420 425 430

Ala Ala Gln Gly Leu Gly Ile Asn Val Asp Ser Gly Ser Val Gln Ser
435 440 445

Asp Ile Ser Ser Ser Ser Ser Phe Leu Ser Thr Ser Ser Ser Ser Ala
450 455 460

Ser Tyr Ser Gln Ala Ser Ala Ser Ser Thr Ser Gly Ala Gly Tyr Thr
465 470 475 480

Gly Pro Ser Gly Pro Ser Thr Gly Pro Ser Gly Tyr Pro Gly Pro Leu
485 490 495

Gly Gly Gly Ala Pro Phe Gly Gln Ser Gly Phe Gly Gly Ser Asp Gly
500 505 510

Pro Gln Gly Gly Phe Gly Ala Thr Gly Gly Ala Ser Ala Gly Leu Ile
515 520 525

Ser Arg Val Ala Asn Ala Leu Ala Asn Thr Ser Thr Leu Arg Thr Val
530 535 540

Leu Arg Thr Gly Val Ser Gln Gln Ile Ala Ser Ser Val Val Gln Arg
545 550 555 560

Ala Ala Gln Ser Leu Ala Ser Thr Leu Gly Val Asp Gly Asn Asn Leu
565 570 575

Ala Arg Phe Ala Val Gln Ala Val Ser Arg Leu Pro Ala Gly Ser Asp
Page 115

Thr Ser Ala Tyr Ala Gln Ala Phe Ser Ser Ala Leu Phe Asn Ala Gly
595 600 605

Val Leu Asn Ala Ser Asn Ile Asp Thr Leu Gly Ser Arg Val Leu Ser
610 615 620

Ala Leu Leu Asn Gly Val Ser Ser Ala Ala Gln Gly Leu Gly Ile Asn
625 630 635 640

Val Asp Ser Gly Ser Val Gln Ser Asp Ile Ser Ser Ser Ser Ser Phe
645 650 655

Leu Ser Thr Ser Ser Ser Ser Ala Ser Tyr Ser Gln Ala Ser Ala Ser
660 665 670

Ser Thr Ser Gly Ala Gly Tyr Thr Gly Pro Ser Gly Pro Ser Thr Gly
675 680 685

Pro Ser Gly Tyr Pro Gly Pro Leu Gly Gly Gly Ala Pro Phe Gly Gln
690 695 700

Ser Gly Phe Gly Gly Ser Ala Gly Pro Gln Gly Gly Phe Gly Ala Thr
705 710 715 720

Gly Gly Ala Ser Ala Gly Leu Ile Ser Arg Val Ala Asn Ala Leu Ala
725 730 735

Asn Thr Ser Thr Leu Arg Thr Val Leu Arg Thr Gly Val Ser Gln Gln
740 745 750

Ile Ala Ser Ser Val Val Gln Arg Ala Ala Gln Ser Leu Ala Ser Thr
755 760 765

Leu Gly Val Asp Gly Asn Asn Leu Ala Arg Phe Ala Val Gln Ala Val
770 775 780

Ser Arg Leu Pro Ala Gly Ser Asp Thr Ser Ala Tyr Ala Gln Ala Phe
785 790 795 800

Ser Ser Ala Leu Phe Asn Ala Gly Val Leu Asn Ala Ser Asn Ile Asp
805 810 815

Thr Leu Gly Ser Arg Val Leu Ser Ala Leu Leu Asn Gly Val Ser Ser
820 825 830

Ala Ala Gln Gly Leu Gly Ile Asn Val Asp Ser Gly Ser Val Gln Ser
835 840 845

Asp Ile Ser Ser Ser Ser Ser Phe Leu Ser Thr Ser Ser Ser Ser Ala

850

855

860

Ser Tyr Ser Gln Ala Ser Ala Ser Ser Thr Ser Gly Ala Gly Tyr Thr
865 870 875 880

Gly Pro Ser Gly Pro Ser Thr Gly Pro Ser Gly Tyr Pro Gly Pro Leu
885 890 895

Gly Gly Gly Ala Pro Phe Gly Gln Ser Gly Phe Gly Gly Ser Ala Gly
900 905 910

Pro Gln Gly Gly Phe Gly Ala Thr Gly Gly Ala Ser Ala Gly Leu Ile
915 920 925

Ser Arg Val Ala Asn Ala Leu Ala Asn Thr Ser Thr Leu Arg Thr Val
930 935 940

Leu Arg Thr Gly Val Ser Gln Gln Ile Ala Ser Ser Val Val Gln Arg
945 950 955 960

Ala Ala Gln Ser Leu Ala Ser Thr Leu Gly Val Asp Gly Asn Asn Leu
965 970 975

Ala Arg Phe Ala Val Gln Ala Val Ser Arg Leu Pro Ala Gly Ser Asp
980 985 990

Thr Ser Ala Tyr Ala Gln Ala Phe Ser Ser Ala Leu Phe Asn Ala Gly
995 1000 1005

Val Leu Asn Ala Ser Asn Ile Asp Thr Leu Gly Ser Arg Val Leu
1010 1015 1020

Ser Ala Leu Leu Asn Gly Val Ser Ser Ala Ala Gln Gly Leu Gly
1025 1030 1035

Ile Asn Val Asp Ser Gly Ser Val Gln Ser Asp Ile Ser Ser Ser
1040 1045 1050

Ser Ser Phe Leu Ser Thr Ser Ser Ser Ser Ala Ser Tyr Ser Gln
1055 1060 1065

Ala Ser Ala Ser Ser Thr Ser Gly Thr Gly Tyr Thr Gly Pro Ser
1070 1075 1080

Gly Pro Ser Thr Gly Pro Ser Gly Tyr Pro Gly Pro Leu Gly Gly
1085 1090 1095

Gly Ala Pro Phe Gly Gln Ser Gly Phe Gly Gly Ser Ala Gly Pro
1100 1105 1110

Gln Gly Gly Phe Gly Ala Thr Gly Gly Ala Ser Ala Gly Leu Ile
Page 117

1115

1120

1125

Ser Arg Val Ala Asn Ala Leu Ala Asn Thr Ser Thr Leu Arg Thr
 1130 1135 1140

Val Leu Arg Thr Gly Val Ser Gln Gln Ile Ala Ser Ser Val Val
 1145 1150 1155

Gln Arg Ala Ala Gln Ser Leu Ala Ser Thr Leu Gly Val Asp Gly
 1160 1165 1170

Asn Asn Leu Ala Arg Phe Ala Val Gln Ala Val Ser Arg Leu Pro
 1175 1180 1185

Ala Gly Ser Asp Thr Ser Ala Tyr Ala Gln Ala Phe Ser Ser Ala
 1190 1195 1200

Leu Phe Asn Ala Gly Val Leu Asn Ala Ser Asn Ile Asp Thr Leu
 1205 1210 1215

Gly Ser Arg Val Leu Ser Ala Leu Leu Asn Gly Val Ser Ser Ala
 1220 1225 1230

Ala Gln Gly Leu Gly Ile Asn Val Asp Ser Gly Ser Val Gln Ser
 1235 1240 1245

Asp Ile Ser Ser Ser Ser Ser Phe Leu Ser Thr Ser Ser Ser Ser
 1250 1255 1260

Ala Ser Tyr Ser Gln Ala Ser Ala Ser Ser Thr Ser Gly Ala Gly
 1265 1270 1275

Tyr Thr Gly Pro Ser Gly Pro Ser Thr Gly Pro Ser Gly Tyr Pro
 1280 1285 1290

Gly Pro Leu Gly Gly Gly Ala Pro Phe Gly Gln Ser Gly Phe Gly
 1295 1300 1305

Gly Ser Ala Gly Pro Gln Gly Gly Phe Gly Ala Thr Gly Gly Ala
 1310 1315 1320

Ser Ala Gly Leu Ile Ser Arg Val Ala Asn Ala Leu Ala Asn Thr
 1325 1330 1335

Ser Thr Leu Arg Thr Val Leu Arg Thr Gly Val Ser Gln Gln Ile
 1340 1345 1350

Ala Ser Ser Val Val Gln Arg Ala Ala Gln Ser Leu Ala Ser Thr
 1355 1360 1365

Leu Gly Val Asp Gly Asn Asn Leu Ala Arg Phe Ala Val Gln Ala

1370

1375

1380

Val Ser Arg Leu Pro Ala Gly Ser Asp Thr Ser Ala Tyr Ala Gln
 1385 1390 1395
 Ala Phe Ser Ser Ala Leu Phe Asn Ala Gly Val Leu Asn Ala Ser
 1400 1405 1410
 Asn Ile Asp Thr Leu Gly Ser Arg Val Leu Ser Ala Leu Leu Asn
 1415 1420 1425
 Gly Val Ser Ser Ala Ala Gln Gly Leu Gly Ile Asn Val Asp Ser
 1430 1435 1440
 Gly Ser Val Gln Ser Asp Ile Ser Ser Ser Ser Ser Phe Leu Ser
 1445 1450 1455
 Thr Ser Ser Ser Ser Ala Ser Tyr Ser Gln Ala Ser Ala Ser Ser
 1460 1465 1470
 Thr Ser Gly Ala Gly Tyr Thr Gly Pro Ser Gly Pro Ser Thr Gly
 1475 1480 1485
 Pro Ser Gly Tyr Pro Gly Pro Leu Gly Gly Gly Ala Pro Phe Gly
 1490 1495 1500
 Gln Ser Gly Phe Gly Gly Ser Asp Gly Pro Gln Gly Gly Phe Gly
 1505 1510 1515
 Ala Thr Gly Gly Ala Ser Ala Gly Leu Ile Ser Arg Val Ala Asn
 1520 1525 1530
 Ala Leu Ala Asn Thr Ser Thr Leu Arg Thr Val Leu Arg Thr Gly
 1535 1540 1545
 Val Ser Gln Gln Ile Ala Ser Ser Val Val Gln Arg Ala Ala Gln
 1550 1555 1560
 Ser Leu Ala Ser Thr Leu Gly Val Asp Gly Asn Asn Leu Ala Arg
 1565 1570 1575
 Phe Ala Val Gln Ala Val Ser Arg Leu Pro Ala Gly Ser Asp Thr
 1580 1585 1590
 Ser Ala Tyr Ala Gln Ala Phe Ser Ser Ala Leu Phe Asn Ala Gly
 1595 1600 1605
 Val Leu Asn Ala Ser Asn Ile Asp Thr Leu Gly Ser Arg Val Leu
 1610 1615 1620
 Ser Ala Leu Leu Asn Gly Val Ser Ser Ala Ala Gln Gly Leu Gly

1625

1630

1635

Ile Asn Val Asp Ser Gly Ser Val Gln Ser Asp Ile Ser Ser Ser
1640 1645 1650

Ser Ser Phe Leu Ser Thr Ser Ser Ser Ser Ala Ser Tyr Ser Gln
1655 1660 1665

Ala Ser Ala Ser Ser Thr Ser Gly Ala Gly Tyr Thr Gly Pro Ser
1670 1675 1680

Gly Pro Ser Thr Gly Pro Ser Gly Tyr Pro Gly Pro Leu Gly Gly
1685 1690 1695

Gly Ala Pro Phe Gly Gln Ser Gly Phe Gly Gly Ser Ala Gly Pro
1700 1705 1710

Gln Gly Gly Phe Gly Ala Thr Gly Gly Ala Ser Ala Gly Leu Ile
1715 1720 1725

Ser Arg Val Ala Asn Ala Leu Ala Asn Thr Ser Thr Leu Arg Thr
1730 1735 1740

Val Leu Arg Thr Gly Val Ser Gln Gln Ile Ala Ser Ser Val Val
1745 1750 1755

Gln Arg Ala Ala Gln Ser Leu Ala Ser Thr Leu Gly Val Asp Gly
1760 1765 1770

Asn Asn Leu Ala Arg Phe Ala Val Gln Ala Val Ser Arg Leu Pro
1775 1780 1785

Ala Gly Ser Asp Thr Ser Ala Tyr Ala Gln Ala Phe Ser Ser Ala
1790 1795 1800

Leu Phe Asn Ala Gly Val Leu Asn Ala Ser Asn Ile Asp Thr Leu
1805 1810 1815

Gly Ser Arg Val Leu Ser Ala Leu Leu Asn Gly Val Ser Ser Ala
1820 1825 1830

Ala Gln Gly Leu Gly Ile Asn Val Asp Ser Gly Ser Val Gln Ser
1835 1840 1845

Asp Ile Ser Ser Ser Ser Ser Phe Leu Ser Thr Ser Ser Ser Ser
1850 1855 1860

Ala Ser Tyr Ser Gln Ala Ser Ala Ser Ser Thr Ser Gly Ala Gly
1865 1870 1875

Tyr Thr Gly Pro Ser Gly Pro Ser Thr Gly Pro Ser Gly Tyr Pro
Page 120

1880

1885

1890

Gly Pro Leu Gly Gly Gly Ala Pro Phe Gly Gln Ser Gly Phe Gly
1895 1900 1905

Gly Ser Ala Gly Pro Gln Gly Gly Phe Gly Ala Thr Gly Gly Ala
1910 1915 1920

Ser Ala Gly Leu Ile Ser Arg Val Ala Asn Ala Leu Ala Asn Thr
1925 1930 1935

Ser Thr Leu Arg Thr Val Leu Arg Thr Gly Val Ser Gln Gln Ile
1940 1945 1950

Ala Ser Ser Val Val Gln Arg Ala Ala Gln Ser Leu Ala Ser Thr
1955 1960 1965

Leu Gly Val Asp Gly Asn Asn Leu Ala Arg Phe Ala Val Gln Ala
1970 1975 1980

Val Ser Arg Leu Pro Ala Gly Ser Asp Thr Ser Ala Tyr Ala Gln
1985 1990 1995

Ala Phe Ser Ser Ala Leu Phe Asn Ala Gly Val Leu Asn Ala Ser
2000 2005 2010

Asn Ile Asp Thr Leu Gly Ser Arg Val Leu Ser Ala Leu Leu Asn
2015 2020 2025

Gly Val Ser Ser Ala Ala Gln Gly Leu Gly Ile Asn Val Asp Ser
2030 2035 2040

Gly Ser Val Gln Ser Asp Ile Ser Ser Ser Ser Ser Phe Leu Ser
2045 2050 2055

Thr Ser Ser Ser Ser Ala Ser Tyr Ser Gln Ala Ser Ala Ser Ser
2060 2065 2070

Thr Ser Gly Ala Gly Tyr Thr Gly Pro Ser Gly Pro Ser Thr Gly
2075 2080 2085

Pro Ser Gly Tyr Pro Gly Pro Leu Gly Gly Gly Ala Pro Phe Gly
2090 2095 2100

Gln Ser Gly Phe Gly Gly Ser Ala Gly Pro Gln Gly Gly Phe Gly
2105 2110 2115

Ala Thr Gly Gly Ala Ser Ala Gly Leu Ile Ser Arg Val Ala Asn
2120 2125 2130

Ala Leu Ala Asn Thr Ser Thr Leu Arg Thr Val Leu Arg Thr Gly
Page 121

2135
 2140
 2145
 Val Ser Gln Gln Ile Ala Ser Ser Val Val Gln Arg Ala Ala Gln
 2150 2155 2160
 Ser Leu Ala Ser Thr Leu Gly Val Asp Gly Asn Asn Leu Ala Arg
 2165 2170 2175
 Phe Ala Val Gln Ala Val Ser Arg Leu Pro Ala Gly Ser Asp Thr
 2180 2185 2190
 Ser Ala Tyr Ala Gln Ala Phe Ser Ser Ala Leu Phe Asn Ala Gly
 2195 2200 2205
 Val Leu Asn Ala Ser Asn Ile Asp Thr Leu Gly Ser Arg Val Leu
 2210 2215 2220
 Ser Ala Leu Leu Asn Gly Val Ser Ser Ala Ala Gln Gly Leu Gly
 2225 2230 2235
 Ile Asn Val Asp Ser Gly Ser Val Gln Ser Asp Ile Ser Ser Ser
 2240 2245 2250
 Ser Ser Phe Leu Ser Thr Ser Ser Ser Ser Ala Ser Tyr Ser Gln
 2255 2260 2265
 Ala Ser Ala Ser Ser Thr Ser Gly Ala Gly Tyr Thr Gly Pro Ser
 2270 2275 2280
 Gly Pro Ser Thr Gly Pro Ser Gly Tyr Pro Gly Pro Leu Gly Gly
 2285 2290 2295
 Gly Ala Pro Phe Gly Gln Ser Gly Phe Gly Gly Ser Ala Gly Pro
 2300 2305 2310
 Gln Gly Gly Phe Gly Ala Thr Gly Gly Ala Ser Ala Gly Leu Ile
 2315 2320 2325
 Ser Arg Val Ala Asn Ala Leu Ala Asn Thr Ser Thr Leu Arg Thr
 2330 2335 2340
 Val Leu Arg Thr Gly Val Ser Gln Gln Ile Ala Ser Ser Val Val
 2345 2350 2355
 Gln Arg Ala Ala Gln Ser Leu Ala Ser Thr Leu Gly Val Asp Gly
 2360 2365 2370
 Asn Asn Leu Ala Arg Phe Ala Val Gln Ala Val Ser Arg Leu Pro
 2375 2380 2385
 Ala Gly Ser Asp Thr Ser Ala Tyr Ala Gln Ala Phe Ser Ser Ala

2390

2395

2400

Leu	Phe	Asn	Ala	Gly	Val	Leu	Asn	Ala	Ser	Asn	Ile	Asp	Thr	Leu
2405						2410					2415			
Gly	Ser	Arg	Val	Leu	Ser	Ala	Leu	Leu	Asn	Gly	Val	Ser	Ser	Ala
2420						2425					2430			
Ala	Gln	Gly	Leu	Gly	Ile	Asn	Val	Asp	Ser	Gly	Ser	Val	Gln	Ser
2435						2440					2445			
Asp	Ile	Ser	Ser	Ser	Ser	Ser	Phe	Leu	Ser	Thr	Ser	Ser	Ser	Ser
2450						2455					2460			
Ala	Ser	Tyr	Ser	Gln	Ala	Leu	Ala	Ser	Ser	Thr	Ser	Gly	Ala	Gly
2465						2470					2475			
Tyr	Thr	Gly	Pro	Ser	Gly	Pro	Ser	Thr	Gly	Pro	Ser	Gly	Tyr	Pro
2480						2485					2490			
Gly	Pro	Leu	Gly	Gly	Gly	Ala	Pro	Phe	Gly	Gln	Ser	Gly	Phe	Gly
2495						2500					2505			
Gly	Ser	Ala	Gly	Pro	Gln	Gly	Gly	Phe	Gly	Ala	Thr	Gly	Gly	Ala
2510						2515					2520			
Ser	Ala	Gly	Leu	Ile	Ser	Arg	Val	Ala	Asn	Ala	Leu	Ala	Asn	Thr
2525						2530					2535			
Ser	Thr	Leu	Arg	Thr	Val	Leu	Arg	Thr	Gly	Val	Ser	Gln	Gln	Ile
2540						2545					2550			
Ala	Ser	Ser	Val	Val	Gln	Arg	Ala	Ala	Gln	Ser	Leu	Ala	Ser	Thr
2555						2560					2565			
Leu	Gly	Val	Asp	Gly	Asn	Asn	Leu	Ala	Arg	Phe	Ala	Val	Gln	Ala
2570						2575					2580			
Val	Ser	Arg	Leu	Pro	Ala	Gly	Ser	Asp	Thr	Ser	Ala	Tyr	Ala	Gln
2585						2590					2595			
Ala	Phe	Ser	Ser	Ala	Leu	Phe	Asn	Ala	Gly	Val	Leu	Asn	Ala	Ser
2600						2605					2610			
Asn	Ile	Asp	Thr	Leu	Gly	Ser	Arg	Val	Leu	Ser	Ala	Leu	Leu	Asn
2615						2620					2625			
Gly	Val	Ser	Ser	Ala	Ala	Gln	Gly	Leu	Gly	Ile	Asn	Val	Asp	Ser
2630						2635					2640			
Gly	Ser	Val	Gln	Ser	Asp	Ile	Ser	Ser	Ser	Ser	Ser	Phe	Leu	Ser

2645

2650

2655

Thr Ser Ser Ser Ser Ala Ser Tyr Ser Gln Ala Ser Ala Ser Ser
 2660 2665 2670
 Thr Ser Gly Ala Gly Tyr Thr Gly Pro Ser Gly Pro Ser Thr Gly
 2675 2680 2685
 Pro Ser Gly Tyr Pro Gly Pro Leu Ser Gly Gly Ala Ser Phe Gly
 2690 2695 2700
 Ser Gly Gln Ser Ser Phe Gly Gln Thr Ser Ala Phe Ser Ala Ser
 2705 2710 2715
 Gly Ala Gly Gln Ser Ala Gly Val Ser Val Ile Ser Ser Leu Asn
 2720 2725 2730
 Ser Pro Val Gly Leu Arg Ser Ala Ser Ala Ala Ser Arg Leu Ser
 2735 2740 2745
 Gln Leu Thr Ser Ser Ile Thr Asn Ala Val Gly Ala Asn Gly Val
 2750 2755 2760
 Asp Ala Asn Ser Leu Ala Arg Ser Leu Gln Ser Ser Phe Ser Ala
 2765 2770 2775
 Leu Arg Ser Ser Gly Met Ser Ser Ser Asp Ala Lys Ile Glu Val
 2780 2785 2790
 Leu Leu Glu Thr Ile Val Gly Leu Leu Gln Leu Leu Ser Asn Thr
 2795 2800 2805
 Gln Val Arg Gly Val Asn Pro Ala Thr Ala Ser Ser Val Ala Asn
 2810 2815 2820
 Ser Ala Ala Arg Ser Phe Glu Leu Val Leu Ala
 2825 2830

<210> 91
 <211> 131
 <212> PRT
 <213> Argiope aurantia (tubuliform spidroin 1)

<220>
 <221> misc_feature
 <222> (46)..(46)
 <223> xaa can be any naturally occurring amino acid

<220>
 <221> misc_feature
 <222> (75)..(75)
 <223> xaa can be any naturally occurring amino acid

<220>

558-33 PCT sequence listing_30 11 2010_ST25.txt

<221> misc_feature

<222> (108)..(108)

<223> Xaa can be any naturally occurring amino acid

<400> 91

Gly Asn Ala Ala Gly Leu Gly Asn Ala Leu Ser Gln Ala Val Ser Ser
1 5 10 15

Val Gly Val Gly Ala Ser Ser Ser Thr Tyr Ala Asn Ala Val Ser Asn
20 25 30

Ala Val Gly Gln Phe Leu Ala Gly Gln Gly Ile Leu Asn Xaa Ala Asn
35 40 45

Ala Gly Ser Leu Ala Ser Ser Phe Ala Ser Ala Leu Ser Ala Ser Ala
50 55 60

Ala Ser Val Ala Ser Ser Ala Ala Ala Gln Xaa Ala Ser Gln Ser Gln
65 70 75 80

Ala Ala Ala Ser Ala Phe Ser Arg Ala Ala Ser Gln Ser Ala Ser Gln
85 90 95

Ser Ala Ala Arg Ser Gly Ala Gln Ser Ser Ser Xaa Thr Thr Thr Thr
100 105 110

Ser Thr Ser Gly Ser Gln Ala Ala Ser Gln Ser Ala Ser Ser Ala Ala
115 120 125

Ser Gln Ala
130

<210> 92

<211> 545

<212> PRT

<213> Argiope aurantia (tubuliform spidroin)

<400> 92

Thr Thr Thr Ser Thr Ala Gly Ser Gln Ala Ala Ser Gln Phe Ala Ser
1 5 10 15

Ser Ala Ala Ser Gln Ala Ser Ala Ser Ser Phe Ala Arg Ala Ser Ser
20 25 30

Ala Ser Leu Ala Ala Ser Ser Ser Phe Ser Ser Ala Phe Ser Ser Ala
35 40 45

Asn Ser Leu Ser Ala Leu Gly Asn Val Gly Tyr Gln Leu Gly Phe Asn
50 55 60

Val Ala Asn Asn Leu Gly Ile Gly Asn Ala Ala Gly Leu Gly Asn Ala
65 70 75 80

558-33 PCT sequence listing_30 11 2010_ST25.txt

Leu Ser Gln Ala Val Ser Ser Val Gly Val Gly Ala Ser Ser Ser Ser
 85 90 95
 Tyr Ala Asn Ala Val Ser Asn Ala Val Gly Gln Leu Leu Ala Gly Gln
 100 105 110
 Gly Ile Leu Asn Ala Ala Asn Ala Gly Ser Leu Ala Ser Ser Phe Ala
 115 120 125
 Ser Ala Leu Ser Ala Ser Ala Ala Ser Val Ala Ser Ser Ala Ala Ala
 130 135 140
 Gln Ala Ala Ser Gln Ser Gln Ala Ala Ala Ser Ala Phe Ser Arg Ala
 145 150 155 160
 Ala Ser Gln Ser Ala Ser Gln Ser Ala Ala Arg Ser Gly Ala Gln Ser
 165 170 175
 Ile Ser Thr Thr Thr Thr Thr Ser Thr Ala Gly Ser Gln Ala Ala Ser
 180 185 190
 Gln Ser Ala Ser Ser Ala Ala Ser Gln Ala Ser Ala Ser Ser Phe Ala
 195 200 205
 Arg Ala Ser Ser Ala Ser Leu Ala Ala Ser Ser Ser Phe Ser Ser Ala
 210 215 220
 Phe Ser Ser Ala Asn Ser Leu Ser Ala Leu Gly Asn Val Gly Tyr Gln
 225 230 235 240
 Leu Gly Phe Asn Val Ala Asn Asn Leu Gly Ile Gly Asn Ala Ala Gly
 245 250 255
 Leu Gly Asn Ala Leu Ser Gln Ala Val Ser Ser Val Gly Val Gly Ala
 260 265 270
 Ser Ser Ser Thr Tyr Ala Asn Ala Val Ser Asn Ala Val Gly Gln Phe
 275 280 285
 Leu Ala Gly Gln Gly Ile Leu Asn Ala Ala Asn Ala Gly Ser Leu Ala
 290 295 300
 Ser Ser Phe Ala Ser Ala Leu Ser Ala Ser Ala Ala Ser Val Ala Ser
 305 310 315 320
 Ser Ala Ala Ala Gln Ala Ala Ser Gln Ser Gln Ala Ala Ala Ser Ala
 325 330 335
 Phe Ser Arg Ala Ala Ser Gln Ser Ala Ser Gln Ser Ala Ala Arg Ser
 340 345 350

558-33 PCT sequence listing_30 11 2010_ST25.txt

Gly Ala Gln Ser Ser Ser Thr Thr Thr Thr Thr Ser Thr Ala Gly Ser
355 360 365

Gln Ala Ala Ser Gln Phe Ala Ser Ser Ala Ala Ser Gln Ala Ser Ala
370 375 380

Ser Ser Phe Ala Arg Ala Ser Ser Ala Ser Leu Ala Ala Ser Ser Ser
385 390 395 400

Phe Ser Ser Ala Phe Ser Ser Ala Asn Ser Leu Ser Ala Leu Gly Asn
405 410 415

Val Gly Tyr Gln Leu Gly Phe Asn Val Ala Asn Asn Leu Gly Ile Ser
420 425 430

Asn Ala Ala Gly Leu Gly Asn Ala Leu Ser Gln Ala Val Ser Ser Val
435 440 445

Gly Val Gly Ala Ser Ser Ser Ser Tyr Ala Asn Ala Val Ser Asn Ala
450 455 460

Val Gly Gln Phe Leu Ala Gly Gln Gly Ile Leu Asn Ala Ala Asn Ala
465 470 475 480

Gly Ser Leu Ala Ser Ser Phe Ala Ser Ala Leu Ser Ala Ser Ala Ala
485 490 495

Ser Val Ala Ser Ser Ala Ala Ala Gln Ala Ala Ser Gln Ser Gln Ala
500 505 510

Ala Ala Ser Ala Phe Ser Arg Ala Ala Ser Gln Ser Ala Ser Gln Ser
515 520 525

Ala Ala Arg Ser Gly Ala Gln Ser Ser Ser Thr Thr Thr Thr Thr Ser
530 535 540

Thr
545

<210> 93
<211> 376
<212> PRT
<213> Argiope aurantia (tubuliform spidroin)

<400> 93

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

Gly Gln Gly Ile Leu Asn Ala Ala Asn Ala Gly Ser Leu Ala Ser Ser
20 25 30

558-33 PCT sequence listing_30 11 2010_ST25.txt

Phe Ala Ser Ala Leu Ser Ala Ser Ala Ala Ser Val Ala Ser Ser Ala
35 40 45

Ala Ala Gln Ala Ala Ser Gln Ser Gln Ala Ala Ala Ser Ala Phe Ser
50 55 60

Arg Ala Ala Ser Gln Ser Ala Ser Gln Ser Ala Ala Arg Ser Gly Ala
65 70 75 80

Gln Ser Phe Ser Thr Thr Thr Thr Thr Ser Thr Ala Gly Ser Gln Ala
85 90 95

Ala Ser Gln Ser Ala Ser Ser Ala Ala Ser Gln Ala Ser Ala Ser Ser
100 105 110

Phe Ala Arg Ala Ser Ser Ala Ser Leu Ala Ala Ser Ser Ala Phe Ser
115 120 125

Ser Ala Phe Ser Ser Ala Asn Ser Leu Ser Ala Leu Gly Asn Val Ala
130 135 140

Tyr Gln Leu Gly Phe Asn Val Ala Asn Thr Leu Gly Ile Gly Asn Ala
145 150 155 160

Ala Gly Leu Gly Asn Ala Leu Ser Gln Ala Val Ser Ser Val Gly Val
165 170 175

Gly Ala Ser Ser Ser Thr Tyr Ala Asn Ala Val Ser Asn Ala Val Gly
180 185 190

Gln Phe Leu Ala Gly Gln Gly Val Leu Asn Ala Gly Asn Ala Gly Ser
195 200 205

Leu Ala Ser Ser Phe Ala Asn Ala Leu Ser Asn Ser Ala Leu Ser Val
210 215 220

Gly Ser Arg Val Ser Ser Pro Ser Tyr Gly Ala Leu Ser Pro Ile Ala
225 230 235 240

Ala Gly Pro Asn Phe Ile Ser Thr Gly Leu Asn Val Gly Gly Pro Phe
245 250 255

Thr Thr Leu Ser Gln Ser Leu Pro Thr Ser Leu Gln Thr Ala Leu Ala
260 265 270

Pro Ile Val Ser Ser Ser Gly Leu Gly Ser Ser Ala Ala Thr Ala Arg
275 280 285

Val Arg Ser Leu Ala Asn Ser Ile Ala Ser Ala Ile Ser Ser Ser Gly
290 295 300

558-33 PCT sequence listing_30 11 2010_ST25.txt

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

Ala Gln Val Ser Ser Ser Ser Ser Leu Asn Ser Ser Glu Val Thr Asn
325 330 335

Glu Val Leu Leu Glu Ala Ile Ala Ala Leu Leu Gln Val Ile Asn Gly
340 345 350

Gly Ser Ile Thr Ser Val Asp Leu Arg Asn Val Pro Asn Ala Gln Gln
355 360 365

Asp Leu Val Asn Ala Leu Ser Gly
370 375

<210> 94

<211> 654

<212> PRT

<213> Araneus gemmoides (tubuliform spidroin)

<400> 94

Ala Ser Gln Ser Gln Ala Ala Ser Gln Ser Gln Ala Ala Ala Ser Ala
1 5 10 15

Phe Arg Gln Ala Ala Ser Gln Ser Ala Ser Gln Ser Ala Ser Arg Ala
20 25 30

Gly Ser Gln Ser Ser Thr Lys Thr Thr Ser Thr Ser Thr Ser Gly Ser
35 40 45

Gln Ala Asp Ser Arg Ser Ala Ser Ser Ser Ala Ser Gln Ala Ser Ala
50 55 60

Ser Ala Phe Ala Gln Gln Ser Ser Ala Ser Leu Ser Ser Ser Ser Ser
65 70 75 80

Phe Ser Ser Ala Phe Ser Ser Ala Thr Ser Ile Ser Ala Val Gly Asn
85 90 95

Val Gly Tyr Gln Leu Gly Leu Lys Val Ala Asn Ser Leu Gly Leu Gly
100 105 110

Asn Ala Gln Ala Leu Ala Ser Ser Leu Ser Gln Ala Val Ser Ala Val
115 120 125

Gly Val Gly Ala Ser Ser Asn Ala Tyr Ala Asn Ala Val Ser Asn Ala
130 135 140

Val Gly Gln Val Leu Ala Gly Gln Gly Ile Leu Asn Ala Ala Asn Ala
145 150 155 160

Gly Ser Leu Ala Ser Ser Phe Ala Ser Ala Leu Ser Ser Ser Ala Ala
Page 129

Ser Val Ala Ser Gln Ser Ala Ser Gln Ser Gln Ala Ala Ser Gln Ser
180 185 190

Gln Ala Ala Ala Ser Ala Phe Arg Gln Ala Ala Ser Gln Ser Ala Ser
195 200 205

Gln Ser Ala Ser Arg Ala Gly Ser Gln Ser Ser Thr Lys Thr Thr Ser
210 215 220

Thr Ser Thr Ser Gly Ser Gln Ala Asp Ser Arg Ser Ala Ser Ser Ser
225 230 235 240

Ala Ser Gln Ala Ser Ala Ser Ala Phe Ala Gln Gln Ser Ser Ala Ser
245 250 255

Leu Ser Ser Ser Ser Ser Phe Ser Ser Ala Phe Ser Ser Ala Thr Ser
260 265 270

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

Asn Ser Leu Gly Leu Gly Asn Ala Gln Ala Leu Ala Ser Ser Leu Ser
290 295 300

Gln Ala Val Ser Ala Val Gly Val Gly Ala Ser Ser Asn Ala Tyr Ala
305 310 315 320

Asn Ala Val Ser Asn Ala Val Gly Gln Val Leu Ala Gly Gln Gly Ile
325 330 335

Leu Asn Ala Ala Asn Ala Gly Ser Leu Ala Ser Ser Phe Ala Ser Ala
340 345 350

Leu Ser Ser Ser Ala Ala Ser Val Ala Ser Gln Ser Ala Ser Gln Ser
355 360 365

Gln Ala Ala Ser Gln Ser Gln Ala Ala Ala Ser Ala Phe Arg Gln Ala
370 375 380

Ala Ser Gln Ser Ala Ser Gln Ser Asp Ser Arg Ala Gly Ser Gln Ser
385 390 395 400

Ser Thr Lys Thr Thr Ser Thr Ser Thr Ser Gly Ser Gln Ala Asp Ser
405 410 415

Arg Ser Ala Ser Ser Ser Ala Ser Gln Ala Ser Ala Ser Ala Phe Ala
420 425 430

Gln Gln Ser Ser Ala Ser Leu Ser Ser Ser Ser Ser Phe Ser Ser Ala
Page 130

Phe Ser Ser Ala Thr Ser Ile Ser Ala Val Gly Asn Val Gly Tyr Gln
450 455 460

Leu Gly Leu Lys Val Ala Asn Ser Leu Gly Leu Gly Asn Ala Gln Ala
465 470 475 480

Leu Ala Ser Ser Leu Ser Gln Ala Val Ser Ala Val Gly Val Gly Ala
485 490 495

Ser Ser Asn Ala Tyr Ala Asn Ala Val Ser Asn Ala Val Gly Gln Val
500 505 510

Leu Ala Gly Gln Gly Ile Leu Asn Ala Ala Asn Ala Gly Ser Leu Ala
515 520 525

Ser Ser Phe Ala Ser Ala Leu Ser Ser Ser Ala Ala Ser Val Ala Ser
530 535 540

Gln Ser Ala Ser Gln Ser Gln Ala Ala Ser Gln Ser Gln Ala Ala Ala
545 550 555 560

Ser Ala Phe Arg Gln Ala Ala Ser Gln Ser Ala Ser Gln Ser Ala Ser
565 570 575

Arg Ala Gly Ser Gln Ser Ser Thr Lys Thr Thr Ser Thr Ser Thr Ser
580 585 590

Gly Ser Gln Ala Asp Ser Arg Ser Ala Ser Ser Ser Ala Ser Gln Ala
595 600 605

Ser Ala Ser Ala Phe Ala Gln Gln Ser Ser Ala Ser Leu Ser Ser Ser
610 615 620

Ser Ser Phe Ser Ser Ala Phe Ser Ser Ala Thr Ser Ile Ser Ala Val
625 630 635 640

Gly Asn Val Gly Tyr Gln Leu Gly Leu Lys Val Ala Asn Ser
645 650

<210> 95
<211> 294
<212> PRT
<213> Araneus gemmoides (tubuliform spidroin)
<400> 95

Ser Ala Ser Gln Ser Gln Ala Ala Ala Ser Ala Phe Arg Gln Ala Ala
1 5 10 15

Ser Gln Ser Ala Ser Gln Ser Ala Ser Arg Ala Gly Ser Gln Ser Ser
20 25 30

558-33 PCT sequence listing_30 11 2010_ST25.txt

Ser Lys Thr Thr Ser Thr Ser Thr Ser Gly Ser Gln Ala Asp Ser Arg
35 40 45

Ser Ala Ser Ser Ser Ala Ser Gln Ala Ser Ala Ser Ala Ile Ala Gln
50 55 60

Gln Ser Ser Ala Ser Leu Ser Ser Ser Ser Ser Phe Ser Ser Ala Phe
65 70 75 80

Ser Ser Ala Thr Ser Leu Ser Ala Val Gly Asn Val Gly Tyr Gln Leu
85 90 95

Gly Leu Lys Val Ala Asn Ser Leu Gly Leu Gly Asn Ala Gln Ala Leu
100 105 110

Ala Ser Gln Gly Ile Leu Asn Ala Ala Asn Ala Gly Ser Leu Ala Ser
115 120 125

Ser Phe Ala Ser Ala Leu Ser Ala Ser Ala Gly Ser Val Gly Asn Arg
130 135 140

Ser Ser Ala Gly Pro Ser Ala Val Gly Leu Gly Gly Val Ser Ala Val
145 150 155 160

Pro Gly Phe Ile Ser Ala Thr Pro Val Val Gly Gly Pro Val Thr Val
165 170 175

Asn Gly Gln Val Leu Pro Ala Ala Leu Gln Thr Ala Leu Ala Pro Val
180 185 190

Val Thr Ser Ser Gly Leu Ala Ser Ser Ala Ala Ser Ala Arg Val Ser
195 200 205

Ser Leu Ala Gln Ser Ile Ala Ser Ala Ile Ser Ser Ser Gly Gly Thr
210 215 220

Leu Ser Val Pro Ile Phe Leu Asn Leu Leu Ser Ser Ala Gly Ala Gln
225 230 235 240

Ala Thr Ala Ser Ser Ser Leu Ser Ser Ser Gln Val Thr Ser Gln Val
245 250 255

Leu Leu Glu Gly Ile Ala Ala Leu Leu Gln Val Ile Asn Gly Ala Gln
260 265 270

Ile Arg Ser Val Asn Leu Ala Asn Val Pro Asn Val Gln Gln Ala Leu
275 280 285

Val Ser Ala Leu Ser Gly
290

558-33 PCT sequence listing_30 11 2010_ST25.txt

<210> 96
 <211> 592
 <212> PRT
 <213> Nephila clavipes (tubuliform spidroin)
 <400> 96
 Ala Ser Ala Ala Ser Ser Leu Ala Tyr Ser Ile Gly Ile Ser Ala Ala
 1 5 10 15
 Arg Ser Leu Gly Ile Ala Asp Ala Ala Gly Leu Ala Gly Ala Leu Ala
 20 25 30
 Arg Ala Ala Gly Ala Leu Gly Gln Gly Asp Thr Ala Ala Ser Tyr Gly
 35 40 45
 Asn Ala Leu Ser Thr Ala Ala Gly Gln Phe Phe Ala Thr Ala Gly Leu
 50 55 60
 Leu Asn Ala Gly Asn Ala Ser Ala Leu Ala Ser Ser Phe Ala Arg Ala
 65 70 75 80
 Phe Ser Ala Ser Ala Glu Ser Gln Ser Phe Ala Gln Ser Gln Ala Phe
 85 90 95
 Gln Gln Ala Ser Ala Phe Gln Gln Ala Ala Ser Arg Ser Ala Ser Gln
 100 105 110
 Ser Ala Ala Glu Ala Asp Ser Thr Ser Ser Ser Thr Thr Thr Thr Thr
 115 120 125
 Ser Ala Ala Arg Ser Gln Ala Ala Ser Gln Ser Ala Ser Ser Ser Tyr
 130 135 140
 Ser Ser Ala Phe Ala Gln Ala Ala Ser Ser Ser Phe Ala Ile Ser Ser
 145 150 155 160
 Ala Leu Ser Arg Ala Phe Ser Ser Val Ser Ser Ala Ser Ala Ala Ser
 165 170 175
 Ser Leu Ala Tyr Ser Ile Gly Leu Ser Ala Ala Arg Ser Leu Gly Ile
 180 185 190
 Ala Asp Ala Thr Gly Leu Ala Gly Ala Leu Ala Arg Ala Val Gly Ala
 195 200 205
 Leu Gly Gln Gly Ala Thr Ala Ala Ser Tyr Gly Asn Ala Leu Ser Thr
 210 215 220
 Ala Ala Ala Gln Phe Phe Ala Thr Ala Gly Leu Leu Asn Ala Gly Asn
 225 230 235 240

558-33 PCT sequence listing_30 11 2010_ST25.txt

Ala Ser Ala Leu Ala Ser Ser Phe Ala Arg Ala Phe Ser Ala Ser Ala
245 250 255

Glu Ser Gln Ser Phe Ala Gln Ser Gln Ala Phe Gln Gln Ala Ser Ala
260 265 270

Phe Gln Gln Ala Ala Ser Arg Ser Ala Ser Gln Ser Ala Ala Glu Ala
275 280 285

Gly Ser Thr Ser Ser Ser Thr Thr Thr Thr Thr Ser Ala Ala Arg Ser
290 295 300

Gln Ala Ala Ser Gln Ser Ala Ser Ser Ser Tyr Ser Ser Ala Phe Ala
305 310 315 320

Gln Ala Ala Ser Ser Ser Leu Ala Thr Ser Ser Ala Leu Ser Arg Ala
325 330 335

Phe Ser Ser Val Ser Ser Ala Ser Ala Ala Ser Ser Leu Ala Tyr Ser
340 345 350

Ile Gly Leu Ser Ala Ala Arg Ser Leu Gly Ile Ala Asp Ala Ala Gly
355 360 365

Leu Ala Gly Val Leu Ala Arg Ala Ala Gly Ala Leu Gly Gln Gly Ala
370 375 380

Thr Ala Ala Ser Tyr Gly Asn Ala Leu Ser Thr Ala Ala Gly Gln Phe
385 390 395 400

Phe Ala Ala Gln Gly Leu Leu Asn Ala Gly Asn Val Ser Ser Leu Ala
405 410 415

Ser Ala Leu Ala Asn Ala Leu Ser Tyr Ser Ala Ala Asn Ser Ala Ala
420 425 430

Ser Gly Asn Tyr Ile Gly Val Ser Gln Asn Phe Gly Ser Ile Ala Pro
435 440 445

Val Ala Gly Thr Ala Gly Ile Ser Val Gly Val Pro Gly Leu Leu Pro
450 455 460

Thr Ser Ala Gly Thr Val Leu Ala Pro Ala Asn Ala Gln Ile Ile Ala
465 470 475 480

Pro Gly Leu Gln Thr Thr Leu Ala Pro Val Phe Ser Ser Ser Gly Leu
485 490 495

Ser Ser Ala Ser Ala Asn Ala Arg Val Ser Ser Leu Ala Gln Ser Phe
500 505 510

558-33 PCT sequence listing_30 11 2010_ST25.txt

Ala Ser Ala Leu Ser Ala Ser Arg Gly Thr Leu Ser Val Ser Thr Phe
515 520 525

Leu Thr Leu Leu Ser Pro Ile Ser Ser Gln Ile Arg Ala Asn Thr Ser
530 535 540

Leu Asp Gly Thr Gln Ala Thr Val Gln Val Leu Leu Glu Ala Leu Ala
545 550 555 560

Ala Leu Leu Gln Val Ile Asn Ala Ala Gln Ile Thr Glu Val Asn Val
565 570 575

Ser Asn Val Ser Ser Ala Asn Ala Ala Leu Val Ser Ala Leu Ala Gly
580 585 590

OCR Model-Sheet for PCT/EP Sequence Listing discs



Receiving section - Front End The Hague / München

File number : **PCT/EP**..... **PCT/EP 2010 / 0 0 7 2 6 6**
Date of receipt : **3 0 NOV 2010**

SEQL disc:



For Search Purposes Only



Part of the international application

Model sent on : **0 2 DEC 2010**

To



Front End The Hague Central Room
Contact Julie Jacobs-Davies Phone 3815 / Ron Nichol Phone 3243

PCT SeqI Discs

(*) Please make sure that the application number is on the Disc/CD etc.