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Gly Ala Gly Val Gly Ala Gly Tyr Gly Ala Gly Tyr Gly Ala Gly
4325 4330 4335

Ala Gly Ala Gly Tyr Gly Ala Gly Ala Gly Ser Gly Ala Ala Ser
4340 4345 4350

Gly Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly Ala Gly Ser Gly
4355 4360 4365

Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly Ser Gly Ala Gly Ala
4370 4375 4380

Gly Ser Gly Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly Ser Gly
4385 4390 4395

Ala Gly Ser Gly Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly Tyr
4400 4405 4410

Gly Ala Gly Tyr Gly Ala Gly Val Gly Ala Gly Tyr Gly Ala Gly
4415 4420 4425

Ala Gly Val Gly Tyr Gly Ala Gly Ala Gly Ala Gly Tyr Gly Ala
4430 4435 4440

Gly Ala Gly Ser Gly Ala Ala Ser Gly Ala Gly Ala Gly Ser Gly
4445 4450 4455

Ser Gly Ala Gly Ser Gly Ala Gly Ala Gly Ser Gly Ala Gly Ala
4460 4465 4470

Gly Ser Gly Ala Gly Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly
4475 4480 4485

Ser Gly Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly Tyr Gly Ala
4490 4495 4500

Gly Tyr Gly Ala Gly Ala Gly Ser Gly Ala Ala Ser Gly Ala Gly
4505 4510 4515

Ala Gly Ala Gly Ala Gly Ala Gly Thr Gly Ser Ser Gly Phe Gly
4520 4525 4530

Pro Tyr Val Ala Asn Gly Gly Tyr Ser Gly Tyr Glu Tyr Ala Trp
4535 4540 4545

Ser Ser Glu Ser Asp Phe Gly Thr Gly Ser Gly Ala Gly Ala Gly
4550 4555 4560

Ser Gly Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly Tyr Gly Ala
4565 4570 4575

Gly Val Gly Ala Gly Tyr Gly Ala Gly Tyr Gly Ala Gly Ala Gly
4580 4585 4590

Ala Gly Tyr Gly Ala Gly Ala Gly Ser Gly Ala Gly Ser Gly Ala
4595 4600 4605

Gly Ala Gly Ser Gly Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly
4610 4615 4620

Ser Gly Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly Ser Gly Ala
4625 4630 4635

Gly Ala Gly Ser Gly Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly
4640 4645 4650

Tyr Gly Ala Gly Tyr Gly Ala Gly Ala Gly Ala Gly Tyr Gly Ala
4655 4660 4665

Gly Ala Gly Val Gly Tyr Gly Ala Gly Ala Gly Ala Gly Tyr Gly
4670 4675 4680

Ala Gly Ala Gly Ser Gly Ala Gly Ser Gly Ala Gly Ala Gly Ser
4685 4690 4695

Gly Ser Gly Ala Gly Ala Gly Ser Gly Ser Gly Ala Gly Ser Gly
4700 4705 4710

Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly Ser Gly Ala Gly Ala
4715 4720 4725

Gly Ser Gly Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly Ser Gly
4730 4735 4740

Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly Tyr Gly Ala Gly Tyr
4745 4750 4755

Gly Ile Gly Val Gly Ala Gly Tyr Gly Ala Gly Ala Gly Val Gly
4760 4765 4770

Tyr Gly Ala Gly Ala Gly Ala Gly Tyr Gly Ala Gly Ala Gly Ser
4775 4780 4785

Gly Ala Ala Ser Gly Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly
4790 4795 4800

Ser Gly Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly Ser Gly Ala
4805 4810 4815

Gly Ala Gly Ser Gly Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly
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Ser Gly Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly Ser Gly Ala
4835 4840 4845

Gly Ala Gly Tyr Gly Ala Gly Ala Gly Val Gly Tyr Gly Ala Gly
4850 4855 4860

Ala Gly Ser Gly Ala Ala Ser Gly Ala Gly Ala Gly Ser Gly Ala
4865 4870 4875

Gly Ala Gly Ser Gly Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly
4880 4885 4890

Ser Gly Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly Ser Gly Ala
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Gly Ala Gly Ser Gly Ala Gly Ser Gly Ala Gly Ala Gly Ser Gly
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Ala Gly Ala Gly Tyr Gly Ala Gly Tyr Gly Ala Gly Val Gly Ala
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Gly Tyr Gly Ala Gly Ala Gly Tyr Gly Ala Gly Tyr Gly Val Gly
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Ala Gly Ala Gly Tyr Gly Ala Gly Ala Gly Ser Gly Ala Gly Ser
4955 4960 4965

Gly Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly Ser Gly Ala Gly
4970 4975 4980

Ala Gly Ser Gly Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly Ser
4985 4990 4995

Gly Ala Gly Ser Gly Ala Gly Ala Gly Tyr Gly Ala Gly Ala Gly
5000 5005 5010

Ala Gly Tyr Gly Ala Gly Ala Gly Ala Gly Tyr Gly Ala Gly Ala
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Gly Ser Gly Ala Ala Ser Gly Ala Gly Ala Gly Ala Gly Ala Gly
5030 5035 5040

Ser Gly Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly Ser Gly Ala
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Gly Ser Gly Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly Tyr Gly
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Ala Gly Ala Gly Ser Gly Ala Ala Ser Gly Ala Gly Ala Gly Ser
5075 5080 5085

Gly Ala Gly Ala Gly Ala Gly Ala Gly Ala Gly Ala Gly Ser Gly
5090 5095 5100

Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly Tyr Gly Ala Gly Ala
5105 5110 5115

Gly Ser Gly Ala Ala Ser Gly Ala Gly Ala Gly Ala Gly Ala Gly
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Thr Gly Ser Ser Gly Phe Gly Pro Tyr Val Ala Asn Gly Gly Tyr
5135 5140 5145

Ser Arg Arg Glu Gly Tyr Glu Tyr Ala Trp Ser Ser Lys Ser Asp
5150 5155 5160

Phe Glu Thr Gly Ser Gly Ala Ala Ser Gly Ala Gly Ala Gly Ala
5165 5170 5175

Gly Ser Gly Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly Ser Gly
5180 5185 5190

Ala Gly Ala Gly Ser Gly Ala Gly Ala Gly Gly Ser Val Ser Tyr
5195 5200 5205

Gly Ala Gly Arg Gly Tyr Gly Gln Gly Ala Gly Ser Ala Ala Ser
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Ser Val Ser Ser Ala Ser Ser Arg Ser Tyr Asp Tyr Ser Arg Arg
5225 5230 5235

Asn Val Arg Lys Asn Cys Gly Ile Pro Arg Arg Gln Leu Val Val
5240 5245 5250

Lys Phe Arg Ala Leu Pro Cys Val Asn Cys
5255 5260

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<213> Bombyx mori

<400> 8

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Ala Pro Ser Val Thr Ile Asn Gln Tyr Ser Asp Asn Glu Ile Pro Arg
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Asp Ile Asp Asp Gly Lys Ala Ser Ser Val Ile Ser Arg Ala Trp Asp
35 40 45

Tyr Val Asp Asp Thr Asp Lys Ser Ile Ala Ile Leu Asn Val Gln Glu
50 55 60

Ile Leu Lys Asp Met Ala Ser Gln Gly Asp Tyr Ala Ser Gln Ala Ser
65 70 75 80

Ala Val Ala Gln Thr Ala Gly Ile Ile Ala His Leu Ser Ala Gly Ile
85 90 95

Pro Gly Asp Ala Cys Ala Ala Ala Asn Val Ile Asn Ser Tyr Thr Asp
100 105 110

Gly Val Arg Ser Gly Asn Phe Ala Gly Phe Arg Gln Ser Leu Gly Pro
115 120 125

Phe Phe Gly His Val Gly Gln Asn Leu Asn Leu Ile Asn Gln Leu Val
130 135 140

Ile Asn Pro Gly Gln Leu Arg Tyr Ser Val Gly Pro Ala Leu Gly Cys
145 150 155 160

Ala Gly Gly Gly Arg Ile Tyr Asp Phe Glu Ala Ala Trp Asp Ala Ile
165 170 175

Leu Ala Ser Ser Asp Ser Ser Phe Leu Asn Glu Glu Tyr Cys Ile Val
180 185 190

Lys Arg Leu Tyr Asn Ser Arg Asn Ser Gln Ser Asn Asn Ile Ala Ala
195 200 205

Tyr Ile Thr Ala His Leu Leu Pro Pro Val Ala Gln Val Phe His Gln
210 215 220

Ser Ala Gly Ser Ile Thr Asp Leu Leu Arg Gly Val Gly Asn Gly Asn
225 230 235 240

Asp Ala Thr Gly Leu Val Ala Asn Ala Gln Arg Tyr Ile Ala Gln Ala

245

250

255

Ala Ser Gln Val His Val
260

<210> 9
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<212> PRT
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<400> 9

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Val Lys Ala Phe Gly His His Pro Gly Asn Arg Asp Thr Val Glu Val
20 25 30

Lys Asn Arg Lys Tyr Asn Ala Ala Ser Ser Glu Ser Ser Tyr Leu Asn
35 40 45

Lys Asp Asn Asp Ser Ile Ser Ala Gly Ala His Arg Ala Lys Ser Val
50 55 60

Glu Gln Ser Gln Asp Lys Ser Lys Tyr Thr Ser Gly Pro Glu Gly Val
65 70 75 80

Ser Tyr Ser Gly Arg Ser Gln Asn Tyr Lys Asp Ser Lys Gln Ala Tyr
85 90 95

Ala Asp Tyr His Ser Asp Pro Asn Gly Gly Ser Ala Ser Ala Gly Gln
100 105 110

Ser Arg Asp Ser Ser Leu Arg Glu Arg Asn Val His Tyr Val Ser Asp
115 120 125

Gly Glu Ala Val Ala Ala Ser Ser Asp Ala Arg Asp Glu Asn Arg Ser
130 135 140

Ala Gln Gln Asn Ala Gln Ala Asn Trp Asn Ala Asp Gly Ser Tyr Gly
145 150 155 160

Val Ser Ala Asp Arg Ser Gly Ser Ala Ser Ser Arg Arg Arg Gln Ala
165 170 175

Asn Tyr Tyr Ser Asp Lys Asp Ile Thr Ala Ala Ser Lys Asp Asp Ser
180 185 190

Arg Ala Asp Ser Ser Arg Arg Ser Asn Ala Tyr Tyr Asn Arg Asp Ser
195 200 205

Asp Gly Ser Glu Ser Ala Gly Leu Ser Asp Arg Ser Ala Ser Ser Ser
210 215 220

Lys Asn Asp Asn Val Phe Val Tyr Arg Thr Lys Asp Ser Ile Gly Gly
225 230 235 240

Gln Ala Lys Ser Ser Arg Ser Ser His Ser Gln Glu Ser Asp Ala Tyr
245 250 255

Tyr Asn Ser Ser Pro Asp Gly Ser Tyr Asn Ala Gly Thr Arg Asp Ser
260 265 270

Ser Ile Ser Asn Lys Lys Lys Ala Ser Ser Thr Ile Tyr Ala Asp Lys
275 280 285

Asp Gln Ile Arg Ala Ala Asn Asp Arg Ser Ser Ser Lys Gln Leu Lys
290 295 300

Gln Ser Ser Ala Gln Ile Ser Ser Gly Pro Glu Gly Thr Ser Val Ser
305 310 315 320

Ser Lys Asp Arg Gln Tyr Ser Asn Asp Lys Arg Ser Lys Ser Asp Ala
325 330 335

Tyr Val Gly Arg Asp Gly Thr Val Ala Tyr Ser Asn Lys Asp Ser Glu
340 345 350

Lys Thr Ser Arg Gln Ser Asn Thr Asn Tyr Ala Asp Gln Asn Ser Val
355 360 365

Arg Ser Asp Ser Ala Ala Ser Asp Gln Thr Ser Lys Ser Tyr Asp Arg
370 375 380

Gly Tyr Ser Asp Lys Asn Ile Val Ala His Ser Ser Gly Ser Arg Gly
385 390 395 400

Ser Gln Asn Gln Lys Ser Ser Ser Tyr Arg Ala Asp Lys Asp Gly Phe
405 410 415

Ser Ser Ser Thr Asn Thr Glu Lys Ser Lys Phe Ser Ser Ser Asn Ser
420 425 430

Val Val Glu Thr Ser Asp Gly Ala Ser Ala Ser Arg Glu Ser Ser Ala
435 440 445

Glu Asp Thr Lys Ser Ser Asn Ser Asn Val Gln Ser Asp Glu Lys Ser
450 455 460

Ala Ser Gln Ser Ser Ser Ser Arg Ser Ser Gln Glu Ser Ala Ser Tyr
465 470 475 480

Ser Ser Ser Ser Ser Ser Ser Thr Leu Ser Glu Asp Ser Ser Glu Val
485 490 495

Asp Ile Asp Leu Gly Asn Leu Gly Trp Trp Trp Asn Ser Asp Asn Lys
500 505 510

Val Gln Arg Ala Ala Gly Gly Ala Thr Lys Ser Gly Ala Ser Ser Ser
515 520 525

Thr Gln Ala Thr Thr Val Ser Gly Ala Asp Asp Ser Ala Asp Ser Tyr
530 535 540

Thr Trp Trp Trp Asn Pro Arg Arg Ser Ser Ser Ser Ser Ser Ala
545 550 555 560

Ser Ser Ser Ser Ser Gly Ser Asn Val Gly Gly Ser Ser Gln Ser Ser
565 570 575

Gly Ser Ser Thr Ser Gly Ser Asn Ala Arg Gly His Leu Gly Thr Val
580 585 590

Ser Ser Thr Gly Ser Thr Ser Asn Thr Asp Ser Ser Ser Lys Ser Ala
595 600 605

Gly Ser Arg Thr Ser Gly Gly Ser Ser Thr Tyr Gly Tyr Ser Ser Ser
610 615 620

His Arg Gly Gly Ser Val Ser Ser Thr Gly Ser Ser Ser Asn Thr Asp
625 630 635 640

Ser Ser Thr Lys Asn Ala Gly Ser Ser Thr Ser Gly Gly Ser Ser Thr
645 650 655

Tyr Gly Tyr Ser Ser Ser His Arg Gly Gly Ser Val Ser Ser Thr Gly
660 665 670

Ser Ser Ser Asn Thr Asp Ser Ser Thr Lys Ser Ala Gly Ser Ser Thr
675 680 685

Ser Gly Gly Ser Ser Thr Tyr Gly Tyr Ser Ser Arg His Arg Gly Gly
690 695 700

Arg Val Ser Ser Thr Gly Ser Ser Ser Thr Thr Asp Ala Ser Ser Asn
705 710 715 720

Ser Val Gly Ser Ser Thr Ser Gly Gly Ser Ser Thr Tyr Gly Tyr Ser
725 730 735

Ser Asn Ser Arg Asp Gly Ser Val Ser Ser Thr Gly Ser Ser Ser Asn
740 745 750

Thr Asp Ser Asn Ser Asn Ser Ala Gly Ser Ser Thr Ser Gly Gly Ser
755 760 765

Ser Thr Tyr Gly Tyr Ser Ser Asn Ser Arg Asp Gly Ser Val Ser Ser
770 775 780

Thr Gly Ser Ser Ser Asn Thr Asp Ser Asn Ser Asn Ser Ala Gly Ser
785 790 795 800

Ser Thr Ser Gly Gly Ser Ser Thr Tyr Gly Tyr Ser Ser Asn Ser Arg
805 810 815

Asp Gly Ser Val Ser Ser Thr Gly Ser Ser Ser Asn Thr Asp Ala Ser
820 825 830

Thr Asp Leu Thr Gly Ser Ser Thr Ser Gly Gly Ser Ser Thr Tyr Gly
835 840 845

Tyr Ser Ser Asp Ser Arg Asp Gly Ser Val Ser Ser Thr Gly Ser Ser
850 855 860

Ser Asn Thr Asp Ala Ser Thr Asp Leu Ala Gly Ser Ser Thr Ser Gly
865 870 875 880

Gly Ser Ser Thr Tyr Gly Tyr Ser Ser Asp Cys Gly Asp Gly Ser Val
885 890 895

Ser Ser Thr Gly Ser Ser Ser Asn Thr Asp Ala Ser Thr Asp Leu Ala
900 905 910

Gly Ser Ser Thr Ser Gly Gly Ser Ser Thr Tyr Gly Tyr Ser Ser Asp
915 920 925

Ser Arg Asp Gly Ser Val Ser Ser Thr Gly Ser Ser Ser Asn Thr Asp
930 935 940

Ala Ser Thr Asp Leu Ala Gly Ser Ser Thr Ser Gly Gly Ser Ser Thr
945 950 955 960

Tyr Gly Tyr Ser Ser Asn Ser Arg Asp Gly Ser Val Ser Ser Thr Gly
965 970 975

Ser Ser Ser Asn Thr Asp Ala Ser Thr Asp Leu Thr Gly Ser Ser Thr
980 985 990

Ser Gly Gly Ser Ser Thr Tyr Gly Tyr Ser Ser Ser Asn Arg Asp Gly
995 1000 1005

Ser Val Leu Ala Thr Gly Ser Ser Ser Asn Thr Asp Ala Ser Thr
1010 1015 1020

Thr Glu Glu Ser Thr Thr Ser Ala Gly Ser Ser Thr Glu Gly Tyr
1025 1030 1035

Ser Ser Ser Ser His Asp Gly Ser Val Thr Ser Thr Asp Gly Ser
1040 1045 1050

Ser Thr Ser Gly Gly Ala Ser Ser Ser Ser Ala Ser Thr Ala Lys
1055 1060 1065

Ser Asp Ala Ala Ser Ser Glu Asp Gly Phe Trp Trp Trp Asn Arg
1070 1075 1080

Arg Lys Ser Gly Ser Gly His Lys Ser Ala Thr Val Gln Ser Ser
1085 1090 1095

Thr Thr Asp Lys Thr Ser Thr Asp Ser Ala Ser Ser Thr Asp Ser
1100 1105 1110

Thr Ser Ser Thr Ser Gly Ala Ser Thr Thr Thr Ser Gly Ser Ser
1115 1120 1125

Ser Thr Ser Gly Gly Ser Ser Thr Ser Asp Ala Ser Ser Thr Ser
1130 1135 1140

Ser Ser Val Ser Arg Ser His His Ser Gly Val Asn Arg Leu Leu
1145 1150 1155

His Lys Pro Gly Gln Gly Lys Ile Cys Leu Cys Phe Glu Asn Ile
1160 1165 1170

Phe Asp Ile Pro Tyr His Leu Arg Lys Asn Ile Gly Val
1175 1180 1185

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<211> 900

<212> PRT

<213> Bombyx mori

<400> 10

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Asn Ala Leu Pro Asn Pro Leu Phe Gly Gly Leu Val Lys Ser Leu Ser
20 25 30

Lys Lys Lys Gln Ile Phe Glu Asp Lys Phe Glu Asn Leu Lys Glu Asn
35 40 45

Val Gly Glu Lys Phe Glu Asn Leu Lys Glu Asn Val Gly Glu Lys Val
50 55 60

Glu Asn Leu Lys Glu Asn Val Gly Glu Lys Leu Glu Asn Ile Lys Glu
65 70 75 80

Lys Ala Gly Glu Lys Phe Glu Asn Leu Lys Asp Asn Val Gly Glu Lys
85 90 95

Phe Glu Asn Leu Lys Asp Asn Val Gly Asp Lys Leu Glu Ala Ala Lys
100 105 110

Glu Lys Ala Gly Glu Ile Lys Lys Lys Leu Val Asp Val Gly Glu Asp

115

120

125

Leu Lys Asp Glu Leu Thr Glu Asp Lys Lys Ile Lys Ile Ser Ile Ser
130 135 140

Lys Asp Glu Gly Leu Thr Leu Glu Lys Glu Gly Tyr Lys Ser Asp Tyr
145 150 155 160

Asp Arg Asn Glu Tyr Glu Glu Arg Gly Ser Glu His Gln Glu Asp Asn
165 170 175

Asp Ser Asp Gly Ser Tyr Ser Lys Gly Ser Glu Tyr Glu Lys Tyr Gly
180 185 190

Glu Glu Glu Lys Tyr Glu Glu Arg Arg Thr His Asp Lys Phe Ser Ile
195 200 205

Gly Lys Asn Gly Ile Ser Ala Glu Arg Thr Lys Ser Lys Arg Gly Glu
210 215 220

Arg Lys Glu Val Glu Gly Glu Tyr Glu Lys Asp Tyr Glu Arg Lys Glu
225 230 235 240

Asn Asn Gly Gly Ser Ser Glu Tyr Ser Glu Arg Glu Arg Glu Ser Leu
245 250 255

Glu Lys Ser Lys Glu Arg Tyr Gly Glu Gln Ser Ser Lys Ser Phe Ser
260 265 270

Leu Gly Lys Ser Gly Leu Lys Lys Gln Asp Asn Ser Lys Ser Tyr Ser
275 280 285

Asp Lys Glu Glu Ser Lys Leu Glu Lys Glu Lys Lys Tyr Glu Lys Lys
290 295 300

Thr Lys Ile Asn Asn Glu Arg Gln Leu Asp Glu Asp Glu Asn Glu Arg
305 310 315 320

Arg Thr Val Val Gly Arg Asp Glu Gln Arg Gln Asp Asp Gln Ser Arg
325 330 335

Asp Asp Gln Ser Arg Asp Asp Gln Ser Gln Asp Glu Glu Thr Gly Ser
340 345 350

Asp Asp Ser Asp Lys Asn Arg Gly Lys Asp Thr Asp Asp Lys Tyr Ser
355 360 365

Glu Thr Gly Thr Asn Lys Ser Ser Glu Thr Lys Thr Gly Lys Arg Asp
370 375 380

Gly Ser Lys Ser Gly Val Thr Val Glu Arg Glu Lys Ser Glu Ser Asn
385 390 395 400

Lys Lys Ser Arg Glu Phe Glu Asn Lys Glu Ala Glu Ser Ser Thr Tyr
405 410 415

Arg Asp Lys Asn Arg Ser Val Asn Ser Gly Ser Glu Arg Lys Ser Ser
420 425 430

Gly Lys Asp Glu Glu Tyr Ser Glu Gln Asn Ser Ser Asn Lys Ser Phe
435 440 445

Asn Asp Gly Asp Ala Ser Ala Asp Tyr Gln Thr Lys Ser Lys Lys Val
450 455 460

Glu Lys Asn Ser Ala Arg Asp Lys Lys Glu Lys Glu Lys Thr Asp Thr
465 470 475 480

Arg Asn Ser Asp Gly Thr Tyr Lys Thr Ser Glu Arg Glu Lys Glu Gln
485 490 495

Ser Ser Arg Val Asn Gln Ser Lys Gly Ser Asn Ser Arg Asp Ser Ser
500 505 510

Glu Ser Asp Lys Ser Gly Arg Lys Val Asn Lys Glu Thr Glu Thr Tyr

515

520

525

Ser Asp Lys Asp Ala Gln Thr Ser Glu Ser Glu Arg Thr Gln Ser Lys
530 535 540

Asp Asn Gly Gly Leu Lys Glu Lys Ser Ser Gln Ser Lys Asn Tyr Gly
545 550 555 560

Arg Asp Glu Lys Tyr Ser Glu Glu Lys Glu Arg Ser Ser Thr Gly Lys
565 570 575

Phe Gly Ser Asn Asp Ser Arg Ala Arg Ser Thr Lys Ala Glu Glu Glu
580 585 590

His Val Arg Lys Ser Gln Glu Glu Thr His Ser Glu Gln Arg Glu Lys
595 600 605

Thr Arg Ser Asp Gly Val Thr Lys Tyr Asn Asp Gly Asp Glu His Phe
610 615 620

Asp Ser Asp Asp Thr Glu Lys Thr Lys Pro Asn Gly Arg Ser Pro Ser
625 630 635 640

His Lys Asp Thr Glu Lys Ala Lys Pro Asn Asp Arg Ser Ser Ser Asp
645 650 655

Lys Asp Thr Glu Lys Thr Phe Asp Lys Asn Ile Asp Asn Lys Arg Pro
660 665 670

Lys Asp Gly Ser Ser Ser Asp Lys Asn Val Glu Gln Glu Arg Glu Asn
675 680 685

Tyr Lys Ser Glu Ser Ser Arg Asn Glu Phe Glu Asn Gln Lys Ser Ala
690 695 700

His Ser Arg Tyr Glu Asp Asn Gly Gly Leu Lys Glu Lys Ser Ser Gln
705 710 715 720

Ser Lys Asn Tyr Gly Arg Asp Glu Lys Tyr Ser Glu Glu Lys Glu Arg
725 730 735

Ser Ser Thr Gly Lys Ser Gly Ser Asn Asp Ser Arg Ala Arg Ser Thr
740 745 750

Lys Ala Glu Glu Glu His Val Arg Lys Ser Gln Glu Glu Thr His Ser
755 760 765

Glu Gln Arg Gly Arg Thr Arg Ser Asp Gly Ala Thr Thr Ser Asn Asp
770 775 780

Asn Asp Lys Gln Tyr Asp Ser Asp Asp Lys Asn Asn Ser Ser Thr Lys
785 790 795 800

His Lys Lys Thr Val Met Arg Ser Glu Gln Ser Asp Ser Ser Gln Asn
805 810 815

Glu Asn Ser Thr Ser Glu Ser Lys Lys Phe Ala Lys Thr Asp Gly Ser
820 825 830

Asn Lys Tyr Glu Ala Glu Ser Ser Ser His Lys Gln Gln Glu Ala Arg
835 840 845

Lys Gln Ser Asn Arg Val Val Glu Lys Ser Thr Asp Gly Asp Asn Glu
850 855 860

Glu Ser Tyr Arg Ser Glu Ser Ser Ser Ser Ser Ser Ser Ser Ser
865 870 875 880

Ser Ser Arg Ser Ser Ser Ser Ser Thr Tyr Thr Gly Ser His Asp Asp
885 890 895

Ser Ser Glu Glu
900

<211> 1271
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<400> 11

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Gln Ala Leu Pro Cys Gln Glu Ser Arg Pro Arg Arg Cys Gly Tyr Arg
20 25 30

Tyr Gly Cys Gly Gly Gly Arg Gly Arg Gly Ser Gly Val Arg Arg Leu
35 40 45

Asp Ser Gly Ala Asp Asp Asn Gln Gly Arg Ser Cys Leu Val Gly Gly
50 55 60

Ser Ala Glu Ser Asn Asp Glu Asp Ser Asp Asp Arg Leu Ser Val Ile
65 70 75 80

Asn Asn Thr Glu Gly His Ala Thr Ser Ser Ser Phe Asp Glu Gln Ser
85 90 95

Ser Ser Ala Arg Gln Ser Ser Ser Ser Tyr Gln Ser Gln Ser Tyr Asn
100 105 110

Lys Asp Ser Ser Ser Thr Asn Glu Ser Ser Asp Gly Gly Ser Gly Ser
115 120 125

Gly Arg Thr Gly Ser Ala Gly Glu Asn Gly Glu Asn Ser Asp Asp Ser
130 135 140

Ser Gly Ala Thr Lys Gly Asn Ser Ser Lys Ser Ser Ser Ser Ser Gln
145 150 155 160

Gly Gln Ser Ala Ser Ser Ser Ser Ser Asp Glu Lys Ser Ser Gln Ser
165 170 175

Ser Ser Asn Ser Ser Asn Asn Ser Lys Ser Ser Ser Gln Ser Ser Ser
180 185 190

Ser Gln Asn Ser Ser Gly Ser Lys Gly Ser Gly Ser Glu Glu Ser Ser
195 200 205

Asn Gly Gly Ser Gly Ser Gly Arg Thr Gly Ser Ala Gly Gly Thr Asp
210 215 220

Glu Asp Ser Asp Asp Ser Ser Gly Ala Thr Lys Gly Asn Ser Ser Lys
225 230 235 240

Ser Ser Ser Ser Ser Gln Gly Gln Ser Ala Ser Ser Ser Ser Ser Asp
245 250 255

Glu Asn Ser Ser Gln Ser Ser Ser Asn Ser Ser Asn Asn Ser Lys Ser
260 265 270

Ser Ser Gln Ser Ser Ser Gly Gln Asn Ser Ser Gly Ser Lys Gly Ser
275 280 285

Gly Ser Glu Glu Ser Ser Asn Gly Gly Ser Gly Ser Gly Arg Asn Gly
290 295 300

Ser Val Gly Gly Thr Asp Glu Asp Ser Asp Asp Ser Ser Gly Ala Thr
305 310 315 320

Lys Gly Asn Ser Ser Lys Ser Ser Ser Ser Ser Gln Gly Gln Ser Ala
325 330 335

Ser Ser Ser Ser Ser Asp Glu Lys Ser Ser Gln Ser Ser Ser Asn Ser
340 345 350

Ser Asn Asn Ser Lys Ser Ser Ser Gln Ser Ser Ser Gly Gln Asn Ser
355 360 365

Ser Gly Ser Lys Gly Ser Gly Ser Glu Glu Ser Ser Asn Gly Gly Ser
370 375 380

Gly Ser Gly Arg Asn Gly Ser Ala Gly Gly Thr Asp Glu Asp Ser Asp
385 390 395 400

Asp Ser Ser Gly Ala Thr Lys Gly Asn Ser Ser Lys Ser Ser Ser Ser
405 410 415

Ser Gln Gly Gln Ser Ala Ser Ser Ser Ser Ser Asp Glu Lys Ser Ser
420 425 430

Gln Ser Ser Ser Asn Ser Ser Asn Asn Ser Lys Ser Ser Ser Gln Ser
435 440 445

Ser Ser Gly Gln Asn Ser Ser Gly Ser Lys Gly Ser Gly Ser Glu Glu
450 455 460

Ser Ser Asn Gly Gly Ser Gly Ser Gly Arg Asn Gly Ser Ala Gly Gly
465 470 475 480

Thr Asp Glu Asp Ser Asp Asp Ser Ser Gly Ala Thr Lys Gly Asn Ser
485 490 495

Ser Lys Ser Ser Ser Ser Ser Gln Gly Gln Ser Ala Ser Ser Ser Ser
500 505 510

Ser Asp Glu Lys Ser Ser Gln Ser Ser Ser Asn Ser Ser Asn Asn Ser
515 520 525

Lys Ser Ser Ser Gln Ser Ser Ser Gly Gln Asn Ser Ser Gly Ser Lys
530 535 540

Gly Ser Gly Ser Glu Glu Ser Ser Asn Gly Gly Ser Gly Ser Gly Arg
545 550 555 560

Thr Gly Ser Ala Gly Glu Thr Asp Glu Asp Ser Asp Asp Ser Ser Gly
565 570 575

Ala Thr Lys Gly Asn Ser Ser Lys Ser Ser Ser Ser Ser Gln Gly Lys
580 585 590

Ser Ala Ser Ser Ser Ser Ser Asp Glu Lys Ser Ser Gln Ser Ser Ser
595 600 605

Asn Ser Ser Asn Asn Ser Lys Ser Ser Ser Gln Ser Ser Ser Ser Asn
610 615 620

Asn Ser Ser Gly Ser Lys Gly Ser Gly Ser Glu Glu Ser Ser Asn Gly
625 630 635 640

Gly Ser Gly Ser Gly Arg Thr Gly Ser Ala Gly Gly Ser Asp Glu Asp
645 650 655

Ser Asp Asp Ser Ser Gly Ala Thr Lys Gly Asn Ser Ser Lys Ser Ser
660 665 670

Ser Ser Ser Gln Gly Gln Ser Ala Ser Ser Ser Ser Ser Asp Glu Lys
675 680 685

Ser Ser Gln Ser Asn Ser Asn Ser Ser Asn Asn Ser Lys Ser Ser Ser
690 695 700

Gln Ser Ser Ser Ser Asn Asn Ser Ser Gly Ser Lys Gly Ser Gly Ser
705 710 715 720

Glu Glu Ser Ser Asn Gly Gly Ser Gly Ser Gly Arg Thr Gly Ser Ala
725 730 735

Gly Gly Thr Asp Glu Asp Ser Asp Asp Ser Ser Gly Ala Thr Lys Gly
740 745 750

Asn Ser Ser Lys Ser Ser Ser Ser Ser Gln Gly Lys Ser Ala Ser Ser
755 760 765

Ser Ser Ser Asp Glu Lys Ser Ser Gln Ser Ser Ser Asn Ser Ser Asn
770 775 780

Asn Ser Lys Ser Ser Ser Gln Ser Ser Ser Ser Lys Asn Ser Ser Gly
785 790 795 800

Ser Lys Gly Ser Gly Ser Glu Glu Ser Ser Asn Gly Gly Ser Gly Ser
805 810 815

Gly Arg Thr Gly Ser Ala Gly Gly Thr Asp Glu Asp Ser Asp Asp Ser
820 825 830

Ser Gly Ala Thr Lys Gly Asn Ser Ser Lys Ser Ser Ser Ser Ser Gln
835 840 845

Gly Lys Ser Ala Ser Ser Ser Ser Ser Asp Glu Lys Ser Ser Gln Ser
850 855 860

Asn Ser Asn Ser Ser Asn Asn Ser Lys Ser Ser Ser Gln Ser Ser Ser
865 870 875 880

Ser Lys Asn Ser Ser Gly Ser Lys Gly Ser Gly Ser Glu Glu Ser Ser
885 890 895

Asn Gly Gly Ser Gly Ser Gly Arg Thr Gly Ser Ala Gly Gly Thr Asp
900 905 910

Glu Asp Ser Asp Asp Ser Ser Gly Ala Thr Lys Gly Asn Ser Ser Lys
915 920 925

Ser Ser Ser Ser Ser Gln Gly Lys Ser Ala Ser Ser Ser Ser Ser Asn
930 935 940

Glu Lys Ser Ser Gln Ser Ser Ser Asn Ser Ser Asn Asn Ser Lys Ser
945 950 955 960

Ser Ser Gln Ser Ser Ser Ser Lys Asn Ser Ser Gly Ser Lys Gly Ser
965 970 975

Gly Ser Ser Glu Ser Gly Asp Lys Lys Ser Ser Ser Arg Gly Ser Ser
980 985 990

Gly Asp Asn Ser Asp Asp Asp Gln Thr Asp Ser Ala Arg Ser Asn Ser
995 1000 1005

Lys Arg Ser Thr Ser Ser Asp Ala Ser Thr Lys Lys Ser Ser Ser
1010 1015 1020

Arg Lys Ser Ser Asn His Arg Ser Ser Arg Ser Gln Gln Ala His
1025 1030 1035

Ser Ser Ser Ser Lys Gln Ala Gln Ser Ser Ser Ser Gln Gln Ala
1040 1045 1050

Gln Asn Ser Arg Ser Gln Gln Ala His Ser Ser Arg Ser Gln Gln
1055 1060 1065

Ala His Ser Ser Ser Ser Lys Gln Ala Gln Ser Ser Ser Ser Lys
1070 1075 1080

Gln Ala Gln Ser Ser Ser Ser Lys Gln Ala Gln Ser Ser Ser Ser
1085 1090 1095

Lys Gln Ala Gln Ser Ser Ser Ser Gln Gln Ala Gln Ser Ser Arg
1100 1105 1110

Ser Gln Gln Ala His Ser Ser Arg Ser Gln Gln Ala His Ser Ser
1115 1120 1125

Ser Ser Lys Gln Ala Gln Ser Ser Ser Ser Lys Gln Ala Gln Ser
1130 1135 1140

Ser Ser Ser Lys Gln Ala Gln Ser Ser Ser Ser Lys Gln Ala Gln
1145 1150 1155

Ser Ser Ser Ser Gln Gln Ala Gln Ser Ser Arg Ser Gln Gln Ala
1160 1165 1170

His Ser Ser Arg Ser Glu Thr Asp Ser Lys Ser Ser Asn Ser Gly
1175 1180 1185

Gly His Ser Asn His Ser Ser Arg Thr Glu Gln Lys Ser Ser Ala
1190 1195 1200

Lys Ala Ile Ser Ser Ser Glu Gln Ser Gln Asn Phe Ser Ser Ser
1205 1210 1215

Ser Gln Lys Ser Ala Glu Ala Ala Asp Gly Ser Glu Ser Thr Gln
1220 1225 1230

Ser Ala Ser Glu Tyr Ser Ser Ser Gln Ser Lys Ala Ser Ser Ser
1235 1240 1245

Phe Ser Ala Ser Ser Ala Ser Glu Ser Ser Ser Leu Ser Ser Asp
1250 1255 1260

Val Asn Phe Glu Glu Lys Thr Asp
1265 1270

<210> 12
<211> 748
<212> PRT
<213> Nephila clavipes

<400> 12

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

Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Gly Leu Gly Ser

50

55

60

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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
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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 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
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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 Gly
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Gly Ala Gly Gln Gly Gly Leu Gly Gly Gln Gly Ala Gly Gln Gly Ala
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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
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Ser Ser Ser Ile Gly Gln Val Asn Tyr Gly Ser Ala Gly Gln Ala Thr
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Gln Ile Val Gly Gln Ser Val Tyr Gln Ala Leu Gly
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<211> 627
<212> PRT
<213> Nephila clavipes

<400> 13

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Gly Gln Gln Gly Pro Ser Gly Pro Gly Ser Ala Ala Ala Ala Ala Ala
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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 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

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 Gly Pro Gly Gln Gln Gly Pro Gly Gly
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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
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Gln Gly Pro Gly Gly Tyr Ala Pro Gly Gln Gln Gly Pro Ser Gly Pro
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Gly Ser Ala Ser Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly Gly
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Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Ala Pro Gly Gln Gln
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Gly Pro Ser Gly Pro Gly Ser Ala Ala Ala Ala Ala Ala Ala Ala Ala
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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

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