

Listasecuencias_ST25
SEQUENCE LISTING

<110> Consejo Superior de Investigaciones Científicas (CSIC).
Institut national de la recherche agronomique (INRA).
<120> Lacasas de alto potencial redox obtenidas por evolución dirigida.
<130> ES1641.268
<160> 55
<170> PatentIn version 3.4
<210> 1
<211> 499
<212> PRT
<213> Pycnopus cinnabarinus

<400> 1

Glu Phe Ala Ile Gly Pro Val Ala Asp Leu Thr Leu Thr Asn Ala Gln
1 5 10 15

Val Ser Pro Asp Gly Phe Ala Arg Glu Ala Val Val Val Asn Gly Ile
20 25 30

Thr Pro Ala Pro Leu Ile Thr Gly Asn Lys Gly Asp Arg Phe Gln Leu
35 40 45

Asn Val Ile Asp Gln Leu Thr Asn His Thr Met Leu Lys Thr Ser Ser
50 55 60

Ile His Trp His Gly Phe Phe Gln Gln Gly Thr Asn Trp Ala Asp Gly
65 70 75 80

Pro Ala Phe Val Asn Gln Cys Pro Ile Ala Ser Gly His Ser Phe Leu
85 90 95

Tyr Asp Phe Gln Val Pro Asp Gln Ala Gly Thr Phe Trp Tyr His Ser
100 105 110

His Leu Ser Thr Gln Tyr Cys Asp Gly Leu Arg Gly Pro Phe Val Val
115 120 125

Tyr Asp Pro Asn Asp Pro His Ala Ser Leu Tyr Asp Ile Asp Asn Asp
130 135 140

Asp Thr Val Ile Thr Leu Ala Asp Trp Tyr His Val Ala Ala Lys Leu
145 150 155 160

Gly Pro Arg Phe Pro Phe Gly Ser Asp Ser Thr Leu Ile Asn Gly Leu
165 170 175

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

Listasecuencias_ST25

Thr Gln Gly Lys Arg Tyr Arg Phe Arg Leu Val Ser Leu Ser Cys Asp
195 200 205

Pro Asn His Thr Phe Ser Ile Asp Asn His Thr Met Thr Ile Ile Glu
210 215 220

Ala Asp Ser Ile Asn Thr Gln Pro Leu Glu Val Asp Ser Ile Gln Ile
225 230 235 240

Phe Ala Ala Gln Arg Tyr Ser Phe Val Leu Asp Ala Ser Gln Pro Val
245 250 255

Asp Asn Tyr Trp Ile Arg Ala Asn Pro Ala Phe Gly Asn Thr Gly Phe
260 265 270

Ala Gly Gly Ile Asn Ser Ala Ile Leu Arg Tyr Asp Gly Ala Pro Glu
275 280 285

Ile Glu Pro Thr Ser Val Gln Thr Thr Pro Thr Lys Pro Leu Asn Glu
290 295 300

Val Asp Leu His Pro Leu Ser Pro Met Pro Val Pro Gly Ser Pro Glu
305 310 315 320

Pro Gly Gly Val Asp Lys Pro Leu Asn Leu Val Phe Asn Phe Asn Gly
325 330 335

Thr Asn Phe Phe Ile Asn Asp His Thr Phe Val Pro Pro Ser Val Pro
340 345 350

Val Leu Leu Gln Ile Leu Ser Gly Ala Gln Ala Ala Gln Asp Leu Val
355 360 365

Pro Glu Gly Ser Val Phe Val Leu Pro Ser Asn Ser Ser Ile Glu Ile
370 375 380

Ser Phe Pro Ala Thr Ala Asn Ala Pro Gly Phe Pro His Pro Phe His
385 390 395 400

Leu His Gly His Ala Phe Ala Val Val Arg Ser Ala Gly Ser Ser Val
405 410 415

Tyr Asn Tyr Asp Asn Pro Ile Phe Arg Asp Val Val Ser Thr Gly Gln
420 425 430

Pro Gly Asp Asn Val Thr Ile Arg Phe Glu Thr Asn Asn Pro Gly Pro
435 440 445

Trp Phe Leu His Cys His Ile Asp Phe His Leu Asp Ala Gly Phe Ala
450 455 460

Listasecuencias_ST25

Val Val Met Ala Glu Asp Thr Pro Asp Thr Lys Ala Ala Asn Pro Val
465 470 475 480

Pro Gln Ala Trp Ser Asp Leu Cys Pro Ile Tyr Asp Ala Leu Asp Pro
485 490 495

Ser Asp Leu

<210> 2
<211> 1501
<212> DNA
<213> Pycnopus cinnabarinus

<400> 2
dgaattcgcc atagggcctg tggcggacct gacccttacc aatgcccagg tcagccccga 60
tggcttcgct cgcgaggccg tcgtggtgaa cggtatcacc cctgcccctc tcatcacagg 120
caataagggc gatcgattcc agctcaatgt catcgaccag ttgacaaatc ataccatggt 180
gaaaacatct agtattcatt ggcacggctt cttccagcaa ggcacgaact gggccgatgg 240
tcccgcgttc gtgaaccagt gtcccatcgc ttcggggccac tcgtttcttgt atgactttca 300
agttcccgac caagcagga ctttctggtg ccatagccat ctctccacgc aatactgcga 360
tggtttgagg gggcctttcg tcgtctacga cccaacgat cctcacgcta gcctgtatga 420
cattgataac gacgactg tcattacgct ggctgattgg taccacgttg ctgccaagct 480
cggacctcgc ttcccatttg gctccgattc aacccttatc aatggacttg gtcgaaccac 540
tggcatagca ccgtccgact tggcagttat caaggtcacg cagggaagc gctaccgctt 600
ccgcttggtg tcgctttctt gcgatccgaa ccatacatc agcattgata atcacacaat 660
gactataatt gaggcggact cgatcaacac tcaacccta gaggttgatt caatccagat 720
ttttgccgag cagcgtact cttcgtgct ggatgctagc cagccggtgg ataactactg 780
gatccgcgca aaccctgcct tcggaaacac aggttttctg ggtggaatca attctgccat 840
cctgcgttat gatggcgac cggagatcga gcctacgtct gtccagacta ctcctacgaa 900
gcctctgaac gaggtcgact tgcattcctt ctgcctatg cctgtgcctg gcagccccga 960
gcccggaggt gtcgacaagc ctctgaactt ggtcttcaac ttcaacggca ccaacttctt 1020
catcaacgac cacacctttg tcccgcgctc tgtcccagtc ttgctacaaa tcctcagtgg 1080
ggcgcaggcg gctcaggacc tgggtccgga gggcagcgtg ttcgtttctt ccagcaactc 1140
gtccattgag atatccttcc ctgccactgc caatgcccct ggattcccc atccgttcca 1200
cttgacaggc cagccttcg ctgtcgtccg gagtgccggg agcagcgtct acaactacga 1260
caaccgatc ttccgcgacg tcgtcagcac cggccagccc ggcgacaacg tcacgattcg 1320
cttcgagacc aataaccag gcccggtggt cctccactgc cacattgact tccacctcga 1380
cgcaggcttt gctgtagtca tggccgagga cactccggac accaaggccg cgaaccctgt 1440
tcctcaggcg tggtcggact tgtgccccat ctatgatgca cttgaccca gcgacctctg 1500

a

<210> 3
 <211> 499
 <212> PRT
 <213> Pycnoporus cinnabarinus

<400> 3

Glu Phe Ala Ile Gly Pro Val Ala Asp Leu Thr Leu Thr Asn Ala Gln
 1 5 10 15

Val Ser Pro Asp Gly Phe Ala Arg Glu Ala Val Val Val Asn Gly Ile
 20 25 30

Thr Pro Ala Pro Leu Ile Thr Gly Asn Lys Gly Asp Arg Phe Gln Ile
 35 40 45

Asn Val Ile Asp Gln Leu Thr Asn His Thr Met Leu Lys Thr Ser Ser
 50 55 60

Ile His Trp His Gly Phe Phe Gln Gln Gly Thr Asn Trp Ala Asp Gly
 65 70 75 80

Pro Ala Phe Val Asn Gln Cys Pro Ile Ala Ser Gly His Ser Phe Leu
 85 90 95

Tyr Asp Phe Gln Val Pro Asp Gln Ala Gly Thr Phe Trp Tyr His Ser
 100 105 110

His Leu Ser Thr Gln Tyr Cys Asp Gly Leu Arg Gly Pro Phe Val Val
 115 120 125

Tyr Asp Pro Asn Asp Pro His Ala Ser Leu Tyr Asp Ile Asp Asn Asp
 130 135 140

Asp Thr Val Ile Thr Leu Ala Asp Trp Tyr His Val Ala Ala Lys Leu
 145 150 155 160

Gly Pro Arg Phe Pro Phe Gly Ser Asp Ser Thr Leu Ile Asn Gly Leu
 165 170 175

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

Thr Gln Gly Lys Arg Tyr Arg Phe Arg Leu Val Ser Leu Ser Cys Asp
 195 200 205

Pro Asn His Thr Phe Ser Ile Asp Asn His Thr Met Thr Ile Ile Glu
 210 215 220

Ala Asp Ser Ile Asn Thr Gln Pro Leu Glu Val Asp Ser Ile Gln Ile
 225 230 235 240

Listasecuencias_ST25

Phe Ala Ala Gln Arg Tyr Ser Phe Val Leu Asp Ala Ser Gln Pro Val
 245 250 255
 Asp Asn Tyr Trp Ile Arg Ala Asn Pro Ala Phe Gly Asn Thr Gly Phe
 260 265 270
 Ala Gly Gly Ile Asn Ser Ala Ile Leu Arg Tyr Asp Gly Ala Pro Glu
 275 280 285
 Ile Glu Pro Thr Ser Val Gln Thr Thr Pro Thr Lys Pro Leu Asn Glu
 290 295 300
 Val Asp Leu His Pro Leu Ser Pro Met Pro Val Pro Gly Ser Pro Glu
 305 310 315 320
 Pro Gly Gly Val Asp Lys Pro Leu Asn Leu Val Phe Asn Phe Asn Gly
 325 330 335
 Thr Asn Phe Phe Ile Asn Asp His Thr Phe Val Pro Pro Ser Val Pro
 340 345 350
 Val Leu Leu Gln Ile Leu Ser Gly Ala Gln Ala Ala Gln Asp Leu Val
 355 360 365
 Pro Glu Gly Ser Val Phe Val Leu Pro Ser Asn Ser Ser Ile Glu Ile
 370 375 380
 Ser Phe Pro Ala Thr Ala Asn Ala Pro Gly Phe Pro His Pro Phe His
 385 390 395 400
 Leu His Gly His Ala Phe Ala Val Val Arg Ser Ala Gly Ser Ser Val
 405 410 415
 Tyr Asn Tyr Asp Asn Pro Ile Phe Arg Asp Val Val Ser Thr Gly Gln
 420 425 430
 Pro Gly Asp Asn Val Thr Ile Arg Phe Glu Thr Asn Asn Pro Gly Pro
 435 440 445
 Trp Phe Leu His Cys His Ile Asp Phe His Leu Asp Ala Gly Phe Ala
 450 455 460
 Val Val Met Ala Glu Asp Thr Pro Asp Thr Lys Ala Ala Asn Pro Val
 465 470 475 480
 Pro Gln Ala Trp Ser Asp Leu Cys Pro Ile Tyr Asp Ala Leu Asp Pro
 485 490 495
 Ser Asp Leu

Listasecuencias_ST25

<210> 4
 <211> 1501
 <212> PRT
 <213> Pycnopus cinnabarinus

<400> 4

Gly Gly Ala Ala Thr Thr Cys Gly Cys Cys Ala Thr Ala Gly Gly Gly
 1 5 10 15

Cys Cys Thr Gly Thr Gly Gly Cys Gly Gly Ala Cys Cys Thr Gly Ala
 20 25 30

Cys Cys Cys Thr Thr Ala Cys Cys Ala Ala Thr Gly Cys Cys Cys Ala
 35 40 45

Gly Gly Thr Cys Ala Gly Cys Cys Cys Cys Gly Ala Thr Gly Gly Cys
 50 55 60

Thr Thr Cys Gly Cys Thr Cys Gly Cys Gly Ala Gly Gly Cys Cys Gly
 65 70 75 80

Thr Cys Gly Thr Gly Gly Thr Gly Ala Ala Cys Gly Gly Thr Ala Thr
 85 90 95

Cys Ala Cys Cys Cys Cys Thr Gly Cys Cys Cys Cys Thr Cys Thr Cys
 100 105 110

Ala Thr Cys Ala Cys Ala Gly Gly Cys Ala Ala Thr Ala Ala Gly Gly
 115 120 125

Gly Cys Gly Ala Thr Cys Gly Ala Thr Thr Cys Cys Ala Gly Ala Thr
 130 135 140

Cys Ala Ala Thr Gly Thr Cys Ala Thr Cys Gly Ala Cys Cys Ala Gly
 145 150 155 160

Thr Thr Gly Ala Cys Ala Ala Ala Thr Cys Ala Thr Ala Cys Cys Ala
 165 170 175

Thr Gly Thr Thr Gly Ala Ala Ala Ala Cys Ala Thr Cys Thr Ala Gly
 180 185 190

Thr Ala Thr Thr Cys Ala Thr Thr Gly Gly Cys Ala Cys Gly Gly Cys
 195 200 205

Thr Thr Cys Thr Thr Cys Cys Ala Gly Cys Ala Ala Gly Gly Cys Ala
 210 215 220

Cys Gly Ala Ala Cys Thr Gly Gly Gly Cys Cys Gly Ala Thr Gly Gly
 225 230 235 240

Listasecuencias_ST25

Thr Cys Cys Cys Gly₂₄₅ Cys Gly Thr Thr Cys₂₅₀ Gly Thr Gly Ala Ala Cys₂₅₅

Cys Ala Gly Thr₂₆₀ Gly Thr Cys Cys Cys₂₆₅ Ala Thr Cys Gly Cys₂₇₀ Thr Thr

Cys Gly Gly₂₇₅ Gly Cys Cys Ala Cys₂₈₀ Thr Cys Gly Thr Thr Cys Thr Thr

Gly Thr₂₉₀ Ala Thr Gly Ala Cys₂₉₅ Thr Thr Thr Cys Ala₃₀₀ Ala Gly Thr Thr

Cys₃₀₅ Cys Cys Gly Ala Cys₃₁₀ Cys Ala Ala Gly Cys₃₁₅ Ala Gly Gly Gly Ala₃₂₀

Cys Cys Thr Thr Cys₃₂₅ Thr Gly Gly Thr Ala₃₃₀ Cys Cys Ala Thr Ala₃₃₅ Gly

Cys Cys Ala Thr₃₄₀ Cys Thr Cys Thr Cys₃₄₅ Cys Ala Cys Gly Cys₃₅₀ Ala Ala

Thr Ala Cys₃₅₅ Thr Gly Cys Gly Ala₃₆₀ Thr Gly Gly Thr Thr Thr Gly Ala

Gly Gly₃₇₀ Gly Gly Gly Cys Cys₃₇₅ Thr Thr Thr Cys Gly₃₈₀ Thr Cys Gly Thr

Cys₃₈₅ Thr Ala Cys Gly Ala₃₉₀ Cys Cys Cys Cys Ala₃₉₅ Ala Cys Gly Ala Thr₄₀₀

Cys Cys Thr Cys Ala₄₀₅ Cys Gly Cys Thr Ala₄₁₀ Gly Cys Cys Thr Gly₄₁₅ Thr

Ala Thr Gly Ala₄₂₀ Cys Ala Thr Thr Gly₄₂₅ Ala Thr Ala Ala Cys₄₃₀ Gly Ala

Cys Gly Ala₄₃₅ Cys Ala Cys Thr Gly₄₄₀ Thr Cys Ala Thr Thr Ala Cys Gly

Cys Thr₄₅₀ Gly Gly Cys Thr Gly₄₅₅ Ala Thr Thr Gly Gly₄₆₀ Thr Ala Thr Cys

Ala₄₆₅ Cys Gly Thr Thr Gly₄₇₀ Cys Thr Gly Cys Cys₄₇₅ Ala Ala Gly Cys Thr₄₈₀

Cys Gly Gly Ala Cys₄₈₅ Cys Thr Cys Gly Cys₄₉₀ Thr Thr Cys Cys Cys₄₉₅ Ala

Thr Thr Thr Gly₅₀₀ Gly Cys Thr Cys Cys₅₀₅ Gly Ala Thr Thr Cys₅₁₀ Ala Ala

Listasecuencias_ST25

Cys Cys Cys Thr Thr Ala Thr Cys Ala Ala Thr Gly Gly Ala Cys Thr
 515 520 525
 Thr Gly Gly Thr Cys Gly Ala Ala Cys Cys Ala Cys Thr Gly Gly Cys
 530 535 540
 Ala Thr Ala Gly Cys Ala Cys Cys Gly Thr Cys Cys Gly Ala Cys Thr
 545 550 555 560
 Thr Gly Gly Cys Ala Gly Thr Thr Ala Thr Cys Ala Ala Gly Gly Thr
 565 570 575
 Cys Ala Cys Gly Cys Ala Gly Gly Gly Cys Ala Ala Gly Cys Gly Cys
 580 585 590
 Thr Ala Cys Cys Gly Cys Thr Thr Cys Cys Gly Cys Thr Thr Gly Gly
 595 600 605
 Thr Gly Thr Cys Gly Cys Thr Thr Thr Cys Thr Thr Gly Cys Gly Ala
 610 615 620
 Thr Cys Cys Gly Ala Ala Cys Cys Ala Thr Ala Cys Ala Thr Thr Cys
 625 630 635 640
 Ala Gly Cys Ala Thr Thr Gly Ala Thr Ala Ala Thr Cys Ala Cys Ala
 645 650 655
 Cys Ala Ala Thr Gly Ala Cys Thr Ala Thr Ala Ala Thr Thr Gly Ala
 660 665 670
 Gly Gly Cys Gly Gly Ala Cys Thr Cys Gly Ala Thr Cys Ala Ala Cys
 675 680 685
 Ala Cys Thr Cys Ala Ala Cys Cys Cys Cys Thr Ala Gly Ala Gly Gly
 690 695 700
 Thr Thr Gly Ala Thr Thr Cys Ala Ala Thr Cys Cys Ala Gly Ala Thr
 705 710 715 720
 Thr Thr Thr Thr Gly Cys Cys Gly Cys Gly Cys Ala Gly Cys Gly Cys
 725 730 735
 Thr Ala Cys Thr Cys Cys Thr Thr Cys Gly Thr Gly Cys Thr Gly Gly
 740 745 750
 Ala Thr Gly Cys Thr Ala Gly Cys Cys Ala Gly Cys Cys Gly Gly Thr
 755 760 765
 Gly Gly Ala Thr Ala Ala Cys Thr Ala Cys Thr Gly Gly Ala Thr Cys
 770 775 780

Listasecuencias_ST25

Cys Gly Cys Gly Cys Ala Ala Ala Cys Cys Cys Thr Gly Cys Cys Thr
 785 790 795 800
 Thr Cys Gly Gly Ala Ala Ala Cys Ala Cys Ala Gly Gly Thr Thr Thr
 805 810 815
 Thr Gly Cys Thr Gly Gly Thr Gly Gly Ala Ala Thr Cys Ala Ala Thr
 820 825 830
 Thr Cys Thr Gly Cys Cys Ala Thr Cys Cys Thr Gly Cys Gly Thr Thr
 835 840 845
 Ala Thr Gly Ala Thr Gly Gly Cys Gly Cys Ala Cys Cys Cys Gly Ala
 850 855 860
 Gly Ala Thr Cys Gly Ala Gly Cys Cys Thr Ala Cys Gly Thr Cys Thr
 865 870 875 880
 Gly Thr Cys Cys Ala Gly Ala Cys Thr Ala Cys Thr Cys Cys Thr Ala
 885 890 895
 Cys Gly Ala Ala Gly Cys Cys Thr Cys Thr Gly Ala Ala Cys Gly Ala
 900 905 910
 Gly Gly Thr Cys Gly Ala Cys Thr Thr Gly Cys Ala Thr Cys Cys Thr
 915 920 925
 Cys Thr Cys Thr Cys Gly Cys Cys Thr Ala Thr Gly Cys Cys Thr Gly
 930 935 940
 Thr Gly Cys Cys Thr Gly Gly Cys Ala Gly Cys Cys Cys Gly Ala
 945 950 955 960
 Gly Cys Cys Cys Gly Gly Ala Gly Gly Thr Gly Thr Cys Gly Ala Cys
 965 970 975
 Ala Ala Gly Cys Cys Thr Cys Thr Gly Ala Ala Cys Thr Thr Gly Gly
 980 985 990
 Thr Cys Thr Thr Cys Ala Ala Cys Thr Thr Cys Ala Ala Cys Gly Gly
 995 1000 1005
 Cys Ala Cys Cys Ala Ala Cys Thr Thr Cys Thr Thr Cys Ala Thr
 1010 1015 1020
 Cys Ala Ala Cys Gly Ala Cys Cys Ala Cys Ala Cys Cys Thr Thr
 1025 1030 1035
 Thr Gly Thr Cys Cys Cys Gly Cys Cys Gly Thr Cys Thr Gly Thr
 1040 1045 1050

Listasecuencias_ST25

Cys	Cys 1055	Cys	Ala	Gly	Thr	Cys 1060	Thr	Thr	Gly	Cys	Thr 1065	Ala	Cys	Ala
Ala	Ala 1070	Thr	Cys	Cys	Thr	Cys 1075	Ala	Gly	Thr	Gly	Gly 1080	Gly	Gly	Cys
Gly	Cys 1085	Ala	Gly	Gly	Cys	Gly 1090	Gly	Cys	Thr	Cys	Ala 1095	Gly	Gly	Ala
Cys	Cys 1100	Thr	Gly	Gly	Thr	Cys 1105	Cys	Cys	Gly	Gly	Ala 1110	Gly	Gly	Gly
Cys	Ala 1115	Gly	Cys	Gly	Thr	Gly 1120	Thr	Thr	Cys	Gly	Thr 1125	Thr	Cys	Thr
Thr	Cys 1130	Cys	Cys	Ala	Gly	Cys 1135	Ala	Ala	Cys	Thr	Cys 1140	Gly	Thr	Cys
Cys	Ala 1145	Thr	Thr	Gly	Ala	Gly 1150	Ala	Thr	Ala	Thr	Cys 1155	Cys	Thr	Thr
Cys	Cys 1160	Cys	Thr	Gly	Cys	Cys 1165	Ala	Cys	Thr	Gly	Cys 1170	Cys	Ala	Ala
Thr	Gly 1175	Cys	Cys	Cys	Cys	Thr 1180	Gly	Gly	Ala	Thr	Thr 1185	Cys	Cys	Cys
Cys	Cys 1190	Ala	Thr	Cys	Cys	Gly 1195	Thr	Thr	Cys	Cys	Ala 1200	Cys	Thr	Thr
Gly	Cys 1205	Ala	Cys	Gly	Gly	Thr 1210	Cys	Ala	Cys	Gly	Cys 1215	Cys	Thr	Thr
Cys	Gly 1220	Cys	Thr	Gly	Thr	Cys 1225	Gly	Thr	Cys	Cys	Gly 1230	Gly	Ala	Gly
Cys	Gly 1235	Cys	Cys	Gly	Gly	Gly 1240	Ala	Gly	Cys	Ala	Gly 1245	Cys	Gly	Thr
Cys	Thr 1250	Ala	Cys	Ala	Ala	Cys 1255	Thr	Ala	Cys	Gly	Ala 1260	Cys	Ala	Ala
Cys	Cys 1265	Cys	Gly	Ala	Thr	Cys 1270	Thr	Thr	Cys	Cys	Gly 1275	Cys	Gly	Ala
Cys	Gly 1280	Thr	Cys	Gly	Thr	Cys 1285	Ala	Gly	Cys	Ala	Cys 1290	Cys	Gly	Gly
Cys	Cys 1295	Ala	Gly	Cys	Cys	Cys 1300	Gly	Gly	Cys	Gly	Ala 1305	Cys	Ala	Ala

Listasecuencias_ST25

Cys Gly Thr Cys Ala Cys Gly Ala Thr Thr Cys Gly Cys Thr Thr
1310 1315 1320

Cys Gly Ala Gly Ala Cys Cys Ala Ala Thr Ala Ala Cys Cys Cys
1325 1330 1335

Ala Gly Gly Cys Cys Cys Gly Thr Gly Gly Thr Thr Cys Cys Thr
1340 1345 1350

Cys Cys Ala Cys Thr Gly Cys Cys Ala Cys Ala Thr Thr Gly Ala
1355 1360 1365

Cys Thr Thr Cys Cys Ala Cys Cys Thr Cys Gly Ala Cys Gly Cys
1370 1375 1380

Ala Gly Gly Cys Thr Thr Thr Gly Cys Thr Gly Thr Ala Gly Thr
1385 1390 1395

Cys Ala Thr Gly Gly Cys Cys Gly Ala Gly Gly Ala Cys Ala Cys
1400 1405 1410

Thr Cys Cys Gly Gly Ala Cys Ala Cys Cys Ala Ala Gly Gly Cys
1415 1420 1425

Cys Gly Cys Gly Ala Ala Cys Cys Cys Thr Gly Thr Thr Cys Cys
1430 1435 1440

Thr Cys Ala Gly Gly Cys Gly Thr Gly Gly Thr Cys Gly Gly Ala
1445 1450 1455

Cys Thr Thr Gly Thr Gly Cys Cys Cys Cys Ala Thr Cys Thr Ala
1460 1465 1470

Thr Gly Ala Thr Gly Cys Ala Cys Thr Thr Gly Ala Cys Cys Cys
1475 1480 1485

Cys Ala Gly Cys Gly Ala Cys Cys Thr Cys Thr Gly Ala
1490 1495 1500

<210> 5
<211> 499
<212> PRT
<213> Pycnopus cinnabarinus

<400> 5

Glu Phe Ala Ile Gly Pro Val Ala Asp Leu Thr Leu Thr Asn Ala Gln
1 5 10 15

Val Ser Pro Asp Gly Phe Ala Arg Glu Ala Val Val Val Asn Gly Ile
20 25 30

Listasecuencias_ST25

Thr Pro Ala Pro Leu Ile Thr Gly Asn Lys Gly Asp Arg Phe Gln Ile
35 40 45

Asn Val Ile Asp Gln Leu Thr Asn His Thr Met Leu Lys Thr Ser Ser
50 55 60

Ile His Trp His Gly Phe Phe Gln Gln Gly Thr Asn Trp Ala Asp Gly
65 70 75 80

Pro Ala Phe Val Asn Gln Cys Pro Ile Ala Ser Gly His Ser Phe Leu
85 90 95

Tyr Asp Phe Gln Val Pro Asp Gln Ala Gly Thr Phe Trp Tyr His Ser
100 105 110

His Leu Ser Thr Gln Tyr Cys Asp Gly Leu Arg Gly Pro Phe Val Val
115 120 125

Tyr Asp Pro Asn Asp Pro His Ala Ser Leu Tyr Asp Ile Asp Asn Asp
130 135 140

Asp Thr Val Ile Thr Leu Ala Asp Trp Tyr His Val Ala Ala Lys Leu
145 150 155 160

Gly Pro Arg Phe Pro Phe Gly Ser Asp Ser Thr Leu Ile Asn Gly Leu
165 170 175

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

Thr Gln Gly Lys Arg Tyr Arg Phe Arg Leu Val Ser Leu Ser Cys Asp
195 200 205

Pro Asn His Thr Phe Ser Ile Asp Asn His Thr Met Thr Ile Ile Glu
210 215 220

Ala Asp Ser Ile Asn Thr Gln Pro Leu Glu Val Asp Ser Ile Gln Ile
225 230 235 240

Phe Ala Ala Gln Arg Tyr Ser Phe Val Leu Asp Ala Ser Gln Pro Val
245 250 255

Asp Asn Tyr Trp Ile Arg Ala Asn Pro Ala Phe Gly Asn Thr Gly Phe
260 265 270

Ala Gly Gly Ile Asn Ser Ala Ile Leu Arg Tyr Asp Gly Ala Pro Glu
275 280 285

Ile Glu Pro Thr Ser Val Gln Thr Thr Pro Thr Lys Pro Leu Asn Glu
290 295 300

Listasecuencias_ST25

Val Asp Leu His Pro Leu Ser Pro Met Pro Val Pro Gly Ser Pro Glu
305 310 315 320

Pro Gly Gly Val Asp Lys Pro Leu Asn Leu Val Phe Asn Phe Asn Gly
325 330 335

Thr Asn Phe Phe Ile Asn Asp His Thr Phe Val Pro Pro Ser Val Pro
340 345 350

Val Leu Leu Gln Ile Leu Ser Gly Ala Gln Ala Ala Gln Asp Leu Val
355 360 365

Pro Glu Gly Ser Val Phe Val Leu Pro Ser Asn Ser Ser Ile Glu Ile
370 375 380

Ser Phe Pro Ala Thr Ala Asn Ala Pro Gly Phe His His Pro Phe His
385 390 395 400

Leu His Gly His Ala Phe Ala Val Val Arg Ser Ala Gly Ser Ser Val
405 410 415

Tyr Asn Tyr Asp Asn Pro Ile Phe Arg Asp Val Val Ser Thr Gly Gln
420 425 430

Pro Gly Asp Asn Val Thr Ile Arg Phe Glu Thr Asn Asn Pro Gly Pro
435 440 445

Trp Phe Leu His Cys His Ile Asp Phe His Leu Asp Ala Gly Phe Ala
450 455 460

Val Val Met Ala Glu Asp Thr Pro Asp Thr Lys Ala Ala Asn Pro Val
465 470 475 480

Pro Gln Ala Trp Ser Asp Leu Cys Pro Ile Tyr Asp Ala Leu Asp Pro
485 490 495

Ser Asp Leu

<210> 6
<211> 1500
<212> DNA
<213> Pycnopus cinnabarinus

<400> 6
gaattcgcca tagggcctgt ggcggacctg acccttacca atgcccaggt cagccccgat 60
ggcttcgctc gcgaggccgt cgtggtgaac ggtatcaccc ctgcccctct catcacaggc 120
aataagggcg atcgattcca gatcaatgtc atcgaccagt tgacaaatca taccatgttg 180
aaaacatcta gtattcattg gcacggcttc ttccagcaag gcacgaactg ggccgatggg 240
cccgcgttcg tgaaccagt tccatcgct tcgggccact cgttcttgta tgactttcaa 300

Listasecuencias_ST25

```

gttcccgacc aagcagggac cttctggtac catagccatc tctccacgca atactgcat 360
ggtttgaggg ggcctttcgt cgtctacgac cccaacgac ctcacgctag cctgtatgac 420
attgataacg acgacactgt cattacgctg gctgattggt atcacgttgc tgccaagctc 480
ggacctcgct tcccatttgg ctccgattca acccttatca atggacttgg tcgaaccact 540
ggcatagcac cgtccgactt ggcagttatc aagggtcacgc agggcaagcg ctaccgcttc 600
cgcttggtgt cgctttcttg cgatccgaac catacattca gcattgataa tcacacaatg 660
actataattg aggcggactc gatcaacact caacccttag aggttgattc aatccagatt 720
tttgccgcgc agcgctactc cttcgtgctg gatgctagcc agccggtgga taactactgg 780
atccgcgcaa accctgcctt cggaacaca ggttttgctg gtggaatcaa ttctgccatc 840
ctgcgttatg atggcgcacc cgagatcgag cctacgtctg tccagactac tcctacgaag 900
cctctgaacg aggtcgactt gcacctctc tcgcctatgc ctgtgcctgg cagccccgag 960
cccggaggtg tcgacaagcc tctgaacttg gtcttcaact tcaacggcac caacttcttc 1020
atcaacgacc acacctttgt cccgccgtct gtcccagtct tgctacaaat cctcagtggg 1080
gcgcaggcgg ctcaggacct ggtcccggag ggcagcgtgt tcgttcttcc cagcaactcg 1140
tccattgaga tatcttccc tgccactgcc aatgcccctg gattccacca tccgttccac 1200
ttgcacggtc acgccttcgc tgtcgtccgg agcgccggga gcagcgtcta caactacgac 1260
aaccgatct tccgcgacgt cgtcagcacc ggccagcccg gcgacaacgt cacgattcgc 1320
ttcgagacca ataaccagg cccgtgggtc ctccactgcc acattgactt ccacctcgac 1380
gcaggctttg ctgtagtcac ggccgaggac actccggaca ccaaggccgc gaacctgtt 1440
cctcaggcgt ggtcggactt gtgccccatc tatgatgcac ttgaccccag cgacctctga 1500

```

```

<210> 7
<211> 499
<212> PRT
<213> Pycnopus cinnabarinus

```

<400> 7

```

Glu Phe Ala Ile Gly Pro Val Ala Asp Leu Thr Leu Thr Asn Ala Gln
1           5           10           15

```

```

Val Ser Pro Asp Gly Phe Ala Arg Glu Ala Val Val Val Asn Gly Ile
          20           25           30

```

```

Thr Pro Ala Pro Leu Ile Thr Gly Asn Lys Gly Asp Arg Phe Gln Leu
          35           40           45

```

```

Asn Val Ile Asp Gln Leu Thr Asn His Thr Met Leu Lys Thr Ser Ser
          50           55           60

```

```

Ile His Trp His Gly Phe Phe Gln Gln Gly Thr Asn Trp Ala Asp Gly
65           70           75           80

```

Listasecuencias_ST25

Pro Ala Phe Val Asn 85 Gln Cys Pro Ile Ala 90 Ser Gly His Ser Phe 95 Leu
Tyr Asp Phe Gln 100 Val Pro Asp Gln Ala 105 Gly Thr Phe Trp Tyr 110 His Ser
His Leu Ser 115 Thr Gln Tyr Cys Asp 120 Gly Leu Arg Gly Pro 125 Phe Val Val
Tyr Asp 130 Pro Asn Asp Pro His 135 Ala Ser Leu Tyr Asp 140 Ile Asp Asn Asp
Asp Thr Val Ile Thr Leu 150 Ala Asp Trp Tyr His 155 Val Ala Ala Lys Leu 160
Gly Pro Arg Phe Pro 165 Phe Gly Ser Asp Ser 170 Thr Leu Ile Asn Gly 175 Leu
Gly Arg Thr Thr 180 Gly Ile Ala Pro Ser 185 Asp Leu Ala Val Ile 190 Lys Val
Thr Gln Gly 195 Lys Arg Tyr Arg Phe 200 Arg Leu Val Ser Leu 205 Ser Cys Asp
Pro Asn 210 His Thr Phe Ser Ile 215 Asp Asn His Thr Met 220 Thr Ile Ile Glu
Ala Asp Ser Ile Asn Thr 230 Gln Pro Leu Glu Val 235 Asp Ser Ile Gln Ile 240
Phe Ala Ala Gln Arg 245 Tyr Ser Phe Val Leu 250 Asp Ala Ser Gln Pro 255 Val
Asp Asn Tyr Trp 260 Ile Arg Ala Asn Pro 265 Ala Phe Gly Asn Thr 270 Gly Phe
Ala Gly Gly 275 Ile Asn Ser Ala Ile 280 Leu Arg Tyr Asp Gly 285 Ala Pro Glu
Ile Glu 290 Pro Thr Ser Val Gln 295 Thr Thr Pro Thr Lys 300 Pro Leu Asn Glu
Val Asp 305 Leu His Pro Leu 310 Ser Pro Met Pro Val 315 Pro Gly Ser Pro Glu 320
Pro Gly Gly Val Asp 325 Lys Pro Leu Asn Leu 330 Val Phe Asn Phe Asn 335 Gly
Thr Asn Phe Phe 340 Ile Asn Asp His Thr 345 Phe Val Pro Pro Ser 350 Val Pro

Listasecuencias_ST25

Val Leu Leu Gln Ile Leu Ser Gly Ala Gln Ala Ala Gln Asp Leu Val
355 360 365

Pro Glu Gly Ser Val Phe Val Leu Pro Ser Asn Ser Ser Ile Glu Ile
370 375 380

Ser Phe Pro Ala Thr Ala Asn Ala Pro Gly Phe His His Pro Phe His
385 390 395 400

Leu His Gly His Ala Phe Ala Val Val Arg Ser Ala Gly Ser Ser Val
405 410 415

Tyr Asn Tyr Asp Asn Pro Ile Phe Arg Asp Val Val Ser Thr Gly Gln
420 425 430

Pro Gly Asp Asn Val Thr Ile Arg Phe Glu Thr Asn Asn Pro Gly Pro
435 440 445

Trp Phe Leu His Cys His Ile Asp Phe His Leu Asp Ala Gly Phe Ala
450 455 460

Val Val Met Ala Glu Asp Thr Pro Asp Thr Lys Ala Ala Asn Pro Val
465 470 475 480

Pro Gln Ala Trp Ser Asp Leu Cys Pro Ile Tyr Asp Ala Leu Asp Pro
485 490 495

Ser Asp Leu

<210> 8
<211> 1500
<212> DNA
<213> Pycnopus cinnabarinus

<400> 8
gaattcgcca tagggcctgt ggcggacctg acccttacca atgcccaggt cagccccgat 60
ggcttcgctc gcgaggccgt cgtggtgaac ggtatcacc ctgcccctct catcacaggc 120
aataagggcg atcgattcca gctcaatgtc atcgaccagt tgacaaatca taccatgttg 180
aaaacatcta gtattcattg gcacggcttc ttccagcaag gcacgaactg ggccgatggt 240
cccgcgttcg tgaaccagt tcccatcgct tcggggcact cgttcttgta tgactttcaa 300
gttcccgacc aagcaggac cttctggtac catagccatc tctccacgca atactgcat 360
ggtttgaggg ggcctttcgt cgtctacgac cccaacgac ctcacgctag cctgtatgac 420
attgataacg acgacactgt cattacgctg gctgattggt atcacgttgc tgccaagctc 480
ggacctcgct tcccatgttg ctccgattca acccttatca atggacttg tcgaaccact 540
ggcatagcac cgtccgactt ggcagttatc aaggtcacgc agggcaagcg ctaccgcttc 600
cgcttggtgt cgctttcttg cgatccgaac catacattca gcattgataa tcacacaatg 660

Listasecuencias_ST25

actataattg aggcggactc gatcaacact caacccttag aggttgattc aatccagatt 720
 tttgccgcgc agcgctactc cttcgtgctg gatgctagcc agccggtgga taactactgg 780
 atccgcgcaa accctgcctt cggaacaca ggttttgctg gtggaatcaa ttctgccatc 840
 ctgcgttatg atggcgcacc cgagatcgag cctacgtctg tccagactac tcctacgaag 900
 cctctgaacg aggtcgactt gcatcctctc tcgcctatgc ctgtgcctgg cagccccgag 960
 cccggagggtg tcgacaagcc tctgaacttg gtcttcaact tcaacggcac caattcttc 1020
 atcaacgacc acacctttgt cccgccgtct gtcccagtct tgctacaaat cctcagtggg 1080
 gcgcaggcgg ctcaggacct ggtcccggag ggcagcgtgt tcgttcttcc cagcaactcg 1140
 tccattgaga tatccttccc tgccactgcc aatgcccctg gattccacca tccgttccac 1200
 ttgcacggtc acgccttcgc tgtcgtccgg agcgccggga gcagcgtcta caactacgac 1260
 aacccgatct tccgcgacgt cgtcagcacc ggccagcccg gcgacaacgt cacgattcgc 1320
 ttcgagacca ataaccagg cccgtgggtc ctccactgcc acattgactt ccacctcgac 1380
 gcaggctttg ctgtagtcac ggccgaggac actccggaca ccaaggccgc gaaccctgtt 1440
 cctcaggcgt ggtcggactt gtgccccatc tatgatgcac ttgaccccag cgacctctga 1500

<210> 9
 <211> 499
 <212> PRT
 <213> Pycnopus cinnabarinus

<400> 9

Glu Phe Ala Ile Gly Pro Val Ala Asp Leu Thr Leu Thr Asn Ala Gln
 1 5 10 15

Val Ser Pro Asp Gly Phe Ala Arg Glu Ala Val Val Val Asn Gly Ile
 20 25 30

Thr Pro Ala Pro Leu Ile Thr Gly Asn Lys Gly Asp Arg Phe Gln Leu
 35 40 45

Asn Val Ile Asp Gln Leu Thr Asn His Thr Met Leu Lys Thr Ser Ser
 50 55 60

Ile His Trp His Gly Phe Phe Gln Gln Gly Thr Asn Trp Ala Asp Gly
 65 70 75 80

Pro Ala Phe Val Asn Gln Cys Pro Ile Ala Ser Gly His Ser Phe Leu
 85 90 95

Tyr Asp Phe Gln Val Pro Asp Gln Ala Gly Thr Phe Trp Tyr His Ser
 100 105 110

His Leu Ser Thr Gln Tyr Cys Asp Gly Leu Arg Gly Pro Phe Val Val
 115 120 125

Listasecuencias_ST25

Tyr Asp Pro Asn Asp Pro His Ala Gly Leu Tyr Asp Ile Asp Asn Asp
 130 135 140
 Asp Thr Val Ile Thr Leu Ala Asp Trp Tyr His Val Ala Ala Lys Leu
 145 150 155 160
 Gly Pro Arg Phe Pro Phe Gly Ser Asp Ser Thr Leu Ile Asn Gly Leu
 165 170 175
 Gly Arg Thr Thr Gly Ile Ala Pro Ser Asp Leu Ala Val Ile Lys Val
 180 185 190
 Thr Gln Gly Lys Arg Tyr Arg Phe Arg Leu Val Ser Leu Ser Cys Asp
 195 200 205
 Pro Asn His Thr Phe Ser Ile Asp Asn His Thr Met Thr Ile Ile Glu
 210 215 220
 Ala Asp Ser Ile Asn Thr Gln Pro Leu Glu Val Asp Ser Ile Gln Ile
 225 230 235 240
 Phe Ala Ala Gln Arg Tyr Ser Phe Val Leu Asp Ala Ser Gln Pro Val
 245 250 255
 Asp Asn Tyr Trp Ile Arg Ala Asn Pro Ala Phe Gly Asn Thr Gly Phe
 260 265 270
 Ala Gly Gly Ile Asn Ser Ala Ile Leu Arg Tyr Asp Gly Ala Pro Glu
 275 280 285
 Ile Glu Pro Thr Ser Val Gln Thr Thr Pro Thr Lys Pro Leu Asn Glu
 290 295 300
 Val Asp Leu His Pro Leu Ser Pro Met Pro Val Pro Gly Ser Pro Glu
 305 310 315 320
 Pro Gly Gly Val Asp Lys Pro Leu Asn Leu Val Phe Asn Phe Asn Gly
 325 330 335
 Thr Asn Phe Phe Ile Asn Asp His Thr Phe Val Pro Pro Ser Val Pro
 340 345 350
 Val Leu Leu Gln Ile Leu Ser Gly Ala Gln Ala Ala Gln Asp Leu Val
 355 360 365
 Pro Glu Gly Ser Val Phe Val Leu Pro Ser Asn Ser Ser Ile Glu Ile
 370 375 380
 Ser Phe Pro Ala Thr Ala Asn Ala Pro Gly Phe His His Pro Phe His
 385 390 395 400

Listasecuencias_ST25

Leu His Gly His Ala Phe Ala Val Val Arg Ser Ala Gly Ser Ser Val
405 410 415

Tyr Asn Tyr Asp Asn Pro Ile Phe Arg Asp Val Val Ser Thr Gly Gln
420 425 430

Pro Gly Asp Asn Val Thr Ile Arg Phe Glu Thr Asn Asn Pro Gly Pro
435 440 445

Trp Phe Leu His Cys His Ile Asp Phe His Leu Asp Ala Gly Phe Ala
450 455 460

Val Val Met Ala Glu Asp Thr Pro Asp Thr Lys Ala Ala Asn Pro Val
465 470 475 480

Pro Gln Ala Trp Ser Asp Leu Cys Pro Ile Tyr Asp Ala Leu Asp Pro
485 490 495

Ser Asp Leu

<210> 10
<211> 1500
<212> DNA
<213> Pycnopus cinnabarinus

<400> 10
gaattcgcca tagggcctgt ggcggacctg acccttacca atgcccaggt cagccccgat 60
ggcttcgctc gcgaggccgt cgtggtgaac ggtatcacc ctgcccctct catcacaggc 120
aataagggcg atcgattcca gctcaatgtc atcgaccagt tgacaaatca taccatgttg 180
aaaacatcta gtattcattg gcacggcttc ttccagcaag gcacgaactg ggccgatggt 240
cccgcgttcg tgaaccagt tcccatcgct tcggggccact cgttcttgta tgactttcaa 300
gttcccgacc aagcaggac cttctggtac catagccatc tctccacgca atactgcat 360
ggtttgaggg ggcctttcgt cgtctacgac cccaacgata ctcacgctgg cctgtatgac 420
attgataacg acgacactgt cattacgctg gctgattggt atcacgttgc tgccaagctc 480
ggacctcgct tcccatttgg ctccgattca acccttatca atggacttgg tcgaaccact 540
ggcatagcac cgtccgactt ggcagttatc aaggctcacgc agggcaagcg ctaccgcttc 600
cgcttggtgt cgctttcttg cgatccgaac catacattca gcattgataa tcacacaatg 660
actataattg aggcggactc gatcaacact caaccctag aggttgattc aatccagatt 720
tttgccgcgc agcgctactc cttcgtgctg gatgctagcc agccggtgga taactactgg 780
atccgcgcaa accctgcctt cggaacaca ggttttgctg gtggaatcaa ttctgccatc 840
ctgcgttatg atggcgcacc cgagatcgag cctacgtctg tccagactac tcctacgaag 900
cctctgaacg aggtcgactt gcatcctctc tcgcctatgc ctgtgcctgg cagccccgag 960
cccgagggtg tcgacaagcc tctgaacttg gtcttcaact tcaacggcac caacttcttc 1020

Listasecuencias_ST25

atcaacgacc acacctttgt cccgccgtct gtcccagtct tgctacaaat cctcagtggg 1080
gcgcaggcgg ctcaggacct ggtcccggag ggcagcgtgt tcgtttcttc cagcaactcg 1140
tccattgaga tatccttccc tgccactgcc aatgccctg gattccacca tccgtttcac 1200
ttgcacggtc acgccttcgc tgtcgtccgg agcgccggga gcagcgtcta caactacgac 1260
aaccgatct tccgcgacgt cgtcagcacc ggccagcccg gcgacaacgt cacgattcgc 1320
ttcgagacca ataaccagg cccgtggttc ctccactgcc acattgactt ccacctcgac 1380
gcaggctttg ctgtagtcac ggccgaggac actccggaca ccaaggccgc gaaccctggt 1440
cctcaggcgt ggtcggactt gtgccccatc tatgatgcac ttgaccccag cgacctctga 1500

<210> 11
<211> 499
<212> PRT
<213> Pycnopus cinnabarinus

<400> 11

Glu Phe Ala Ile Gly Pro Val Ala Asp Leu Thr Leu Thr Asn Ala Gln
1 5 10 15

Val Ser Pro Asp Gly Phe Ala Arg Glu Ala Val Val Val Asn Gly Ile
20 25 30

Thr Pro Ala Pro Leu Ile Thr Gly Asn Lys Gly Asp Arg Phe Gln Leu
35 40 45

Asn Val Ile Asp Gln Leu Thr Asn His Thr Met Leu Lys Thr Ser Ser
50 55 60

Ile His Trp His Gly Phe Phe Gln Gln Gly Thr Asn Trp Ala Asp Gly
65 70 75 80

Pro Ala Phe Val Asn Gln Cys Pro Ile Ala Ser Gly His Ser Phe Leu
85 90 95

Tyr Asp Phe Gln Val Pro Asp Gln Ala Gly Thr Phe Trp Tyr His Ser
100 105 110

His Leu Ser Thr Gln Tyr Cys Asp Gly Leu Arg Gly Pro Phe Val Val
115 120 125

Tyr Asp Pro Asn Asp Pro His Ala Ser Leu Tyr Asp Ile Asp Asn Asp
130 135 140

Asp Thr Val Ile Thr Leu Ala Asp Trp Tyr His Val Ala Ala Lys Leu
145 150 155 160

Gly Pro Arg Phe Pro Phe Gly Ser Asp Ser Thr Leu Ile Asn Gly Leu
165 170 175

Listasecuencias_ST25

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

Thr Gln Gly Lys Arg Tyr Arg Phe Arg Leu Val Ser Leu Ser Cys Asp
195 200 205

Pro Asn His Thr Phe Ser Ile Asp Asn His Thr Met Thr Ile Ile Glu
210 215 220

Ala Asp Ser Ile Asn Thr Gln Pro Leu Glu Val Asp Ser Ile Gln Ile
225 230 235 240

Phe Ala Ala Gln Arg Tyr Ser Phe Val Leu Asp Ala Ser Gln Pro Val
245 250 255

Asp Asn Tyr Trp Ile Arg Ala Asn Pro Ala Phe Gly Asn Thr Gly Phe
260 265 270

Ala Gly Gly Ile Asn Ser Ala Ile Leu Arg Tyr Asp Gly Ala Pro Glu
275 280 285

Ile Glu Pro Thr Ser Val Gln Thr Thr Pro Thr Lys Pro Leu Asn Glu
290 295 300

Val Asp Leu His Pro Leu Ser Pro Met Pro Val Pro Gly Ser Pro Glu
305 310 315 320

Pro Gly Gly Val Asp Lys Pro Leu Asn Leu Val Phe Asn Phe Asn Gly
325 330 335

Thr Asn Phe Phe Ile Asn Asp His Thr Phe Val Pro Pro Ser Val Pro
340 345 350

Val Leu Leu Gln Ile Leu Ser Gly Ala Gln Ala Ala Gln Asp Leu Val
355 360 365

Pro Glu Gly Ser Val Phe Val Leu Pro Ser Asn Ser Ser Ile Glu Ile
370 375 380

Ser Phe Pro Ala Thr Ala Asn Ala Pro Gly Phe His His Pro Phe His
385 390 395 400

Leu His Gly His Ala Phe Ala Val Val Arg Ser Ala Gly Ser Ser Val
405 410 415

Tyr Asn Tyr Asp Asn Pro Ile Phe Arg Asp Val Val Ser Thr Gly Gln
420 425 430

Pro Gly Asp Asn Val Thr Ile Arg Phe Glu Thr Asn Asn Pro Gly Pro
435 440 445

Listasecuencias_ST25

Trp Phe Leu His Cys His Ile Asp Phe His Leu Asp Ala Gly Phe Ala
450 455 460

Val Val Met Ala Glu Asp Thr Pro Asp Thr Lys Ala Ala Asn Pro Val
465 470 475 480

Pro Gln Ala Trp Ser Asp Leu Cys Pro Ile Tyr Asp Ala Leu Asp Pro
485 490 495

Ser Asp Leu

<210> 12
<211> 1500
<212> DNA
<213> Pycnopus cinnabarinus

<400> 12
gaattcgcca tagggcctgt ggcggacctg acccttacca atgcccaggt cagccccgat 60
ggcttcgctc gcgaggccgt cgtggtgaac ggtatcacc ctgccccct catcacaggc 120
aataagggcg atcgattcca gctcaatgtc atcgaccagt tgacaaatca taccatgttg 180
aaaacatcta gtattcattg gcacggcttc ttccagcaag gcacgaactg ggccgatggt 240
cccgcgttcg tgaaccagt tcccatcgct tcgggccact cgttcttgta tgactttcaa 300
gttcccgaac aagcaggac cttctggtac catagccatc tctccacgca atactgcat 360
ggtttgagg ggctttctgt cgtctacgac cccaacgatc ctcacgctag cctgtatgac 420
attgataacg acgacactgt cattacgctg gctgattggt atcacgttgc tgccaagctc 480
ggacctcgct tccattttgg ctccgattca acccttatca atggacttgg tcgaaccact 540
ggcatagcac cgtccgactt ggcagttatc aaggctacgc agggcaagcg ctaccgcttc 600
cgcttggtgt cgctttcttg cgatccgaac catacattca gcattgataa tcacacaatg 660
actataattg aggcggactc gatcaacact caaccctag aggttgattc aatccagatt 720
tttgccgcgc agcgctactc cttcgtgctg gatgctagcc agccggtgga taactactgg 780
atccgcgcaa accctgcctt cggaaacaca ggttttgctg gtggaatcaa ttctgccatc 840
ctgcgttatg atggcgcacc cgagatcgag cctacgtctg tccagactac tcctacgaag 900
cctctgaacg aggtcgactt gcatcctctc tcgcctatgc ctgtgcctgg cagccccgag 960
cccgagggtg tcgacaagcc tctgaacttg gtcttcaact tcaacggcac caatttcttc 1020
atcaacgacc acacctttgt ccgcccgtct gtcccagtct tgctacaaat cctcagtggg 1080
gcgcaggcag ctcaggacct ggtcccggag ggcagcgtgt tcgttcttcc cagcaactcg 1140
tccattgaga tatccttccc tgccactgcc aatgcccctg gattccacca tccgttcac 1200
ttgcacggtc acgccttcgc tgtcgtccgg agcgccggga gcagcgtcta caactacgac 1260
aaccgatct tccgcgacgt cgtcagcacc ggccagccc gcgacaacgt cacgattcgc 1320
ttcgagacca ataaccagg ccggtggttc ctccactgcc acattgactt ccacctcgac 1380

Listasecuencias_ST25

gcaggctttg ctgtagtcat ggccgaggac actccggaca ccaaggccgc gaaccctgtt 1440
cctcaggcgt ggtcggactt gtgccccatc tatgatgcac ttgaccccag cgacctctga 1500

<210> 13
<211> 499
<212> PRT
<213> Pycnoporus cinnabarinus

<400> 13

Glu Leu Ala Ile Gly Pro Val Ala Asp Leu Thr Leu Thr Asn Ala Gln
1 5 10 15

Val Ser Pro Asp Gly Phe Ala Arg Glu Ala Val Val Val Asn Gly Ile
20 25 30

Thr Pro Ala Pro Leu Ile Thr Gly Asn Lys Gly Asp Arg Phe Gln Leu
35 40 45

Asn Val Ile Asp Gln Leu Thr Asn His Thr Met Leu Lys Thr Ser Ser
50 55 60

Ile His Trp His Gly Phe Phe Gln Gln Gly Thr Asn Trp Ala Asp Gly
65 70 75 80

Pro Ala Phe Val Asn Gln Cys Pro Ile Ala Ser Gly His Ser Phe Leu
85 90 95

Tyr Asp Phe Gln Val Pro Asp Gln Ala Gly Thr Phe Trp Tyr His Ser
100 105 110

His Leu Ser Thr Gln Tyr Cys Asp Gly Leu Arg Gly Pro Phe Val Val
115 120 125

Tyr Asp Pro Asn Asp Pro His Ala Ser Leu Tyr Asp Ile Asp Asn Asp
130 135 140

Asp Thr Val Ile Thr Leu Ala Asp Trp Tyr His Val Ala Ala Lys Leu
145 150 155 160

Gly Pro Arg Phe Pro Phe Gly Ser Asp Ser Thr Leu Ile Asn Gly Leu
165 170 175

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

Thr Gln Gly Lys Arg Tyr Arg Phe Arg Leu Val Ser Leu Ser Cys Asp
195 200 205

Pro Asn His Thr Phe Ser Ile Asp Asn His Thr Met Thr Ile Ile Glu
210 215 220

Listasecuencias_ST25

Ala Asp Ser Ile Asn Thr Gln Pro Leu Glu Val Asp Ser Ile Gln Ile
225 230 235 240

Phe Ala Ala Gln Arg Tyr Ser Phe Val Leu Asp Ala Ser Gln Pro Val
245 250 255

Asp Asn Tyr Trp Ile Arg Ala Asn Pro Ala Phe Gly Asn Thr Gly Phe
260 265 270

Ala Gly Gly Ile Asn Ser Ala Ile Leu Arg Tyr Asp Gly Ala Pro Glu
275 280 285

Ile Glu Pro Thr Ser Val Gln Thr Thr Pro Thr Lys Pro Leu Asn Glu
290 295 300

Val Asp Leu His Pro Leu Ser Pro Met Pro Val Pro Gly Ser Pro Glu
305 310 315 320

Pro Gly Gly Val Asp Lys Pro Leu Asn Leu Val Phe Asn Phe Asn Gly
325 330 335

Thr Asn Phe Phe Ile Asn Asn His Thr Phe Val Pro Pro Ser Val Pro
340 345 350

Val Leu Leu Gln Ile Leu Ser Gly Ala Gln Ala Ala Gln Asp Leu Val
355 360 365

Pro Glu Gly Ser Val Phe Val Leu Pro Ser Asn Ser Ser Ile Glu Ile
370 375 380

Ser Phe Pro Ala Thr Ala Asn Ala Pro Gly Phe His His Pro Phe His
385 390 395 400

Leu His Gly His Ala Phe Ala Val Val Arg Ser Ala Gly Ser Ser Val
405 410 415

Tyr Asn Tyr Asp Asn Pro Ile Phe Arg Asp Val Val Ser Thr Gly Gln
420 425 430

Pro Gly Asp Asn Val Thr Ile Arg Phe Glu Thr Asn Asn Pro Gly Pro
435 440 445

Trp Phe Leu His Cys His Ile Asp Phe His Leu Asp Ala Gly Phe Ala
450 455 460

Val Val Met Ala Glu Asp Thr Pro Asp Thr Lys Ala Ala Asn Pro Val
465 470 475 480

Pro Gln Ala Trp Ser Asp Leu Cys Pro Ile Tyr Asp Ala Leu Asp Pro
485 490 495

Listasecuencias_ST25

Ser Asp Leu

<210> 14
 <211> 1500
 <212> DNA
 <213> Pycnopus cinnabarinus

<400> 14
 gaactcgcca tagggcctgt ggcggacctg acccttacca atgcccaggt cagccccgat 60
 ggcttcgctc gcgaggccgt cgtggtgaac ggtatcaccc ctgcccctct catcacaggc 120
 aataagggcg atcgattcca gctcaatgtc atcgaccagt tgacaaatca taccatgttg 180
 aaaacatcta gtattcattg gcacggcttc ttccagcaag gcacgaactg ggccgatggg 240
 cccgcgttcg tgaaccagtg tcccatcgct tcggggccact cgttcttgta tgactttcaa 300
 gttcccgacc aagcagggac cttctggtac catagccatc tctccacgca atactgcat 360
 ggtttgaggg ggcctttcgt cgtctacgac cccaacgac ctcacgctag cctgtatgac 420
 attgataacg acgacactgt cattacgctg gctgattggg atcacgttgc tgccaagctc 480
 ggacctcgct tcccatttgg ctccgattca acccttatca atggacttgg tcgaaccact 540
 ggcatagcac cgtccgactt ggcagttatc aagggtcacgc agggcaagcg ctaccgcttc 600
 cgcttggtgt cgctttcttg cgatccgaac catacattca gcattgataa tcacacaatg 660
 actataattg aggcggactc gatcaacact caacccttag aggttgattc aatccagatt 720
 tttgccgcgc agcgtactc cttcgtgctg gatgctagcc agccggtgga taactactgg 780
 atccgcgcaa accctgcctt cggaacaca ggttttgctg gtggaatcaa ttctgccatc 840
 ctgcgttatg atggcgcacc cgagatcgag cctacgtctg tccagactac tcctacgaag 900
 cctctgaacg aggtcgactt gcatcctctc tcgcctatgc ctgtgcctgg cagccccgag 960
 cccggaggtg tcgacaagcc tctgaacttg gtcttcaact tcaacggcac caacttcttc 1020
 atcaacaacc acaccttgtg cccgccgtct gtcccagtct tgctacaaat cctcagtggg 1080
 gcgcaggcgg ctcaggacct ggtcccggag ggcagcgtgt tcgttcttcc cagcaactcg 1140
 tccattgaga tatccttccc tgccactgcc aatgcccctg gattccacca tccgttcac 1200
 ttgcacggtc acgccttcgc tgtcgtccgg agcgccggga gcagcgtcta caactacgac 1260
 aacccgatct tccgcgacgt cgtcagcacc ggccagcccc gcgacaacgt cacgattcgc 1320
 ttcgagacca ataaccagg cccgtgggtc ctccactgcc acattgactt ccacctcgac 1380
 gcaggctttg ctgtagtcat ggccgaggac actccggaca ccaaggccgc gaaccctggt 1440
 cctcaggcgt ggtcggactt gtgccccatc tatgatgcac ttgaccccag cgacctctga 1500

<210> 15
 <211> 499
 <212> PRT
 <213> Pycnopus cinnabarinus

<400> 15

Listasecuencias_ST25

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

Listasecuencias_ST25

Ala Gly Gly Ile Asn Ser Ala Ile Leu Arg Tyr Asp Gly Ala Pro Glu
275 280 285

Ile Glu Pro Thr Ser Val Gln Thr Thr Pro Thr Lys Pro Leu Asn Glu
290 295 300

Val Asp Leu His Pro Leu Ser Pro Met Pro Val Pro Gly Ser Pro Glu
305 310 315 320

Pro Gly Gly Val Asp Lys Pro Leu Asn Leu Val Phe Asn Phe Asn Gly
325 330 335

Thr Asn Phe Phe Ile Asn Asn His Thr Phe Val Pro Pro Ser Val Pro
340 345 350

Val Leu Leu Gln Ile Leu Ser Gly Ala Gln Ala Ala Gln Asp Leu Val
355 360 365

Pro Glu Gly Ser Val Phe Val Leu Pro Ser Asn Ser Ser Ile Glu Ile
370 375 380

Ser Phe Pro Ala Thr Ala Asn Ala Pro Gly Phe His His Pro Phe His
385 390 395 400

Leu His Gly His Ala Phe Ala Val Val Arg Ser Ala Gly Ser Ser Val
405 410 415

Tyr Asn Tyr Asp Asn Pro Ile Phe Arg Asp Val Val Ser Thr Gly Gln
420 425 430

Pro Gly Asp Asn Val Thr Ile Arg Phe Glu Thr Asn Asn Pro Gly Pro
435 440 445

Trp Phe Leu His Cys His Ile Asp Phe His Leu Asp Ala Gly Phe Ala
450 455 460

Val Val Met Ala Glu Asp Thr Pro Asp Thr Lys Ala Ala Asn Pro Val
465 470 475 480

Pro Gln Ala Trp Ser Asp Leu Cys Pro Ile Tyr Asp Ala Leu Asp Pro
485 490 495

Ser Asp Leu

<210> 16

<211> 1500

<212> DNA

<213> Pycnopus cinnabarinus

<400> 16

gaattcgcca tagggcctgt ggcggacctg acccttacca atgccaggt cagccccgat

60

Listasecuencias_ST25

```

ggcttcgctc gcgaggccgt cgtggtgaac ggtatcaccc ctgcccctct catcacaggc 120
aataagggcg atcgattcca gctcaatgtc atcgaccagt tgacaaatca taccatgttg 180
aaaacatcta gtattcattg gcacggcttc ttccagcaag gcacgaactg ggccgatggt 240
cccgcgttcg tgaaccagtg tcccatcgct tcggggccact cgttcttgta tgactttcaa 300
gttcccgacc aagcaggggac cttctggtac catagccatc tctccacgca atactgcat 360
ggtttgaggg ggcctttcgt cgtctacgac cccaacgac ctcacgctag cctgtatgac 420
attgataacg acgacactgt cattacgctg gctgattggt atcacgttgc tgccaagctc 480
ggacctcgct tcccatttgg ctccgattca acccttatca atggacttgg tcgaaccact 540
ggcatagcac cgtccgactt ggaggttatc aaggtcacgc agggcaagcg ctaccgcttc 600
cgcttggtgt cgctttcttg cgatccgagc catacattca gcattgataa tcacacaatg 660
actataattg aggcggactc gatcaacact caaccctag aggttgattc aatccagatt 720
tttgccgcgc agcgtactc cttcgtgctg gatgctagcc agccggtgga taactactgg 780
atccgcgcaa accctgcctt cggaaacaca ggttttgctg gtggaatcaa ttctgccatc 840
ctgcgttatg atggcgcacc cgagatcgag cctacgtctg tccagactac tcctacgaag 900
cctctgaacg aggtcgactt gcacctctc tcgcctatgc ctgtgcctgg cagccccgag 960
cccggaggtg tcgacaagcc tctgaacttg gtcttcaact tcaacggcac caacttcttc 1020
atcaacaacc acaccttgtt cccgccgtct gtcccagtct tgctacaaat cctcagtggt 1080
gcgagggcgg ctgaggacct ggtcccggag ggcagcgtgt tcgttcttcc cagcaactcg 1140
tccattgaga tatccttccc tgccactgcc aatgcccctg gattccacca tccgttccac 1200
ttgcacggtc acgccttcgc tgtcgtccgg agcgccggga gcagcgtcta caactacgac 1260
aaccgatct tccgcgacgt cgtcagcacc ggccagcccg gcgacaacgt cacgattcgc 1320
ttcgagacca ataaccagg cccgtggttc ctccactgcc acattgactt ccaccttgac 1380
gcaggctttg ctgtatgcat ggccgaggac actccggaca ccaaggccgc gaaccctggt 1440
cctcaggcgt ggtcggactt gtgccccatc tatgatgcac ttgaccccag cgacctctga 1500

```

<210> 17

<211> 499

<212> PRT

<213> Pycnopus cinnabarinus

<400> 17

Glu Phe Ala Ile Gly Pro Val Ala Asp Leu Thr Leu Thr Asn Ala Gln
1 5 10 15

Val Ser Pro Asp Gly Phe Ala Arg Glu Ala Val Val Val Asn Gly Ile
20 25 30

Thr Pro Ala Pro Leu Ile Thr Gly Asn Lys Gly Asp Arg Phe Gln Leu
35 40 45

Listasecuencias_ST25

Asn Val Ile Asp Gln Leu Thr Asn His Thr Met Leu Lys Thr Ser Ser
 50 55 60
 Ile His Trp His Gly Phe Phe Gln Gln Gly Thr Asn Trp Ala Asp Gly
 65 70 75 80
 Pro Ala Phe Val Asn Gln Cys Pro Ile Ala Ser Gly His Ser Phe Leu
 85 90 95
 Tyr Asp Phe Gln Val Pro Asp Gln Ala Gly Thr Phe Trp Tyr His Ser
 100 105 110
 His Leu Ser Thr Gln Tyr Cys Asp Gly Leu Arg Gly Pro Phe Val Val
 115 120 125
 Tyr Asp Pro Asn Asp Pro His Ala Ser Leu Tyr Asp Ile Asp Asn Asp
 130 135 140
 Asp Thr Val Ile Thr Leu Ala Asp Trp Tyr His Val Ala Ala Lys Leu
 145 150 155 160
 Gly Pro Arg Phe Pro Phe Gly Ser Asp Ser Thr Leu Ile Asn Gly Leu
 165 170 175
 Gly Arg Thr Thr Gly Ile Ala Pro Ser Asp Leu Ala Val Ile Lys Val
 180 185 190
 Thr Gln Gly Lys Arg Tyr Arg Phe Arg Leu Val Ser Leu Ser Cys Asp
 195 200 205
 Pro Asn His Thr Phe Ser Ile Asp Asn His Thr Met Thr Ile Ile Glu
 210 215 220
 Ala Asp Ser Ile Asn Thr Gln Pro Leu Glu Val Asp Ser Ile Gln Ile
 225 230 235 240
 Phe Ala Ala Gln Arg Tyr Ser Phe Val Leu Asp Ala Ser Gln Pro Val
 245 250 255
 Asp Asn Tyr Trp Ile Arg Ala Asn Pro Ala Phe Gly Asn Thr Gly Phe
 260 265 270
 Ala Gly Gly Ile Asn Ser Ala Ile Leu Arg Tyr Asp Gly Ala Pro Glu
 275 280 285
 Ile Glu Pro Thr Ser Val Gln Thr Thr Pro Thr Lys Pro Leu Asn Glu
 290 295 300
 Val Asp Leu His Pro Leu Ser Pro Met Pro Val Pro Gly Ser Pro Glu
 305 310 315 320

Listasecuencias_ST25

Pro Gly Gly Val Asp Lys Pro Leu Asn Leu Val Phe Asn Phe Asn Gly
325 330 335

Thr Asn Phe Phe Ile Asn Asp His Thr Phe Val Pro Pro Ser Val Pro
340 345 350

Val Leu Leu Gln Ile Leu Ser Gly Ala Gln Ala Ala Gln Asp Leu Val
355 360 365

Pro Glu Gly Ser Val Phe Val Leu Pro Ser Asn Ser Ser Ile Glu Ile
370 375 380

Ser Phe Pro Ala Thr Ala Asn Ala Pro Gly Phe His His Pro Phe His
385 390 395 400

Leu His Gly His Ala Phe Ala Val Val Arg Ser Ala Gly Ser Ser Val
405 410 415

Tyr Asn Tyr Asp Asn Pro Ile Phe Arg Asp Val Val Ser Thr Gly Gln
420 425 430

Pro Gly Asp Asn Val Thr Ile Arg Phe Glu Thr Asn Asn Pro Gly Pro
435 440 445

Trp Phe Leu His Cys His Ile Asp Phe His Leu Asp Ala Gly Phe Ala
450 455 460

Val Val Met Ala Glu Asp Thr Pro Asp Thr Lys Ala Ala Asn Pro Val
465 470 475 480

Pro Gln Ala Trp Ser Asp Leu Cys Pro Ile Tyr Asp Ala Leu Asp Pro
485 490 495

Ser Asp Leu

<210> 18

<211> 1500

<212> DNA

<213> Pycnopus cinnabarinus

<400> 18

gaattcgcca tagggcctgt ggcggacctg acccttacca atgcccaggt cagccccgat 60

ggcttcgctc gcgaggccgt cgtggtgaac ggtatcacc ctgcccctct catcacaggc 120

aataagggcg atcgattcca gctcaatgtc atcgaccagt tgacaaatca taccatgttg 180

aaaacatcta gtattcattg gcacggcttc ttccagcaag gcacgaactg ggccgatggt 240

cccgcgttcg tgaaccagt tcccatcgct tcggggcact cgttcttgta tgactttcaa 300

gttcccgacc aagcaggac cttctggtac catagccatc tctccacgca atactgcat 360

ggtttgaggg ggccttcgt cgtctacgac cccaacgatc ctcacgctag cctgtatgac 420

Listasecuencias_ST25

attgataacg acgacactgt cattacgctg gctgattggt atcacgttgc tgccaagctc	480
ggacctcgct tcccatttgg ctccgattca acccttatca atggacttgg tcgaaccact	540
ggcatagcac cgtccgactt ggcagttatc aaggctacgc agggcaagcg ctaccgcttc	600
cgcttggtgt cgctttcttg cgatccgaac catacattca gcattgataa tcacacaatg	660
actataattg aggcggactc gatcaacact caaccctag aggttgattc aatccagatt	720
tttgccgcgc agcgctactc cttcgtgctg gatgctagcc agccggtgga taactactgg	780
atccgcgcaa accctgcctt cggaaacaca ggttttgctg gtggaatcaa ttctgccatc	840
ctgcgttatg atggcgcacc cgagatcgag cctacgtctg tccagactac tcctacgaag	900
cctctgaacg aggtcgactt gcacctctc tcgcctatgc ctgtgcctgg cagccccgag	960
cccggaggtg tcgacaagcc tctgaacttg gtcttcaact tcaacggcac caattcttc	1020
atcaacgacc acacctttgt cccgccgtct gtcccagtct tgctacaaat cctcagtggg	1080
gcgaggcg ctcaggacct ggtcccgag ggcagcgtgt tcgttcttcc cagcaactcg	1140
tccattgaga tatccttccc tgccactgcc aatgcccctg gattccacca tccgttccac	1200
ttgcacggtc acgccttcgc tgtcgtccgg agcgccggga gcagcgtcta caactacgac	1260
aacccgatct tccgcgacgt cgtcagcacc ggccagcccg gcgacaacgt cacgattcgc	1320
ttcgagacca ataaccagg cccgtggttc ctccactgcc acattgactt ccacctcgac	1380
gcaggctttg ctgtagtcac ggccgaggac actccggaca ccaaggccgc gaaccctggt	1440
cctcaggcgt ggtcggactt gtgccccatc tatgatgcac ttgaccccag cgacctctga	1500

<210> 19

<211> 499

<212> PRT

<213> Pycnopus cinnabarinus

<400> 19

Glu	Phe	Ala	Ile	Gly	Pro	Val	Ala	Asp	Leu	Thr	Leu	Thr	Asn	Ala	Gln
1				5					10					15	

Val	Ser	Pro	Asp	Gly	Phe	Ala	Arg	Glu	Ala	Val	Val	Val	Asn	Gly	Ile
			20					25					30		

Thr	Pro	Ala	Pro	Leu	Ile	Thr	Gly	Asn	Lys	Gly	Asp	Arg	Phe	Gln	Leu
		35					40					45			

Asn	Val	Ile	Asp	Gln	Leu	Thr	Asn	His	Thr	Met	Leu	Lys	Thr	Ser	Ser
	50					55					60				

Ile	His	Trp	His	Gly	Phe	Phe	Gln	Gln	Gly	Thr	Asn	Trp	Ala	Asp	Gly
65					70					75					80

Pro	Ala	Phe	Val	Asn	Gln	Cys	Pro	Ile	Ala	Ser	Gly	His	Ser	Phe	Leu
				85					90					95	

Listasecuencias_ST25

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

Listasecuencias_ST25

Pro Glu Gly Ser Val Phe Val Leu Pro Ser Asn Ser Ser Ile Glu Ile
370 375 380

Ser Phe Pro Ala Thr Ala Asn Ala Pro Gly Phe His His Pro Phe His
385 390 395 400

Leu His Gly His Ala Phe Ala Val Val Arg Ser Ala Gly Ser Ser Val
405 410 415

Tyr Asn Tyr Asp Asn Pro Ile Phe Arg Asp Val Val Ser Thr Gly Gln
420 425 430

Pro Gly Asp Asn Val Thr Ile Arg Phe Glu Thr Asn Asn Pro Gly Pro
435 440 445

Trp Phe Leu His Cys His Val Asp Phe His Leu Asp Ala Gly Phe Ala
450 455 460

Val Val Met Ala Glu Asp Thr Pro Asp Thr Lys Ala Ala Asn Pro Val
465 470 475 480

Pro Gln Ala Trp Ser Asp Leu Cys Pro Ile Tyr Gly Ala Leu Asp Pro
485 490 495

Ser Asp Leu

<210> 20

<211> 1500

<212> DNA

<213> Pycnopus cinnabarinus

<400> 20

gaattcgcca tagggcctgt ggcggacctg acccttacca atgcccaggt cagccccgat	60
ggcttcgctc gcgaggccgt cgtggtgaac ggtatcaccc ctgcccctct catcacaggc	120
aataagggcg atcgattcca gctcaatgtc atcgaccagt tgacaaatca taccatgttg	180
aaaacatcta gtattcattg gcacggcttc ttccagcaag gcacgaactg ggccgatggg	240
cccgcgttcg tgaaccagt tcccatcgct tcggggcact cgttcttgta tgactttcaa	300
gttcccgacc aagcaggga cttctggtac catagccatc tctccacgca atactgcat	360
ggtttgaggg ggcctttcgt cgtctacgac cccaacgatc ctcacgctag cctgtatgac	420
attgataacg acgacactgt cattacgctg gctgattggg atcacgttgc tgccaagctc	480
ggacctcgct tcccatttgg ctccgattca acccttatca atggacttg tcgaaccact	540
ggcatagcac cgtccgactt ggcagttatc aaggtcacgc agggcaagcg ctaccgcttc	600
cgcttggtgt cgctttcttg cgatccgaac catacattca gcattgataa tcacacaatg	660
actataattg aggcggactc gatcaacact caaccctag aggttgattc aatccagatt	720
tttgccgcgc agcgctactc cttcgtgctg gatgctagcc agccggtgga taactactgg	780

Listasecuencias_ST25

atccgcgcaa accctgcctt cggaaacaca ggttttgctg gtggaatcaa ttctgccatc 840
ctgcgttatg atggcgcacc cgagatcgag cctacgtctg tccagactac tcctacgaag 900
cctctgaacg aggtcgactt gcatcctctc tcgcctatgc ctgtgcctgg cagccccgag 960
cccggagggtg tcgacaagcc tctgaacttg gtcttcaact tcaacggcac caacttcttc 1020
atcaacgacc acacctttgt cccgccgtct gtcccagtct tgctacaaat cctcagtggtg 1080
gcgcaggcgg ctcaggacct ggtcccggag ggcagcgtgt tcgttcttcc cagcaactcg 1140
tccattgaga tatccttccc tgccactgcc aatgcccctg gattccacca tccgttccac 1200
ttgcacggtc acgccttcgc tgtcgtccgg agcgccggga gcagcgtcta caactacgac 1260
aaccgatct tccgcgacgt cgtcagcacc ggccagcccg gcgacaacgt cagcattcgc 1320
ttcgagacca ataaccagg cccgtggttc ctccactgcc acgttgactt ccacctcgac 1380
gcaggctttg ctgtagtcac ggccgaggac actccggaca ccaaggccgc gaaccctggt 1440
cctcaggcgt ggtcggactt gtgccccatc tatggtgcac ttgaccccag cgacctctga 1500

<210> 21
<211> 89
<212> PRT
<213> Pycnopus cinnabarinus

<400> 21

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

Ala Leu Ala Ala Pro Val Asn Thr Thr Thr Glu Asp Glu Thr Ala Gln
20 25 30

Ile Pro Ala Glu Ala Val Ile Gly Tyr Ser Asp Leu Glu Gly Asp Phe
35 40 45

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

Phe Ile Asn Thr Thr Ile Ala Ser Ile Ala Ala Lys Glu Glu Gly Val
65 70 75 80

Ser Leu Glu Lys Arg Glu Ala Glu Ala
85

<210> 22
<211> 267
<212> DNA
<213> Pycnopus cinnabarinus

<400> 22

atgagttttc cttcaatttt tactgctgtt ttattcgcag catcctccgc attagctgct 60
ccagtcaaca ctacaacaga agatgaaacg gcacaaattc cggctgaagc tgtcatcggt 120
tactcagatt tagaagggga tttcgtggtt gctgttttgc cattttccaa cggcacaat 180

Listasecuencias_ST25

aacgggttat tgtttataaa tactactatt gccagcattg ctgctaaaga agaaggggta 240
tctctcgaga aaagagaggc tgaagct 267

<210> 23
<211> 89
<212> PRT
<213> Pycnoporus cinnabarinus
<400> 23

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

Ala Leu Ala Ala Pro Val Asn Thr Thr Thr Glu Asp Glu Thr Ala Gln
20 25 30

Ile Pro Ala Glu Ala Val Ile Gly Tyr Ser Asp Leu Glu Gly Asp Phe
35 40 45

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

Phe Ile Asn Thr Thr Ile Ala Ser Ile Ala Ala Lys Glu Glu Gly Val
65 70 75 80

Ser Leu Glu Lys Arg Glu Ala Glu Ala
85

<210> 24
<211> 267
<212> DNA
<213> Pycnoporus cinnabarinus

<400> 24
atgagttttc cttcaatttt tactgctggt ttattcgcag catcctccgc attagctgct 60
ccagtcaaca ctacaacaga agatgaaacg gcacaaattc cggctgaagc tgtcatcggt 120
tactcagatt tagaagggga tttcgatggt gctgttttgc ctttttccaa cagcacaat 180
aacgggttat tgtttataaa tactactatt gccagcattg ctgctaaaga agaaggggta 240
tctctcgaga aaagagaggc tgaagct 267

<210> 25
<211> 89
<212> PRT
<213> Pycnoporus cinnabarinus
<400> 25

Met Arg Phe Pro Ser Ile Phe Thr Ala Val Leu Phe Ala Ala Ser Ser
1 5 10 15

Ala Leu Ala Ala Pro Val Asn Thr Thr Thr Glu Asp Glu Thr Ala Gln
20 25 30

Listasecuencias_ST25

Ile Pro Ala Glu Ala Val Ile Gly Tyr Ser Asp Leu Glu Gly Asp Phe
35 40 45

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

Phe Ile Asn Thr Thr Ile Ala Ser Ile Ala Ala Lys Glu Glu Gly Val
65 70 75 80

Ser Leu Glu Lys Arg Glu Ala Glu Ala
85

<210> 26
<211> 1500
<212> DNA
<213> Pycnopus cinnabarinus

<400> 26
gaattcgcca tagggcctgt ggcggacctg acccttacca atgcccaggt cagccccgat 60
ggcttcgctc gcgagggcgt cgtggtgaac ggtatcacc ctgcccctct catcacaggc 120
aataagggcg atcgattcca gctcaatgtc atcgaccagt tgacaaatca taccatgttg 180
aaaacatcta gtattcattg gcacggcttc ttccagcaag gcacgaactg ggccgatggg 240
cccgcgttcg tgaaccagt tcccatcgct tcgggccact cgttcttgta tgactttcaa 300
gttcccgacc aagcagggac cttctggtac catagccatc tctccacgca atactgcat 360
ggtttgaggg ggcctttcgt cgtctacgac cccaacgatc ctcacgctag cctgtatgac 420
attgataacg acgacactgt cattacgctg gctgattggg atcacgttgc tgccaagctc 480
ggacctcgct tcccatttgg ctccgattca acccttatca atggacttgg tcgaaccact 540
ggcatagcac cgtccgactt ggcagttatc aagggtcacgc agggcaagcg ctaccgcttc 600
cgcttggtgt cgctttcttg cgatccgaac catacattca gcattgataa tcacacaatg 660
actataattg aggcggactc gatcaacact caacccttag aggttgattc aatccagatt 720
tttgccgcgc agcgctactc cttcgtgctg gatgctagcc agccggtgga taactactgg 780
atccgcgcaa accctgcctt cggaaacaca ggttttgctg gtggaatcaa ttctgccatc 840
ctgcgttatg atggcgcacc cgagatcgag cctacgtctg tccagactac tctacgaag 900
cctctgaacg aggtcgactt gcatcctctc tcgcctatgc ctgtgcctgg cagccccgag 960
cccggagggtg tcgacaagcc tctgaacttg gtcttcaact tcaacggcac caacttcttc 1020
atcaacgacc acaccttgtg cccgccgtct gtcccagtct tgctacaaat cctcagtggg 1080
gcgcaggcgg ctcaggacct ggtcccggag ggcagcgtgt tcgttcttcc cagcaactcg 1140
tccattgaga tatccttccc tgccactgcc aatgcccctg gattccacca tccgttcac 1200
ttgcacggtc acgccttcgc tgtcgtccgg agcgccggga gcagcgtcta caactacgac 1260
aaccgatct tccgcgacgt cgtcagcacc ggccagcccg gcgacaacgt cacgattcgc 1320
ttcgagacca ataaccagg cccgtgggtc ctccactgcc acattgactt ccacctcgac 1380

Listasecuencias_ST25

gcaggctttg ctgtagtcat ggccgaggac actccggaca ccaaggccgc gaaccctgtt 1440
cctcaggcgt ggtcggactt gtgccccatc tatgatgcac ttgaccccag cgacctctga 1500

<210> 27
<211> 89
<212> PRT
<213> Pycnopus cinnabarinus
<400> 27

Met Arg Phe Pro Ser Ile Phe Thr Asp Val Leu Phe Ala Ala Ser Ser
1 5 10 15

Ala Leu Ala Ala Pro Val Asn Thr Thr Thr Glu Asp Glu Thr Ala Gln
20 25 30

Ile Pro Ala Glu Ala Val Ile Gly Tyr Ser Asp Leu Glu Gly Asp Phe
35 40 45

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

Phe Ile Asn Thr Thr Ile Ala Ser Ile Ala Ala Lys Glu Glu Gly Val
65 70 75 80

Ser Leu Glu Lys Arg Glu Ala Glu Ala
85

<210> 28
<211> 1500
<212> DNA
<213> Pycnopus cinnabarinus

<400> 28
gaattcgcca tagggcctgt ggcggacctg acccttacca atgcccaggt cagccccgat 60
ggcttcgctc gcgaggccgt cgtggtgaac ggtatcaccc ctgccccct catcacaggc 120
aataagggcg atcgattcca gctcaatgtc atcgaccagt tgacaaatca taccatgttg 180
aaaacatcta gtattcattg gcacggcttc ttccagcaag gcacgaactg ggccgatggg 240
cccgcgttcg tgaaccagt tcccatcgct tcggggcact cgttcttgta tgactttcaa 300
gttcccgacc aagcagggac cttctggtac catagccatc tctccacgca atactgcat 360
ggtttgaggg ggcctttcgt cgtctacgac cccaacgatc ctcacgctag cctgtatgac 420
attgataacg acgacactgt cattacgctg gctgattggg atcacgttgc tgccaagctc 480
ggacctcgct tcccatttgg ctccgattca acccttatca atggacttgg tcgaaccact 540
ggcatagcac cgtccgactt ggcagttatc aaggtcacgc agggcaagcg ctaccgcttc 600
cgcttggtgt cgctttcttg cgatccgaac catacattca gcattgataa tcacacaatg 660
actataattg aggcggactc gatcaacact caaccctag aggttgattc aatccagatt 720
tttgccgcgc agcgctactc cttcgtgctg gatgctagcc agccggtgga taactactgg 780

Listasecuencias_ST25

atccgcgcaa accctgcctt cggaacaca ggttttgctg gtggaatcaa ttctgccatc 840
ctgcgttatg atggcgcacc cgagatcgag cctacgtctg tccagactac tcctacgaag 900
cctctgaacg aggtcgactt gcatcctctc tcgcctatgc ctgtgcctgg cagccccgag 960
cccggagggtg tcgacaagcc tctgaacttg gtcttcaact tcaacggcac caatttcttc 1020
atcaacgacc acacctttgt cccgccgtct gtcccagtct tgctacaaat cctcagtggg 1080
gcgcaggcag ctgaggacct ggtcccggag ggcagcgtgt tcgttcttcc cagcaactcg 1140
tccattgaga tatccttccc tgccactgcc aatgcccctg gattccacca tccgttccac 1200
ttgcacggtc acgccttcgc tgtcgtccgg agcgccggga gcagcgtcta caactacgac 1260
aaccgatct tccgcgacgt cgtcagcacc ggccagcccg gcgacaacgt cagcattcgc 1320
ttcgagacca ataaccagg cccgtgggtc ctccactgcc acattgactt ccacctcgac 1380
gcaggctttg ctgtatgcat ggccgaggac actccggaca ccaaggccgc gaaccctgtt 1440
cctcaggcgt ggtcggactt gtgccccatc tatgatgcac ttgaccccag cgacctctga 1500

<210> 29
<211> 89
<212> PRT
<213> Pycnopus cinnabarinus

<400> 29

Met Arg Phe Pro Ser Ile Phe Thr Asp Val Leu Phe Ala Ala Ser Ser
1 5 10 15

Ala Leu Ala Ala Pro Val Asn Thr Thr Thr Glu Asp Glu Thr Ala Gln
20 25 30

Ile Pro Ala Glu Ala Val Ile Gly Tyr Ser Asp Leu Glu Gly Asp Ser
35 40 45

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

Phe Ile Asn Thr Thr Ile Ala Ser Ile Ala Ala Lys Glu Glu Gly Val
65 70 75 80

Ser Leu Glu Lys Arg Gly Ala Glu Ala
85

<210> 30
<211> 1500
<212> DNA
<213> Pycnopus cinnabarinus

<400> 30

gaattcgcca tagggcctgt ggcggacctg acccttacca atgccaggt cagccccgat 60
ggcttcgctc gcgaggccgt cgtggtgaac ggtatcacc ctgcccctct catcacaggc 120
aataagggcg atcgattcca gctcaatgtc atcgaccagt tgacaaatca taccatgttg 180

Listasecuencias_ST25

aaaacatcta gtattcattg gcacggcttc ttccagcaag gcacgaactg ggccgatggg	240
cccgcgttcg tgaaccagtg tcccatcgct tcggggccact cgttcttgta tgactttcaa	300
gttcccggacc aagcaggagc cttctgggtac catagccatc tctccacgca atactgcat	360
ggtttgaggg ggcctttcgt cgtctacgac cccaacgata ctcacgctag cctgtatgac	420
attgataacg acgacactgt cattacgctg gctgattggg atcacgttgc tgccaagctc	480
ggacctcgct tcccatttgg ctccgattca acccttatca atggacttgg tcgaaccact	540
ggcatagcac cgtccgactt ggcagttatc aagggtcacgc agggcaagcg ctaccgcttc	600
cgcttggtgt cgctttcttg cgatccgagc catacattca gcattgataa tcacacaatg	660
actataattg aggcggactc gatcaacact caacccttag aggttgattc aatccagatt	720
tttgccgcgc agcgctactc cttcgtgctg gatgctagcc agccggtgga taactactgg	780
atccgcgcaa accctgcctt cggaaacaca ggttttgctg gtggaatcaa ttctgccatc	840
ctgcgttatg atggcgcacc cgagatcgag cctacgtctg tccagactac tcctacgaag	900
cctctgaacg aggtcgactt gcacccctc tcgcctatgc ctgtgcctgg cagccccgag	960
cccggagggtg tcgacaagcc tctgaacttg gtcttcaact tcaacggcac caacttcttc	1020
atcaacaacc acacctttgt cccgccgtct gtcccagtct tgctacaaat cctcagtggg	1080
gcgcaggcgg ctacaggacct ggtcccggag ggcagcgtgt tcgttcttcc cagcaactcg	1140
tccattgaga tatccttccc tgccactgcc aatgcccctg gattccacca tccgttccac	1200
ttgcacggtc acgccttcgc tgtcgtccgg agcgccggga gcagcgtcta caactacgac	1260
aacccgatct tccgcgacgt cgtcagcacc ggccagcccg gcgacaacgt cacgattcgc	1320
ttcgagacca ataaccagg cccgtgggtc ctccactgcc acattgactt ccaccttgac	1380
gcaggctttg ctgtagtcac ggccgaggac actccggaca ccaaggccgc gaaccctgtt	1440
cctcaggcgt ggtcggactt gtgccccatc tatgatgcac ttgaccccag cgacctctga	1500

<210> 31
 <211> 89
 <212> PRT
 <213> Saccharomyces cerevisiae

<400> 31

Met	Arg	Phe	Pro	Ser	Ile	Phe	Thr	Ala	Val	Leu	Phe	Ala	Ala	Ser	Ser
1				5					10					15	

Ala	Leu	Ala	Ala	Pro	Val	Asn	Thr	Thr	Thr	Glu	Asp	Glu	Thr	Ala	Gln
		20						25					30		

Ile	Pro	Ala	Glu	Ala	Val	Ile	Gly	Tyr	Ser	Asp	Leu	Glu	Gly	Asp	Phe
		35					40					45			

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

Listasecuencias_ST25

Phe Ile Asn Thr Thr Ile Ala Ser Ile Ala Ala Lys Glu Glu Gly Val
65 70 75 80

Ser Leu Glu Lys Arg Glu Ala Glu Ala
85

<210> 32
<211> 267
<212> DNA
<213> Saccharomyces cerevisiae

<400> 32
atgagatttc cttcaatttt tactgctggt ttattcgcag catcctccgc attagctgct 60
ccagtcaaca ctacaacaga agatgaaacg gcacaaattc cggctgaagc tgtcatcggt 120
tactcagatt tagaagggga tttcgatggt gctgttttgc ctttttccaa cagcacaat 180
aacgggttat tgttataaa tactactatt gccagcattg ctgctaaaga agaaggggta 240
tctctcgaga aaagagaggc tgaagct 267

<210> 33
<211> 499
<212> PRT
<213> Pycnopus cinnabarinus

<400> 33
Glu Phe Ala Ile Gly Pro Val Ala Asp Leu Thr Leu Thr Asn Ala Gln
1 5 10 15

Val Ser Pro Asp Gly Phe Ala Arg Glu Ala Val Val Val Asn Gly Ile
20 25 30

Thr Pro Ala Pro Leu Ile Thr Gly Asn Lys Gly Asp Arg Phe Gln Leu
35 40 45

Asn Val Ile Asp Gln Leu Thr Asn His Thr Met Leu Lys Thr Ser Ser
50 55 60

Ile His Trp His Gly Phe Phe Gln Gln Gly Thr Asn Trp Ala Asp Gly
65 70 75 80

Pro Ala Phe Val Asn Gln Cys Pro Ile Ala Ser Gly His Ser Phe Leu
85 90 95

Tyr Asp Phe Gln Val Pro Asp Gln Ala Gly Thr Phe Trp Tyr His Ser
100 105 110

His Leu Ser Thr Gln Tyr Cys Asp Gly Leu Arg Gly Pro Phe Val Val
115 120 125

Tyr Asp Pro Asn Asp Pro His Ala Ser Leu Tyr Asp Ile Asp Asn Asp
130 135 140

Listasecuencias_ST25

Asp Thr Val Ile Thr Leu Ala Asp Trp Tyr His Val Ala Ala Lys Leu
 145 150 155 160
 Gly Pro Arg Phe Pro Phe Gly Ser Asp Ser Thr Leu Ile Asn Gly Leu
 165 170 175
 Gly Arg Thr Thr Gly Ile Ala Pro Ser Asp Leu Ala Val Ile Lys Val
 180 185 190
 Thr Gln Gly Lys Arg Tyr Arg Phe Arg Leu Val Ser Leu Ser Cys Asp
 195 200 205
 Pro Asn His Thr Phe Ser Ile Asp Asn His Thr Met Thr Ile Ile Glu
 210 215 220
 Ala Asp Ser Ile Asn Thr Gln Pro Leu Glu Val Asp Ser Ile Gln Ile
 225 230 235 240
 Phe Ala Ala Gln Arg Tyr Ser Phe Val Leu Asp Ala Ser Gln Pro Val
 245 250 255
 Asp Asn Tyr Trp Ile Arg Ala Asn Pro Ala Phe Gly Asn Thr Gly Phe
 260 265 270
 Ala Gly Gly Ile Asn Ser Ala Ile Leu Arg Tyr Asp Gly Ala Pro Glu
 275 280 285
 Ile Glu Pro Thr Ser Val Gln Thr Thr Pro Thr Lys Pro Leu Asn Glu
 290 295 300
 Val Asp Leu His Pro Leu Ser Pro Met Pro Val Pro Gly Ser Pro Glu
 305 310 315 320
 Pro Gly Gly Val Asp Lys Pro Leu Asn Leu Val Phe Asn Phe Asn Gly
 325 330 335
 Thr Asn Phe Phe Ile Asn Asp His Thr Phe Val Pro Pro Ser Val Pro
 340 345 350
 Val Leu Leu Gln Ile Leu Ser Gly Ala Gln Ala Ala Gln Asp Leu Val
 355 360 365
 Pro Glu Gly Ser Val Phe Val Leu Pro Ser Asn Ser Ser Ile Glu Ile
 370 375 380
 Ser Phe Pro Ala Thr Ala Asn Ala Pro Gly Phe Pro His Pro Phe His
 385 390 395 400
 Leu His Gly His Ala Phe Ala Val Val Arg Ser Ala Gly Ser Ser Val
 405 410 415

Listasecuencias_ST25

Tyr Asn Tyr Asp Asn Pro Ile Phe Arg Asp Val Val Ser Thr Gly Gln
420 425 430

Pro Gly Asp Asn Val Thr Ile Arg Phe Glu Thr Asn Asn Pro Gly Pro
435 440 445

Trp Phe Leu His Cys His Ile Asp Phe His Leu Asp Ala Gly Phe Ala
450 455 460

Val Val Met Ala Glu Asp Thr Pro Asp Thr Lys Ala Ala Asn Pro Val
465 470 475 480

Pro Gln Ala Trp Ser Asp Leu Cys Pro Ile Tyr Asp Ala Leu Asp Pro
485 490 495

Ser Asp Leu

<210> 34
<211> 1500
<212> DNA
<213> Pycnopus cinnabarinus

<400> 34
gaattcgcca tagggcctgt ggcggacctg acccttacca atgcccaggt cagccccgat 60
ggcttcgctc gcgaggccgt cgtggtgaac ggtatcaccc ctgcccctct catcacaggc 120
aataagggcg atcgattcca gctcaatgtc atcgaccagt tgacaaatca taccatgttg 180
aaaacatcta gtattcattg gcacggcttc ttccagcaag gcacgaactg ggccgatggt 240
cccgcgttcg tgaaccagt tcccatcgct tcggggcact cgttcttgta tgactttcaa 300
gttcccgacc aagcaggagc tttctggtac catagccatc tctccacgca atactgcat 360
ggtttgaggg ggcctttcgt cgtctacgac cccaacgac ctcacgctag cctgtatgac 420
attgataacg acgacactgt cattacgctg gctgattggt atcacgttgc tgccaagctc 480
ggacctcgct tcccatttgg ctccgattca acccttatca atggacttg tcgaaccact 540
ggcatagcac cgtccgactt ggcagttatc aaggtcacgc agggcaagcg ctaccgcttc 600
cgcttggtgt cgctttcttg cgatccgaac catacattca gcattgataa tcacacaatg 660
actataattg aggcggactc gatcaacact caacccttag aggttgattc aatccagatt 720
tttgccgcg agcgctactc cttcgtgctg gatgctagcc agccggtgga taactactgg 780
atccgcgcaa accctgcctt cggaacaca ggttttgctg gtggaatcaa ttctgccatc 840
ctgcgttatg atggcgcacc cgagatcgag cctacgtctg tccagactac tcctacgaag 900
cctctgaacg aggtcgactt gcatcctctc tcgcctatgc ctgtgcctgg cagccccgag 960
ccgggaggtg tcgacaagcc tctgaacttg gtcttcaact tcaacggcac caatttcttc 1020
atcaacgacc acacctttgt cccgccgtct gtcccagtct tgctacaaat cctcagtggg 1080
gcgcaggcgg ctcaggacct ggtcccggag ggcagcgtgt tcgttcttcc cagcaactcg 1140

Listasecuencias_ST25

tccattgaga tatccttccc tgccactgcc aatgcccctg gattccccca tccgttccac	1200
ttgcacggtc acgccttcgc tgtcgtccgg agcgccggga gcagcgtcta caactacgac	1260
aacccgatct tccgcgacgt cgtcagcacc ggccagcccg gcgacaacgt cacgattcgc	1320
ttcgagacca ataaccagg cccgtgggtc ctccactgcc acattgactt ccacctcgac	1380
gcaggctttg ctgtagtcat ggccgaggac actccggaca ccaaggccgc gaaccctggt	1440
cctcaggcgt ggtcggactt gtgccccatc tatgatgcac ttgaccccag cgacctctga	1500

<210> 35
 <211> 27
 <212> DNA
 <213> Artificial

<220>
 <223> cebador NcoRI-directo

<400> 35 cggaattcgc catagggcct gtggcgg	27
---	----

<210> 36
 <211> 42
 <212> DNA
 <213> Artificial

<220>
 <223> cebador CNotI-reverse

<400> 36 aaggaaaaaa gcggccgctc agaggtcgct ggggtcaagt gc	42
--	----

<210> 37
 <211> 34
 <212> DNA
 <213> Artificial

<220>
 <223> cebador NtpJRBglII-directo

<400> 37 gaagatctat gagatttcct tcaattttta ctgc	34
---	----

<210> 38
 <211> 42
 <212> DNA
 <213> Artificial

<220>
 <223> cebador CtpGAPZlac-reverso

<400> 38 aaggaaaaaa gcggccgctc agaggtcgct ggggtcaagt gc	42
--	----

<210> 39
 <211> 22
 <212> DNA
 <213> Artificial

<220>
 <223> cebador RMLN directo

Listasecuencias_ST25

<400> 39
cctctatact ttaacgtcaa gg 22

<210> 40
<211> 20
<212> DNA
<213> Artificial

<220>
<223> cebador RMLC inverso

<400> 40
gggagggcgt gaatgtaagc 20

<210> 41
<211> 21
<212> PRT
<213> Pycnopus cinnabarinus

<400> 41

Met Ser Arg Phe Gln Ser Leu Phe Phe Phe Val Leu Val Ser Leu Thr
1 5 10 15

Ala Val Ala Asn Ala
20

<210> 42
<211> 63
<212> DNA
<213> Pycnopus cinnabarinus

<400> 42
atgagccgtt ttcagagcct gttttttttt gtgctgggtga gcctgaccgc ggtggcgaac 60
gcg 63

<210> 43
<211> 1500
<212> DNA
<213> Pycnopus cinnabarinus

<400> 43
gaattcgcca tagggcctgt ggcggacctg acccttacca atgcccaggt cagccccgat 60
ggcttcgctc gcgaggccgt cgtggtgaac ggtatcacc cgtcccctct catcacaggc 120
aataagggcg atcgattcca gctcaatgtc atcgaccagt tgacaaatca taccatgttg 180
aaaacatcta gtattcattg gcacggcttc ttccagcaag gcacgaactg ggccgatggt 240
cccgcttcg tgaaccagt tccatcgct tcggggcact cgttcttgta tgactttcaa 300
gttcccgacc aagcaggac cttctggtac catagccatc tctccacgca atactgcat 360
ggtttgaggg ggcctttcgt cgtctacgac cccaacgac ctcacgctag cctgtatgac 420
attgataacg atgacactgt cattacgctg gctgattggt atcacgttgc tgccaagctc 480
ggacctcgct tcccatttgg ctccgattca acccttatca atggacttgg tcgaaccact 540
ggcatagcac cgtccgactt ggcagttatc aaggctacgc agggcaagcg ctaccgcttc 600

Listasecuencias_ST25

cgcttggtgt	cgctttcttg	cgatccgaac	catacattca	gcattgataa	tcacacaatg	660
actataattg	aggcggactc	gatcaacact	caacccttag	aggttgattc	aatccagatt	720
tttgccgcgc	agcgctactc	cttcgtgctg	gatgctagcc	agccggtgga	taactactgg	780
atccgcgcaa	accctgcctt	cggaaacaca	ggttttgctg	gtggaatcaa	ttctgccatc	840
ctgcgttatg	atggcgcacc	cgagatcgag	cctacgtctg	tccagactac	tcctacgaag	900
cctctgaacg	aggctgactt	gcatcctctc	tcgcctatgc	ctgtgcctgg	cagccccgag	960
cccggagggtg	tcgacaagcc	tctgaacttg	gtcttcaact	tcaacggcac	caacttcttc	1020
atcaacgacc	acacctttgt	cccgccgtct	gtcccagtct	tgctacaaat	cctcagtggg	1080
gcgcaggcgg	ctcaggacct	ggccccggag	ggcagcgtgt	tcgttcttcc	cagcaactcg	1140
tccattgaga	tatccttccc	tgccactgcc	aatgcccctg	gattccccca	tccgttccac	1200
ttgcacggtc	acgccttcgc	tgtcgtccgg	agcgccggga	gcagcgtcta	caactacgac	1260
aacccgatct	tccgcgacgt	cgtcagcacc	ggccagcccc	gcgacaacgt	cacgattcgc	1320
ttcgagacca	ataaccagg	cccgtgggtc	ctccactgcc	acattgactt	ccacctcgac	1380
gcaggctttg	ctgtagtcac	ggccgaggac	actccggaca	ccaaggccgc	gaaccctggt	1440
cctcaggcgt	ggtcggactt	gtgccccatc	tatgatgcac	ttgaccccag	cgacctctga	1500

<210> 44

<211> 1500

<212> DNA

<213> Pycnopus cinnabarinus

<400> 44

gaattcgcca	tagggcctgt	ggcggacctg	acccttacca	atgccaggt	cagccccgat	60
ggcttcgctc	gcgaggccgt	cgtggtgaac	ggtatcacc	ctgcccctct	catcacaggc	120
aataagggcg	atcgattcca	gatcaatgtc	atcgaccagt	tgacaaatca	taccatgttg	180
aaaacatcta	gtattcattg	gcacggcttc	ttccagcaag	gcacgaactg	ggccgatggt	240
cccgcgttcg	tgaaccagt	tcccatcgct	tcggggccact	cgttcttgta	tgactttcaa	300
gttcccgacc	aagcagggac	cttctggtac	catagccatc	tctccacgca	atactgcgat	360
ggtttgaggg	ggcctttcgt	cgtctacgac	cccaacgac	ctcacgctag	cctgtatgac	420
attgataacg	acgacactgt	cattacgctg	gctgattggt	atcacgttgc	tgccaagctc	480
ggacctcgct	tcccatttgg	ctccgattca	acccttatca	atggacttgg	tcgaaccact	540
ggcatagcac	cgtccgactt	ggcagttatc	aaggctcacg	agggcaagcg	ctaccgcttc	600
cgcttggtgt	cgctttcttg	cgatccgaac	catacattca	gcattgataa	tcacacaatg	660
actataattg	aggcggactc	gatcaatact	caacccttag	aggttgattc	aatccagatt	720
tttgccgcgc	agcgctactc	cttcgtgctg	gatgctagcc	agccggtgga	taactactgg	780
atccgcgcaa	accctgcctt	cggaaacaca	ggttttgctg	gtggaatcaa	ttctgccatc	840
ctgcgttatg	atggcgcacc	cgagatcgag	cctacgtctg	tccagactac	tcctacgaag	900

Listasecuencias_ST25

cctctgaacg aggtcgactt gcatcctctc tcgcctatgc ctgtgcctgg cagccccgag	960
cccggagggtg tcgacaagcc tctgaacttg gtcttcaact tcaacggcac caacttcttc	1020
atcaacgacc acacctttgt cccgccgtct gtcccagtct tgctacaaat cctcagtggg	1080
gcgcaggcgg ctcaggacct ggtcccggag ggcagcgtgt tcgttcttcc cagcaactcg	1140
tccattgaga tatccttccc tgccactgcc aatgcccctg gattccacca tccgttccac	1200
ttgcacggtc acgccttcgc tgtcgtccgg agcgccggga gcagcgtcta caactacgac	1260
aacccgatct tccgcgacgt cgtcagcacc ggccagcccg gcgacaacgt cacgattcgc	1320
ttcgagacca ataaccagg cccgtgggtc ctccactgcc acattgactt ccacctcgac	1380
gcaggctttg ctgtagtcac ggccgaggac actccggaca ccaaggccgc gaaccctggt	1440
cctcaggcgt ggtcggactt gtgccccatc tatgatgcac ttgaccccag cgacctctga	1500

<210> 45

<211> 1500

<212> DNA

<213> Pycnopus cinnabarinus

<400> 45

gaattcgcca tagggcctgt ggccggacctg acccttacca acgcccaggt cagccccgat	60
ggcttcgctc gcgaggccgt cgtggtgaac ggtatcacc ctgcccctct catcacaggc	120
aataagggcg atcgattcca gatcaatgtc atcgaccagt tgacaaatca taccatgttg	180
aaaacatcta gtattcattg gcacggcttc ttccagcaag gcacgaactg ggccgatggt	240
cccgcgttcg tgaaccagt tcccatcgct tcggggccact cgttcttgta tgactttcaa	300
gttcccgacc aagcagggac cttctggtac catagccatc tctccacgca atactgcat	360
ggtttgaggg ggcttttcgt cgtctacgac cccaacgac ctcacgctag cctgtatgac	420
attgataacg acgacactgt cattacgctg gctgattggt atcacgttgc tgccaagctc	480
ggacctcgct tcccatttgg ctccgattca acccttatca atggacttgg tcgaaccact	540
ggcatagcac cgtccgactt ggcagttatc aaggctacgc agggcaagcg ctaccgcttc	600
cgcttggtgt cgctttcttg cgatccgaac catacattca gcattgataa tcacacaatg	660
actataattg aggcggactc gatcaacact caaccctag aggttgattc aatccagatt	720
tttgccgcgc agcgctactc cttcgtgctg gatgctagcc agccggtgga taactactgg	780
atccgcgcaa accctgcctt cggaaacaca ggttttgctg gtggaatcaa ttctgccatc	840
ctgcgttatg atggcgcacc cgagatcgag cctacgtctg tccagactac ccctacgaag	900
cctctgaacg aggtcgactt gcatcctctc tcgcctatgc ctgtgcctgg cagccccgag	960
cccggagggtg tcgacaagcc tctgaacttg gtcttcaact tcaacggcac caacttcttc	1020
atcaacgacc acacctttgt cccgccgtct gtcccagtct tgctacaaat cctcagtggg	1080
gcgcaggcgg ctcaggacct ggtcccggag ggcagcgtgt tcgttcttcc cagcaactcg	1140
tccattgaga tatccttccc tgccactgcc aatgcccctg gattccacca tccgttccac	1200
ttgcacggtc acgccttcgc tgtcgtccgg agcgccggga gcagcgtcta caactacgac	1260

Listasecuencias_ST25

aacccgatct	tccgcgacgt	cgtcagcacc	ggccagcccg	gcgacaacgt	cacgattcgc	1320
ttcgagacca	ataaccagg	cccgtgggtc	ctccactgcc	acattgactt	ccacctcgac	1380
gcaggctttg	ctgtagtc	ggccgaggac	actccggaca	ccaaggccgc	gaaccctggt	1440
cctcaggcgt	ggtcggactt	gtgccccatc	tatgatgcac	ttgaccccag	cgacctctga	1500

<210> 46
 <211> 1500
 <212> DNA
 <213> *Pycnopus cinnabarinus*

<400> 46						
gaattcgcca	tagggcctgt ggcggacctg acccttacca atgcccaggt cagccccgat 60					
ggcttcgctc	gcgaggccgt cgtggtgaac ggtatcacc ctgccccctc catcacaggc 120					
aataagggcg	atcgattcca gctcaatgtc atcgaccagt tgacaaatca taccatgttg 180					
aaaacatcta	gtattcattg gcacggcttc ttccagcaag gcacgaactg ggccgatggt 240					
cccgcgttcg	tgaaccagt tcccatcgct tcggggccact cgttcttgta tgactttcaa 300					
gttcccagacc	aagcaggggac cttctggtac catagccatc tctccacgca atactgcat 360					
ggtttgaggg	ggcctttcgt cgtctacgac cccaacgatc ctcacgctag cctgtatgac 420					
attgataacg	atgacactgt cattacgtg gctgattggt atcacgttgc tgccaagctc 480					
ggacctcgct	tcccatcttg ctccgattca acccttatca atggacttg tcgaaccact 540					
ggcatagcac	cgtccgactt ggcagttatc aaggctacgc agggcaagcg ctaccgcttc 600					
cgcttggtgt	cgctttcttg cgatccgaac catacattca gcattgataa tcacacaatg 660					
actataattg	aggcggactc gatcaacact caaccctag aggttgattc aatccagatt 720					
tttgccgcgc	agcgctactc cttcgtgctg gatgctagcc agccggtgga taactactgg 780					
atccgcgcaa	accctgcctt cggaaacaca ggttttgctg gtggaatcaa ttctgccatc 840					
ctgcgttatg	atggcgcacc cgagatcgag cctacgtctg tccagactac ccctacgaag 900					
cctctgaacg	aggtcgactt gcatcctctc tcgcctatgc ctgtgcctgg cagccccgag 960					
cccggagggtg	tcgacaagcc tctgaacttg gtcttcaact tcaacggcac caacttcttc 1020					
atcaacgacc	acacctttgt cccgccgtct gtcccagctc tgctacaaat cctcagtggg 1080					
gcgcaggcgg	ctcaggacct ggtcccggag ggcagcgtgt tcgttcttcc cagcaactcg 1140					
tccattgaga	tatccttccc tgccactgcc aatgcccctg gattccacca tccgttcac 1200					
ttgcacggtc	acgccttcgc tgtcgtccgg agcgccggga gcagcgtcta caactacgac 1260					
aacccgatct	tccgcgacgt cgtcagcacc ggccagcccg gcgacaacgt cacgattcgc 1320					
ttcgagacca	ataaccagg cccgtgggtc ctccactgcc acattgactt ccacctcgac 1380					
gcaggctttg	ctgtagtc	ggccgaggac	actccggaca	ccaaggccgc	gaaccctggt	1440
cctcaggcgt	ggtcggactt	gtgccccatc	tatgatgcac	ttgaccccag	cgacctctga	1500

<210> 47

Listasecuencias_ST25

<211> 267
 <212> DNA
 <213> Pycnopus cinnabarinus

 <400> 47
 atgagttttc cttcaatttt tactgctggt ttattcgcag catcctccgc attagctgct 60
 ccagtcaaca ctacaacaga agatgaaacg gcacaaattc cggctgaagc tgtcatcggt 120
 tactcagatt tagaagggga tttcgatggt gctgttttgc ctttttccaa cggcacaaat 180
 aacgggttat tgtttataaa tactactatt gccagcattg ctgctaaaga agaaggggta 240
 tctctcgaga aaagagaggc tgaagct 267

<210> 48
 <211> 267
 <212> DNA
 <213> Pycnopus cinnabarinus

 <400> 48
 atgagttttc cttcaatttt tactgctggt ttattcgcag catcctccgc attagctgct 60
 ccagtcaaca ctacaacaga agatgaaacg gcacaaattc cggctgaagc tgtcatcggt 120
 tactcagatt tagaagggga tttcgatggt gctgttttgc ctttttccaa cggcacaaat 180
 aacgggttat tgtttataaa tactactatt gccagcattg ctgctaaaga agaaggggta 240
 tctctcgaga aaagagaggc tgaagct 267

<210> 49
 <211> 267
 <212> DNA
 <213> Pycnopus cinnabarinus

 <400> 49
 atgagatttc cttcaatttt tactgctggt ttattcgcag catcctccgc attagctgct 60
 ccagtcaaca ctacaacaga agatgaaacg gcacaaattc cggctgaagc tgtcatcggt 120
 tactcagatt tagaagggga tttcgatggt gctgttttgc ctttttccaa cagcacaaat 180
 aacgggttat tgtttataaa tactactatt gccagcattg ctgctaaaga agaaggggta 240
 tctctcgaga aaagagaggc tgaagct 267

<210> 50
 <211> 267
 <212> DNA
 <213> Pycnopus cinnabarinus

 <400> 50
 atgagatttc cttcaatttt tactgatggt ttattcgcag catcctccgc attagctgct 60
 ccagtcaaca ctacaacaga agatgaaacg gcacaaattc cggctgaagc tgtcatcggt 120
 tactcagatt tagaagggga tttcgatggt gctgttttgc ctttttccaa cagcacaaat 180
 aacgggttat tgtttataaa tactactatt gccagcattg ctgctaaaga agaaggggta 240
 tctctcgaga aaagagaggc tgaagct 267

<210> 51

Listasecuencias_ST25

<211> 267
 <212> DNA
 <213> Pycnopus cinnabarinus

 <400> 51
 atgagatttc cttcaatttt tactgatgtt ttattcgcag catcctccgc attagctgct 60
 ccagtcaaca ctacaacaga agatgaaacg gcacaaattc cggctgaagc tgtcatcggt 120
 tactcagatt tagaagggga ttccgatgtt gctgttttgc ctttttccaa cggcacaat 180
 aacgggttat tgtttataaa tactactatt gccagcattg ctgctaaaga agaaggggta 240
 tctctcgaga aaagaggggc tgaagct 267

<210> 52
 <211> 267
 <212> DNA
 <213> Pycnopus cinnabarinus

 <400> 52
 atgagatttc cttcaatttt tactgatgtt ttattcgcag catcctccgc attagctgct 60
 ccagtcaaca ctacaacaga agatgaaacg gcacaaattc cggctgaagc tgtcatcggt 120
 tactcagatt tagaagggga ttccgatgtt gctgttttgc ctttttccaa cggcacaat 180
 aacgggttat tgtttataaa tactactatt gccagcattg ctgctaaaga agaaggggta 240
 tctctcgaga aaagaggggc tgaagct 267

<210> 53
 <211> 267
 <212> DNA
 <213> Pycnopus cinnabarinus

 <400> 53
 atgagatttc cttcaatttt tactgatgtt ttattcgcag catcctccgc attagctgct 60
 ccagtcaaca ctacaacaga agatgaaacg gcacaaatcc cggctgaagc tgtcatcggt 120
 tactcagatt tagaagggga ttccgatgtt gctgttttgc ctttttccaa cggcacaat 180
 aacgggttat tgtttataaa tactactatt gccagcattg ctgctaaaga agaaggggta 240
 tctctcgaga aaagaggggc tgaagct 267

<210> 54
 <211> 267
 <212> DNA
 <213> Pycnopus cinnabarinus

 <400> 54
 atgagatttc cttcaatttt tactgatgtt ttattcgcag catcctccgc attagctgct 60
 ccagtcaaca ctacaacaga agatgaaacg gcacaaattc cggctgaagc tgtcatcggt 120
 tactcagatt tagaagggga ttccgatgtt gctgttttgc ctttttccaa cggcacaat 180
 aacgggttat tgtttataaa tactactatt gccagcattg ctgctaaaga agaaggggta 240
 tctctcgaga aaagaggggc tgaagct 267

<210> 55

Listasecuencias_ST25

<211> 267

<212> DNA

<213> Pycnopus cinnabarinus

<400> 55

atgagatttc	cttcaatttt	tactgatggt	ttattcgcag	catcctccgc	attagctgct	60
ccagtcaaca	ctacaacaga	agatgaaacg	gcacaaattc	cggctgaagc	tgtcatcggt	120
tactcagatt	tagaagggga	ttccgatggt	gctgttttgc	cattttccaa	cggcacaaat	180
aacgggttat	tgtttataaa	tactactatt	gccagcattg	ctgctaaaga	agaaggggta	240
tctctcgaga	aaagaggggc	tgaagct				267