

# SEQUENCE LISTING

<110> VIB VZW  
UNIVERSITEIT GENT  
MOANA BELGIUM NV

<120> NOVEL ANDROGENIC GLAND HORMONE

<130> FVB/SX2/V258

<150> US 61/033,830

<151> 2008-03-05

<160> 28

<170> PatentIn version 3.5

<210> 1

<211> 2091

<212> DNA

<213> Penaeus monodon

<400> 1

gagggtgctgc cacacacagg acagggcaag ttctctgccc ggccttaccc tgatccaaga	60
accattcaag gttgtgctg taccctcact ccttcacttt cccgtatcct ccccaccata	120
cccaccactc cagttctcca cctccaaccc tcctcagatc tctccaccaa tccctccaca	180
aaaaccactc catcaaccct acgtatttgc taactcctcc acctcccctc tatccacccc	240
tcctatccta ttatccctcc tccttttcca ctcttctcat agacacaaaag aaaaaaatga	300
accaactcgc tgcctcacgc acctacggcc tcggcatgcc cactcagctg cttgtgggaa	360
tgctgatggc cctctccctg acttcgacgt caagctgcta caacgtcacg gggattcctg	420
ttgacttcga ctgcggtgac atcggcgata ccatgagtca catctgcaag acgtttccca	480
cagcccggcc tcactcgcga gtgtccaggt cagctgatac cgacgacctc tggcaggaca	540
cgagagcagg tcagaccacg cccattgacc tgcttctctg ccagtaccgc ctgcatcccc	600
gggccttgaa tccgatgcga tatttcgaaa tggtagtca ggacctgata agagaccacc	660
tggtagagccc cgargccgcg cagccctcgc tcaagacatc crggaggcgc gcgaagagat	720
cctacaacgt gcaggatgag tgctgcaacc acgtgagcca gcggacgtgt gtggcggagg	780
agattctgga gtattgcgag gaccgggtac cttagtctcc cctggcggtt tctgtcatat	840
gcgatgttct ctcwttatta cacttttttt gctaattgctt acagatatac agtatatgca	900
tagcgcattc tgataacaca tatgtatatt ttatakgtgt acaatgtgtg ttaaaacaaa	960
ttcattgtgt tctctctgtt tcacaaggta gaatataatc ctatcctttt gatagtaatt	1020
tactcgcata cacgcttgta aatcttggtt tcgtctcgtg tggttttgat ctacattctt	1080
cttcatgtat gatttctaga tgtgagagta agtaggcaag ttatctctcg aatgaaattc	1140

gaaatcaggc	aatcagtya	ttaacatttc	tcccttctgt	ttccccagta	cttctaaacc	1200
ttgaacctga	cctgacctat	ggccttctta	acctctctaa	gtggagtcgt	cagtgggtcca	1260
tggccccacc	atcctcctta	caacagtctt	cggtgacctg	atcatatggc	ctctccatcc	1320
tctcaatgac	ctgacctcaa	cccaygggtc	cccccttctt	taggccaagt	ctttgcggac	1380
ctgacccaaa	ccgaggcttc	tctaaccctc	ctctgatgag	tttgtaataa	aaataaccgg	1440
cctggtgacc	caagttctca	tgaatttgac	ttaatctgca	attaatgacc	cgttagagtc	1500
ctttcaatga	tgtctgccaa	aagtagcggt	acattccatt	tttcttttcg	aktawtaggc	1560
cccagagtaa	ttcttgacct	caactttcta	aaaaaaaaata	ygtatattca	grgcaagaac	1620
tatttttcatt	catgttctgt	caattttctt	ggcgtcataa	tttctttcta	tccttttatt	1680
aaacaaaata	aataaaaagat	aaccatacat	taacaaaggt	gtgatacaaa	gacataaaag	1740
atatcaaagt	tcagtacttt	ctttcgcttt	ttctatTTTT	atctttcgat	tttccgaacg	1800
ttttaaaagt	tctaactttt	atcccyctgt	aaaaataaag	ttgacagacg	ataataaaaa	1860
gcaataatgt	tttagaatct	attccttttt	tgtgatcacc	tgaatatctt	ttttatatat	1920
acattatcgt	attggaatca	gatagatcag	yacggyatat	cagaattaat	tcgtaataaa	1980
aaaatgcatt	tcaataactg	aatttccgat	aaaaaaatTT	cmctgtatc	tgtcttttgc	2040
gaaacaataa	aagcatttca	aatcgraaa	aaaaaaaaaa	aaaaaaaaaa	a	2091

<210> 2  
 <211> 480  
 <212> DNA  
 <213> Penaeus monodon

<400> 2	
atgccactc	agctgcttgt
gggaatgctg	atggctctct
ccctgacttc	gacgtcaagc
tgctacaacg	tcacggggat
tcctgttgac	ttcgactgcg
gtgacatcgg	cgataccatg
agtcacatct	gcaagacgtt
tcccacagcc	cgccctcact
cgcgagtgtc	caggtcagct
gataccgacg	acctctggca
ggacacgaga	gcaggtcaga
ccacgcccac	tgacctgctt
cctcgccagt	accgcctgca
tccccggggc	ttgaatccga
tgcgatattt	cgaaatgggt
agtcaggacc	tgataagaga
ccacctgggtg	agccccgarg
ccgcgcacgc	cctcgtcaag
acatccrgga	ggcgcgcgaa
gagatcctac	aacgtgcagg
atgagtgtgtg	caaccacgtg
agccagcgga	cgtgtgtggc
ggaggagatt	ctggagtatt
gagaggaccc	ggtaccttag

<210> 3  
 <211> 159  
 <212> PRT  
 <213> Penaeus monodon

<400> 3

Met Pro Thr Gln Leu Leu Val Gly Met Leu Met Val Leu Ser Leu Thr  
1 5 10 15

Ser Thr Ser Ser Cys Tyr Asn Val Thr Gly Ile Pro Val Asp Phe Asp  
20 25 30

Cys Gly Asp Ile Gly Asp Thr Met Ser His Ile Cys Lys Thr Phe Pro  
35 40 45

Thr Ala Arg Pro His Ser Arg Val Ser Arg Ser Ala Asp Thr Asp Asp  
50 55 60

Leu Trp Gln Asp Thr Arg Ala Gly Gln Thr Thr Pro Ile Asp Leu Leu  
65 70 75 80

Pro Arg Gln Tyr Arg Leu His Pro Arg Ala Leu Asn Pro Met Arg Tyr  
85 90 95

Phe Glu Met Val Ser Gln Asp Leu Ile Arg Asp His Leu Val Ser Pro  
100 105 110

Glu Ala Ala His Ala Leu Val Lys Thr Ser Gly Arg Arg Ala Lys Arg  
115 120 125

Ser Tyr Asn Val Gln Asp Glu Cys Cys Asn His Val Ser Gln Arg Thr  
130 135 140

Cys Val Ala Glu Glu Ile Leu Glu Tyr Cys Glu Asp Pro Val Pro  
145 150 155

<210> 4

<211> 1709

<212> PRT

<213> Penaeus monodon

<400> 4

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Thr Cys Cys Thr Ala Thr Cys Cys Thr Ala Thr Thr Ala Thr Cys Cys  
245 250 255

Cys Thr Cys Cys Thr Cys Cys Thr Thr Thr Thr Cys Cys Ala Cys Thr  
260 265 270

Cys Thr Thr Cys Thr Cys Ala Thr Ala Gly Ala Cys Ala Cys Ala Ala  
275 280 285

Ala Gly Ala Ala Ala Ala Ala Ala Ala Thr Gly Ala Ala Cys Cys Ala

290

295

300

Ala Cys Thr Cys Gly Cys Thr Gly Cys Cys Thr Cys Ala Cys Gly Cys  
 305 310 315 320

Ala Cys Cys Thr Ala Cys Gly Gly Cys Cys Thr Cys Gly Gly Cys Ala  
 325 330 335

Thr Gly Cys Cys Cys Ala Cys Thr Cys Ala Gly Cys Thr Gly Cys Thr  
 340 345 350

Thr Gly Thr Gly Gly Gly Ala Ala Thr Gly Cys Thr Gly Ala Thr Gly  
 355 360 365

Gly Thr Cys Cys Thr Cys Thr Cys Cys Cys Thr Gly Ala Cys Thr Thr  
 370 375 380

Cys Gly Ala Cys Gly Thr Cys Ala Ala Gly Cys Thr Gly Cys Thr Ala  
 385 390 395 400

Cys Ala Ala Cys Gly Thr Cys Ala Cys Gly Gly Gly Gly Ala Thr Thr  
 405 410 415

Cys Cys Thr Gly Thr Thr Gly Ala Cys Thr Thr Cys Gly Ala Cys Thr  
 420 425 430

Gly Cys Gly Gly Thr Gly Ala Cys Ala Thr Cys Gly Gly Cys Gly Ala  
 435 440 445

Thr Ala Cys Cys Ala Thr Gly Ala Gly Thr Cys Ala Cys Ala Thr Cys  
 450 455 460

Thr Gly Cys Ala Ala Gly Ala Cys Gly Thr Thr Thr Cys Cys Cys Ala  
 465 470 475 480

Cys Ala Gly Cys Cys Cys Gly Gly Cys Cys Thr Cys Ala Cys Thr Cys  
 485 490 495

Gly Cys Gly Ala Gly Thr Gly Thr Cys Cys Ala Gly Gly Thr Cys Ala  
 500 505 510

Gly Cys Thr Gly Ala Thr Ala Cys Cys Gly Ala Cys Gly Ala Cys Cys  
 515 520 525

Thr Cys Thr Gly Gly Cys Ala Gly Gly Ala Cys Ala Cys Gly Ala Gly  
 530 535 540

Ala Gly Cys Ala Gly Gly Thr Cys Ala Gly Ala Cys Cys Ala Cys Gly  
545 550 555 560

Cys Cys Cys Ala Thr Thr Gly Ala Cys Cys Thr Gly Cys Thr Thr Cys  
565 570 575

Cys Thr Cys Gly Cys Cys Ala Gly Thr Ala Cys Cys Gly Cys Cys Thr  
580 585 590

Gly Cys Ala Thr Cys Cys Cys Cys Gly Gly Gly Cys Cys Thr Thr Gly  
595 600 605

Ala Ala Thr Cys Cys Gly Ala Thr Gly Cys Gly Ala Thr Ala Thr Thr  
610 615 620

Thr Cys Gly Ala Ala Ala Thr Gly Gly Thr Thr Ala Gly Thr Cys Ala  
625 630 635 640

Gly Gly Ala Cys Cys Thr Gly Ala Thr Ala Ala Gly Ala Gly Ala Cys  
645 650 655

Cys Ala Cys Cys Thr Gly Gly Thr Gly Ala Gly Cys Cys Cys Cys Gly  
660 665 670

Ala Arg Gly Cys Cys Gly Cys Gly Cys Ala Cys Gly Cys Cys Cys Thr  
675 680 685

Cys Gly Thr Cys Ala Ala Gly Ala Cys Ala Thr Cys Cys Arg Gly Gly  
690 695 700

Ala Gly Gly Cys Gly Cys Gly Cys Gly Ala Ala Gly Ala Gly Ala Thr  
705 710 715 720

Cys Cys Thr Ala Cys Ala Ala Cys Gly Thr Gly Cys Ala Gly Gly Ala  
725 730 735

Thr Gly Ala Gly Thr Gly Cys Thr Gly Cys Ala Ala Cys Cys Ala Cys  
740 745 750

Gly Thr Gly Ala Gly Cys Cys Ala Gly Cys Gly Gly Ala Cys Gly Thr  
755 760 765

Gly Thr Gly Thr Gly Gly Cys Gly Gly Ala Gly Gly Ala Gly Ala Thr  
770 775 780

Thr Cys Thr Gly Gly Ala Gly Thr Ala Thr Thr Gly Cys Gly Ala Gly  
785 790 795 800

Gly Ala Cys Cys Cys Gly Thr Ala Cys Thr Thr Cys Thr Ala Ala Ala  
805 810 815

Cys Cys Thr Thr Gly Ala Ala Cys Cys Thr Gly Ala Cys Cys Thr Gly  
820 825 830

Ala Cys Cys Thr Ala Thr Gly Gly Cys Cys Thr Thr Cys Cys Thr Ala  
835 840 845

Ala Cys Cys Thr Cys Thr Cys Thr Ala Ala Gly Thr Gly Gly Ala Gly  
850 855 860

Thr Cys Gly Thr Cys Ala Gly Thr Gly Gly Thr Cys Cys Ala Thr Gly  
865 870 875 880

Gly Cys Cys Cys Ala Cys Cys Cys Ala Thr Cys Cys Thr Cys Cys Thr  
885 890 895

Thr Ala Cys Ala Ala Cys Ala Gly Thr Cys Thr Thr Cys Gly Gly Thr  
900 905 910

Gly Ala Cys Cys Thr Gly Ala Thr Cys Ala Thr Ala Thr Gly Gly Cys  
915 920 925

Cys Thr Cys Thr Cys Cys Ala Thr Cys Cys Thr Cys Thr Cys Ala Ala  
930 935 940

Thr Gly Ala Cys Cys Thr Gly Ala Cys Cys Thr Cys Ala Ala Cys Cys  
945 950 955 960

Cys Ala Tyr Gly Gly Gly Thr Cys Cys Cys Cys Cys Thr Thr Cys  
965 970 975

Thr Thr Thr Ala Gly Gly Cys Cys Ala Ala Gly Thr Cys Thr Thr Thr  
980 985 990

Gly Cys Gly Gly Ala Cys Cys Thr Gly Ala Cys Cys Cys Ala Ala Ala  
995 1000 1005

Cys Cys Gly Ala Gly Gly Cys Thr Thr Cys Thr Cys Thr Ala Ala  
1010 1015 1020

Cys	Cys	Cys	Thr	Cys	Cys	Thr	Cys	Thr	Gly	Ala	Thr	Gly	Ala	Gly
1025						1030					1035			
Thr	Thr	Thr	Gly	Thr	Ala	Ala	Thr	Ala	Ala	Ala	Ala	Ala	Thr	Ala
1040						1045					1050			
Ala	Cys	Cys	Gly	Gly	Cys	Cys	Thr	Gly	Gly	Thr	Gly	Ala	Cys	Cys
1055						1060					1065			
Cys	Ala	Ala	Gly	Thr	Thr	Cys	Thr	Cys	Ala	Thr	Gly	Ala	Ala	Thr
1070						1075					1080			
Thr	Thr	Gly	Ala	Cys	Thr	Thr	Ala	Ala	Thr	Cys	Thr	Gly	Cys	Ala
1085						1090					1095			
Ala	Thr	Thr	Ala	Ala	Thr	Gly	Ala	Cys	Cys	Cys	Gly	Thr	Thr	Ala
1100						1105					1110			
Gly	Ala	Gly	Thr	Cys	Cys	Thr	Thr	Thr	Cys	Ala	Ala	Thr	Gly	Ala
1115						1120					1125			
Thr	Gly	Thr	Cys	Thr	Gly	Cys	Cys	Ala	Ala	Ala	Ala	Gly	Thr	Ala
1130						1135					1140			
Gly	Cys	Gly	Thr	Thr	Ala	Cys	Ala	Thr	Thr	Cys	Cys	Ala	Thr	Thr
1145						1150					1155			
Thr	Thr	Thr	Cys	Thr	Thr	Thr	Thr	Cys	Gly	Ala	Lys	Thr	Ala	Trp
1160						1165					1170			
Thr	Ala	Gly	Gly	Cys	Cys	Cys	Cys	Ala	Gly	Ala	Gly	Thr	Ala	Ala
1175						1180					1185			
Thr	Thr	Cys	Thr	Thr	Gly	Ala	Cys	Cys	Thr	Cys	Ala	Ala	Cys	Thr
1190						1195					1200			
Thr	Thr	Cys	Thr	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Thr	Ala
1205						1210					1215			
Tyr	Gly	Thr	Ala	Thr	Ala	Thr	Thr	Cys	Ala	Gly	Arg	Gly	Cys	Ala
1220						1225					1230			
Ala	Gly	Ala	Ala	Cys	Thr	Ala	Thr	Thr	Thr	Thr	Cys	Ala	Thr	Thr
1235						1240					1245			
Cys	Ala	Thr	Gly	Thr	Thr	Cys	Thr	Gly	Thr	Cys	Ala	Ala	Thr	Thr

1250						1255						1260			
Thr	Cys	Thr	Thr	Tyr	Gly	Gly	Cys	Gly	Thr	Cys	Ala	Thr	Ala	Ala	
1265						1270					1275				
Thr	Thr	Thr	Cys	Thr	Thr	Thr	Cys	Thr	Ala	Thr	Cys	Cys	Thr	Thr	
1280						1285					1290				
Thr	Thr	Ala	Thr	Thr	Ala	Ala	Ala	Cys	Ala	Ala	Ala	Ala	Thr	Ala	
1295						1300					1305				
Ala	Ala	Thr	Ala	Ala	Ala	Ala	Gly	Ala	Thr	Ala	Ala	Cys	Cys	Ala	
1310						1315					1320				
Thr	Ala	Cys	Ala	Thr	Thr	Ala	Ala	Cys	Ala	Ala	Ala	Gly	Gly	Thr	
1325						1330					1335				
Gly	Thr	Gly	Ala	Thr	Ala	Cys	Ala	Ala	Ala	Gly	Ala	Cys	Ala	Thr	
1340						1345					1350				
Ala	Ala	Ala	Ala	Gly	Ala	Thr	Ala	Thr	Cys	Ala	Ala	Ala	Gly	Thr	
1355						1360					1365				
Thr	Cys	Ala	Gly	Thr	Ala	Cys	Thr	Thr	Thr	Cys	Thr	Thr	Thr	Cys	
1370						1375					1380				
Gly	Cys	Thr	Thr	Thr	Thr	Thr	Cys	Thr	Ala	Thr	Thr	Thr	Thr	Thr	
1385						1390					1395				
Ala	Thr	Cys	Thr	Thr	Thr	Cys	Gly	Ala	Thr	Thr	Thr	Thr	Cys	Cys	
1400						1405					1410				
Gly	Ala	Ala	Cys	Gly	Thr	Thr	Thr	Thr	Ala	Ala	Ala	Gly	Thr	Thr	
1415						1420					1425				
Thr	Cys	Thr	Ala	Ala	Cys	Thr	Thr	Thr	Thr	Ala	Thr	Cys	Cys	Cys	
1430						1435					1440				
Tyr	Cys	Thr	Gly	Thr	Ala	Ala	Ala	Ala	Ala	Thr	Ala	Ala	Ala	Gly	
1445						1450					1455				
Thr	Thr	Gly	Ala	Cys	Ala	Gly	Ala	Cys	Gly	Ala	Thr	Ala	Ala	Thr	
1460						1465					1470				
Ala	Ala	Ala	Ala	Ala	Gly	Cys	Ala	Ala	Thr	Ala	Ala	Thr	Gly	Thr	
1475						1480					1485				

Thr	Thr	Thr	Ala	Gly	Ala	Ala	Thr	Cys	Thr	Ala	Thr	Thr	Cys	Cys
1490						1495					1500			
Thr	Thr	Thr	Thr	Thr	Thr	Gly	Thr	Gly	Ala	Thr	Cys	Ala	Cys	Cys
1505						1510					1515			
Thr	Gly	Ala	Ala	Thr	Ala	Thr	Cys	Thr	Thr	Thr	Thr	Thr	Thr	Ala
1520						1525					1530			
Thr	Ala	Thr	Ala	Thr	Ala	Cys	Ala	Thr	Thr	Ala	Thr	Cys	Gly	Thr
1535						1540					1545			
Ala	Thr	Thr	Gly	Gly	Ala	Ala	Thr	Cys	Ala	Gly	Ala	Thr	Ala	Gly
1550						1555					1560			
Ala	Thr	Cys	Ala	Gly	Tyr	Ala	Cys	Gly	Gly	Tyr	Ala	Thr	Ala	Thr
1565						1570					1575			
Cys	Ala	Gly	Ala	Ala	Thr	Thr	Ala	Ala	Thr	Thr	Cys	Gly	Thr	Ala
1580						1585					1590			
Ala	Thr	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Thr	Gly	Cys	Ala	Thr	Thr
1595						1600					1605			
Thr	Cys	Ala	Ala	Thr	Ala	Ala	Cys	Thr	Gly	Ala	Ala	Thr	Thr	Thr
1610						1615					1620			
Cys	Cys	Gly	Ala	Thr	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Thr	Thr	Thr
1625						1630					1635			
Cys	Met	Cys	Cys	Thr	Gly	Thr	Ala	Thr	Cys	Thr	Gly	Thr	Cys	Thr
1640						1645					1650			
Thr	Thr	Thr	Gly	Cys	Gly	Ala	Ala	Ala	Cys	Ala	Ala	Thr	Ala	Ala
1655						1660					1665			
Ala	Ala	Gly	Cys	Ala	Thr	Thr	Thr	Cys	Ala	Ala	Ala	Ala	Thr	Cys
1670						1675					1680			
Gly	Arg	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala
1685						1690					1695			
Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala				
1700						1705								

<210> 5  
<211> 480  
<212> DNA  
<213> Penaeus monodon

<400> 5  
atgccactc agctgcttgt gggaatgctg atggctctct cctgacttc gacgtcaagc 60  
tgctacaacg tcacggggat tcctgttgac ttcgactgcg gtgacatcgg cgataccatg 120  
agtcacatct gcaagacgtt tcccacagcc cggcctcact cgcgagtgtc caggtcagct 180  
gataccgacg acctctggca ggacacgaga gcaggtcaga ccacgccccat tgacctgctt 240  
cctcgccagt accgcctgca tccccggggc ttgaatccga tgcgatattt cgaaatgggt 300  
agtcaggacc tgataagaga ccacctggtg agccccgarg ccgcgcacgc cctcgtaag 360  
acatccrgga ggcgcgcgaa gagatcctac aacgtgcagg atgagtgtg caaccacgtg 420  
agccagcggg cgtgtgtggc ggaggagatt ctggagtatt gcgaggaccc gtacttctaa 480

<210> 6  
<211> 159  
<212> PRT  
<213> Penaeus monodon

<400> 6

Met Pro Thr Gln Leu Leu Val Gly Met Leu Met Val Leu Ser Leu Thr  
1 5 10 15

Ser Thr Ser Ser Cys Tyr Asn Val Thr Gly Ile Pro Val Asp Phe Asp  
20 25 30

Cys Gly Asp Ile Gly Asp Thr Met Ser His Ile Cys Lys Thr Phe Pro  
35 40 45

Thr Ala Arg Pro His Ser Arg Val Ser Arg Ser Ala Asp Thr Asp Asp  
50 55 60

Leu Trp Gln Asp Thr Arg Ala Gly Gln Thr Thr Pro Ile Asp Leu Leu  
65 70 75 80

Pro Arg Gln Tyr Arg Leu His Pro Arg Ala Leu Asn Pro Met Arg Tyr  
85 90 95

Phe Glu Met Val Ser Gln Asp Leu Ile Arg Asp His Leu Val Ser Pro  
100 105 110

Glu Ala Ala His Ala Leu Val Lys Thr Ser Gly Arg Arg Ala Lys Arg  
115 120 125

Ser Tyr Asn Val Gln Asp Glu Cys Cys Asn His Val Ser Gln Arg Thr  
130 135 140

Cys Val Ala Glu Glu Ile Leu Glu Tyr Cys Glu Asp Pro Tyr Phe  
145 150 155

<210> 7  
<211> 2082  
<212> DNA  
<213> Penaeus monodon

<400> 7  
gaggtgctgc cacacacagg acagggcaag ttctctgccc ggccttacct tgatccaaga 60  
accattcaag gttgtgctgt taccctcact ctttcacttt cccgtatcct cccaccata 120  
cccaccactc cagttctcca cctccaacct tcttcagatc tctccaccaa tccctccaca 180  
aaaaccactc catcaaccct acgtatttgc taactcctcc acctccctc tatccacccc 240  
tctatccta ttatccctcc tctttttcca ctcttctcat agacacaaag aaaaaaatga 300  
accaactcgc tgcctcacgc acctacggcc tcggcatgcc cactcagctg cttgtgggaa 360  
tgctgatggg cctctccctg acttcgacgt caagctgcta caacgtcacg gggattcctg 420  
ttgacttcga ctgcggtgac atcggcgata ccatgagtca catctgcaag acgtttccca 480  
cagcccggcc tactcgcga gtgtccaggt cagctgatac cgacgacctc tggcaggaca 540  
cgagagcagg tcagaccacg cccattgacc tgcttcctcg ccagtaccgc ctgcatcccc 600  
gggccttgaa tccgatgcga tatttcgaaa tggacctgat aagagaccac ctggtgagcc 660  
ccgargccgc gcacgccctc gtcaagacat ccrggaggcg cgcaagaga tctacaacg 720  
tgcaggatga gtgctgcaac cacgtgagcc agcggacgtg tgtggcggag gagattctgg 780  
agtattgcga ggacccggta ccttagtctc ccctggcggg ttctgtcata tgcgatgttc 840  
tctcwttatt acactttttt tgctaattgt tacagatata cagtatatgc atagcgcatt 900  
ctgataacac atatgtatat ttatakgtg tacaatgtgt gttaaaacaa attcattgtg 960  
ttctctctgt ttcacaaggt agaataaat cctatccttt tgatagtaat ttactcgcat 1020  
acacgcttgt aaatcttgtt ttcgtctcgt gtgggtttga tctacattct tottcatgta 1080  
tgattttctag atgtgagagt aagtaggcaa gttatctctc gaatgaaatt cgaaatcagg 1140  
caaatcagty attaacattt ctcccttctg tttccccagt acttctaaac cttgaacctg 1200  
acctgacctc tggccttcct aacctctcta agtggagtcg tcagtgggtcc atggcccacc 1260  
catcctcctt acaacagtct tcggtgacct gatcatatgg cctctccatc ctctcaatga 1320  
cctgacctca acccaygggt ccccccttct ttaggccaaag tctttgcgga cctgacccaa 1380

accgaggctt ctctaaccct cctctgatga gtttgtaata aaaataaccg gcctgggtgac	1440
ccaagttctc atgaatttga cttaatctgc aattaatgac ccgtttagagt cctttcaatg	1500
atgtctgcc aagtagcgt tacattccat ttttcttttc gaktawtagg ccccagagta	1560
attcttgacc tcaactttct aaaaaaaaaat aygtatatct agrgcaagaa ctattttcat	1620
tcatgttctg tcaattttct yggcgtcata atttctttct atccttttat taaacaaaat	1680
aaataaaaga taaccataca ttaacaaagg tgtgatacaa agacataaaa gatatcaaag	1740
ttcagtaactt tctttcgctt tttctatttt tatctttcga ttttccgaac gttttaaagt	1800
ttctaacttt tatcccyctg taaaaataaa gttgacagac gataataaaa agcaataatg	1860
ttttagaatc tattcctttt ttgtgatcac ctgaatatct tttttatata tacattatcg	1920
tattggaatc agatagatca gyacggyata tcagaattaa ttcgtaataa aaaaatgcat	1980
ttcaataact gaatttccga taaaaaaatt tcmctgtat ctgtcttttg cgaaacaata	2040
aaagcatttc aaaatcgraa aaaaaaaaaa aaaaaaaaaa aa	2082

<210> 8  
 <211> 471  
 <212> DNA  
 <213> *Penaeus monodon*

<400> 8	
atgccactc agctgcttgt gggaatgctg atggctctct cctgacttc gacgtcaagc	60
tgctacaacg tcacggggat tcctgttgac ttcgactgcg gtgacatcgg cgataccatg	120
agtcacatct gcaagacgtt tcccacagcc cggcctcact cgcgagtgtc caggtcagct	180
gataccgacg acctctggca ggacacgaga gcaggtcaga ccacgcccac tgacctgctt	240
cctcgccagt accgcctgca tccccggggc ttgaatccga tgcgatattt cgaaatggac	300
ctgataagag accacctggt gagccccgar gccgcgcacg ccctcgtaaa gacatccrgg	360
aggcgcgcga agagatccta caacgtgcag gatgagtgtc gcaaccacgt gagccagcgg	420
acgtgtgtgg cggaggagat tctggagtat tgcgaggacc cggtacctta g	471

<210> 9  
 <211> 156  
 <212> PRT  
 <213> *Penaeus monodon*

<400> 9

Met	Pro	Thr	Gln	Leu	Leu	Val	Gly	Met	Leu	Met	Val	Leu	Ser	Leu	Thr
1				5				10						15	

Ser	Thr	Ser	Ser	Cys	Tyr	Asn	Val	Thr	Gly	Ile	Pro	Val	Asp	Phe	Asp
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

20

25

30

Cys Gly Asp Ile Gly Asp Thr Met Ser His Ile Cys Lys Thr Phe Pro  
 35 40 45

Thr Ala Arg Pro His Ser Arg Val Ser Arg Ser Ala Asp Thr Asp Asp  
 50 55 60

Leu Trp Gln Asp Thr Arg Ala Gly Gln Thr Thr Pro Ile Asp Leu Leu  
 65 70 75 80

Pro Arg Gln Tyr Arg Leu His Pro Arg Ala Leu Asn Pro Met Arg Tyr  
 85 90 95

Phe Glu Met Asp Leu Ile Arg Asp His Leu Val Ser Pro Glu Ala Ala  
 100 105 110

His Ala Leu Val Lys Thr Ser Gly Arg Arg Ala Lys Arg Ser Tyr Asn  
 115 120 125

Val Gln Asp Glu Cys Cys Asn His Val Ser Gln Arg Thr Cys Val Ala  
 130 135 140

Glu Glu Ile Leu Glu Tyr Cys Glu Asp Pro Val Pro  
 145 150 155

<210> 10

<211> 1700

<212> DNA

<213> Penaeus monodon

<400> 10

gaggtgctgc cacacacagg acagggcaag ttctctgccc ggccttacct tgatccaaga 60

accattcaag gttgtgctgt taccctcact ctttcacttt cccgtatcct cccaccata 120

cccaccactc cagttctcca cctccaacct tcctcagatc tctccaccaa tccctccaca 180

aaaaccactc catcaaccct acgtatttgc taactcctcc acctcccctc tatccacccc 240

tcctataccta ttatccctcc tccttttcca ctcttctcat agacacaaag aaaaaaatga 300

accaactcgc tgcctcacgc acctacggcc tcggcatgcc cactcagctg cttgtgggaa 360

tgctgatggg cctctccctg acttcgacgt caagctgcta caacgtcacg gggattcctg 420

ttgacttcga ctgcggtgac atcggcgata ccatgagtca catctgcaag acgtttccca 480

cagcccggcc tactcgcga gtgtccaggt cagctgatac cgacgacctc tggcaggaca 540

cgagagcagg tcagaccacg ccattgacc tgcttctctg ccagtaccgc ctgcacccc 600

gggccttgaa tccgatgcga tatttcgaaa tggacctgat aagagaccac ctggtgagcc	660
ccgargccgc gcacgccctc gtcaagacat crrggaggcg cgcgaagaga tcctacaacg	720
tgcaggatga gtgctgcaac cacgtgagcc agcggacgtg tgtggcggag gagattctgg	780
agtattgcga ggacccgtac ttctaaacct tgaacctgac ctgacctatg gccttcctaa	840
cctctctaag tggagtcgtc agtgggtccat ggcccaccca tcctccttac aacagtcttc	900
ggtgacctga tcatatggcc tctccatcct ctcaatgacc tgacctcaac ccaygggtcc	960
ccccttcttt aggccaagtc tttgcgacc tgacccaaac cgaggcttct ctaaccctcc	1020
tctgatgagt ttgtaataaa aataaccggc ctggtgaccc aagttctcat gaatttgact	1080
taatctgcaa ttaatgaccc gttagagtcc tttcaatgat gtctgccaaa agtagcgta	1140
cattccattt ttcttttcga ktawtaggcc ccagagtaat tcttgacctc aactttctaa	1200
aaaaaaatay gtatattcag rgcaagaact attttcattc atgttctgtc aattttcttyg	1260
gcgtcataat ttctttctat ccttttatta aacaaaataa ataaaagata accatacatt	1320
aacaaaggtg tgatacaaag acataaaaga tatcaaagtt cagtactttc tttcgctttt	1380
tctattttta tctttcgatt ttccgaacgt tttaaagttt ctaactttta tcccyctgta	1440
aaaataaagt tgacagacga taataaaaag caataatggt ttagaatcta ttcctttttt	1500
gtgatcacct gaatatcttt tttatatata cattatcgta ttggaatcag atagatcagy	1560
acggyatatc agaattaatt cgtaataaaa aaatgcattt caataactga atttccgata	1620
aaaaaatctc mcctgtatct gtcttttgcg aaacaataaa agcatttcaa aatcgraaaa	1680
aaaaaaaaaa aaaaaaaaaa	1700

<210> 11  
 <211> 471  
 <212> DNA  
 <213> *Penaeus monodon*

<400> 11	
atgccactc agctgcttgt gggaatgctg atggctcctc ccctgacttc gacgtcaagc	60
tgctacaacg tcacggggat tcctgttgac ttcgactgcg gtgacatcgg cgataccatg	120
agtcacatct gcaagacgtt tcccacagcc cggcctcact cgcgagtgtc caggtcagct	180
gataccgacg acctctggca ggacacgaga gcaggtcaga ccacgcccat tgacctgctt	240
cctcgccagt accgcctgca tccccggggc ttgaatccga tgcgatattt cgaaatggac	300
ctgataagag accacctggt gagccccgar gccgcgcacg ccctcgtaaa gacatccrgg	360
aggcgcgcga agagatccta caacgtgcag gatgagtgtt gcaaccacgt gagccagcgg	420
acgtgtgtgg cggaggagat tctggagtat tgcgaggacc cgtacttcta a	471

<210> 12  
 <211> 156  
 <212> PRT  
 <213> Penaeus monodon

<400> 12

Met Pro Thr Gln Leu Leu Val Gly Met Leu Met Val Leu Ser Leu Thr  
 1 5 10 15

Ser Thr Ser Ser Cys Tyr Asn Val Thr Gly Ile Pro Val Asp Phe Asp  
 20 25 30

Cys Gly Asp Ile Gly Asp Thr Met Ser His Ile Cys Lys Thr Phe Pro  
 35 40 45

Thr Ala Arg Pro His Ser Arg Val Ser Arg Ser Ala Asp Thr Asp Asp  
 50 55 60

Leu Trp Gln Asp Thr Arg Ala Gly Gln Thr Thr Pro Ile Asp Leu Leu  
 65 70 75 80

Pro Arg Gln Tyr Arg Leu His Pro Arg Ala Leu Asn Pro Met Arg Tyr  
 85 90 95

Phe Glu Met Asp Leu Ile Arg Asp His Leu Val Ser Pro Glu Ala Ala  
 100 105 110

His Ala Leu Val Lys Thr Ser Gly Arg Arg Ala Lys Arg Ser Tyr Asn  
 115 120 125

Val Gln Asp Glu Cys Cys Asn His Val Ser Gln Arg Thr Cys Val Ala  
 130 135 140

Glu Glu Ile Leu Glu Tyr Cys Glu Asp Pro Tyr Phe  
 145 150 155

<210> 13  
 <211> 2008  
 <212> DNA  
 <213> Penaeus monodon

<400> 13

aaatcaaaact gtatTTTTat ctcaaccaca aaacatccca acaagcagac agtgccttct	60
ctttccctta cagtgtccag gtcagctgat accgacgacc tctggcagga cacgagagca	120
ggtcagacca cgcccattga cctgcttctt cgccagtacc gcctgcatcc ccgggccttg	180
aatccgatgc gatatttcga aatgggttagt caggtaacag gtattttctta ttaattgtaa	240

caccattatc	acaaatatct	gataatatta	agtatctgca	agttcctatt	cttctgtggt	300
gttcgtgatt	cttaattgca	tagcattatt	ttcagttctc	agataatatt	gcatactgac	360
gtgcgctaca	gtttaattac	ccttcatata	taacatcact	tttatgtaat	cttaccttgt	420
gacatataga	aacatacaac	gatagtctgc	ccactaagta	cctgcgaggt	agacggttct	480
atttctgcag	tactacataa	tatatacaca	aaatagactc	tagtacacga	aaggattcct	540
gccatgccac	aggacctgat	aagagaccac	ctgggtgagcc	ccgargccgc	gcacgccctc	600
gtcaagacat	ccrggaggcg	cgcgaagaga	tcctacaacg	tgcaggatga	gtgctgcaac	660
cacgtgagcc	agcggacgtg	tgtggcggag	gagattctgg	agtattgcga	ggacccggta	720
ccttagtctc	ccctggcggt	ttctgtcata	tgcgatgttc	tcwctttatt	acactttttt	780
tgctaattgt	tacagatata	cagtatatgc	atagcgcatt	ctgataacac	atatgtatat	840
tttatakgtg	tacaattgtg	gttaaaacaa	attcattgtg	ttctctctgt	ttcacaaggt	900
agaatataat	cctatccttt	tgatagtaat	ttactcgcat	acacgcttgt	aaatcttgtt	960
ttcgtctcgt	gtggttttga	tctacattct	tcttcatgta	tgattttctag	atgtgagagt	1020
aagtaggcaa	gttatctctc	gaatgaaatt	cgaaatcagg	caaatcagty	attaacattt	1080
ctcccttctg	tttccccagt	acttctaaac	cttgaacctg	acctgacctc	tggccttctc	1140
aacctctcta	agtggagtcg	tcagtgggtc	atggcccacc	catcctcctt	acaacagtct	1200
tcggtgacct	gatcatatgg	cctctccatc	ctctcaatga	cctgacctca	accaygggt	1260
cccccttct	ttaggccaa	tctttgcgga	cctgacccaa	acccgaggct	tctctaacc	1320
tcctctgatg	agtttgtaat	aaaaataacc	ggcctgggtga	cccaagttct	catgaatttg	1380
acttaatctg	caattaatga	cccgttagag	tcctttcaat	gatgtctgcc	aaaagtagcg	1440
ttacattcca	tttttctttt	cgaktawtag	gccccagagt	aattcttgac	ctcaactttc	1500
taaaaaaaaa	taygtatatt	cagrgcaaga	actattttca	ttcatgttct	gtcaattttct	1560
tyggcgcat	aatttctttc	tatcctttta	ttaaacaaaa	taaataaaaag	ataaccatac	1620
attaacaaa	gtgtgatata	aagacataaa	agatatcaaa	gttcagtact	ttctttcgct	1680
ttttctat	ttatctttcg	attttccgaa	cgtttttaaag	tttctaactt	ttatcccyct	1740
gtaaaaataa	agttgacaga	cgataataaa	aagcaataat	gttttagaat	ctattccttt	1800
tttgtgatca	cctgaatatc	ttttttatat	atacattatc	gtattggaat	cagatagatc	1860
agyacggyat	atcagaatta	attcgtaata	aaaaaatgca	tttcaataac	tgaatttccg	1920
ataaaaaaat	ttcmctgtga	tctgtctttt	gcgaaacaat	aaaagcattt	caaaatcgrg	1980
aaatatgaat	ccttgcttgc	aacagctg				2008

<210> 14	
<211> 25	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 14	
tatgacagaa accgccaggg gagac	25
<210> 15	
<211> 25	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 15	
aggtaccggg tcctcgcaat actcc	25
<210> 16	
<211> 25	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 16	
ctggcggttt ctgtcatatg cgatg	25
<210> 17	
<211> 25	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 17	
gtctcccctg gcggtttctg tcata	25
<210> 18	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 18	
acacaggaca gggcaagttc	20

<210> 19  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Primer

<400> 19  
tccctccaca aaaaccactc 20

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

<220>  
<223> Primer

<400> 20  
tctggggcct attaatcgaa 20

<210> 21  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Primer

<400> 21  
acgttcggaa aatcgaaaga t 21

<210> 22  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Primer

<400> 22  
gtgctgccac acacaggac 19

<210> 23  
<211> 16  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Primer

<400> 23  
gcacgccctc gtcaag 16

<210> 24

<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	24	
	tcaagaatta ctctggggcc ta	22
<210>	25	
<211>	18	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	25	
	ccagtaccgc ctgcatcc	18
<210>	26	
<211>	19	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	26	
	ggctcaccag gtggtctct	19
<210>	27	
<211>	38	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	27	
	taatacgact cactataggg atgcccactc agctgctt	38
<210>	28	
<211>	39	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Primer	
<400>	28	
	taatacgact cactataggg ctaaggtacc gggtcctcg	39