

PH-7033-PCT_SequenceListing_5254481_1
SEQUENCE LISTING

<110> Japan International Research Center for Agricultural Sciences
<120> A method of releasing the suppression of egg maturation in economically-important prawn/shrimp species
<130> PH-7033-PCT
<150> JP 2016-214411
<151> 2016-11-01
<160> 39
<170> PatentIn version 3.5
<210> 1
<211> 364
<212> DNA
<213> Litopenaeus vannamei

<220>
<221> CDS
<222> (12)..(356)

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ttgcgtaaac t atg ctt gcc tac cgt act atg tgg tca gcg ata atg gcc 50
Met Leu Ala Tyr Arg Thr Met Trp Ser Ala Ile Met Ala
1 5 10

tct ttg ctg ctg ctg ctc gcg gcg tcg tcc gct gcc ccc gcc gac gcc 98
Ser Leu Leu Leu Leu Leu Ala Ala Ser Ser Ala Ala Pro Ala Asp Ala
15 20 25

tta tcc gcc cct gcg gca ggc ctc acc aaa cgc tcg cta ttc gac cct 146
Leu Ser Ala Pro Ala Gly Leu Thr Lys Arg Ser Leu Phe Asp Pro
30 35 40 45

tcc tgc agc ggc gtc ttc gac cgg cag ctc ttg cgg agg ctg cgt cga 194
Ser Cys Ser Gly Val Phe Asp Arg Gln Leu Leu Arg Arg Leu Arg Arg
50 55 60

gtg tgt gat gac tgt ttc aac gta ttt agg gaa ccc aac gta gct att 242
Val Cys Asp Asp Cys Phe Asn Val Phe Arg Glu Pro Asn Val Ala Ile
65 70 75

gat tgc agg gag aac tgt tac aac aac gaa gtg ttc cgc cag tgc atg 290
Asp Cys Arg Glu Asn Cys Tyr Asn Asn Glu Val Phe Arg Gln Cys Met
80 85 90

gca tac gtc gtt ccc gca aac ctc cac gac gaa cac agg caa gcc gtg 338
Ala Tyr Val Val Pro Ala Asn Leu His Asp Glu His Arg Gln Ala Val
95 100 105

cag atg gtc ggc aag taa actacttc 364
Gln Met Val Gly Lys
110

<210> 2
<211> 114

PH-7033-PCT_SequenceListing_5254481_1

<212> PRT

<213> Litopenaeus vannamei

<400> 2

Met Leu Ala Tyr Arg Thr Met Trp Ser Ala Ile Met Ala Ser Leu Leu
1 5 10 15

Leu Leu Leu Ala Ala Ser Ser Ala Ala Pro Ala Asp Ala Leu Ser Ala
20 25 30

Pro Ala Ala Gly Leu Thr Lys Arg Ser Leu Phe Asp Pro Ser Cys Ser
35 40 45

Gly Val Phe Asp Arg Gln Leu Leu Arg Arg Leu Arg Arg Val Cys Asp
50 55 60

Asp Cys Phe Asn Val Phe Arg Glu Pro Asn Val Ala Ile Asp Cys Arg
65 70 75 80

Glu Asn Cys Tyr Asn Asn Glu Val Phe Arg Gln Cys Met Ala Tyr Val
85 90 95

Val Pro Ala Asn Leu His Asp Glu His Arg Gln Ala Val Gln Met Val
100 105 110

Gly Lys

<210> 3

<211> 450

<212> DNA

<213> Litopenaeus vannamei

<220>

<221> CDS

<222> (54)..(449)

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att ggg gtt cga ctg gtg cgt tca gct gtc ctg gta tcc ctg ctg cta 104
Ile Gly Val Arg Leu Val Arg Ser Ala Val Leu Val Ser Leu Leu Leu
5 10 15

gtg ttc ccg gcc tct gtc ctc gcc tct tgg gac gga aat gaa atc cct 152
Val Phe Pro Ala Ser Val Leu Ala Ser Trp Asp Gly Asn Glu Ile Pro
20 25 30

ccg tcc ctg cct tcc tcc tca gaa tcc tct cct gcg acc ccc ctc gcg 200
Pro Ser Leu Pro Ser Ser Glu Ser Ser Pro Ala Thr Pro Leu Ala
35 40 45

PH-7033-PCT_SequenceListing_5254481_1

gga gcc cag acc gca aac aag cgc agc ata tcc ttc gac tcg tgc acg 248
Gly Ala Gln Thr Ala Asn Lys Arg Ser Ile Ser Phe Asp Ser Cys Thr
50 55 60 65

ggc gtc tac gac cgc gaa ctc ctt gta agg ctc gac cgc gtg tgc gaa 296
Gly Val Tyr Asp Arg Glu Leu Leu Val Arg Leu Asp Arg Val Cys Glu
70 75 80

gac tgc tac aac ctg tac cgc gac acc gac gtg gcg gtc gaa tgc agg 344
Asp Cys Tyr Asn Leu Tyr Arg Asp Thr Asp Val Ala Val Glu Cys Arg
85 90 95

agc aac tgt ttc cac aac gag gta ttc ctg tac tgc gtc gac tac atg 392
Ser Asn Cys Phe His Asn Glu Val Phe Leu Tyr Cys Val Asp Tyr Met
100 105 110

tac cgg cct cgc caa agg aac cag tac cgg gcc gcc ctg cag agg ctc 440
Tyr Arg Pro Arg Gln Arg Asn Gln Tyr Arg Ala Ala Leu Gln Arg Leu
115 120 125

ggc aag tag g 450
Gly Lys
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<210> 4
<211> 131
<212> PRT
<213> Litopenaeus vannamei

<400> 4

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

Pro Pro Ser Leu Pro Ser Ser Ser Glu Ser Ser Pro Ala Thr Pro Leu
35 40 45

Ala Gly Ala Gln Thr Ala Asn Lys Arg Ser Ile Ser Phe Asp Ser Cys
50 55 60

Thr Gly Val Tyr Asp Arg Glu Leu Leu Val Arg Leu Asp Arg Val Cys
65 70 75 80

Glu Asp Cys Tyr Asn Leu Tyr Arg Asp Thr Asp Val Ala Val Glu Cys
85 90 95

Arg Ser Asn Cys Phe His Asn Glu Val Phe Leu Tyr Cys Val Asp Tyr
100 105 110

Met Tyr Arg Pro Arg Gln Arg Asn Gln Tyr Arg Ala Ala Leu Gln Arg
115 120 125

PH-7033-PCT_SequenceListing_5254481_1

Leu Gly Lys
130

<210> 5
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<212> DNA
<213> Litopenaeus vannamei

<220>
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<222> (45)..(389)

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Arg Met Val Trp Ser Met Leu Leu Ala Ser Leu Leu Leu Leu Leu Ala
5 10 15 20

gcg tcg tcc gct gcc ccc gcc gac gcc tta tcc gcc cct gcg gca ggc 152
Ala Ser Ser Ala Ala Pro Ala Asp Ala Leu Ser Ala Pro Ala Ala Gly
25 30 35

ctc acc aaa cgc tcg ctc ttc gac cct tcc tgc acc ggc gtc ttc gac 200
Leu Thr Lys Arg Ser Leu Phe Asp Pro Ser Cys Thr Gly Val Phe Asp
40 45 50

cgg cag ctc ttg cgg agg ctg cgt cga gtg tgt gac gac tgt ttc aac 248
Arg Gln Leu Leu Arg Arg Leu Arg Arg Val Cys Asp Asp Cys Phe Asn
55 60 65

gta ttc agg gaa ccc aac gta tct act gaa tgc aga agt aac tgt tac 296
Val Phe Arg Glu Pro Asn Val Ser Thr Glu Cys Arg Ser Asn Cys Tyr
70 75 80

aac aat gaa gtg ttc cgc cag tgt atg gaa tac ctc ctc ccg cct cac 344
Asn Asn Glu Val Phe Arg Gln Cys Met Glu Tyr Leu Leu Pro Pro His
85 90 95 100

ctt cac gaa gag cac aga cta gct gtc cag atg gtc ggg aaa tag 389
Leu His Glu Glu His Arg Leu Ala Val Gln Met Val Gly Lys
105 110

atttacgggtt aagacgctgc aaccacttc gctgacgaca ggaattcgat gatagtaaaa 449

ggcaccctaa ttccacttat tctacagcat agcactgagt cctcgatcgc tgtaacgaat 509

ggttttcaat gctgaagact tatactatga aatgaagctg acttccactc taagaaataa 569

gaatgaaagg gtgcagtttg ccattatatt gggactatca tgacacattt agttcggcca 629

ctgatcacag tatagaaaat atatatacac atgaacgccca tttatcagga aactggagaa 689

aaaatatcac tgaaagagat tgttcttagg actcgaggct ttaattaaca ttagaatagg 749

tatttgtgat gttttattat gtttaaattt acgaataaag cactggcatg ctaaaaaaaaa 809

aaaaaaaaaa aaaaaaaaaa aaaa

833

<210> 6
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 <212> PRT
 <213> Litopenaeus vannamei

<400> 6

Met Thr Ala Phe Arg Met Val Trp Ser Met Leu Leu Ala Ser Leu Leu
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Leu Leu Leu Ala Ala Ser Ser Ala Ala Pro Ala Asp Ala Leu Ser Ala
 20 25 30

Pro Ala Ala Gly Leu Thr Lys Arg Ser Leu Phe Asp Pro Ser Cys Thr
 35 40 45

Gly Val Phe Asp Arg Gln Leu Leu Arg Arg Leu Arg Arg Val Cys Asp
 50 55 60

Asp Cys Phe Asn Val Phe Arg Glu Pro Asn Val Ser Thr Glu Cys Arg
 65 70 75 80

Ser Asn Cys Tyr Asn Asn Glu Val Phe Arg Gln Cys Met Glu Tyr Leu
 85 90 95

Leu Pro Pro His Leu His Glu Glu His Arg Leu Ala Val Gln Met Val
 100 105 110

Gly Lys

<210> 7
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 <212> DNA
 <213> Litopenaeus vannamei

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 <222> (49)..(402)

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 Met Val Leu
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caa tac atg ctg tct gcg gcc ctg ctg gtg ctc gcc gcc tcg tcc tcg 105
 Gln Tyr Met Leu Ser Ala Ala Leu Leu Val Leu Ala Ala Ser Ser Ser
 5 10 15

ccc gcc gcc gcc cgc tcc ctc gac gcg gcg cct tcg tct gcg tcc tca 153
 Pro Ala Ala Ala Arg Ser Leu Asp Ala Ala Pro Ser Ser Ala Ser Ser

PH-7033-PCT_SequenceListing_5254481_1

20 25 30 35

gga agc cac agc ctc agc aag cgc tcc ctc ttc gac ccg gcg tgc acc 201
Gly Ser His Ser Leu Ser Lys Arg Ser Leu Phe Asp Pro Ala Cys Thr
40 45 50

ggc atc tac gac cgg cag ctg ctg ggc aag ctg ggg cgc ctg tgc gac 249
Gly Ile Tyr Asp Arg Gln Leu Leu Gly Lys Leu Gly Arg Leu Cys Asp
55 60 65

gac tgc tac aac gtg ttc cgg gag ccc aag gtg gcc acg gga tgc agg 297
Asp Cys Tyr Asn Val Phe Arg Gly Pro Lys Val Ala Thr Gly Cys Arg
70 75 80

agt aac tgc tac tac aac ctc atc ttc ctc gac tgc ctc gag tac ctg 345
Ser Asn Cys Tyr Tyr Asn Leu Ile Phe Leu Asp Cys Leu Glu Tyr Leu
85 90 95

atc ccg agc cac ctt cag gag gag cac atg tcg gcc ctg cag acc gtc 393
Ile Pro Ser His Leu Gln Glu Glu His Met Ser Ala Leu Gln Thr Val
100 105 110 115

ggc aaa taa ag 404
Gly Lys

<210> 8
<211> 117
<212> PRT
<213> Litopenaeus vannamei

<400> 8

Met Val Leu Gln Tyr Met Leu Ser Ala Ala Leu Leu Val Leu Ala Ala
1 5 10 15

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

Ala Ser Ser Gly Ser His Ser Leu Ser Lys Arg Ser Leu Phe Asp Pro
35 40 45

Ala Cys Thr Gly Ile Tyr Asp Arg Gln Leu Leu Gly Lys Leu Gly Arg
50 55 60

Leu Cys Asp Asp Cys Tyr Asn Val Phe Arg Glu Pro Lys Val Ala Thr
65 70 75 80

Gly Cys Arg Ser Asn Cys Tyr Tyr Asn Leu Ile Phe Leu Asp Cys Leu
85 90 95

Glu Tyr Leu Ile Pro Ser His Leu Gln Glu Glu His Met Ser Ala Leu
100 105 110

Gln Thr Val Gly Lys

115

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 <212> DNA
 <213> Litopenaeus vannamei

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 <222> (60)..(416)

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 atg aca gcc ttt cgc ttg atg gcc gtg gcc ctg gtg gtg gtc gtg gcg 107
 Met Thr Ala Phe Arg Leu Met Ala Val Ala Leu Val Val Val Val Ala
 1 5 10 15
 tgc tcg acg acc tgg gct cgc tcc gcc gag ggg tcg tcg tcc ccc gtg 155
 Cys Ser Thr Thr Trp Ala Arg Ser Ala Glu Gly Ser Ser Ser Pro Val
 20 25 30
 gcc tcc ctc atc agg ggc cgc agc ctc agc aag cga gca aac ttc gac 203
 Ala Ser Leu Ile Arg Gly Arg Ser Leu Ser Lys Arg Ala Asn Phe Asp
 35 40 45
 cct tcc tgc acg ggc gtc tac gac cgg gag ctc ctg ggg agg ctg agc 251
 Pro Ser Cys Thr Gly Val Tyr Asp Arg Glu Leu Leu Gly Arg Leu Ser
 50 55 60
 cgc ctc tgc gac gac tgc tac aac gtg ttt cgc gag ccc aag gtg gcc 299
 Arg Leu Cys Asp Asp Cys Tyr Asn Val Phe Arg Glu Pro Lys Val Ala
 65 70 75 80
 acg gag tgc agg agc aac tgc ttc tac aac ccc gtg ttc gtc cag tgc 347
 Thr Glu Cys Arg Ser Asn Cys Phe Tyr Asn Pro Val Phe Val Gln Cys
 85 90 95
 ctg gag tac ctg att ccg gcc gac ctg cac gag gag tac caa gcc ctc 395
 Leu Glu Tyr Leu Ile Pro Ala Asp Leu His Glu Glu Tyr Gln Ala Leu
 100 105 110
 gtg cag acg gtg ggc aag tag gctcgctcga cctgccacgg cctcgccctcg 446
 Val Gln Thr Val Gly Lys
 115
 cgcactcacg ccaacggccg gaagacacag agaggatttc aggatttggt tctggctaac 506
 tgggtgtattt catcgaccct gctcggattt tgatatgatt tctcatgtcc taaattgtga 566
 tgaatctcta aatgaagtgt g 587

<210> 10
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 <213> Litopenaeus vannamei

<400> 10

Met Thr Ala Phe Arg Leu Met Ala Val Ala Leu Val Val Val Val Ala

PH-7033-PCT_SequenceListing_5254481_1

1 5 10 15
 Cys Ser Thr Thr Trp Ala Arg Ser Ala Glu Gly Ser Ser Ser Pro Val
 20 25 30
 Ala Ser Leu Ile Arg Gly Arg Ser Leu Ser Lys Arg Ala Asn Phe Asp
 35 40 45
 Pro Ser Cys Thr Gly Val Tyr Asp Arg Glu Leu Leu Gly Arg Leu Ser
 50 55 60
 Arg Leu Cys Asp Asp Cys Tyr Asn Val Phe Arg Glu Pro Lys Val Ala
 65 70 75 80
 Thr Glu Cys Arg Ser Asn Cys Phe Tyr Asn Pro Val Phe Val Gln Cys
 85 90 95
 Leu Glu Tyr Leu Ile Pro Ala Asp Leu His Glu Glu Tyr Gln Ala Leu
 100 105 110
 Val Gln Thr Val Gly Lys
 115

<210> 11
 <211> 43
 <212> DNA
 <213> Artificial

<220>
 <223> Primer

<400> 11
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43

<210> 12
 <211> 43
 <212> DNA
 <213> Artificial

<220>
 <223> Primer

<400> 12
 taatacgact cactataggg agatgggtgc tcaggtagtg gtt

43

<210> 13
 <211> 41
 <212> DNA
 <213> Artificial

<220>
 <223> Primer

PH-7033-PCT_SequenceListing_5254481_1

<400> 13
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<210> 14
<211> 41
<212> DNA
<213> Artificial

<220>
<223> Primer

<400> 14
taatacgact cactataggg agactacttg cccaccgtct g 41

<210> 15
<211> 42
<212> DNA
<213> Artificial

<220>
<223> Primer

<400> 15
taatacgact cactataggg agactcgctc ttcgaccctt cc 42

<210> 16
<211> 42
<212> DNA
<213> Artificial

<220>
<223> Primer

<400> 16
taatacgact cactataggg agactatttc ccgaccatct gg 42

<210> 17
<211> 45
<212> DNA
<213> Artificial

<220>
<223> Primer

<400> 17
taatacgact cactataggg agacgcagca tatccttcga ctcgt 45

<210> 18
<211> 42
<212> DNA
<213> Artificial

<220>
<223> Primer

<400> 18
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PH-7033-PCT_SequenceListing_5254481_1

<210> 19
 <211> 47
 <212> DNA
 <213> Artificial

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 <223> Primer

 <400> 19
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 <210> 20
 <211> 20
 <212> DNA
 <213> Artificial

 <220>
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 <400> 20
 taatacgact cactataggg 20

 <210> 21
 <211> 19
 <212> DNA
 <213> Artificial

 <220>
 <223> Primer

 <400> 21
 cggagtgcag gagcaactg 19

 <210> 22
 <211> 25
 <212> DNA
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 <220>
 <223> Primer

 <400> 22
 cctctctgtg tcttctggcc gttgg 25

 <210> 23
 <211> 27
 <212> DNA
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 <220>
 <223> Primer

 <400> 23
 cgacctcaca gactacctga tgaagat 27

 <210> 24
 <211> 21

PH-7033-PCT_SequenceListing_5254481_1

<212> DNA
 <213> Artificial
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 <400> 24
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<210> 25
 <211> 26
 <212> DNA
 <213> Artificial
 <220>
 <223> Primer
 <400> 25
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<210> 26
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 <212> DNA
 <213> Artificial
 <220>
 <223> Primer
 <400> 26
 cgaccaccgc cgagcgagaa atcgttcgt 29

<210> 27
 <211> 19
 <212> DNA
 <213> Artificial
 <220>
 <223> Primer
 <400> 27
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<210> 28
 <211> 234
 <212> DNA
 <213> Litopenaeus vannamei
 <400> 28
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 tcgagtgtgt gatgactgtt tcaacgtatt tagggaaccc aacgtagcta ttgattgcag 120
 ggagaactgt tacaacaacg aagtgttccg ccagtgcatt gcatacgtcg ttcccgcgaa 180
 cctccacgac gaacacaggc aagccgtgca gatggtcggc aagtaaaacta cttc 234

<210> 29
 <211> 22

PH-7033-PCT_SequenceListing_5254481_1

<212> DNA
<213> Artificial

<220>
<223> Primer

<400> 29
cgagcatat ccttcgactc gt 22

<210> 30
<211> 229
<212> DNA
<213> Litopenaeus vannamei

<400> 30
cgagcatat ccttcgactc gtgcacgggc gtctacgacc gcgaactcct tgtaaggctc 60
gaccgcgtgt gcgaagactg ctacaacctg taccgcgaca ccgacgtggc ggtcgaatgc 120
aggagcaact gtttccacaa cgaggatttc ctgtactgcg tcgactacat gtaccggcct 180
cgccaaagga accagtaccg ggccgccctg cagaggctcg gcaagtagg 229

<210> 31
<211> 20
<212> DNA
<213> Artificial

<220>
<223> Primer

<400> 31
ctcgtcttc gacccttcct 20

<210> 32
<211> 19
<212> DNA
<213> Artificial

<220>
<223> Primer

<400> 32
ccagatggtc gggaaatag 19

<210> 33
<211> 226
<212> DNA
<213> Litopenaeus vannamei

<400> 33
ctcgtcttc gacccttcct gcaccggcgt cttcgaccgg cagctcttgc ggaggctgcg 60
tcgagtgtgt gacgactgtt tcaacgtatt cagggaaccc aacgtatcta ctgaatgcag 120
aagtaactgt tacaacaatg aagtgttccg ccagtgtatg gaataacctcc tcccgccctca 180

ccttcacgaa gagcacagac tagctgtcca gatggtcggg aaatag 226

<210> 34
 <211> 19
 <212> DNA
 <213> Artificial

<220>
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<400> 34
 aagcgctccc tcttcgacc 19

<210> 35
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <223> Primer

<400> 35
 cctgcagacc gtcggcaaata aaag 24

<210> 36
 <211> 233
 <212> DNA
 <213> Litopenaeus vannamei

<400> 36
 aagcgctccc tcttcgaccc ggcgtgcacc ggcattctacg accggcagct gctgggcaag 60

ctggggcgcc tgtgcgacga ctgctacaac gtgttccggg agcccaagggt ggccacggga 120

tgcaggagta actgctacta caacctcatc ttcttcgact gcctcgagta cctgatcccg 180

agccaccttc aggaggagca catgtcggcc ctgcagaccg tcggcaaata aag 233

<210> 37
 <211> 18
 <212> DNA
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<220>
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<400> 37
 aagcgagcaa acttcgac 18

<210> 38
 <211> 18
 <212> DNA
 <213> Artificial

<220>
 <223> Primer

<400> 38

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<213>	Litopenaeus vannamei		
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accgggagct	cctggggagg		60
ctgagccgcc	tctgcgacga	ctgctacaac	gtgtttcgcg
agcccaaggt	ggccacggag		120
tgcaggagca	actgcttcta	caaccccgtg	ttcgtccagt
gcctggagta	cctgattccg		180
gccgacctgc	acgaggagta	ccaagccctc	gtgcagacgg
tgggcaagta	g		231