

SEQUENCE LISTING

<110> Dow AgroSciences, LLC
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 Geng, Chaoxian
 Vilcinskas, Andreas
 Knorr, Eileen

<120> SPT5 NUCLEIC ACID MOLECULES TO CONTROL INSECT PESTS

<130> 2971-P12798.1US (77542-US-NP)

<150> US 62/168,613
 <151> 2015-05-29

<160> 108

<170> PatentIn version 3.5

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820 825 830

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850 855 860

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gtgccctgag aacaacgcag actgatgccg atgatgcgaa gcgcaaacgg aaacgtcgtc 780

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Val His Leu Lys Leu Leu Pro Arg Ile Asp Tyr Thr Arg Leu Arg Gly
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Ala Leu Arg Thr Thr Gln Thr Asp Ala Asp Asp Ala Lys Arg Lys Arg
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Lys Arg Arg Pro Pro Ala Lys Pro Phe Asp Pro Glu Ala Ile Arg Ala
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Ile Gly Gly Glu Val Thr Ser Asp Gly Asp Phe Leu Val Phe Glu Gly
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<213> Artificial Sequence

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<223> T7 phage promoter

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<223> Partial YFP coding sequence

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 <210> 20
 <211> 218
 <212> DNA
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 <210> 21
 <211> 424
 <212> DNA
 <213> *Diabrotica virgifera*

 <220>
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 <223> n is a, c, g, or t

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 <213> *Diabrotica virgifera*

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 <212> DNA
 <213> *Diabrotica virgifera*

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 <211> 330
 <212> DNA
 <213> *Diabrotica virgifera*

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<210> 25
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 <213> *Diabrotica virgifera*

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<223> Probe hpSpt5-1 v1 REV Set 1

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tcaactccgc ctacatccgg ccatatccgg caacgacgac ttctctatga ctaaattaag      4020
tgacggacag ataggcgata ttgcatactt gcatcatgaa ctcatttgta caacagtgat      4080
tgtttaattt atttgctgcc ttccttatcc ttcttgtaaa actatatggt acacacatgt      4140
atcattaggt ctagtagtgt tgttgcaaag acacttagac accagagggt ccaggagtat      4200
cagagataag gtataagagg gagcagggag cag                                     4233

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<210> 70
<211> 20
<212> DNA
<213> Artificial Sequence

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<220>
<223> Primer GAAD1-F

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<400> 70
tgttcggttc cctctaccaa                                                    20

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<210> 71
<211> 22
<212> DNA
<213> Artificial Sequence

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<220>
<223> Primer GAAD1-R

```

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<400> 71
caacatccat caccttgact ga                                                    22

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<210> 72
<211> 24
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Probe GAAD1-P (FAM)

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<400> 72
cacagaaccg tcgcttcagc aaca 24

<210> 73
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer IVR1-F

<400> 73
tggcggacga cgacttgt 18

<210> 74
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer IVR1-R

<400> 74
aaagtttgga ggctgccgt 19

<210> 75
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe IVR1-P (HEX)

<400> 75
cgagcagacc gccgtgtact tctacc 26

<210> 76
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer SPC1A

<400> 76
cttagctgga taacgccac 19

<210> 77
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer SPC1S

<400> 77
gaccgtaagg cttgatgaa 19

<210> 78
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe TQSPEC (CY5*)

<400> 78
cgagattctc cgcgctgtag a 21

<210> 79
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer ST-LS1-F

<400> 79
gtatgtttct gcttctacct ttgat 25

<210> 80
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer ST-LS1- R

<400> 80
ccatgttttg gtcatatatt agaaaagtt 29

<210> 81
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe ST-LS1-P (FAM)

<400> 81
agtaatatag tatttcaagt atttttttca aaat 34

<210> 82
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer Loop_F

<400> 82
 ggaacgagct gcttgcgtat 20

<210> 83
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer Loop_R

<400> 83
 cacggtgcag ctgattgatg 20

<210> 84
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Probe Loop_FAM

<400> 84
 tcccttccgt agtcagag 18

<210> 85
 <211> 865
 <212> DNA
 <213> Euschistus heros

<400> 85
 agaaatcata gatagtggca ggaaaattaa aacggtgttg gcccttggaa ccgttggaag 60
 aaatcagtat ggcccgaagg ctgaaaagtt tggagacccc tggattagag aatagaattt 120
 caccccaatg gtaatctcta atagtcaata ttgctgtaaa ttgaataata gtttaatgat 180
 tctttgttaa caggtggaag ttctgcttat gctgcttcgg catctccagg tagtggaata 240
 ggaccttttg gaacaccttc cctacatca tacagtccac gcaactccagg gagcagtgca 300
 tctccttata aatctagttc agattcatct gatggagatt gggttacgac tggatttgaa 360
 gtccgtataa aagattcgca cgatgatgat ggcttatctg gacaaactgg aactgtcaaa 420
 acagtatctg gaggaatgtg tacacttttc ttgttggctg aagacaggac tgttaccatc 480
 acaagtgata gattggcacc agtaaaacca caacagaatg atacagtga ggtgatcaaa 540
 gggaaaaaag acaaggatca gactggcagg cttgtttcaa ttgatcatgt tgagggcggtt 600
 gtcagtttca gtaatggaga attaaacatg ttcccaatgg attttctatg taaaatgtcc 660
 gctggtagcc aataggtgtt ttgggttcta attattaaaa ttaacttctt tactttattc 720
 ctgttatagt atcaaatgca gttatttgtg tattcctgtc ttatattatt aaattcacta 780

gcttttgctt ctaaagatg aaatcttaat ttcttttttt tttaagaaca tataaatgca 840
 aaatattatt ttaaaaaagg tgaat 865

<210> 86
 <211> 167
 <212> PRT
 <213> Euschistus heros

<400> 86

Phe Asn Asp Ser Leu Leu Thr Gly Gly Ser Ser Ala Tyr Ala Ala Ser
 1 5 10 15

Ala Ser Pro Gly Ser Gly Ile Gly Pro Phe Gly Thr Pro Ser Pro Thr
 20 25 30

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

Ser Ser Asp Ser Ser Asp Gly Asp Trp Val Thr Thr Gly Ile Glu Val
 50 55 60

Arg Ile Lys Asp Ser His Asp Asp Asp Gly Leu Ser Gly Gln Thr Gly
 65 70 75 80

Thr Val Lys Thr Val Ser Gly Gly Met Cys Thr Leu Phe Leu Leu Ala
 85 90 95

Glu Asp Arg Thr Val Thr Ile Thr Ser Asp Arg Leu Ala Pro Val Lys
 100 105 110

Pro Gln Gln Asn Asp Thr Val Lys Val Ile Lys Gly Lys Lys Asp Lys
 115 120 125

Asp Gln Thr Gly Arg Leu Val Ser Ile Asp His Val Glu Gly Val Val
 130 135 140

Ser Phe Ser Asn Gly Glu Leu Asn Met Phe Pro Met Asp Phe Leu Cys
 145 150 155 160

Lys Met Ser Ala Gly Ser Gln
 165

<210> 87
 <211> 496
 <212> DNA

<213> Euschistus heros

<400> 87

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cgtataaaag attcgcacga tgatgatggc ttatctggac aaactggaac tgtcaaaaca      180
gtatctggag gaatgtgtac acttttcttg ttggctgaag acaggactgt taccatcaca      240
agtgatagat tggcaccagt aaaaccacaa cagaatgata cagtgaaggt gatcaaaggg      300
aaaaaagaca aggatcagac tggcaggctt gtttcaattg atcatgttga gggcgttgtc      360
agtttcagta atggagaatt aaacatgttc ccaatggatt ttctatgtaa aatgtccgct      420
ggtagccaat aggtgttttg gtttctaatt attaaaatta acttctttac tttattcctg      480
ttatagtatc aaatgc      496
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<210> 88

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer BSB_spt5-1_For

<400> 88

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<210> 89

<211> 51

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer BSB_spt5-1_Rev

<400> 89

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ttaatacgac tcactatagg gagagcattt gatactataa caggaataaa g      51
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<210> 90

<211> 301

<212> DNA

<213> Artificial Sequence

<220>

<223> YFPv2 coding sequence

<400> 90

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catctggagc acttctcttt catgggaaga ttccttacgt tgtggagatg gaagggaatg      60
ttgatggcca cacctttagc atacgtggga aaggctacgg agatgcctca gtgggaaagg      120
ttgatgcaca gttcatctgc acaactgggt atgttcctgt gccttggagc acacttgtca      180
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ccactctcac ctatggagca cagtgccttg ccaagtatgg tccagagttg aaggacttct 240
acaagtcctg tatgccagat ggctatgtgc aagagcgcac aatcaccttt gaaggagatg 300
g 301

<210> 91
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer YFPv2_F

<400> 91
ttaatacgac tcactatagg gagagcatct ggagcacttc tctttca 47

<210> 92
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer YFPv2_R

<400> 92
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<210> 93
<211> 3711
<212> RNA
<213> Diabrotica virgifera

<400> 93
ggcaguuuga agcacaguaa aaaccaacag uuugaagguu uucuguuucu gugguuuugg 60
aaauuaaua gaaacaagaa uuguauucuu guauuaaua uauacacagc uucgcuuac 120
uuaaacuuaa uuuaauuuu auagaagaca cgaugaauac ucaaaccgca acauaaccua 180
uucacuaaua uucaguguac aaaauagcaa auaugucuga uucggagggg agcaacuuuu 240
cggauaacga aaugcgucu gcagcggggg cgguagguc ccgcagcuca agagguagcg 300
uucgaaguag aucuagauc cgcucuagau ccaggucgag auccaugucg aaaaguagau 360
cgagauacc aucaagaggc ucaagaauu ccagaucagc aucacggucu cccucucguu 420
caagaucaag aucaccuucu agaucucggg cucguucacg cucccgauagc aaaucuagau 480
cacgaagcag guccaggagc agaucggcaa gaucuggauc agaagcaaaa gaagcuucag 540
guccugagga uguuguggag gaagaagaac cagauggaga uagucuaagg ucagacgaau 600
augacaguga agaagaugaa agugaugaug gggguagagc aaagaaaagg aaaaagaaua 660

aagacagaua	uggcggauuu	auuauugacg	aagcugaggu	agaugacgaa	guugaagaug	720
aagaugaug	ggaagaugga	gcacaagaaa	uuggaaugu	uccuaacgaa	guugacgagu	780
uuggaccuac	agcaagagaa	auugaaggaa	gaagaagagg	aacaaauua	ugggaugcuc	840
agaaggauc	agaaauugag	gaauaccuaa	aaagaaaaua	ugcugaugau	ggagcagcaa	900
ucaaacauuu	uggagauggc	ggugaagaaa	ugucagauga	aaucacacaa	caaacauuau	960
ugccaggugu	uaaagaucac	aacuugugga	uggucaagug	uagaauugga	gaggaaaaau	1020
cuacuugccu	cuuacuuaug	cgaaaguuuu	uggcuuacca	aaauaccaau	gaaccuuugc	1080
aaaucaaguc	aguaguagca	ccugaaggug	uuaaaggaua	cauauauuu	gaagccuaca	1140
aacaaccuca	ugucaaggcu	gcuauccaga	augugggaaa	uuuaagaug	gguaucugga	1200
aacagcagau	gguucccauc	aaggaaauga	cggauguuuu	aagaguugug	aaagaacaaa	1260
cugguuugaa	aucaaaacag	uggguaaggc	uuagcgagg	ucuuuacaaa	gaugacauug	1320
ccaagucga	uuauuuugau	auggcacaaa	aucagguaca	ucuuaaaauu	uuaccaagaa	1380
uugacuacac	acguuugaga	ggagcccuaa	gaacagcaca	aacagaauuc	gaagcagaaa	1440
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uaggugguga	aguuacgucc	gauggugacu	uuuuauucuu	ugaagguaau	cguuacucac	1560
gcaagggcuu	ucuauacaaa	aauuuuaccc	ucagcgccgu	uauaaugau	gguguaagc	1620
cgaccuuggc	agaacuggaa	agguucgaag	aacaaccuga	aggaaucgau	uuggaaugu	1680
ccguggauaa	agaggagaaa	gcuguuacuc	auucauucag	cgcgaggagau	aacguugaag	1740
uuugugaagg	ugaauugauc	uauuugcagg	guaaaaucau	cagcaucgau	ggacacauga	1800
uaaccguaau	gccc aaacac	gaggauuuga	aagaggcauu	gguguuucua	gcuuaugaau	1860
ugaagaagua	uuu caaaacu	ggagaucaug	uaaaaguuuu	ggcagggcg	uauagaaggag	1920
acacugguuu	gguagucaga	guagaaaaua	acagagucgu	auugauaucu	gaccugacua	1980
ugcacgaaa	ggaaauucua	ccaaaagacu	uacaauuaug	uacugauaug	gcuaguggug	2040
ucgauucacu	agguaaaauuc	gauggggug	aucuuguaaa	ccuggaugcu	gaaacuguug	2100
gaguauuuau	uagguuggaa	agggaaaaau	uccauguuuu	gaauaugcac	ggcaaaguug	2160
uugaaugcag	gccuggaucg	uuacagaaga	gaaggaucca	uaauuacacu	gcagccuugg	2220
auucauaccg	gaacaauuuu	cauagaagag	auauggucaa	aguaaucgau	gggccacauu	2280
cuggauuuuc	uggagaaaau	aaacaucucu	auagaaaauu	cgcauuucuc	uacucagugg	2340
aauuuuugca	aauggguggu	auauuugugu	gcaaaacuaa	gcaucuucag	uuggcuggag	2400
gcaacaagaa	caugccuucu	gcagauauug	gcauuggaau	ggaguuuuug	uccccgagaa	2460

gaaguucucc aaugcaucca ucaaguggug gaggugcagc cggagcagcu uucggugccu 2520
uuggagcugg uagaccugcu gguggagccg guagaggaag agggagcaga gauagagauc 2580
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guuauggcaa aacuccagca uacgcgggua accagacucc uuuguacaga gauucuggca 2820
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cugcuucuag caacaauccg uacagcacuc ccaguucugg guauagcccg acaugccgu 3180
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gcuuuauuag aagcauauu gcagcuauug guacaguuuu ccuuccugaa gaagauagag 3360
uuguuaacau cauauccgcu caucuagau caguacggcc acaaagagga gaucaguuaa 3420
agguaauuau uggggaagaa cgagagcaaa cuggcgaacu ucuuucuaa gaugcaaacg 3480
aaggaguagu uaaaaauaag gacgauauu cuauccugcc cuuacaaaau uuaugcaaga 3540
ugaggcccuc aggucaaaaa aaauaugaac uuuuugaaau acguuaaguu guacguugau 3600
ugugaacgug aaaaauuuu ggauucgauu uuagguaaua uauaaaaau aaauauaugu 3660
cgauguaau ugaauuuu aaaaauagag uauuaguagu caaaaaaca a 3711

<210> 94

<211> 943

<212> RNA

<213> *Diabrotica virgifera*

<400> 94

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aaauugagau ccgacgacgu ggcaaucugu gggacaauca aaaggaagac gaaauugaag 180
aaauaucgaa gaagcgauu gcugaugaau cgaucgcacg ucgacauuuc ggugauggcg 240
gugaagagau guccgacgaa auuacacagc agacguugcu gccgacaauc aaggauccca 300
auuuguggau ggugaaaugu cgcaucggcg aggaaaagau aacugcacug cuguugaugc 360

gcaaaauuuu gacauaccaa aacaccgacg aaccgcugca aaauaaagcg guuguugcac 420
cggaaggugu caaaggauac aucuacgugg aagcauucac acagacgcau guaaaggcau 480
ccaaucaaua cgucaguaau uuacgaaugg gacaauggaa acaggaaaug gugccaauc 540
aggaaaugac agacguucug aagguuguca aagaacagac uggccugaaa ccgaaacaau 600
ggguucgucu aaaacgcagu caguacaaag augacauugc gcaaguggac uacguggaca 660
uggcacaaaa ucaaguucac uuaaaacugc ugccacguau cgauuacacu cgauugcgcg 720
gugcccugag aacaacgcag acugaugccg augaugcgaa gcgcaaacgg aaacgucguc 780
caccagcaaa accauucgau ccggaagcca uucgagcgau cggcggugag gucacaucug 840
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auuucuuau cucggccauu cugucggaag gugugaagcc aac 943

<210> 95
<211> 479
<212> RNA
<213> *Diabrotica virgifera*

<400> 95
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ggagacacug guuugguagu cagaguagaa auaacagag ucguauugau aucugaccug 120
acuaugcacg aauggaaaau ucuacaaaa gacuuacaau uauguacuga uauggcuagu 180
ggugucgauu cacuagguaa auucgaaugg ggugaucuuu uaaaccugga ugcugaaacu 240
guuggaguua uuauuagguu ggaaagggaa aauuuccaug uuuugaauau gcacggcaaa 300
guuguugaau gcaggccugc aucguuacag aagagaagga uccaauaaau cacugcagcc 360
uuggauucac accggaacaa uuacauaga agagauaugg ucaaaguaau cgaugggcca 420
cauucuggau uuucuggaga aaauaaacau cucuauagaa auuucgauu ucucucuc 479

<210> 96
<211> 480
<212> RNA
<213> *Diabrotica virgifera*

<400> 96
gucgcaucgg cgaggaaaag auaacugcac ugcuguugau gcgcaauuu uugacauacc 60
aaaacaccga cgaaccgcug caaauaaaag cgguguugc accggaaggu gucaaaggau 120
acaucucgu ggaagcauuc aaacagacgc auguaaaggc auccaaucau aacgucagua 180
auuucgaaug gggacaugg aaacaggaaa uggugccaau caaggaaaug acagacguuc 240
ugaagguugu caaagaacag acuggccuga aaccgaaaca auggguucgu cuaaaacgca 300

gucaguacaa agaugacauu gcgcaagugg acuacgugga cauggcaciaa aaucaaguuc 360
 auuuuuuuuu gcugccacgu aucgauuaca cucgauugcg cggugcccug agaacaacgc 420
 agacugaugc cgaugaugcg aagcgcaaac ggaaacgucg uccaccagca aaaccauucg 480

<210> 97
 <211> 114
 <212> RNA
 <213> *Diabrotica virgifera*

<400> 97
 agaguagaaa auaacagagu cguauugaua ucugaccuga cuaugcacga aauggaaaau 60
 cuacccaaaag acuuacaauu auguacugau auggcuagug gugucgauuc acua 114

<210> 98
 <211> 108
 <212> RNA
 <213> *Diabrotica virgifera*

<400> 98
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 uuuucuggag aaauuaaaca ucucuauaga aaauucgcau uucucuac 108

<210> 99
 <211> 865
 <212> RNA
 <213> *Euschistus heros*

<400> 99
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 aaucagauu ggcccgaagg cugaaaaguu uggagacccc uggauuagag aaugaauuu 120
 caccccaug guaaucucua auagucaaua uugcuguaaa uugaauaaua guuuauugau 180
 ucuuuguuaa cagguggaag uucugcuuau gcugcuucgg caucuccagg uaguggaaua 240
 ggaccuuuug gaacaccuuc ccuacauca uacaguccac gcacuccagg gagcagugca 300
 ucuccuuauc aaucuaguuc agauucaucu gauggagauu ggguuacgac ugguaugaa 360
 guccguauaa aagauucgca cgaugaugau ggcuuauucg gacaaacugg aacugucaaa 420
 acaguaucug gaggaauug uacacuuuuc uuguuggcug aagacaggac uguuaccauc 480
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 gggaaaaaag acaaggauca gacuggcagg cuuguuucaa uugaucaugu ugagggcgau 600
 gucaguuuca guaauggaga auuaaacaug uucccaaugg auuuucuaug uaaaauugucc 660
 gcugguagcc aaagguguu uugguuucua auuaauaaaa uuaacuucuu uacuuuauuc 720

cuguuauagu aucaaaugca guuauuugug uauuccuguc uuauuuuuu aaauucacua	780
gcuuuugcuu cuaaaugaug aaauucuaau uucuuuuuuu uuuaagaaca uauaaaugca	840
aaauuuuuu uuaaaaaagg ugaau	865

<210> 100
 <211> 496
 <212> RNA
 <213> Euschistus heros

<400> 100	
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cguauaaaag auucgcacga ugaugauggc uuauucuggac aaacuggaac ugucaaaaca	180
guauucuggag gaugugugac acuuuuucug uuggcugaag acaggacugu uaccaucaca	240
agugauagau uggcaccagu aaaaccacaa cagaugaua cagugaaggu gaucaaaggg	300
aaaaaagaca aggaucagac uggcaggcuu guuucuuug aucauguuga gggcguuguc	360
aguucacua auggagaauu aaacauguuc ccauggauu uucauguaa aauguccgcu	420
gguagccaau agguuuuuug guuucuaauu auuaaaaua acuuuuuac uuauuuccug	480
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<210> 101
 <211> 3246
 <212> DNA
 <213> Meligethes aeneus

<220>
 <221> misc_feature
 <222> (1962)..(1995)
 <223> n is a, c, g, or t

<400> 101	
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agtaggtcta gaagtagatc aaggggtcga agtagatcac gatccagatc gaggtcaaga	180
tctggtagta gatctgctag atcaggttct gaagctcgcg aagcttctgg taatgaagag	240
gttgctgatg aggaggaacc tgaaggtgat agtttaaatg agtatgacag tgaagaagat	300
gaatcggacg atggtagaca tgctaaaaaa cgtaaaaagg ataggtttcg tgattttatt	360
attgatgaag ctgaagttga tgacgaggtt gaagacgaag atgaatggga agacggagcc	420
caagagattg gaattgtccc caatgaagtg gacgaatttg gtccgacagc cagagaaatt	480

gaagggagac	gaagaggaac	taaccttttg	gacgctcaga	aagagcatga	aatcgaggag	540
tatctaagga	aaaagtatgc	tgatgacagt	gttgccgcta	aacatttcgg	agatggtggg	600
gaggagatgt	ccgacgagat	tactcagcaa	actctgttac	ctggtgtaaa	agacccaaat	660
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cattga 3246

<210> 102
<211> 1069
<212> PRT
<213> Meligethes aeneus

<400> 102

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Ser Lys Ser Arg Ser Arg Ser Pro Ser Arg Ser Arg Ser Arg Ser Arg
35 40 45

Gly Arg Ser Arg Ser Arg Ser Arg Ser Arg Ser Arg Ser Gly Ser Arg
50 55 60

Ser Ala Arg Ser Gly Ser Glu Ala Arg Glu Ala Ser Gly Asn Glu Glu
65 70 75 80

Val Ala Asp Glu Glu Glu Pro Glu Gly Asp Ser Leu Asn Glu Tyr Asp
 85 90 95

Ser Glu Glu Asp Glu Ser Asp Asp Gly Arg His Ala Lys Lys Arg Lys
 100 105 110

Lys Asp Arg Phe Arg Asp Phe Ile Ile Asp Glu Ala Glu Val Asp Asp
 115 120 125

Glu Val Glu Asp Glu Asp Glu Trp Glu Asp Gly Ala Gln Glu Ile Gly
 130 135 140

Ile Val Pro Asn Glu Val Asp Glu Phe Gly Pro Thr Ala Arg Glu Ile
 145 150 155 160

Glu Gly Arg Arg Arg Gly Thr Asn Leu Trp Asp Ala Gln Lys Glu His
 165 170 175

Glu Ile Glu Glu Tyr Leu Arg Lys Lys Tyr Ala Asp Asp Ser Val Ala
 180 185 190

Ala Lys His Phe Gly Asp Gly Gly Glu Glu Met Ser Asp Glu Ile Thr
 195 200 205

Gln Gln Thr Leu Leu Pro Gly Val Lys Asp Pro Asn Leu Trp Met Val
 210 215 220

Lys Cys Arg Ile Gly Glu Glu Lys Ser Thr Cys Leu Leu Leu Met Arg
 225 230 235 240

Lys Phe Leu Ala Tyr Gln Asn Thr Asn Glu Pro Leu Gln Ile Lys Ser
 245 250 255

Val Val Ala Pro Glu Gly Val Lys Gly Tyr Ile Tyr Ile Glu Ala Phe
 260 265 270

Lys His Pro His Val Lys Ala Ala Ile Glu Asn Val Gly Asn Leu Arg
 275 280 285

Met Gly Met Trp Lys Gln Gln Met Val Pro Ile Lys Glu Met Thr Asp
 290 295 300

Val Leu Arg Val Val Lys Glu Gln Thr Gly Leu Lys Ser Arg Gln Trp
 305 310 315 320

Val Arg Leu Lys Arg Gly Leu Tyr Lys Asp Asp Ile Ala Gln Val Asp
 325 330 335

Tyr Phe Asp Met Ala Gln Asn Gln Val His Leu Lys Leu Leu Pro Arg
 340 345 350

Ile Asp Tyr Thr Arg Leu Arg Gly Ala Leu Arg Thr Thr Gln Ser Glu
 355 360 365

Ser Glu Ala Glu Lys Arg Lys Lys Lys Arg Arg Pro Pro Ser Lys Pro
 370 375 380

Phe Asp Pro Glu Ala Ile Arg Ala Ile Gly Gly Glu Val Thr Gln Asp
 385 390 395 400

Gly Asp Phe Leu Ile Phe Glu Gly Asn Arg Tyr Ser Arg Lys Gly Phe
 405 410 415

Leu Tyr Lys Asn Phe Thr Met Ser Ala Val Leu Ile Glu Gly Val Lys
 420 425 430

Pro Thr Leu Ala Glu Leu Glu Arg Phe Glu Glu Gln Pro Glu Gly Ile
 435 440 445

Asp Leu Glu Leu Pro Thr Glu Lys Glu Asp Lys Ala Val Thr His Ser
 450 455 460

Phe Ser Ala Gly Asp Asn Val Glu Val Ser Glu Gly Glu Leu Ile Asn
 465 470 475 480

Leu Gln Gly Lys Ile Val Ser Ile Asp Gly Ser Met Ile Thr Val Met
 485 490 495

Pro Lys His Glu Glu Leu Lys Asp Pro Leu Val Phe Gln Ala Asn Glu
 500 505 510

Leu Arg Lys Tyr Phe Lys Met Gly Asp His Val Lys Val Leu Ser Gly
 515 520 525

Arg Tyr Glu Gly Asp Thr Gly Leu Ile Val Arg Val Glu Asn Asn Arg
 530 535 540

Val Val Leu Ile Ser Asp Leu Thr Met His Glu Met Glu Ile Leu Pro
 545 550 555 560

Lys Asp Leu Gln Leu Cys Thr Asp Met Ala Ser Gly Val Asp Ser Leu
 565 570 575

Gly Lys Phe Glu Trp Gly Asp Leu Val Asn Leu Asp Ala Glu Thr Val
 580 585 590

Gly Val Ile Val Arg Leu Glu Arg Glu Asn Phe His Val Leu Asn Met
 595 600 605

His Gly Lys Val Val Glu Val Arg Pro Gly Ser Leu Gln Lys Arg Arg
 610 615 620

Leu Asn Arg Phe Thr Ala Ala Leu Asp Ser Tyr Arg Asn Asn Leu His
 625 630 635 640

Arg Arg Asp Met Val Lys Val Ile Asp Gly Pro His Asn Phe Ala Phe
 645 650 655

Leu Tyr Ser Val Thr Phe Leu Gln Asn Gly Gly Ile Phe Val Cys Lys
 660 665 670

Thr Lys His Leu Gln Leu Ala Gly Gly Asn Lys Thr Leu Pro Ser Ala
 675 680 685

Glu Ile Gly Ser Gly Met Glu Phe Met Ser Pro Arg Arg Ala Ser Pro
 690 695 700

Met His Pro Ser Ser Gly Gly Gly Gly Ala Ala Gly Gly Gly Gly Gly
 705 710 715 720

Gly Gly Gly Gly Gly Gly Phe Gly Gly Gly Gly Arg Gly Gly Ala His
 725 730 735

Gly Gly Gly Gly Arg Gly Arg Ala Thr Arg Asp Arg Asp Leu Ile Gly
 740 745 750

Thr Thr Ile Lys Ile Thr Arg Gly Pro Tyr Lys Gly Asn Ile Gly Ile
 755 760 765

Val Lys Asp Ala Thr Gln Ser Thr Ala Arg Ile Glu Leu His Thr Ser
 770 775 780

Cys Gln Thr Ile Ser Val Asp Arg Asn Asn Ile Ala Asp Val Gly Ala
 785 790 795 800

Thr Lys Asp Thr Ala Gly Ser Ala Thr Ser Tyr Gly Arg Thr Pro Ala
805 810 815

Tyr Thr Gly Asn Gln Thr Pro Leu Tyr Arg Glu Ser Gly Asn Lys Thr
820 825 830

Pro Met Cys Asp Ser Gly Gly Ser Arg Thr Pro Leu His Tyr Gly Ser
835 840 845

Met Thr Pro Leu His Asp Gly Ser Arg Thr Pro Asn Ala Gly Ser Glu
850 855 860

Trp Asp Ala Ser Val Ser Gln Ala Tyr Pro Ser Pro Gly Tyr Asp Pro
865 870 875 880

Ser Thr Pro Ala Tyr Gln Val Asn Gly Pro Phe Thr Pro Gln Thr Pro
885 890 895

Gly Thr Met Tyr Glu Ser Thr Tyr Ser Pro Tyr Gln Thr Ser Pro Gly
900 905 910

Tyr Gln Ser Ala Ile Ser Thr Pro Ser Pro Gly Thr Gly Tyr Gly Gln
915 920 925

Ser Pro Ala Ser Asn Asn Pro Tyr Asn Thr Pro Ser Ser Gly Tyr Ser
930 935 940

Pro Ala Tyr Asn Pro Gln Thr Pro Gly Ala Gly Leu Asp Ile Leu Pro
945 950 955 960

Met Thr Asp Trp His Thr Val Asp Ile Glu Val Arg Ile Arg Asp Gly
965 970 975

Asp Ser Gly Leu Val Gly Gln Thr Gly Val Ile Arg Ser Ile Ser Gly
980 985 990

Ala Met Cys Ser Val Phe Leu Pro Glu Glu Asp Arg Val Val Asn Ile
995 1000 1005

Met Ser Asp His Leu Asp Pro Val Arg Pro Gln Arg Gly Asp Asp
1010 1015 1020

Phe Lys Val Ile Ile Gly Glu Glu Arg Glu Ala Thr Gly Glu Leu
1025 1030 1035

Leu Ser Ile Asp Leu His Glu Gly Val Val Lys Ile Lys Glu Glu
 1040 1045 1050

Ile Lys Met Leu Pro Leu Gln Asn Leu Cys Lys Met Arg Lys Asp
 1055 1060 1065

His

<210> 103
 <211> 424
 <212> DNA
 <213> *Meligethes aeneus*

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 tgaaatcgag gagtatctaa ggaaaaagta tgctgatgac agtgttgccg ctaaaccattt 180
 cggagatggt ggggaggaga tgtccgacga gattactcag caaactctgt tacctggtgt 240
 aaaagaccca aatctgtgga tggtaaaatg ccgcacgagc gaggaaaaat ccacgtgctt 300
 gctgctcatg cgcaaattcc tcgcctacca aaacacgaac gaacccctcc aaataaaatc 360
 ggtcgtagcg cccgagggcg tcaaaggcta catctacatc gaggccttca aacatccgca 420
 cgtc 424

<210> 104
 <211> 110
 <212> DNA
 <213> *Diabrotica virgifera*

<400> 104
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 ttttctggag aaattaaaca tctctataga aatttcgcat ttctctactc 110

<210> 105
 <211> 153
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Loop linker polynucleotide

<400> 105
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 catagggaac gagctgcttg cgtatttccc ttccgtagtc agagtcatca atcagctgca 120

ccgtgtcgtgta aagcgggacg ttcgcaagct cgt 153

<210> 106
 <211> 3246
 <212> RNA
 <213> Meligethes aeneus

<220>
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 <222> (1962)..(1995)
 <223> n is a, c, g, or u

<400> 106
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 gugagaucag guucucguag ccgaucaaga ucgguuucca aaucucgauc uagaucucca 120
 aguaggucua gaaguagauc aaggggucga aguagaucac gauccagauc gaggucaaga 180
 ucugguagua gaucugcuag aucagguucu gaagcucgcg aagcuucugg uaaugaagag 240
 guugcugaug aggaggaacc ugaaggugau aguuaaaug augaugacag ugaagaagau 300
 gaaucggacg augguagaca ugcuaaaaaa cguaaaaagg auagguuucg ugauuuuuuu 360
 auugaugaag cugaaguuga ugacgagguu gaagacgaag augaauaggga agacggagcc 420
 caagagauug gaauuguccc caaugaagug gacgaauuug guccgacagc cagagaaaau 480
 gaagggagac gaagaggaac uaaccuuugg gacgcucaga aagagcauga aaucgaggag 540
 uaucuaagga aaaaguaugc ugaugacagu guugccgcua aacauuucgg agaugguggg 600
 gaggagaugu cgcacgagau uacucagcaa acucuguuac cugguguaaa agaccctaaau 660
 cuguggaugg uaaaaugccg caucggcgag gaaaaaucca cgugcuugcu gcucaugcgc 720
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nnnnnnnnnn nnnnnuucgc guuuuuguc uccgucacuu uccugcaaaa cggcgguauu	2040
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aaaauaaaag aagaaauaaa gauguugccg uuacaaauc ucugcaagau gcgcaaagau	3240
cauga	3246

<210> 107
 <211> 424
 <212> RNA
 <213> *Meligethes aeneus*

<400> 107	
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ugaaaucgag gaguaucuaa ggaaaaagua ugcugaugac aguguugccg cuaaacauuu	180
cggagauggu ggggaggaga uguccgacga gauuacucag caaacucugu uaccuggugu	240
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gcugcucaug cgcaauucc ucgccuacca aaacacgaac gaacccucc aaauaaauc	360
ggucguagcg cccgagggcg ucaaaggcua caucuacuc gaggccuua acauccgca	420
cguc	424

<210> 108
 <211> 110
 <212> RNA
 <213> *Diabrotica virgifera*

<400> 108	
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uuuucuggag aaauaaaca ucucuauaga aaauucgau uucucuacuc	110