

SEQUENCE LISTING

<110> Monsanto Technology LLC
 <120> PLANT REGULATORY ELEMENTS AND USES THEREOF
 <130> MONS:468WO
 <150> US 62/790,570
 <151> 2019-01-10
 <160> 19
 <170> PatentIn version 3.5
 <210> 1
 <211> 435
 <212> DNA
 <213> *Setaria italica*
 <220>
 <221> misc_feature
 <222> (1)..(435)
 <223> DNA sequence of the 3' UTR, T-SETit.Ams1:1, derived from the
 S-adenosylmethionine synthetase 1 protein gene from *Setaria
 italica* (Foxtail millet).
 <400> 1
 ggcgcccttt gagaagaagc ttttggtctg ctgcgcttat catgttttgt ggcttctgtg
 60
 ttgtgattct tgatctgccc cttgctatca tttgtattgt actgtcctaa taagtggtag
 120
 ttgtgagggg attactgtgt ctgggtatctt acctagagga ggaattattg tctgctattt
 180
 ctgggttttgc tgtttatgta atggtgaacc aaagaatgaa gctgcagggt actttgagaa
 240
 ggaaggggac ctgctgcttt ctatcttgtc atgcgtgatt acttgaacag tcctgatgat
 300
 ctattaatgt tctttggtca gtgcaagtgt ttggtgtagc tccaacaggt agtgtttatg
 360
 tttggtgaag cagcaatggc cgactgtatg tgtttggtga agctgcaacc tgcttgtgct
 420
 aactgaacat gcaga
 435

<210> 2
<211> 561
<212> DNA
<213> Coix lacryma-jobi

<220>
<221> misc_feature
<222> (1)..(561)
<223> DNA sequenced of the 3' UTR, T-Cl.Hsp16.9_2:1, derived from the Hsp16.9 (heat shock protein 16.9) protein gene from Coix lacryma-jobi (Job's tears).

<400> 2
atgaagtgcc atcatgccat ggatgcgggg tgaaagctcg cggcgtcgaa tataatctcc
60

ggttcagtt tcagctacta tggcgactcg tgctgtgtgt gtgtgggttac tctgcttttg
120

tatgtttggt aatggtgtgt gcgctgttgt ccagagtttc atggtgggtac tgcttcctag
180

cagtgttgtg tactagtctc ggtactttgc ctgtatgttg agctcggctc agtatgttct
240

gggagtgaat aaataaaaat aaaaaaaacc agatattgta gtataactaac tgccgttgct
300

ctgtttcatc cacatacaca gaatcctatg aactgatctt tgtggggact tgggagccat
360

ctgctcggat cttcttcatg ggattctctc aatttctcct cttttttcta aggctgtgtg
420

ttagatgta gggagaaaag tttttggatt gtacatcgtg ttgggtacta atttagtcta
480

ctactccgtc cgtgaataga tgacattttc tttcgggtgt gttcgtcgtg ccacaaagtt
540

ttgaatttat ttatatgcaa t
561

<210> 3
<211> 499
<212> DNA
<213> Eragrostis tef

<220>
<221> misc_feature
<222> (1)..(499)

<223> DNA sequence of the 3' UTR, T-ERIrA.Hsp17.9_3:1, derived from a putative heat shock protein gene from *Eragrostis tef* (Tef).

<400> 3

tcgatcggcg cggaggcggc tctctgttct cgcacgctgt tgatgcgtaa aacggactag
60

tatcggacgg tgtgcgacga cagtgaagata tcagcagttt cctcctgtcg taagctttat
120

ttctgccctg gtttggttga ctttgtcttc attttcatcg acctcttcct cctgcatgta
180

aaaagaagaa gaaaatagcc atgcgcgggtg tgtttcctct gttcttcgtg cttagtaa
240

gaaaagcaag ctaagctgga acctttcgtt ctctactact cctaatttct tggcatcgta
300

caattgatca gaaaaaaagc tttgttcctt gggttggtct ttgttttctg tgtgatcgat
360

ctgcctgctg catgtaaaac gaatatgaaa atgtccctgt gctatgtagt tcctctgtct
420

tttgtgctta gaaaatgaag agcaacctag gcttgaagcg ttctctgcaa ctaatttctt
480

ggcatcgttc gtgcaagag
499

<210> 4

<211> 680

<212> DNA

<213> *Saccharum ravennae*

<220>

<221> misc_feature

<222> (1)..(680)

<223> DNA sequence of the 3' UTR, T-ERIrA.Hsp16.9_3:1, derived from the Hsp16.9 (Heat shock protein 16.9) protein gene from *Saccharum ravennae* (hardy pampas grass).

<400> 4

gcacccatag acgtggattg aaggtgtact actgctgtgc tgggccgtgg ctgtcctgca
60

cggtttattt gcactgtggc ggaggatgtt tgctgtgtct tctacgatat gtactactac
120

ttccctttgt tccgtatatg tacatcttcc tcgtgtgggt catgtatttt ccctttgaat
180

aataataaat aaaatcaggt tttccatata ggatcggttg cttgtatttg tgtatggaga
240

ttgtgggtgta tagtttcatc tcagattggt tacgtcaaga attcaagata taatcaatgt
300

catcaaccta actcatttcc atctctagac aagcacttct gttaatcagg gagagcacat
360

gcaggctaca ctgctcgcct atatactccc tccgtcctag aaaggatgga attctcaaat
420

tttaagggtga gattagcggg gacgcgagat tacgcatgta aatttcaagg tgagattagc
480

ggagacgcga gattacgcat gtacccctgc tctccatcat tgcattctgga cttctggaga
540

attctttaca agttcattgc atctaatagcc ataagacacc cagggtgacg tgggccaaca
600

acagccacgc aatatacaca gtcacatddd ttacaaatca aagtatggta gaagccaaaa
660

taaccatgac cacacatddd
680

<210> 5
<211> 322
<212> DNA
<213> Artificial

<220>
<223> DNA sequence of the 3' UTR, T-ANDge.Hsp/Sb.Hsp, a chimeric 3' UTR
derived from heat shock protein genes from *Andropogon gerardii*
(big bluestem) and *Sorghum bicolor* (*Sorghum*).

<400> 5
actcctgggc cgcacgtccg gtcgtcgtgc ctgcgtgatt ggaggaaacg gcagttcgtc
60

tcggtcgttt tgtgaaataa ataaaatcat agagtgtttg tcactaatat ggtggtagtg
120

tggtatgatg gtggaatgtg gtcagaaact ctgcgtctct ttcgtatgta ctccgtccgt
180

atgatgtgag tatatctcgt gagtttgctc tttatctaag aatttcttca tttgtggtat
240

cttaagatct gtgttcatgt ttttcagttt ttgtcgcttt attgtatctc atcatcctaa
300

taagttggta atccattctc tc
322

<210> 6
<211> 2659
<212> DNA
<213> Artificial

<220>
<223> DNA sequence of an EXP, EXP-Zm.LTP-SETit.Act4 comprising a promoter and 5' UTR derived from a lipid transfer protein-like protein gene from Zea mays, operably linked 5' to an intron derived from an actin 4 gene from Setaria italica.

<400> 6
tgttcggatt catccctctc ttagatgccc acgttccttc tagagagcat ttgatcctgc
60

ttgcacggat gaagggggag cgacacactt acatgggtgc tctaacaagg atcaatgagg
120

agtgttgact ctctgatatc tcgataaaac atcatcatat taataatcct tctttacttt
180

gaacatttac attcaagcaa ttcaattctt gttttgtatt actataattg tcatgctgaa
240

atatggttga aacgcagtag gacgtagaaa ttttatgata taattgaaaa tttatgtatg
300

cttaaagagt gaagtgggct attcgatagc attgatctat tataagaagt attattttta
360

tataatttac cgttccttttg gacatccttag tcttgtatta aactatTTTT gaacttatgc
420

acgtcattta tgtttcttaa gcttggagct tgccaagtgt tttctggact ttgtgaagtg
480

catgaagcac tcggcaaaaag agttatctgc ggtagtgaag agttcgggta aatttattag
540

tacactcttt tttcataaac aagcggaacc atctagccaa cagtacgtca tacaaaaagg
600

gcacccaccg ttgtttgtgg gaatgctttt taagcaaatt caagcctcta actttgaatg
660

ttccaactga acataataaa ccttgacccg atcaggaaca gagctaaagc aaatttttagt
720

gattgcaatt gccttctgag cgcattcagt tttaccatgc aagggtgcac ccgtaccac
780

cgctatatgc aattatgcat agctctgcgc ttggatcccg tgaagtgcag aaaaaaaaaat
840

acttcaactg ttcaacaact tgggcgtcca ccgtccatgc atcaccatga tacctctgct
900

gatgttttagc actcgatcac gttactagat acaagcagcc aacccatatg acaagttcgt
960

cctaaactga ataaaaatga tcaaccatca agcgagaaca aacatcaaca tgcattccacc
1020

agtggagcaa tcttgggccac ttgcgctggt ctgcattgat cagccatcta attaataatc
1080

gccctcacat gcactcatgc tcacgggaat gtaaactcac acaacaacac tgctattaca
1140

ataatcggca ctgcgccgat ggttctccta taaatgcaac aatcaagcgc caccacgaac
1200

catcacaagc gcttagtgat cagttaatac taagggcagg cacacctctg cttcgcgcta
1260

gtgatcaagc aagtgccttc tgtactctgc agcatccccg gtaatctcct cctccccctc
1320

ccctccgctc cctggagccc ctctactcgc gatctcccca cgcactagct cctgctccag
1380

catttttcga gtgtttggcg ctccagatctg agcggcctgg ctccagatct gcggtttgct
1440

catgcgttct ggtcacttgc ctccggtgct cccgccagat ccggggcgggg taccgcgcga
1500

tccgccagcg gatcgtgctt cgtgggttggg gctaggggtgt tcgtctgacg tctgtgcttg
1560

atgaactccg tcctgttcct gatctgtagc gtttctgcgt gccgatgcgt ctgattttgt
1620

gcgcacgcct gatgtgtgtt tgcgggactg ccgtgcgagg aggctctctg agctacgtac
1680

ctaggaatgg tgactgtgat gtgcctgaat gcgcttacgt gttgctggcg atgcacgagc
1740

ccttggggtg tgactgcttg actacttccc agctccgacg ttctagtttc ctgcttgact
1800

gggagtctgg gagagcttcg tgatgctctg tctagcaagt ccagatagtt gcggtaactg
1860

gtaacatggg tggatgaaag tcgcggatag ttaatttggt gtgattgaac taccagagtg
1920

taaaaatccg tgtgtggttc attcggagag agctatttgg aaagcatatc tgcattgtag
1980

gatgtttcct tgtcatgaat agctattgag cacataccac ccaaatttag tgacaactta
2040

gtgatgtttc atggcaccaa atgttaggct gaaaagtcca gcatgtgatt tttgttgctc
2100

tgcaggtcac attttagaca acaaaaaagc ttgttagatt ggccagtaca tgtacactac
2160

tttttcaaag caatgctagt cttttcctat catgttttagt tatacgaatg tttggttatg
2220

gtactttaca catttttata aatgttgga acaacagtcc gcaagttatc agattatttc
2280

ttactctctc cgttccaaat tgtaggctcg tttgactttt gtaggttcat agatattatt
2340

atgcatctag atatagtgtg tgtctagggt cataataata tctatgaatc tagaaaagtc
2400

aaaacgacct acaatttgga acggagggag tacaacatta gcctagtcgg tgaaatgaat
2460

cccacttttg cctggcagta agctctgtac atatgttggt tttattgact tatagatgca
2520

caaataaaa ggttcagttg atatgccttc aaaactttta tgtttacgat gcttactggt
2580

tccttgttac agctactatc tagcaggata cacttgctgt taactgatac cccttttttg
2640

ctacctcttg cagggtagc
2659

<210> 7
<211> 1201
<212> DNA
<213> Zea mays

<220>
<221> misc_feature

<222> (1)..(1201)

<223> DNA sequence of a promoter, P-Zm.Ltp-1:1:2, derived from a lipid transfer protein-like protein from Zea mays.

<400> 7

tggtcggatt catccctctc ttagatgccc acgttccttc tagagagcat ttgatcctgc
60

ttgcacggat gaagggggag cgacacactt acatgggtgc tctaacaagg atcaatgagg
120

agtgttgact ctctgatatc tcgataaaac atcatcatat taataatcct tctttacttt
180

gaacatttac attcaagcaa ttcaattctt gttttgtatt actataattg tcatgctgaa
240

atatggttga aacgcagtag gacgtagaaa ttttatgata taattgaaaa tttatgtatg
300

cttaaagagt gaagtgggct attcgatagc attgatctat tataagaagt attattttaa
360

tataatttac cgttcttttg gacatcttag tcttgtatta aactatTTTT gaacttatgc
420

acgtcattta tgtttcttaa gcttggagct tgccaagtgt tttctggact ttgtgaagtg
480

catgaagcac tcggcaaaaag agttatctgc ggtagtgaag agttcgggta aatttattag
540

tacactcttt tttcataaac aagcggaacc atctagccaa cagtacgtca tacaaaaagg
600

gcaccaccg ttgtttgtgg gaatgctttt taagcaaatt caagcctcta actttgaatg
660

ttccaactga acataataaa ccttgaccg atcaggaaca gagctaaagc aaattttagt
720

gattgcaatt gccttctgag cgcattcagt tttaccatgc aagggtgcac ccgtaccac
780

cgctatatgc aattatgcat agctctgcgc ttggatcccc tgaagtgcag aaaaaaaaaat
840

acttcaactg ttcaacaact tgggcgtcca ccgtccatgc atcaccatga tacctctgct
900

gatgttttagc actcgatcac gttactagat acaagcagcc aacctatg acaagttcgt
960

cctaaactga ataaaaatga tcaaccatca agcgagaaca aacatcaaca tgcattccacc
1020

agtggagcaa tcttggccac ttgcgctgtt ctgcattgat cagccatcta attaataatc
1080

gccctcacat gcactcatgc tcacgggaat gtaaactcac acaacaacac tgctattaca
1140

ataatcggca ctgcgccgat gggttctcta taaatgcaac aatcaagcgc caccacgaac
1200

C
1201

<210> 8
<211> 93
<212> DNA
<213> Zea mays

<220>
<221> misc_feature
<222> (1)..(93)
<223> DNA sequence of a 5' UTR, L-Zm.Ltp-1:1:3, derived from a lipid
transfer protein-like protein from Zea mays.

<400> 8
atcacaagcg cttagtgatc agttaataact aagggcaggc acacctctgc ttgcgctag
60

tgatcaagca agtgctttct gtactctgca gca
93

<210> 9
<211> 1365
<212> DNA
<213> Setaria italica

<220>
<221> misc_feature
<222> (1)..(1365)
<223> DNA sequence of an intron, I-SETit.Act4:2, derived from an actin
4 gene from Setaria italica.

<400> 9
tccccggtaa tctcctcctc ccctccct ccgctccctg gagccctct actcgcgatc
60

tccccacgca ctagctcctg ctccagcatt tttcgagtgt ttggcgctca gatctgagcg
120

gcctggctcg agatctgcgg ttgctcatg cgttctggtc acttgctcc cgtgctccc
180

ccagatccgg ggcgggtacc gcgcgatccg ccagcggatc gtgcttcgtg gttggtgcta
240

gggtgttcgt ctgacgtctg tgcttgatga actccgtcct gttcctgac tgtagcgttt
300

ctgcgtgccg atgcgtctga ttttgtgcgc acgcctgatg tgtgtttgcg ggactgccgt
360

gcgaggaggc tctctgagct acgtacctag gaatggtgac tgtgatgtgc ctgaatgcgc
420

ttacgtgttg ctggcgatgc acgagccctt ggggtgtgac tgcttgacta cttcccagct
480

ccgacgttct agtttcctgc ttgactggga gtctgggaga gcttcgtgat gctctgtcta
540

gcaagtccag atagttgcgg taactggtaa catggttgga tgaaagtcgc ggatagttaa
600

tttgggtgta ttgaactacc agagtgtaaa aatccgtgtg tggttcattc ggagagagct
660

atttgaaaag catatctgca tgtaggatg tttccttgtc atgaatagct attgagcaca
720

taccaccaa aattagtgac aacttagtga tgtttcatgg caccaaattg taggctgaaa
780

agttcagcat gtgatttttg ttgctctgca ggtcacattt tagacaacaa aaaagcttgt
840

tagattggcc agtacatgta cactactttt tcaaagcaat gctagtcttt tcctatcatg
900

tttagttata cgaatgtttg gttatggtac tttacacatt tttataaatg ttggaaacaa
960

cagtccgcaa gttatcagat tatttcttac tctctccgtt ccaaattgta ggtcgttttg
1020

actttttag gttcatagat attattatgc atctagatat agtgtatgtc taggtgcata
1080

ataatatcta tgaatctaga aaagtcaaaa cgacctacaa tttggaacgg agggagtaca
1140

acattagcct agtcggtgaa atgaatccca cttttgcctg gcagtaagct ctgtacatat
1200

gttgttttta ttgacttata gatgcacaaa tataaagggtt cagttgatat gccttcaaaa
1260

cttttatggtt tacgatgctt actgggttccc ttgtacagct actatctagc aggatacact
1320

tgctgttaac tgatacccct tttttgctac ctcttgcagg gtagc
1365

<210> 10
<211> 477
<212> DNA
<213> Cauliflower mosaic virus

<220>
<221> misc_feature
<222> (1)..(477)
<223> DNA sequence of an enhancer, E-CaMV.35S-RC derived from the
Cauliflower mosaic virus 35S promoter in a reverse compliment
orientation.

<400> 10
aggatagtgg gattgtgctt catcccttac gtcagtggag atatcacatc aatccacttg
60

ctttgaagac gtggttggaa cgtcttcttt ttccacgatg ctctctgtgg gtgggggtcc
120

atctttggga ccaactgtcg cagaggcatc ttgaacgata gcctttcctt tatcgcaatg
180

atggactttg taggagccac cttccttttc tactgtcctt tccatgaagt gacagataga
240

tgggcaatgg aatccgagga ggtttcctga tattaccctt tggtgaaaag tctcaatagc
300

cctttggtct tctgagactg tatctttgat attcttggag tagacgagag tgtcgtgctc
360

cacatgttg acgaagattt tcttcttgtc attgagtcgt aaaagactct gtatgaactg
420

tccgccagtc ttcacggcga gttctgttag atcctcgatc tgaatttttg actcctt
477

<210> 11
<211> 2001
<212> DNA
<213> Artificial

<220>

<223> Synthetic coding sequence optimized for plant expression for beta-glucuronidase (GUS) with a processable intron derived from the potato light-inducible tissue-specific ST-LS1 gene (GenBank Accession: X04753).

<400> 11

atggtgaggc ccgttgagac cccgactagg gagatcaaga agctggacgg cctctgggcc
60

ttctccctcg accgtgagaa ctgcggcatc gaccagcgct ggtgggagtc cgccctccag
120

gagtctaggg ccatcgccgt gcccggttcc ttcaacgacc agttcgccga cgccgacatc
180

cgcaactacg cgggcaacgt ctggtatcag cgcgagggtg tcatcccgaa gggctgggcg
240

ggccagcgca tcgtgctccg cttcgacgcc gtgaccact acggcaaggt ctgggtgaac
300

aatcaggagg taagtttctg cttctacctt tgatatatat ataataatta tcattaatta
360

gtagtaatat aatatttcaa atattttttt caaaataaaa gaatgtagta tatagcaatt
420

gcttttctgt agtttataag tgtgtatatt ttaatttata acttttctaa tatatgacca
480

aaatttgttg atgtgcaggt gatggagcac cagggcggtt acaccccggt cgaggccgac
540

gtgacgccgt acgtgatcgc cgggaagtcc gtccgcatca ccgtctgcgt gaacaatgag
600

ctgaactggc agaccatccc gcttggcatg gtcacaccg acgagaacgg caagaagaag
660

cagtcctact tccacgactt cttcaactac gctggcatcc accgctccgt gatgctctac
720

accactccca acacctgggt ggacgacatc accgtggtca cccacgtggc ccaggactgc
780

aaccacgcct ccgtggactg gcaagtcggt gccaacggcg acgtcagcgt cgagctgcgc
840

gacgccgacc agcaagtcgt tgccaccggc cagggcacca gcggcaccct ccaagtcgtc
900

aaccctcacc tctggcagcc tggcgagggc tacctctacg agctgtgcgt caccgccaag
960

agccagactg agtgcgacat ctaccctctc cgcgtcggca tcaggagcgt cgctgtcaag
1020

ggcgagcagt tcctcatcaa ccacaagcct ttctacttca ctggtttcgg ccgccacgag
1080

gacgctgacc tgaggggcaa gggtttcgac aacgtcctga tgggtccacga ccacgctctg
1140

atggactgga tcggtgcaa cagctacagg accagtcact acccgtagcg tgaggagatg
1200

ctggactggg ctgacgagca cggtatcgtc gtgatcgacg agactgctgc ggtcggtttc
1260

aacctgtctc tgggcattgg ttctgaggct gggaacaagc cgaaggagct gtactctgag
1320

gaagctgtca acggcgagac tcagcaagct catctccagg cgattaagga gctgattgcc
1380

agggacaaga accatccgtc tgtcgtgatg tgggtctattg cgaatgagcc ggacaccaga
1440

ccgcaagggg cgcgtgaata cttcgcgccg ctggcggagg cgactcgcaa actggaccca
1500

acccgtccaa tcacgtgcgt caatgtcatg ttctgcgacg cccatacgga tacgatctcg
1560

gacctgttcg atgttctttg tctcaatcgg tactatgggt ggtatgttca gagcggggat
1620

cttgagacgg cggagaaggt tcttgagaag gaactcctgg cgtggcaaga gaagctccat
1680

cagccgatca ttatcacgga gtacgggggt gacacacttg cgggccttca cagtatgtac
1740

acagatatgt ggtcggagga ataccagtgt gcatggttgg atatgtacca tcgtgtcttc
1800

gaccgggttt cagcggttgt cggcgaacaa gtctggaact tcgcagactt cgccacgagc
1860

caagggatac tgcgggtagg agggaacaag aagggaatct tcacacggga tcggaagccc
1920

aagtcagcag ccttcctggt gcagaagcga tggacaggaa tgaacttcgg agaaaagcca
1980

cagcaaggcg gaaagcagtg a
2001

<210> 12
<211> 572
<212> DNA
<213> *Saccharum ravennae*

<220>
<221> misc_feature
<222> (1)..(572)
<223> DNA sequence of a 3' UTR, T-Cl.Hsp16.9:2, derived from the
Hsp16.9 (Heat shock protein 16.9) protein gene from *Saccharum*
ravennae (hardy pampas grass).

<400> 12
gcgaccatgg acgttggatg atgaagatgt ggcaacggtg tggagtgtga taccctgttt
60

tgtttcccggttcgtgattgt ttgctgtgtc agatggttta ctgcagcttc atgtgaagtc
120

tactgcctgc tacagtgcta ctccctggac ttttgagtaa tctgcaatca gtattctcca
180

tgtgtaatcg tctttgagat tatataaaag taaataaagc atcttctcca cctttccgga
240

aaaccatgag atcatcctac tcctatagtt ttttaatactc cgttcgttct aatttctaaa
300

aaaatgtaaa ctcaattctc caggagtga ttaacttta ctaaaccgaa aaaacaatag
360

ttatgatgcg taataagtct tattagatca atcatgaact atatttttat aatgaaccta
420

tttagagata aaaacttaat gtagaagtga gattcatatt cttttaaaac agagagagta
480

catgcgttta acagtgtgcg agtgaaaatt ttactcattc ctctctatt ttggtgcagg
540

gcacaacgtg gtacttgtag gtgcccctgg ta
572

<210> 13
<211> 572
<212> DNA
<213> *Coix lacryma-jobi*

<220>
<221> misc_feature
<222> (1)..(572)
<223> DNA sequence of a 3' UTR, T-Cl.Hsp16.9:2, derived from the
Hsp16.9 (heat shock protein 16.9) protein gene from Coix
lacryma-jobi (Job's tears).

<400> 13
aggagcctgg gcgctttata tatgctcaaa ataccgatgc tgccgtcttc gtctgtgtcg
60

atcgatcggg tagttcttcg catgtcgggt ccataaaaat gctcgcgtcc gtgtaataca
120

cttgctactg tgctggtatc atggatgatt ggatggctgt cttgagtagc gtgtgtcgtg
180

gctgctgtgt ttccaacgag attaaagtgt cgtgcgttgt gtattgtgtc gcctgttgcg
240

tgatcgcgtc tgtaataaac ccagtttcaa agaatttcca agtgacttgc tagtttctag
300

tgttctacgg cttctttgga ataaattcct aagggtactcg taataagctt acaattaaca
360

tgttcgatca ctatcatgac aaagtagctt ccatttcctt acagttcaga tgtctcatcg
420

aacacgttgg atctacagaa aataccgttc gtttttttcc cccagttctt gtggagaccc
480

cacaaccagt atctaaggat cgacatataa acacacagta gtctactggg atgttctctc
540

ttattaaatc agcatatagc caacttgtag ca
572

<210> 14
<211> 496
<212> DNA
<213> Artificial

<220>
<223> DNA sequence of a chimeric-rearranged enhancer, E-DaMV.H-Flt:1,
derived from multiple public Dahlia mosaic virus promoters.

<400> 14
taactgggat ttttggagga ttctgatgaa accatttacc ctaacttgag ataactggag
60

taaaagatcc ttactgtcca ccatttcttg tgatgggta aaatccctct tgccggagag
120

acctatctct atcaggtgat atgcctggta gctgtttcct tcttcccaat ctggcaggcc
180

cttggtcgtc actgctgacg tctttttcct cattattgga ggatgagtca ctgcaagctg
240

taaagcttgt attattgctg gtggaggccc caccttcaca tgctgagcat ttatggttgt
300

cggccaataa tttcttcagc tgtttgcaaa gcaataattt tgtagatgtc cctacatcaa
360

ctttggcatg tgcaatgctt tcttcaaagg aagataagat gtcaacatct tgtctggaga
420

ttggtgctcc gtagtgactc atgatcaata cctttttctg tgcgtaattg atcttgattt
480

ttgtcttccc gtcgat
496

<210> 15
<211> 322
<212> DNA
<213> Dahlia mosaic virus

<220>
<221> misc_feature
<222> (1)..(322)
<223> DNA sequence of an enhancer, E-DaMV.FLT:2, derived from a Dahlia
mosaic virus promoter, Genbank accession EF513491, nucleotides 1
through 322.

<400> 15
atcaacggag aaacaaagat aaaaatcaat tactcacatg aaagagtatt gatcacgagt
60

cactatggag cgacaatctc cagacaggat gtcagcatct tatcttcctt tgaagaaagc
120

atcatcaata acgatgtaat ggtggggaca tccactaagt tattgctctg caaacagctc
180

aaaaagctac tggccgacaa tcataattgc tcggcatgtg cagggtggggc ctccactagc
240

aataatacaa gctttacagc ttgcagtgac tcatcctcca ataatggaga aaaagacgtc
300

agcagtgcgc aacaaggggc ga
322

<210> 16
<211> 3163
<212> DNA
<213> Artificial

<220>
<223> DNA sequence of an EXP, EXP-DaMV.H-Flt+Zm.Ltp+SETit.Act4:1
comprised of the chimeric-rearranged enhancer, E-DaMV.H-Flt:1,
operably linked 5' to the EXP, EXP-Zm.LTP-SETit.Act4.

<400> 16
atcgacggga agacaaaaat caagatcaat tacgcacaga aaaaggtatt gatcatgagt
60

cactacggag caccaatctc cagacaagat gttgacatct tatcttcctt tgaagaaagc
120

attgcacatg ccaaagttga tgtagggaca tctacaaaat tattgctttg caaacagctg
180

aagaaattat tggccgacaa ccataaatgc tcagcatgtg aaggtggggc ctccaccagc
240

aataatacaa gctttacagc ttgcagtgc tcatcctcca ataatgagga aaaagacgtc
300

agcagtgcgc aacaagggcc tgccagattg ggaagaagga aacagctacc aggcataatca
360

cctgatagag ataggtctct ccggcaagag ggattttaac ccatcacaag aaatgggtga
420

cagtaaggat cttttactcc agttatctca agttagggta aatggtttca tcagaatcct
480

ccaaaaatcc cagttatggt cggattcatc cctctcttag atgcccacgt tccttctaga
540

gagcatttga tcctgcttgc acggatgaag ggggagcgac acatttacat ggggtgctcta
600

acaaggatca atgaggagtg ttgactctct gatatctcga taaaacatca tcatattaat
660

aatccttctt tactttgaac atttacattc aagcaattca attcttgttt tgtattacta
720

taattgtcat gctgaaatat ggttgaaacg cagtaggacg tagaaatfff atgatataat
780

tgaaaattta tgtatgctta aagagtgaag tgggctattc gatagcattg atctattata
840

agaagtatta ttttaataata atttaccgtt cttttggaca tcttagtctt gtattaaact
900

atttttgaac ttatgcacgt catttatgtt tcttaagctt ggagcttgcc aagtgttttc
960

tggactttgt gaagtgcatt aagcactcgg caaaagagtt atctgcggta gtgaagagtt
1020

cgggtaaatt tattagtaca ctcttttttc ataaacaagc ggaaccatct agccaacagt
1080

acgtcataca aaaagggcac ccaccgttgt ttgtgggaat gctttttaag caaattcaag
1140

cctctaactt tgaatgttcc aactgaacat aataaacctt gacccgatca ggaacagagc
1200

taaagcaaat ttttagtgatt gcaattgcct tctgagcgca ttcagtttta ccatgcaagg
1260

gtgcacccgt acccaccgct atatgcaatt atgcatagct ctgcgcttgg atcccgtaa
1320

gtgcagaaaa aaaaataactt caactgttca acaacttggg cgtccaccgt ccatgcatca
1380

ccatgatacc tctgctgatg tttagcactc gatcacgtta ctagatacaa gcagccaacc
1440

catatgacaa gttcgtccta aactgaataa aaatgatcaa ccatcaagcg agaacaaca
1500

tcaacatgca tccaccagtg gagcaatctt ggccacttgc gctgttctgc attgatcagc
1560

catctaatta ataatcgccc tcacatgcac tcatgctcac gggaatgtaa actcacacaa
1620

caacactgct attacaataa tcggcactgc gccgatggtt ctctataaaa tgcaacaatc
1680

aagcgccacc acgaaccatc acaagcgctt agtgatcagt taatactaag ggcaggcaca
1740

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1800

cccggtaatc tctctctccc cctccccctc gctccctgga gccctctac tcgcatctc
1860

cccacgcact agctcctgct ccagcatttt tcgagtgttt ggcgctcaga tctgagcggc
1920

ctggctcgag atctgcggtt tgctcatgcg ttctggtcac ttgcctccgg tgctcccgcc
1980

agatccgggg cgggtaccgc gcgatccgcc agcggatcgt gcttcgtggg tggtgctagg
2040

gtgttcgtct gacgtctgtg cttgatgaac tccgtcctgt tcctgatctg tagcgtttct
2100

gcgtgccgat gcgtctgatt ttgtgcgcac gcctgatgtg tgtttgcggg actgccgtgc
2160

gaggaggctc tctgagctac gtacctagga atgggtgactg tgatgtgcct gaatgcgctt
2220

acgtgttgct ggcgatgcac gagcccttgg ggtgtgactg cttgactact tcccagctcc
2280

gacgttctag tttcctgctt gactgggagt ctgggagagc ttcgtgatgc tctgtctagc
2340

aagtccagat agttgcggtg actggtaaca tgggttgatg aaagtcgcgg atagttaatt
2400

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2460

ttggaaagca tatctgcatg ttaggatgtt tccttgtcat gaatagctat tgagcacata
2520

ccacccaaaa ttagtgacaa cttagtgatg tttcatggca ccaaattgta ggctgaaaag
2580

ttcagcatgt gattttttgtt gctctgcagg tcacatttta gacaacaaaa aagcttgta
2640

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2700

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2760

gtccgcaagt tatcagatta tttcttactc tctccgttcc aaattgtagg tcgttttgac
2820

ttttgtaggt tcatagatat tattatgcat ctagatatag tgtatgtcta ggtgcataat
2880

aatatctatg aatctagaaa agtcaaaacg acctacaatt tggaacggag ggagtacaac
2940

attagcctag tcggtgaaat gaatcccact ttgcctggc agtaagctct gtacatatgt
3000

tgtttttatt gacttataga tgcacaaata taaagggtca gttgatatgc cttcaaaact
3060

tttatgttta cgatgcttac tggttccctt gtacagctac tatctagcag gatacacttg
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3163

<210> 17

<211> 3163

<212> DNA

<213> Artificial

<220>

<223> DNA sequence of an EXP, EXP-DaMV.H-Flt+Zm.Ltp+SETit.Act4:1
comprised of the chimeric-rearranged enhancer, E-DaMV.H-Flt:1,
operably linked 5' to the EXP, EXP-Zm.LTP-SETit.Act4.

<400> 17

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120

acctatctct atcagggtgat atgcctggta gctgtttcct tcttcccaat ctggcaggcc
180

ctgttcgctc actgctgacg tctttttcct cattattgga ggatgagtca ctgcaagctg
240

taaagcttgt attattgctg gtggaggccc caccttcaca tgctgagcat ttatggttgt
300

cggccaataa tttcttcagc tgtttgcaaa gcaataattt tgtagatgtc cctacatcaa
360

ctttggcatg tgcaatgctt tcttcaaagg aagataagat gtcaacatct tgtctggaga
420

ttgggtgctcc gtagtgactc atgatcaata cctttttctg tgcgtaattg atcttgattt
480

ttgtcttccc gtcgattggt cggattcatc cctctcttag atgcccacgt tccttctaga
540

gagcatttga tcctgcttgc acggatgaag ggggagcgac acatttacat ggggtgctcta
600

acaaggatca atgaggagtg ttgactctct gatatctcga taaaacatca tcatattaat
660

aatccttctt tactttgaac atttacattc aagcaattca attcttgttt tgtattacta
720

taattgtcat gctgaaatat ggttgaaacg cagtaggacg tagaaatttt atgatataat
780

tgaaaattta tgtatgctta aagagtgaag tgggctattc gatagcattg atctattata
840

agaagtatta ttttaataata atttaccgtt cttttggaca tcttagtctt gtattaaact
900

atttttgaac ttatgcacgt cttttatgtt tcttaagctt ggagcttgcc aagtgttttc
960

tggactttgt gaagtgcattg aagcactcgg caaaagagtt atctgcggta gtgaagagtt
1020

cgggtaaatt tattagtaca ctcttttttc ataaacaagc ggaaccatct agccaacagt
1080

acgtcataca aaaagggcac ccaccgttgt ttgtgggaat gctttttaag caaattcaag
1140

cctctaactt tgaatgttcc aactgaacat aataaacctt gacccgatca ggaacagagc
1200

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1260

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1320

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1380

ccatgatacc tctgctgatg tttagcactc gatcacgtta ctagatacaa gcagccaacc
1440

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1500

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1560

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1680

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1860

cccacgcact agctcctgct ccagcatttt tcgagtgttt ggcgctcaga tctgagcggc
1920

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1980

agatccgggg cgggtaccgc gcgatccgcc agcggatcgt gcttcgtggt tggtgctagg
2040

gtgttcgtct gacgtctgtg cttgatgaac tccgtcctgt tcctgatctg tagcgtttct
2100

gcgtgccgat gcgtctgatt ttgtgcgcac gcctgatgtg tgtttgcggg actgccgtgc
2160

gaggaggctc tctgagctac gtacctagga atggtgactg tgatgtgcct gaatgcgctt
2220

acgtgttgct ggcgatgcac gagcccttgg ggtgtgactg cttgactact tcccagctcc
2280

gacgttctag tttcctgctt gactgggagt ctgggagagc ttcgtgatgc tctgtctage
2340

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2400

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2520

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2580

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2640

gattggccag tacatgtaca ctactttttc aaagcaatgc tagtcttttc ctatcatgtt
2700

tagttatacg aatgtttggt tatgggtactt tacacatttt tataaatgtt ggaaacaaca
2760

gtccgcaagt tatcagatta tttcttactc tctccgttcc aaattgtagg tcgttttgac
2820

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2880

aatatctatg aatctagaaa agtcaaaacg acctacaatt tggaacggag ggagtacaac
2940

attagcctag tcggtgaaat gaatcccact tttgcctggc agtaagctct gtacatatgt
3000

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3060

tttatgttta cgatgcttac tggttccctt gtacagctac tatctagcag gatacacttg
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3163

<210> 18

<211> 1271

<212> DNA

<213> Artificial

<220>

<223> DNA sequence of an EXP, EXP-DaMV.FLT+Td.RCc3_1+SETit.14-3-3C-5:1
comprised of the enhancer, E-DaMV.FLT:2 operably linked 5' to a
promoter, leader, and intron.

<400> 18

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aagctgtaaa gcttgtatta ttgctagtgg aggccccacc tgcacatgcc gagcaattat
120

gattgtcggc cagtagcttt ttgagctggt tgcagagcaa taacttagtg gatgtcccca
180

ccattacatc gttattgatg atgctttctt caaaggaaga taagatgctg acatcctgtc
240

tggagattgt cgctccatag tgactcgtga tcaatactct ttcatgtgag taattgattt
300

ttatctttgt ttctccgttg atggcctact aggccaaatg gatgaaacaa cttggaccaa
360

tcagagatgg ccacgtcagc tcccgatcgt cgtaaccgac caaaccgat cgataacggc
420

ttaggctcca atacaccgtc ggtaccaccc ggtcgctatc atctgcccc gtcccaacgc
480

tattggtatc gtccgcccct atatcggtcg gtagcccagt ccaccgtcgg ggccaatcgt
540

cccctgctgc gtccgctcgt gtcggtaccg atcgccaaaa acgccacgtc aacggcactg
600

cggtaccgac cgccgctggc accggcctta gcgggccaca cgaccgatcg ctgttgtagc
660

gacgtagagg tgaatcatgc gattgaattt tcgctagagg aaagttatca tcttattatc
720

tccaaccctc cttcctacgg ctggatccga cgaaaattta ccctggacgg tgccagtaac
780

aattgcaggt ctcaactcacg tgctaaatcc agcaatcaaa cacgaaggaa tatacgtgat
840

ctggccagaa catgcaagag aataatacag tagtggtaga gtacgaaacc tacacgattc
900

aacgaattaa tcaatggggtt cacgttcacg ggtatgctcg cgcacgtcca aaatccaacg
960

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1020

atctcgcatc ccccatcacc gctataaata ccattggcca tgcacacccg cactcccaca
1080

cagcacaagc agcagcagca gcagcagctc gatcgaacta gcttagctac tacgtgcgcg
1140

tgcaacaagc agctcgatcg atcgccctca cggtaatttc ttctcccaaa ataaacctaa
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1271

<210> 19

<211> 1271

<212> DNA

<213> Artificial

<220>

<223> DNA sequence of an EXP, EXP-DaMV.FLT+Td.RCc3_1+SETit.14-3-3C-5:1
comprised of the enhancer, E-DaMV.FLT:2 operably linked 5' to a

promoter, leader, and intron.

<400> 19

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cactatggag cgacaatctc cagacaggat gtcagcatct tatcttcctt tgaagaaagc
120

atcatcaata acgatgtaat ggtggggaca tccactaagt tattgctctg caaacagctc
180

aaaaagctac tggccgacaa tcataattgc tcggcatgtg caggtggggc ctccactagc
240

aataatacaa gctttacagc ttgcagtgc tcatcctcca ataatggaga aaaagacgtc
300

agcagtgcg aacaagggc gaggcctact aggccaaatg gatgaaaca cttggaccaa
360

tcagagatgg ccacgtcagc tcccgatcgt cgtaaccgac caaaccgat cgataacggt
420

ttaggctcca atacaccgct ggtaccaccc ggtcgctatc atctgcccc gtcccaacgc
480

tattggtatc gtccgcccct atatcggtcg gtagccagc ccaccgtcgg ggccaatcgt
540

ccctgctgc gtccgctcgt gtcggtaccg atcgccaaaa acgccacgtc aacggcactg
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cggtaccgac cgccgctggc accggcctta gcgggccaca cgaccgatcg ctgttgtagc
660

gacgtagagg tgaatcatgc gattgaattt tcgctagagg aaagttatca tcttattatc
720

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780

aattgcaggt ctactcacg tgctaaatcc agcaatcaaa cacgaaggaa tatacgtgat
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900

aacgaattaa tcaatggggt cacgttcacg ggtatgctcg cgcacgtcca aaatccaacg
960

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1020

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1080

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1200

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1260

tgcaggagga c
1271