

Sequence Listing.txt
SEQUENCE LISTING

```
<110>  NORDSAAT  SAATZUCHTGESELLSCHAFT MBH
<120>  Process of producing male sterile monocotyledonous plants
<130>  N 7951/RN
<150>  EP 08 157 508
<151>  2008-06-03
<160>  71
<170>  PatentIn version 3.3
<210>  1
<211>  447
<212>  DNA
<213>  Bacillus amyloliquefaciens
```

```
<220>
<221> misc_feature
<222> (1)..(447)
<223> native sequence of the barnase enzyme from Bacillus
      amyloliquefaciens
```

<400>	1						
atgaaaaaac	gattatcgtg	gattttccggt	tgtttacttg	tgcttgtctc	cgcggcgggg		60
atgctgtttt	caacagctgc	caaaacggaa	acatcttctc	acaaggcaca	cacagaagca		120
caggttatca	acacgtttga	cggggttgcg	gattatcttc	agacatatca	taagctacct		180
gataattaca	ttacaaaatc	agaagcacia	gccctcggct	gggtggcatc	aaaagggaac		240
cttgacagacg	tcgctccggg	gaaaagcatc	ggcggagaca	tcttctcaaa	cagggaaggc		300
aaactcccgg	gcaaaagcgg	acgaacatgg	cgtgaagcgg	atattaacta	tacatcaggc		360
ttcagaaatt	cagaccgat	tctttactca	agcgactggc	tgatttacia	aacaacggac		420
cattatcaga	cctttacaaa	aatcaga					447

<210>	2
<211>	149
<212>	PRT
<213>	Bacillus amyloliquefaciens

```
<220>
<221> SIGNAL
<222> (1)..(39)
<223> leader peptide of the mature protein
```

```
<220>
<221> MISC_FEATURE
<222> (1)..(149)
<223> native sequence of the barnase enzyme from Bacillus
      amyloliquefaciens
```

<400> 2

Met Lys Lys Arg Leu Ser Trp Ile Ser Val Cys Leu Leu Val Leu Val
1 5 10 15

Ser Ala Ala Gly Met Leu Phe Ser Thr Ala Ala Lys Thr Glu Thr Ser
Seite 1

Sequence Listing.txt

20

25

30

Ser His Lys Ala His Thr Glu Ala Gln Val Ile Asn Thr Phe Asp Gly
35 40 45

Val Ala Asp Tyr Leu Gln Thr Tyr His Lys Leu Pro Asp Asn Tyr Ile
50 55 60

Thr Lys Ser Glu Ala Gln Ala Leu Gly Trp Val Ala Ser Lys Gly Asn
65 70 75 80

Leu Ala Asp Val Ala Pro Gly Lys Ser Ile Gly Gly Asp Ile Phe Ser
85 90 95

Asn Arg Glu Gly Lys Leu Pro Gly Lys Ser Gly Arg Thr Trp Arg Glu
100 105 110

Ala Asp Ile Asn Tyr Thr Ser Gly Phe Arg Asn Ser Asp Arg Ile Leu
115 120 125

Tyr Ser Ser Asp Trp Leu Ile Tyr Lys Thr Thr Asp His Tyr Gln Thr
130 135 140

Phe Thr Lys Ile Arg
145

<210> 3
<211> 108
<212> DNA
<213> Artificial

<220>
<223> DNA sequence

<220>
<221> misc_feature
<222> (1)..(108)
<223> non-optimized N-terminus of the barnase sequence used in vector
pICH13688

<400> 3
atggcacagg ttatcaacac gtttgacggg gttgcggatt atcttcagac atatcataag 60
ctacctgata attacattac aaaatcagaa gcacaagccc tcggctgg 108

<210> 4
<211> 36
<212> PRT
<213> Artificial

<220>
<223> amino acid sequence

<220>
<221> MISC_FEATURE
<222> (1)..(36)
<223> non-optimized N-terminus of the barnase sequence used in vector

Sequence Listing.txt

pICH13688

<400> 4

Met Ala Gln Val Ile Asn Thr Phe Asp Gly Val Ala Asp Tyr Leu Gln
1 5 10 15

Thr Tyr His Lys Leu Pro Asp Asn Tyr Ile Thr Lys Ser Glu Ala Gln
20 25 30

Ala Leu Gly Trp
35

<210> 5

<211> 225

<212> DNA

<213> Artificial

<220>

<223> DNA sequence

<220>

<221> misc_feature

<222> (1)..(225)

<223> non-optimized C-terminus of the barnase sequence used in vector
pICH13688

<400> 5

gtcgcaccaa aagggaacct tgcagacgtc gctccgggga aaagcatcgg cggagacatc 60

ttctcaaaca gggaaggcaa actcccgggc aaaagcggac gaacatggcg tgaagcggat 120

attaactata catcaggctt cagaaattca gaccggattc tttactcaag cgactggctg 180

atttacaaaa caacggacca ttatcagacc tttacaaaaa tcaga 225

<210> 6

<211> 75

<212> PRT

<213> Artificial

<220>

<223> amino acid sequence

<220>

<221> MISC_FEATURE

<222> (1)..(75)

<223> non-optimized C-terminus of the barnase sequence used in vector
pICH13688

<400> 6

Val Ala Ser Lys Gly Asn Leu Ala Asp Val Ala Pro Gly Lys Ser Ile
1 5 10 15

Gly Gly Asp Ile Phe Ser Asn Arg Glu Gly Lys Leu Pro Gly Lys Ser
20 25 30

Gly Arg Thr Trp Arg Glu Ala Asp Ile Asn Tyr Thr Ser Gly Phe Arg
35 40 45

Sequence Listing.txt

Asn Ser Asp Arg Ile Leu Tyr Ser Ser Asp Trp Leu Ile Tyr Lys Thr
50 55 60

Thr Asp His Tyr Gln Thr Phe Thr Lys Ile Arg
65 70 75

<210> 7
<211> 1287
<212> DNA
<213> Synechocystis sp.

<220>
<221> gene
<222> (1)..(1287)

```
<400> 7
tgcatacagt gagatagttt gatcagcttg gcgagcacag gaaaaagagt ttctattaaa 60
gatttgtag atgaaaaaga ttttgaaata tgggcaatta atgaacagac gatgaagcta 120
gaatcagcta aagttagtcg tgtattttgt actggcaaaa agctagttta tatttttaaaa 180
actcgactag gtagaactat caaggcaaca gcaaatcata gatttttaac tattgatggg 240
tggaagagat tagatgagct atctttaaaa gagcatattg ctctaccccg taaactagaa 300
agtcctctt tacaattaat gaggatgag gaactaggat tactagggca tctaattggg 360
gatggctgta cttacctcg ccatgctatt caatatacaa gcaataaaat agaattagct 420
gaaaggttag tcgaattagc aaaagcagtt tttggcgacc aaattaatcc tcgtatcagc 480
caagaaaggc aatggtacca agtttatatc cctgctagtt atcggttaac ccataacaaa 540
aaaaatccga ttacaaaatg gctagagaat ttagacgtat tcggactgcg ttcctacgaa 600
aaatttggtt ctaatacagt ttttgaacaa ccacagaggg cgatcgccat ttttctaaga 660
catttatgga gtacagatgg ttgctgcaaa ttaatagtag aaaaatcatc tagaccggta 720
gcttattacg caactagtag cgagaagtta gcaaaggatg tacagtcggt actcttgaaa 780
ttaggcatta acgcacgtct atcaaaaata agtcagaatg gcaaaggcag ggataactat 840
catgtaacca ttacagggca agctgattta caaatctttg ttgatcaaat tggcgctggt 900
gacaaagaca aacaggcaag tgttgaggaa attaaaacc atatcgctca acatcaagca 960
aacactaaca gggatgtcat tccaaaacaa atttggaaga cctatgtggt gccacaaatt 1020
caaataaaag ggataactac tcgcgacttg caaatgagac ttggtaatgc ctactgtggg 1080
acagctcttt ataaacataa tttgagtagg gaaagagcag caaaaatagc cactattacc 1140
caatcaccag aatagaaaaa gttgtctcag agtgatattt actgggactc catcgtttct 1200
attacggaga ctggagtcga agaggttttt gatttgactg tgccaggacc acataacttt 1260
gtcgccaatg acatcattgt ccataac 1287
```

<210> 8
<211> 429
<212> PRT
<213> Synechocystis sp.

Sequence Listing.txt

```

<220>
<221> MISC_FEATURE
<222> (1)..(429)
<223> complete amino acid sequence of DnaB from Synechocystis sp.

<400> 8
Cys Ile Ser Gly Asp Ser Leu Ile Ser Leu Ala Ser Thr Gly Lys Arg
1      5      10      15
Val Ser Ile Lys Asp Leu Leu Asp Glu Lys Asp Phe Glu Ile Trp Ala
20     25     30
Ile Asn Glu Gln Thr Met Lys Leu Glu Ser Ala Lys Val Ser Arg Val
35     40     45
Phe Cys Thr Gly Lys Lys Leu Val Tyr Ile Leu Lys Thr Arg Leu Gly
50     55     60
Arg Thr Ile Lys Ala Thr Ala Asn His Arg Phe Leu Thr Ile Asp Gly
65     70     75     80
Trp Lys Arg Leu Asp Glu Leu Ser Leu Lys Glu His Ile Ala Leu Pro
85     90     95
Arg Lys Leu Glu Ser Ser Ser Leu Gln Leu Met Ser Asp Glu Glu Leu
100    105    110
Gly Leu Leu Gly His Leu Ile Gly Asp Gly Cys Thr Leu Pro Arg His
115    120    125
Ala Ile Gln Tyr Thr Ser Asn Lys Ile Glu Leu Ala Glu Lys Val Val
130    135    140
Glu Leu Ala Lys Ala Val Phe Gly Asp Gln Ile Asn Pro Arg Ile Ser
145    150    155    160
Gln Glu Arg Gln Trp Tyr Gln Val Tyr Ile Pro Ala Ser Tyr Arg Leu
165    170    175
Thr His Asn Lys Lys Asn Pro Ile Thr Lys Trp Leu Glu Asn Leu Asp
180    185    190
Val Phe Gly Leu Arg Ser Tyr Glu Lys Phe Val Pro Asn Gln Val Phe
195    200    205
Glu Gln Pro Gln Arg Ala Ile Ala Ile Phe Leu Arg His Leu Trp Ser
210    215    220
Thr Asp Gly Cys Val Lys Leu Ile Val Glu Lys Ser Ser Arg Pro Val
225    230    235    240

```

Sequence Listing.txt

Ala Tyr Tyr Ala Thr Ser Ser Glu Lys Leu Ala Lys Asp Val Gln Ser
245 250 255

Leu Leu Leu Lys Leu Gly Ile Asn Ala Arg Leu Ser Lys Ile Ser Gln
260 265 270

Asn Gly Lys Gly Arg Asp Asn Tyr His Val Thr Ile Thr Gly Gln Ala
275 280 285

Asp Leu Gln Ile Phe Val Asp Gln Ile Gly Ala Val Asp Lys Asp Lys
290 295 300

Gln Ala Ser Val Glu Glu Ile Lys Thr His Ile Ala Gln His Gln Ala
305 310 315 320

Asn Thr Asn Arg Asp Val Ile Pro Lys Gln Ile Trp Lys Thr Tyr Val
325 330 335

Leu Pro Gln Ile Gln Ile Lys Gly Ile Thr Thr Arg Asp Leu Gln Met
340 345 350

Arg Leu Gly Asn Ala Tyr Cys Gly Thr Ala Leu Tyr Lys His Asn Leu
355 360 365

Ser Arg Glu Arg Ala Ala Lys Ile Ala Thr Ile Thr Gln Ser Pro Glu
370 375 380

Ile Glu Lys Leu Ser Gln Ser Asp Ile Tyr Trp Asp Ser Ile Val Ser
385 390 395 400

Ile Thr Glu Thr Gly Val Glu Glu Val Phe Asp Leu Thr Val Pro Gly
405 410 415

Pro His Asn Phe Val Ala Asn Asp Ile Ile Val His Asn
420 425

<210> 9
<211> 336
<212> DNA
<213> Artificial

<220>
<223> DNA sequence

<220>
<221> misc_feature
<222> (1)..(6)
<223> sequence coding for the amino acids aspartate and valine; both
have been inserted into vector pICH13688 as a result of the
cloning strategies

<220>
<221> misc_feature
<222> (7)..(15)
<223> dnaB intein exon sequence RES

Sequence Listing.txt

<220>
 <221> misc_feature
 <222> (7)..(18)
 <223> dnaB intein exon sequence RESG

<220>
 <221> misc_feature
 <222> (19)..(336)
 <223> N-terminal part of the dnaB intein from Synechocystis sp.

<400> 9
 gacgtcagag agagtggatg catcagtgga gatagtttga tcagcttggc gagcacagga 60
 aaaagagttt ctattaaaga tttgttagat gaaaaagatt ttgaaatatg ggcaattaat 120
 gaacagacga tgaagctaga atcagctaaa gttagtcgtg tttttgtac tggcaaaaag 180
 ctagtttata ttttaaaaac tcgactaggt agaactatca aggcaacagc aaatcataga 240
 tttttaacta ttgatggttg gaaaagatta gatgagctat ctttaaaaga gcatattgct 300
 ctaccccgta aactagaaag ctcctcttta caatta 336

<210> 10
 <211> 112
 <212> PRT
 <213> Artificial

<220>
 <223> amino acid sequence

<220>
 <221> MISC_FEATURE
 <222> (1)..(2)
 <223> insertion of the amino acids aspartate and valine as a result of the cloning strategies

<220>
 <221> MISC_FEATURE
 <222> (3)..(5)
 <223> DnaB intein exon sequence RES

<220>
 <221> MISC_FEATURE
 <222> (3)..(6)
 <223> DnaB intein exon sequence RESG

<220>
 <221> MISC_FEATURE
 <222> (7)..(112)
 <223> N-terminal part of DnaB intein from Synechocystis sp.

<400> 10
 Asp Val Arg Glu Ser Gly Cys Ile Ser Gly Asp Ser Leu Ile Ser Leu
 1 5 10 15

Ala Ser Thr Gly Lys Arg Val Ser Ile Lys Asp Leu Leu Asp Glu Lys
 20 25 30

Asp Phe Glu Ile Trp Ala Ile Asn Glu Gln Thr Met Lys Leu Glu Ser
 35 40 45

Ala Lys Val Ser Arg Val Phe Cys Thr Gly Lys Lys Leu Val Tyr Ile
 Seite 7

Sequence Listing.txt

50

55

60

Leu Lys Thr Arg Leu Gly Arg Thr Ile Lys Ala Thr Ala Asn His Arg
65 70 75 80

Phe Leu Thr Ile Asp Gly Trp Lys Arg Leu Asp Glu Leu Ser Leu Lys
85 90 95

Glu His Ile Ala Leu Pro Arg Lys Leu Glu Ser Ser Ser Leu Gln Leu
100 105 110

<210> 11
<211> 168
<212> DNA
<213> Artificial

<220>
<223> DNA sequence

<220>
<221> misc_feature
<222> (1)..(147)
<223> C-terminal part of dnaB intein from Synechocystis sp.

<220>
<221> misc_feature
<222> (148)..(168)
<223> dnaB exon sequence SEEQDHG

<400> 11
atgagccag aaatagaaaa gttgtctcag agtgatattt actgggactc catcgtttct 60
attacggaga ctggagtcga agaggttttt gatttgactg tgccaggacc acataacttt 120
gtcgccaatg acatcattgt ccataacagt gaagagcaag accatggc 168

<210> 12
<211> 56
<212> PRT
<213> Artificial

<220>
<223> amino acid sequence

<220>
<221> MISC_FEATURE
<222> (1)..(49)
<223> C-terminal part of DnaB intein from Synechocystis sp.

<220>
<221> MISC_FEATURE
<222> (50)..(56)
<223> DnaB exon sequence

<400> 12

Met Ser Pro Glu Ile Glu Lys Leu Ser Gln Ser Asp Ile Tyr Trp Asp
1 5 10 15

Ser Ile Val Ser Ile Thr Glu Thr Gly Val Glu Glu Val Phe Asp Leu
20 25 30

Sequence Listing.txt

Thr Val Pro Gly Pro His Asn Phe Val Ala Asn Asp Ile Ile Val His
35 40 45

Asn Ser Glu Glu Gln Asp His Gly
50 55

<210> 13
<211> 108
<212> DNA
<213> Artificial

<220>
<223> DNA sequence

<220>
<221> misc_feature
<222> (1)..(108)
<223> codon-optimized N-terminus of the barnase sequence from *Bacillus amyloliquefaciens*

<400> 13
atggccaag tgattaacac cttcgacggc gtggccgact acctccagac ctaccacaag 60
ctcccggaca actacatcac caagtccgag gcccaggccc tcggctgg 108

<210> 14
<211> 36
<212> PRT
<213> Artificial

<220>
<223> amino acid sequence

<220>
<221> MISC_FEATURE
<222> (1)..(36)
<223> codon-optimized N-terminus of the barnase sequence from *Bacillus amyloliquefaciens*

<400> 14

Met Ala Gln Val Ile Asn Thr Phe Asp Gly Val Ala Asp Tyr Leu Gln
1 5 10 15

Thr Tyr His Lys Leu Pro Asp Asn Tyr Ile Thr Lys Ser Glu Ala Gln
20 25 30

Ala Leu Gly Trp
35

<210> 15
<211> 12
<212> DNA
<213> *Synechocystis* sp.

<220>
<221> misc_feature
<222> (1)..(12)

<223> dnaB extein part, N-terminal

<400> 15
agggagtccg gc

12

<210> 16
<211> 4
<212> PRT
<213> Synechocystis sp.

<220>
<221> MISC_FEATURE
<222> (1)..(4)
<223> DnaB extein part, N-terminal

<400> 16
Arg Glu Ser Gly
1

<210> 17
<211> 318
<212> DNA
<213> Synechocystis sp.

<220>
<221> misc_feature
<222> (1)..(318)
<223> codon-optimized N-terminus of dnaB intein

<400> 17
tgcatctccg gcgactccct catctccctc gcctccaccg gcaagcgcgt gtccatcaag 60
gacctcctcg acgagaagga cttcgagatt tgggccatca acgagcagac catgaagctg 120
gagtccgccca aggtgtcccg cgtgttctgc accggcaaga agctcgtcta tctcctcaag 180
acccgcctcg gcaggacat caaggccacc gccaacacc gcttcctcac catcgacggc 240
tggaagcgcc tcgacgagct gtccctcaag gagcacatcg ccctcccgcg caagctcgaa 300
tcctcctccc tccagctc 318

<210> 18
<211> 106
<212> PRT
<213> Synechocystis sp.

<220>
<221> MISC_FEATURE
<222> (1)..(106)
<223> codon-optimized N-terminus of DnaB intein

<400> 18
Cys Ile Ser Gly Asp Ser Leu Ile Ser Leu Ala Ser Thr Gly Lys Arg
1 5 10 15

Val Ser Ile Lys Asp Leu Leu Asp Glu Lys Asp Phe Glu Ile Trp Ala
20 25 30

Sequence Listing.txt

Ile Asn Glu Gln Thr Met Lys Leu Glu Ser Ala Lys Val Ser Arg Val
35 40 45

Phe Cys Thr Gly Lys Lys Leu Val Tyr Ile Leu Lys Thr Arg Leu Gly
50 55 60

Arg Thr Ile Lys Ala Thr Ala Asn His Arg Phe Leu Thr Ile Asp Gly
65 70 75 80

Trp Lys Arg Leu Asp Glu Leu Ser Leu Lys Glu His Ile Ala Leu Pro
85 90 95

Arg Lys Leu Glu Ser Ser Ser Leu Gln Leu
100 105

<210> 19
<211> 147
<212> DNA
<213> Synechocystis sp.

<220>
<221> misc_feature
<222> (1)..(147)
<223> codon-optimized C-terminus of dnaB intein

<400> 19
atgagcccg agatcgagaa gctctcccag tccgacatct actgggactc catcgtgtcc 60
atcaccgaaa cgggcgtgga ggaggtgttc gacctcaccg tgccaggccc gcacaacttc 120
gtggccaacg acatcatcgt gcacaac 147

<210> 20
<211> 49
<212> PRT
<213> Synechocystis sp.

<220>
<221> MISC_FEATURE
<222> (1)..(49)
<223> codon-optimized C-terminus of DnaB intein

<400> 20
Met Ser Pro Glu Ile Glu Lys Leu Ser Gln Ser Asp Ile Tyr Trp Asp
1 5 10 15

Ser Ile Val Ser Ile Thr Glu Thr Gly Val Glu Glu Val Phe Asp Leu
20 25 30

Thr Val Pro Gly Pro His Asn Phe Val Ala Asn Asp Ile Ile Val His
35 40 45

Asn

<210> 21

Sequence Listing.txt

<211> 15
<212> DNA
<213> Synechocystis sp.

<220>
<221> misc_feature
<222> (1)..(15)
<223> dnaB extein part, C-terminal

<400> 21
tccatcgagc aggac

15

<210> 22
<211> 5
<212> PRT
<213> Synechocystis sp.

<220>
<221> MISC_FEATURE
<222> (1)..(5)
<223> DnaB extein part, C-terminal

<400> 22

Ser Ile Glu Gln Asp
1 5

<210> 23
<211> 30
<212> DNA
<213> Artificial

<220>
<223> DNA sequence

<220>
<221> CDS
<222> (1)..(30)
<223> GGGGS-spacer used for vectors pICH25301 and pICH25881

<400> 23
gga ggc gga gga agt gga ggc ggt gga tca
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
1 5 10

30

<210> 24
<211> 10
<212> PRT
<213> Artificial

<220>
<223> Synthetic Construct

<400> 24

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
1 5 10

<210> 25
<211> 45
<212> DNA
<213> Artificial

Sequence Listing.txt

```

<220>
<223> DNA sequence

<220>
<221> CDS
<222> (1)..(45)
<223> GGGGS-spacer used for vector pICH27371

<400> 25
gga ggc ggt gga agt gga ggc ggt gga tca gga ggc ggt ggc tca      45
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
1          5          10          15

<210> 26
<211> 15
<212> PRT
<213> Artificial

<220>
<223> Synthetic Construct

<400> 26
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
1          5          10          15

<210> 27
<211> 225
<212> DNA
<213> Bacillus amyloliquefaciens

<220>
<221> misc_feature
<222> (1)..(225)
<223> codon-optimized C-terminus of the barnase sequence

<400> 27
gtggcctcca agggcaacct cgccgacgtg gcccagggga agtccatcgg cggcgacatc      60
ttctccaacc gcgagggcaa gctcccaggc aagtcgggca ggacctggag ggaggccgac      120
atcaactaca cctccggctt ccgcaactcc gaccgcatcc tctactcctc cgactggctc      180
atctacaaga ccaccgacca ctaccagacc ttcaccaaga tccgc                      225

<210> 28
<211> 75
<212> PRT
<213> Bacillus amyloliquefaciens

<220>
<221> MISC_FEATURE
<222> (1)..(75)
<223> codon-optimized C-terminus of the barnase sequence

<400> 28
Val Ala Ser Lys Gly Asn Leu Ala Asp Val Ala Pro Gly Lys Ser Ile
1          5          10          15

Gly Gly Asp Ile Phe Ser Asn Arg Glu Gly Lys Leu Pro Gly Lys Ser

```

Gly Arg Thr Trp Arg Glu Ala Asp Ile Asn Tyr Thr Ser Gly Phe Arg
35 40 45

Asn Ser Asp Arg Ile Leu Tyr Ser Ser Asp Trp Leu Ile Tyr Lys Thr
50 55 60

Thr Asp His Tyr Gln Thr Phe Thr Lys Ile Arg
65 70 75

<210> 29
<211> 1932
<212> DNA
<213> Oryza sativa

<220>
<221> misc_feature
<222> (1)..(1932)
<223> ALS (acetolactate synthase) sequence from Oryza sativa

<300>
<308> Genbank / AP008208
<309> 2005-02-02
<313> (1)..(1932)

<400> 29
atggctacga ccgccgcggc cgcggccgcc gccctgtccg ccgccgcgac ggccaagacc 60
ggccgtaaga accaccagcg acaccacgtc cttcccgtc gaggccgggt gggggcggcg 120
gcggtcaggt gtcggggcgt gtccccggtc accccgccgt ccccggcgcc gccggccacg 180
ccgctccggc cgtggggggc ggccgagccc cgcaagggcg cggacatcct cgtggaggcg 240
ctggagcggg gcggcgctag cgacgtgttc gcctaccggg gcggcgcgtc catggagatc 300
caccaggcgc tgacgcgtc cccggtcac accaaccacc tcttcgcga cgagcagggc 360
gaggcgttcg cggcgctccg gtacgcgcgc gcgtccggcc gcgtcggggg ctgcgtcgcc 420
acctccggcc ccggggcaac caacctcgtg tccgcgctcg ccgacgcgct gctcgactcc 480
gtcccgatgg tcgccatcac gggccaggtc ccccgccgca tgatcggcac cgacgccttc 540
caggagacgc ccatagtcga ggtcaccgc tccatcacca agcacaatta ccttgcctt 600
gatgtggagg acatcccccg cgtcatacag gaagccttct tcctcgcgtc ctcgggccgt 660
cctggcccgg tgctggtcga catccccaag gacatccagc agcagatggc cgtgccggtc 720
tgggacacct cgatgaatct accagggtac atcgacgcc tgcccaagcc acccgcgaca 780
gaattgcttg agcaggctct gcgtctggtt ggcgagtcac ggcgcccgat tctctatgtc 840
ggtggtggct gctctgcatc tggtgacgaa ttgcgctggt ttgttgagct gactggtatc 900
ccagttacaa cactctgat gggcctcggc aatttcccca gtgacgaccc gttgtccctg 960
cgcatgcttg ggatgcatgg cacggtgtac gcaaattatg ccgtggataa ggctgacctg 1020
ttgcttgctg ttggtgtgct gtttgatgat cgtgtgacag ggaaaattga ggcttttgca 1080
agcaggggcca agattgtgca cattgacatt gatccagcag agattggaaa gaacaagcaa 1140

Sequence Listing.txt

```
ccacatgtgt caatttgcgc agatgttaag cttgctttac agggcttgaa tgctctgcta 1200
caacagagca caacaaagac aagttctgat tttagtgcac ggcacaatga gttggaccag 1260
cagaagaggg agtttctctt ggggtacaaa acttttggtg aagagatccc accgcaatat 1320
gccattcagg tgctggatga gctgacgaaa ggtgaggcaa tcatcgctac tgggtgttggg 1380
cagcaccaga tgtggggcggc acaatattac acctacaagc ggccacggca gtggctgtct 1440
tcggctggtc tgggcgcaat gggatttggg ctgcctgctg cagctggtgc ttctgtggct 1500
aaccaggtg tcacagttgt tgatattgat ggggatggta gcttcctcat gaacattcag 1560
gagctggcat tgatccgcat tgagaacctc cctgtgaagg tgatggtgtt gaacaaccaa 1620
catttgggta tgggtggtgca atgggaggat aggttttaca aggcgaatag ggcgcataca 1680
tacttgggca acccggaatg tgagagcgag atatatccag attttgtgac tattgctaag 1740
gggttcaata ttcctgcagt ccgtgtaaca aagaagagtg aagtccgtgc cgccatcaag 1800
aagatgctcg agactccagg gccatacttg ttggatatca tcgtcccgca ccaggagcat 1860
gtgctgccta tgatcccaag tgggggcgca ttcaaggaca tgatcctgga tgggtgatggc 1920
aggactgtgt at 1932
```

```
<210> 30
<211> 644
<212> PRT
<213> Oryza sativa
```

```
<220>
<221> MISC_FEATURE
<222> (1)..(644)
<223> ALS (aceto lactate synthase) sequence from Oryza sativa
<400> 30
```

```
Met Ala Thr Thr Ala Ala Ala Ala Ala Ala Ala Leu Ser Ala Ala Ala
1 5 10 15
```

```
Thr Ala Lys Thr Gly Arg Lys Asn His Gln Arg His His Val Leu Pro
20 25 30
```

```
Ala Arg Gly Arg Val Gly Ala Ala Ala Val Arg Cys Ser Ala Val Ser
35 40 45
```

```
Pro Val Thr Pro Pro Ser Pro Ala Pro Pro Ala Thr Pro Leu Arg Pro
50 55 60
```

```
Trp Gly Pro Ala Glu Pro Arg Lys Gly Ala Asp Ile Leu Val Glu Ala
65 70 75 80
```

```
Leu Glu Arg Cys Gly Val Ser Asp Val Phe Ala Tyr Pro Gly Gly Ala
85 90 95
```

```
Ser Met Glu Ile His Gln Ala Leu Thr Arg Ser Pro Val Ile Thr Asn
100 105 110
```

Sequence Listing.txt

His Leu Phe Arg His Glu Gln Gly Glu Ala Phe Ala Ala Ser Gly Tyr
 115 120 125
 Ala Arg Ala Ser Gly Arg Val Gly Val Cys Val Ala Thr Ser Gly Pro
 130 135 140
 Gly Ala Thr Asn Leu Val Ser Ala Leu Ala Asp Ala Leu Leu Asp Ser
 145 150 155 160
 Val Pro Met Val Ala Ile Thr Gly Gln Val Pro Arg Arg Met Ile Gly
 165 170 175
 Thr Asp Ala Phe Gln Glu Thr Pro Ile Val Glu Val Thr Arg Ser Ile
 180 185 190
 Thr Lys His Asn Tyr Leu Val Leu Asp Val Glu Asp Ile Pro Arg Val
 195 200 205
 Ile Gln Glu Ala Phe Phe Leu Ala Ser Ser Gly Arg Pro Gly Pro Val
 210 215 220
 Leu Val Asp Ile Pro Lys Asp Ile Gln Gln Gln Met Ala Val Pro Val
 225 230 235 240
 Trp Asp Thr Ser Met Asn Leu Pro Gly Tyr Ile Ala Arg Leu Pro Lys
 245 250 255
 Pro Pro Ala Thr Glu Leu Leu Glu Gln Val Leu Arg Leu Val Gly Glu
 260 265 270
 Ser Arg Arg Pro Ile Leu Tyr Val Gly Gly Gly Cys Ser Ala Ser Gly
 275 280 285
 Asp Glu Leu Arg Trp Phe Val Glu Leu Thr Gly Ile Pro Val Thr Thr
 290 295 300
 Thr Leu Met Gly Leu Gly Asn Phe Pro Ser Asp Asp Pro Leu Ser Leu
 305 310 315 320
 Arg Met Leu Gly Met His Gly Thr Val Tyr Ala Asn Tyr Ala Val Asp
 325 330 335
 Lys Ala Asp Leu Leu Leu Ala Phe Gly Val Arg Phe Asp Asp Arg Val
 340 345 350
 Thr Gly Lys Ile Glu Ala Phe Ala Ser Arg Ala Lys Ile Val His Ile
 355 360 365
 Asp Ile Asp Pro Ala Glu Ile Gly Lys Asn Lys Gln Pro His Val Ser
 370 375 380

Sequence Listing.txt

Ile Cys Ala Asp Val Lys Leu Ala Leu Gln Gly Leu Asn Ala Leu Leu
385 390 395 400

Gln Gln Ser Thr Thr Lys Thr Ser Ser Asp Phe Ser Ala Trp His Asn
405 410 415

Glu Leu Asp Gln Gln Lys Arg Glu Phe Pro Leu Gly Tyr Lys Thr Phe
420 425 430

Gly Glu Glu Ile Pro Pro Gln Tyr Ala Ile Gln Val Leu Asp Glu Leu
435 440 445

Thr Lys Gly Glu Ala Ile Ile Ala Thr Gly Val Gly Gln His Gln Met
450 455 460

Trp Ala Ala Gln Tyr Tyr Thr Tyr Lys Arg Pro Arg Gln Trp Leu Ser
465 470 475 480

Ser Ala Gly Leu Gly Ala Met Gly Phe Gly Leu Pro Ala Ala Ala Gly
485 490 495

Ala Ser Val Ala Asn Pro Gly Val Thr Val Val Asp Ile Asp Gly Asp
500 505 510

Gly Ser Phe Leu Met Asn Ile Gln Glu Leu Ala Leu Ile Arg Ile Glu
515 520 525

Asn Leu Pro Val Lys Val Met Val Leu Asn Asn Gln His Leu Gly Met
530 535 540

Val Val Gln Trp Glu Asp Arg Phe Tyr Lys Ala Asn Arg Ala His Thr
545 550 555 560

Tyr Leu Gly Asn Pro Glu Cys Glu Ser Glu Ile Tyr Pro Asp Phe Val
565 570 575

Thr Ile Ala Lys Gly Phe Asn Ile Pro Ala Val Arg Val Thr Lys Lys
580 585 590

Ser Glu Val Arg Ala Ala Ile Lys Lys Met Leu Glu Thr Pro Gly Pro
595 600 605

Tyr Leu Leu Asp Ile Ile Val Pro His Gln Glu His Val Leu Pro Met
610 615 620

Ile Pro Ser Gly Gly Ala Phe Lys Asp Met Ile Leu Asp Gly Asp Gly
625 630 635 640

Arg Thr Val Tyr

Sequence Listing.txt

<210> 31
<211> 1932
<212> DNA
<213> Artificial

<220>
<223> DNA sequence

<220>
<221> misc_feature
<222> (1)..(1932)
<223> mutated version of ALS (acetolactate synthase) used in vectors
pICH24581, pICH25301, pICH23731 and pICH25881

```
<400> 31
atggctacga ccgccgcggc cgcgcccgcc gccctgtccg ccgccgcgac ggccaagacc      60
ggccgtaaga accaccagcg acaccacgtc cttcccgctc gaggccgggt gggggcgggc      120
gcggtcaggt gtcggcggtt gtccccggtc accccgccgt ccccgggcgc gccggccacg      180
ccgctccggc cgtggggggc ggccgagccc cgcaagggcg cggacatcct cgtggaggcg      240
ctggagcggg gcggcgctcag cgacgtgttc gcctaccggg gcggcgcgtc catggagatc      300
caccaggcgc tgacgcgctc cccggtcatc accaaccacc tcttccgcca cgagcagggc      360
gaggcgttcg cggcgctccg gtacgcgcgc gcgtccggcc gcgtcggggg ctgcgtcgcc      420
acctccggcc ccggggcaac caacctcgtg tccgcgctcg ccgacgcgct gctcgactcc      480
gtcccgatgg tcgccatcac gggccagggt ccccgccgca tgatcggcac cgacgccttc      540
caggagacgc ccatagtcga ggtcaccgcg tccatcacca agcacaatta ccttgtcctt      600
gatgtggagg acatcccccg cgtcatacag gaagccttct tcctcgcgtc ctcgggccgt      660
cctggcccgg tgctggtcga catccccaag gacatccagc agcagatggc cgtgccgggt      720
tgggacacct cgatgaatct accagggtac atcgcacgcc tgcccaagcc acccgcgaca      780
gaattgcttg agcaggctct gcgtctggtt ggcgagtcac ggcgcccgat tctctatgtc      840
ggtggtggct gctctgcatc tgggtgacgaa ttgcgctggt ttgttgagct gactggtatc      900
ccagttacaa ccactctgat gggcctcggc aatttcccca gtgacgacct gttgtccctg      960
cgcatgcttg ggatgcatgg cacgggtgtac gcaaattatg ccgtggataa ggctgacctg     1020
ttgcttgctg ttggtgtgcg gtttgatgat cgtgtgacag ggaaaattga ggcttttgca     1080
agcagggcca agattgtgca cattgacatt gatccagcag agattggaaa gaacaagcaa     1140
ccacatgtgt caatttgcgc agatgttaag cttgctttac agggcttgaa tgctctgcta     1200
caacagagca caacaaagac aagttctgat tttagtgcac ggcacaatga gttggaccag     1260
cagaagaggg agtttctctt ggggtacaaa acttttggtg aagagatccc accgcaatat     1320
gccattcagg tgctggatga gctgacgaaa ggtgaggcaa tcatcgctac tgggtgttggg     1380
cagcaccaga tgtgggcggc acaatattac acctacaagc ggccacggca gtggctgtct     1440
tcggctggtc tgggcgcaat gggatttggg ctgcctgctg cagctggtgc ttctgtggct     1500
aaccaggtg tcacagttgt tgatattgat ggggatggta gcttcctcat gaacattcag     1560
gagctggcat tgatccgcat tgagaacctc cctgtgaagg tgatggtgtt gaacaaccaa     1620
```

Sequence Listing.txt

catttgggta tgggtggtgca acttgaggat aggtttttaca aggcgaatag ggcgcataca 1680
tacttggggca acccggaatg tgagagcgag atatatccag attttgtgac tattgctaag 1740
gggttcaata ttcctgcagt ccgtgtaaca aagaagagtg aagtccgtgc cgccatcaag 1800
aagatgctcg agactccagg gccatacttg ttggatatca tcgtcccgca ccaggagcat 1860
gtgctgccta tgatcccaag tggggggcgca ttcaaggaca tgatcctgga tggatgatggc 1920
aggactgtgt ac 1932

<210> 32
<211> 644
<212> PRT
<213> Artificial

<220>
<223> DNA sequence

<220>
<221> MISC_FEATURE
<222> (1)..(644)
<223> mutated version of ALS (acetolactate synthase) used in vectors
pICH24581, pICH25301, pICH23731 and pICH25881

<400> 32

Met Ala Thr Thr Ala Ala Ala Ala Ala Ala Ala Leu Ser Ala Ala Ala
1 5 10 15

Thr Ala Lys Thr Gly Arg Lys Asn His Gln Arg His His Val Leu Pro
20 25 30

Ala Arg Gly Arg Val Gly Ala Ala Ala Val Arg Cys Ser Ala Val Ser
35 40 45

Pro Val Thr Pro Pro Ser Pro Ala Pro Pro Ala Thr Pro Leu Arg Pro
50 55 60

Trp Gly Pro Ala Glu Pro Arg Lys Gly Ala Asp Ile Leu Val Glu Ala
65 70 75 80

Leu Glu Arg Cys Gly Val Ser Asp Val Phe Ala Tyr Pro Gly Gly Ala
85 90 95

Ser Met Glu Ile His Gln Ala Leu Thr Arg Ser Pro Val Ile Thr Asn
100 105 110

His Leu Phe Arg His Glu Gln Gly Glu Ala Phe Ala Ala Ser Gly Tyr
115 120 125

Ala Arg Ala Ser Gly Arg Val Gly Val Cys Val Ala Thr Ser Gly Pro
130 135 140

Gly Ala Thr Asn Leu Val Ser Ala Leu Ala Asp Ala Leu Leu Asp Ser
145 150 155 160

Sequence Listing.txt

Val Pro Met Val Ala Ile Thr Gly Gln Val Pro Arg Arg Met Ile Gly
 165 170 175
 Thr Asp Ala Phe Gln Glu Thr Pro Ile Val Glu Val Thr Arg Ser Ile
 180 185 190
 Thr Lys His Asn Tyr Leu Val Leu Asp Val Glu Asp Ile Pro Arg Val
 195 200 205
 Ile Gln Glu Ala Phe Phe Leu Ala Ser Ser Gly Arg Pro Gly Pro Val
 210 215 220
 Leu Val Asp Ile Pro Lys Asp Ile Gln Gln Gln Met Ala Val Pro Val
 225 230 235 240
 Trp Asp Thr Ser Met Asn Leu Pro Gly Tyr Ile Ala Arg Leu Pro Lys
 245 250 255
 Pro Pro Ala Thr Glu Leu Leu Glu Gln Val Leu Arg Leu Val Gly Glu
 260 265 270
 Ser Arg Arg Pro Ile Leu Tyr Val Gly Gly Gly Cys Ser Ala Ser Gly
 275 280 285
 Asp Glu Leu Arg Trp Phe Val Glu Leu Thr Gly Ile Pro Val Thr Thr
 290 295 300
 Thr Leu Met Gly Leu Gly Asn Phe Pro Ser Asp Asp Pro Leu Ser Leu
 305 310 315 320
 Arg Met Leu Gly Met His Gly Thr Val Tyr Ala Asn Tyr Ala Val Asp
 325 330 335
 Lys Ala Asp Leu Leu Leu Ala Phe Gly Val Arg Phe Asp Asp Arg Val
 340 345 350
 Thr Gly Lys Ile Glu Ala Phe Ala Ser Arg Ala Lys Ile Val His Ile
 355 360 365
 Asp Ile Asp Pro Ala Glu Ile Gly Lys Asn Lys Gln Pro His Val Ser
 370 375 380
 Ile Cys Ala Asp Val Lys Leu Ala Leu Gln Gly Leu Asn Ala Leu Leu
 385 390 395 400
 Gln Gln Ser Thr Thr Lys Thr Ser Ser Asp Phe Ser Ala Trp His Asn
 405 410 415
 Glu Leu Asp Gln Gln Lys Arg Glu Phe Pro Leu Gly Tyr Lys Thr Phe
 420 425 430

Sequence Listing.txt

Gly Glu Glu Ile Pro Pro Gln Tyr Ala Ile Gln Val Leu Asp Glu Leu
435 440 445

Thr Lys Gly Glu Ala Ile Ile Ala Thr Gly Val Gly Gln His Gln Met
450 455 460

Trp Ala Ala Gln Tyr Tyr Thr Tyr Lys Arg Pro Arg Gln Trp Leu Ser
465 470 475 480

Ser Ala Gly Leu Gly Ala Met Gly Phe Gly Leu Pro Ala Ala Ala Gly
485 490 495

Ala Ser Val Ala Asn Pro Gly Val Thr Val Val Asp Ile Asp Gly Asp
500 505 510

Gly Ser Phe Leu Met Asn Ile Gln Glu Leu Ala Leu Ile Arg Ile Glu
515 520 525

Asn Leu Pro Val Lys Val Met Val Leu Asn Asn Gln His Leu Gly Met
530 535 540

Val Val Gln Leu Glu Asp Arg Phe Tyr Lys Ala Asn Arg Ala His Thr
545 550 555 560

Tyr Leu Gly Asn Pro Glu Cys Glu Ser Glu Ile Tyr Pro Asp Phe Val
565 570 575

Thr Ile Ala Lys Gly Phe Asn Ile Pro Ala Val Arg Val Thr Lys Lys
580 585 590

Ser Glu Val Arg Ala Ala Ile Lys Lys Met Leu Glu Thr Pro Gly Pro
595 600 605

Tyr Leu Leu Asp Ile Ile Val Pro His Gln Glu His Val Leu Pro Met
610 615 620

Ile Pro Ser Gly Gly Ala Phe Lys Asp Met Ile Leu Asp Gly Asp Gly
625 630 635 640

Arg Thr Val Tyr

<210> 33
<211> 1209
<212> DNA
<213> Artificial

<220>
<223> DNA sequence

<220>
<221> misc_feature
<222> (1)..(1209)

Sequence Listing.txt

<223> codon-optimized N-terminus of ALS (acetolactate synthase) from
Oryza sativa

```

<400> 33
atggctacga ccgccgcggc cgccggccgcc gccctgtccg ccgccgcgac ggccaagacc      60
ggccgtaaga accaccagcg acaccacgtc cttcccgctc gaggccgggt gggggcggcg      120
gcggtcaggt gtcggggcgt gtccccggtc accccgccgt cccgggcgcc gccggccacg      180
ccgctccggc cgtggggggc ggccgagccc cgcaagggcg cggacatcct cgtggaggcg      240
ctggagcggg gcggcgctag cgacgtgttc gcctaccggg gcggcgcgtc catggagatc      300
caccaggcgc tgacgcgctc cccgggtcatc accaaccacc tcttcgcgca cgagcagggc      360
gaggcgttcg cggcgctccg gtacgcgcgc gcgtccggcc gcgtcggggg ctgcgtcgcc      420
acctccggcc ccggggcaac caacctcgtg tccgcgctcg ccgacgcgct gctcgactcc      480
gtcccgatgg tcgccatcac gggccaggtc ccccgccgca tgatcggcac cgacgccttc      540
caggagacgc ccatagtcga ggtcacccgc tccatcacca agcacaatta cttgttcctt      600
gatgtggagg acatcccccg cgtcatacag gaagccttct tcctcgcgtc ctcgggccgt      660
cctggcccgg tgctggtcga catccccaag gacatccagc agcagatggc cgtgccggtc      720
tgggacacct cgatgaatct accagggtac atcgacgcc tgcccaagcc acccgcgaca      780
gaattgcttg agcaggctct gcgtctggtt ggcgagtcac ggcgcccgat tctctatgtc      840
ggtggtggct gctctgcatc tgggtacgaa ttgcgctggt ttgttgagct gactggtatc      900
ccagttacaa cactctgat gggcctcggc aatttcccca gtgacgaccc gttgtccctg      960
cgcatgcttg ggatgcatgg cacggtgtac gcaaattatg ccgtggataa ggctgacctg     1020
ttgcttgctg ttggtgtgcg gtttgatgat cgtgtgacag ggaaaattga ggcttttgca     1080
agcaggggcca agattgtgca cattgacatt gatccagcag agattggaaa gaacaagcaa     1140
ccacatgtgt caatttgcgc agatgttaag cttgctttac agggcttgaa tgctctgcta     1200
caacagagc                                         1209
  
```

```

<210> 34
<211> 403
<212> PRT
<213> Artificial
  
```

```

<220>
<223> amino acid sequence
  
```

```

<220>
<221> MISC_FEATURE
<222> (1)..(403)
<223> codon-optimized N-terminus of ALS (acetolactate synthase) from
Oryza sativa
  
```

```

<400> 34
Met Ala Thr Thr Ala Ala Ala Ala Ala Ala Ala Leu Ser Ala Ala Ala
1          5          10          15
  
```

```

Thr Ala Lys Thr Gly Arg Lys Asn His Gln Arg His His Val Leu Pro
                               Seite 22
  
```

Ala Arg Gly Arg Val Gly Ala Ala Ala Val Arg Cys Ser Ala Val Ser
 35 40 45
 Pro Val Thr Pro Pro Ser Pro Ala Pro Pro Ala Thr Pro Leu Arg Pro
 50 55 60
 Trp Gly Pro Ala Glu Pro Arg Lys Gly Ala Asp Ile Leu Val Glu Ala
 65 70 75 80
 Leu Glu Arg Cys Gly Val Ser Asp Val Phe Ala Tyr Pro Gly Gly Ala
 85 90 95
 Ser Met Glu Ile His Gln Ala Leu Thr Arg Ser Pro Val Ile Thr Asn
 100 105 110
 His Leu Phe Arg His Glu Gln Gly Glu Ala Phe Ala Ala Ser Gly Tyr
 115 120 125
 Ala Arg Ala Ser Gly Arg Val Gly Val Cys Val Ala Thr Ser Gly Pro
 130 135 140
 Gly Ala Thr Asn Leu Val Ser Ala Leu Ala Asp Ala Leu Leu Asp Ser
 145 150 155 160
 Val Pro Met Val Ala Ile Thr Gly Gln Val Pro Arg Arg Met Ile Gly
 165 170 175
 Thr Asp Ala Phe Gln Glu Thr Pro Ile Val Glu Val Thr Arg Ser Ile
 180 185 190
 Thr Lys His Asn Tyr Leu Val Leu Asp Val Glu Asp Ile Pro Arg Val
 195 200 205
 Ile Gln Glu Ala Phe Phe Leu Ala Ser Ser Gly Arg Pro Gly Pro Val
 210 215 220
 Leu Val Asp Ile Pro Lys Asp Ile Gln Gln Gln Met Ala Val Pro Val
 225 230 235 240
 Trp Asp Thr Ser Met Asn Leu Pro Gly Tyr Ile Ala Arg Leu Pro Lys
 245 250 255
 Pro Pro Ala Thr Glu Leu Leu Glu Gln Val Leu Arg Leu Val Gly Glu
 260 265 270
 Ser Arg Arg Pro Ile Leu Tyr Val Gly Gly Gly Cys Ser Ala Ser Gly
 275 280 285
 Asp Glu Leu Arg Trp Phe Val Glu Leu Thr Gly Ile Pro Val Thr Thr
 290 295 300

Sequence Listing.txt

Thr Leu Met Gly Leu Gly Asn Phe Pro Ser Asp Asp Pro Leu Ser Leu
305 310 315 320

Arg Met Leu Gly Met His Gly Thr Val Tyr Ala Asn Tyr Ala Val Asp
325 330 335

Lys Ala Asp Leu Leu Leu Ala Phe Gly Val Arg Phe Asp Asp Arg Val
340 345 350

Thr Gly Lys Ile Glu Ala Phe Ala Ser Arg Ala Lys Ile Val His Ile
355 360 365

Asp Ile Asp Pro Ala Glu Ile Gly Lys Asn Lys Gln Pro His Val Ser
370 375 380

Ile Cys Ala Asp Val Lys Leu Ala Leu Gln Gly Leu Asn Ala Leu Leu
385 390 395 400

Gln Gln Ser

<210> 35
<211> 21
<212> DNA
<213> Synechocystis sp.

<220>
<221> misc_feature
<222> (1)..(21)
<223> dnaE extein part, N-terminal

<400> 35
gacgtcaagt ttgcggaata t

21

<210> 36
<211> 7
<212> PRT
<213> Synechocystis sp.

<220>
<221> MISC_FEATURE
<222> (1)..(7)
<223> DnaE extein part, N-terminal

<400> 36

Asp Val Lys Phe Ala Glu Tyr
1 5

<210> 37
<211> 369
<212> DNA
<213> Synechocystis sp.

<220>

Sequence Listing.txt

<221> misc_feature

<222> (1)..(369)

<223> N-terminus of dnaE intein

<400> 37

```

tgcctcagtt ttggcaccga aattttaacc gttgagtacg gcccattgcc cattggcaaa      60
attgtgagtg aagaaattaa ttgttctgtg tacagtgttg atccagaagg gagagtttac      120
accaggcga tcgccaatg gcatgaccgg ggagagcagg aagtattgga atatgaattg      180
gaagatgggt cagtaatccg agctacctct gaccaccgct ttttaaccac cgattatcaa      240
ctgttggcga tcgaagaaat ttttgctagg caactggact tgttgacttt agaaaatatt      300
aagcaaactg aagaagctct tgacaacat cgtcttcctt ttccattact tgacgctggg      360
acaattaa                                     369

```

<210> 38

<211> 123

<212> PRT

<213> Synechocystis sp.

<220>

<221> MISC_FEATURE

<222> (1)..(123)

<223> N-terminus of DnaE intein

<400> 38

```

Cys Leu Ser Phe Gly Thr Glu Ile Leu Thr Val Glu Tyr Gly Pro Leu
1           5           10           15

Pro Ile Gly Lys Ile Val Ser Glu Glu Ile Asn Cys Ser Val Tyr Ser
20          25          30

Val Asp Pro Glu Gly Arg Val Tyr Thr Gln Ala Ile Ala Gln Trp His
35          40          45

Asp Arg Gly Glu Gln Glu Val Leu Glu Tyr Glu Leu Glu Asp Gly Ser
50          55          60

Val Ile Arg Ala Thr Ser Asp His Arg Phe Leu Thr Thr Asp Tyr Gln
65          70          75          80

Leu Leu Ala Ile Glu Glu Ile Phe Ala Arg Gln Leu Asp Leu Leu Thr
85          90          95

Leu Glu Asn Ile Lys Gln Thr Glu Glu Ala Leu Asp Asn His Arg Leu
100         105         110

Pro Phe Pro Leu Leu Asp Ala Gly Thr Ile Lys
115         120

```

<210> 39

<211> 108

<212> DNA

<213> Synechocystis sp.

Sequence Listing.txt

```

<220>
<221> misc_feature
<222> (1)..(108)
<223> C-terminus of dnaE intein

<400> 39
atgggttaaag ttatcggtcg tcgttcctc ggagtgcaaa gaatatttga tattgggtctt    60
ccccaaagacc ataattttct gctagccaat ggggcgatcg cgcccaat                108

```

```

<210> 40
<211> 36
<212> PRT
<213> Synechocystis sp.

```

```

<220>
<221> MISC_FEATURE
<222> (1)..(36)
<223> C-terminus of DnaE intein

<400> 40
Met Val Lys Val Ile Gly Arg Arg Ser Leu Gly Val Gln Arg Ile Phe
1      5      10      15

Asp Ile Gly Leu Pro Gln Asp His Asn Phe Leu Leu Ala Asn Gly Ala
      20      25      30

```

```

Ile Ala Ala Asn
      35

```

```

<210> 41
<211> 15
<212> DNA
<213> Synechocystis sp.

```

```

<220>
<221> misc_feature
<222> (1)..(15)
<223> dnaE extein part, C-terminal

<400> 41
tggtttaacc atggg                                15

```

```

<210> 42
<211> 5
<212> PRT
<213> Synechocystis sp.

```

```

<220>
<221> MISC_FEATURE
<222> (1)..(5)
<223> DnaE extein part, C-terminal

<400> 42

```

```

Cys Phe Asn His Gly
1      5

```

Sequence Listing.txt

<210> 43
<211> 723
<212> DNA
<213> Oryza sativa

<220>
<221> misc_feature
<222> (1)..(723)
<223> codon-optimized C-terminus of ALS (acetolactate synthase)

```
<400> 43
acaacaaaga caagttctga ttttagtgca tggcacaatg agttggacca gcagaagagg      60
gagtttcctc tgggggtacaa aacttttggt gaagagatcc caccgcaata tgccattcag      120
gtgctggatg agctgacgaa aggtgaggca atcatcgcta ctggtgttgg gcagcaccag      180
atgtggggcgg cacaatatta cacctacaag cggccacggc agtggctgtc ttcggctggt      240
ctgggcgcaa tgggatttgg gctgcctgct gcagctggtg cttctgtggc taaccaggt      300
gtcacagttg ttgatattga tggggatggt agcttcctca tgaacattca ggagctggca      360
ttgatccgca ttgagaacct ccctgtgaag gtgatggtgt tgaacaacca acatttgggt      420
atggtggtgc aacttgagga taggttttac aaggcgaata gggcgcatat atacttgggc      480
aaccgggaat gtgagagcga gatatatcca gatthttgtga ctattgctaa ggggttcaat      540
attcctgcag tccgtgtaac aaagaagagt gaagtcctgt cgcgatcaa gaagatgctc      600
gagactccag ggccatactt gttggatatc atcgtccgcg accaggagca tgtgtgcct      660
atgatcccaa gtgggggagc attcaaggac atgatcctgg atggtgatgg caggactgtg      720
tac                                                                    723
```

<210> 44
<211> 241
<212> PRT
<213> Oryza sativa

<220>
<221> MISC_FEATURE
<222> (1)..(241)
<223> codon-optimized C-terminus of ALS (acetolactate synthase)

```
<400> 44
Thr Thr Lys Thr Ser Ser Asp Phe Ser Ala Trp His Asn Glu Leu Asp
1          5          10          15

Gln Gln Lys Arg Glu Phe Pro Leu Gly Tyr Lys Thr Phe Gly Glu Glu
          20          25          30

Ile Pro Pro Gln Tyr Ala Ile Gln Val Leu Asp Glu Leu Thr Lys Gly
          35          40          45

Glu Ala Ile Ile Ala Thr Gly Val Gly Gln His Gln Met Trp Ala Ala
50          55          60
```

Sequence Listing.txt

Gln Tyr Tyr Thr Tyr Lys Arg Pro Arg Gln Trp Leu Ser Ser Ala Gly
65 70 75 80

Leu Gly Ala Met Gly Phe Gly Leu Pro Ala Ala Ala Gly Ala Ser Val
85 90 95

Ala Asn Pro Gly Val Thr Val Val Asp Ile Asp Gly Asp Gly Ser Phe
100 105 110

Leu Met Asn Ile Gln Glu Leu Ala Leu Ile Arg Ile Glu Asn Leu Pro
115 120 125

Val Lys Val Met Val Leu Asn Asn Gln His Leu Gly Met Val Val Gln
130 135 140

Leu Glu Asp Arg Phe Tyr Lys Ala Asn Arg Ala His Thr Tyr Leu Gly
145 150 155 160

Asn Pro Glu Cys Glu Ser Glu Ile Tyr Pro Asp Phe Val Thr Ile Ala
165 170 175

Lys Gly Phe Asn Ile Pro Ala Val Arg Val Thr Lys Lys Ser Glu Val
180 185 190

Arg Ala Ala Ile Lys Lys Met Leu Glu Thr Pro Gly Pro Tyr Leu Leu
195 200 205

Asp Ile Ile Val Pro His Gln Glu His Val Leu Pro Met Ile Pro Ser
210 215 220

Gly Gly Ala Phe Lys Asp Met Ile Leu Asp Gly Asp Gly Arg Thr Val
225 230 235 240

Tyr

<210> 45
<211> 13833
<212> DNA
<213> Artificial

<220>
<223> DNA sequence

<220>
<221> misc_feature
<222> (1)..(13833)
<223> complete sequence of vector pICH24581

<400> 45
ctacgcccc aactgagaga actcaaaggt taccacagtt ggggcacggc gcgccacact 60
cgagaattcg gcgccttttt ttacacagt tcaaagtga ttttggttaa aaccctcagg 120
ttgtatttgg ataatgggga ataatgtggg tgggaattgg gattgggaaa tgaacgaagg 180

Sequence Listing.txt

gtaggatta aatggaagaa ggagaataaa tgggttaaaat ttaaagatgt ctttttagtgg	240
gtgggaaatg atttcccttt cccattagcc aaacggggcc tcagtatatatt ttcaattaac	300
agaagttaa tacttaataa tttaaatgac agttcaatat tttagccatg acacatggca	360
tccaatgaaa gggtcgtcca ctagaaataa aggtgacaga cggtcactga ataggtacac	420
ccataaccagc caccttttcta ttgtctttgc acttgggatt gaaaagggtgg tcaccaaggg	480
gttaaaaccc tgtattcatt cgggaaatgt ttttgccaca caaatgagtt ccaaatacac	540
tgagtgcac tacgggtcag tccctaaaat ttctgaaatg ttgttaccta cccgtctctt	600
tgtccaaaaa taaaccaaac ccgtacggtg tgaatatacc ttcaatgtta cctacactgt	660
acaaggttag cttattttgt aacggaggga acatacatct ttccgatacc cagcattaat	720
aattgtttgt cgccttgggt tcagttcaaa tttcttttta caaaattccg cttgcatctt	780
tgtccggcg cggcaaaaaa aaaatccaca ataaagggtat catataaaaa caatgatggc	840
agttaatcag tttaggttgg tcactatctt aatagatgca aattaagttg ggttgtagcg	900
aaaccaacga acggcatttg ttttgtgctc ccacgataca atcccttaaa tcagcacaca	960
cgcacaatgc atgcaccaca ttttagatcg atttcgtaga gaatatattcg atcacatagc	1020
cacaattaat ctacattcta gaagctccaa caaacttatt taattagttc ctgcaaatta	1080
acatttaca atattctcaa ctgaagaaat aactttaatt gcaatgccgg cagccaaccc	1140
ggcgtgtatg cttccatttg ttcggatgta aaagggtgctg tttatccata ggaagagggtg	1200
taatattaat aactactcca tccgtttcta aatatttgac gtcattgact atttgtttaa	1260
atatgtttga atgttcgtct ttttttaaaa aaatttaagt aattattaat ttttttctat	1320
cattttgatt tattggttaa atatacctta tatgtataca tatagtttta catatttcac	1380
aaaagttttt gaatatgacg aaagggttaa catgtgctaa aaagtcaatg gtatcaaata	1440
tttagaaacg gagggagtat gtttgttgaa aatgttttac cttctctcaa tcttaataaa	1500
tttggtcagg gcaggcaccg gaaaaaaaaa acaggaaggc ataacagcaa aacaaaaaca	1560
gtggaaatta agcattgcta attacaaact tttctgatca ttcacaccat tttcatgttt	1620
gatcccgtc aaacttcaact tcaacagctt agacactctt agctagcaaa agtcctaatc	1680
acaggcatta taaatggcac aggcaattag cctcatctac acacactgcc atcactccaa	1740
ttaaccaaag ctaattaagc atcgattcat gagcccggag atcgagaagc tctcccagtc	1800
cgacatctac tgggactcca tcgtgtccat caccgaaacg ggcgtggagg aggtgttcga	1860
cctcaccgtg ccaggcccg cacaacttcgt ggccaacgac atcatcgtgc acaactccat	1920
cgagcaggac gtggcctcca agggcaacct cgccgacgtg gccccaggga agtccatcgg	1980
cggcgacatc ttctccaacc gcgagggcaa gctcccaggc aagtcgggca ggacctggag	2040
ggaggccgac atcaactaca cctccggctt ccgcaactcc gaccgcatcc tctactcctc	2100
cgactggctc atctacaaga ccaccgacca ctaccagacc ttcaccaaga tccgctgagg	2160
atcctctaga gtctgtcttt aatgagatat gcgagacgcc tatgatcgca tgatatttgc	2220
tttcaattct gttgtgcacg ttgtaaaaaa cctgagcatg tgtagctcag atccttaccg	2280

Sequence Listing.txt

ccggttttcg	ttcattctaa	tgaatatatc	acccgttact	atcgtatttt	tatgaataat	2340
attctccgtt	caatttactg	attgtaccct	actacttata	tgtacaatat	taaaatgaaa	2400
acaatatatt	gtgctgaata	ggtttatagc	gacatctatg	atagagcgcc	acaataacaa	2460
acaattgcgt	tttattatta	caaatccaat	tttaaaaaaa	gcggcagaac	cggtcaaacc	2520
taaaagactg	attacataaa	tcttattcaa	atttcaaaag	tgccccaggg	gctagtatct	2580
acgacacacc	gagcggcgaa	ctaataacgc	tactgaagg	gaactccggt	tccccgccgg	2640
cgcgcatggg	tgagattcct	tgaagttgag	tattggccgt	ccgctctacc	gaaagttacg	2700
ggcaccattc	aaccgggtcc	agcacggcgg	ccgggtaacc	gacttgctgc	cccgagaatt	2760
atgcagcatt	tttttgggtg	atgtgccaaa	tgaagtgcag	gtcaaacctt	gacagtgcg	2820
acaaatcggt	gggcgggtcc	agggcggaatt	ttgcgacaac	atgtcgaggg	tcagcaggac	2880
ctgcaggtag	cacaactagt	gatgggtgag	gtggagtacg	cgcccgggga	gccaagggc	2940
acgccctggc	acccgcaccg	cggttcgag	ctcgagtgc	ggtcgatcta	gtaacataga	3000
tgacaccg	cgcgataatt	tatcctagtt	tgcgcgctat	attttgtttt	ctatcgcgta	3060
ttaaattgat	aattgcggga	ctctaatacat	aaaaacccat	ctcataaata	acgtcatgca	3120
ttacatgtta	attattacat	gcttaacgta	attcaacaga	aattatatga	taatcatcgc	3180
aagaccggca	acaggattca	atcttaagaa	actttattgc	caaagtgttg	aacgatctgc	3240
ttgactctag	agcttagcat	tagtacacag	tcctgccatc	accatccagg	atcatgtcct	3300
tgaatgcgcc	cccacttggg	atcataggca	gcacatgctc	ctggtgcggg	acgatgatata	3360
ccaacaagta	tggccctgga	gtctcgagca	tcttcttgat	ggcggcacgg	acttcactct	3420
tctttgttac	acggactgca	ggaatattga	acccttagc	aatagtcaca	aaatctggat	3480
atatctcgct	ctcacattcc	gggttgccca	agtatgtatg	cgccctattc	gccttgtaaa	3540
acctatcctc	aagttgcacc	accataacca	aatgtttggt	gttcaacacc	atcaccttca	3600
cagggagggt	ctcaatgcgg	atcaatgcca	gtcctgaat	gttcatgagg	aagctaccat	3660
ccccatcaat	atcaacaact	gtgacacctg	ggttagccac	agaagcacca	gctgcagcag	3720
gcagcccaaa	tcccattg	cccagaccag	ccgaagacag	ccactgccgt	ggccgcttgt	3780
aggtgtaata	ttgtgccgcc	cacatctggt	gctgcccaac	accagtagcg	atgattgcct	3840
cacctttcgt	cagctcatcc	agcacctgaa	tgccatattg	cggtgggatac	tcttcaccaa	3900
aagttttgta	ccccagagga	aactccctct	tctgctgggtc	caactcattg	tgccatgcac	3960
taaaatcaga	acttgtcttt	gttgtgctct	gttgtagcag	agcattcaag	ccctgtaaag	4020
caagcttaac	atctgcgcaa	attgacacat	gtggttgctt	gttctttcca	atctctgctg	4080
gatcaatgtc	aatgtgcaca	atcttgcccc	tgcttgcaaa	agcctcaatt	ttccctgtca	4140
cacgatcatc	aaaccgcaca	ccaaacgcaa	gcaacagggtc	agccttatcc	acggcataat	4200
ttgcgtacac	cgtgccatgc	atcccaagca	tgcgagggga	caacgggtcg	tactggggga	4260
aattgccgag	gcccatacaga	gtggttgtaa	ctgggatacc	agtcagctca	acaaaccagc	4320

Sequence Listing.txt

gcaattcgtc	accagatgca	gagcagccac	caccgacata	gagaatcggg	cgccgtgact	4380
cgccaaccag	acgcaagacc	tgctcaagca	attctgtcgc	gggtggcttg	ggcaggcgtg	4440
cgatgtaccc	tggtagattc	atcgaggtgt	cccagaccgg	cacggccatc	tgctgtctgga	4500
tgtccttggg	gatgtcgacc	agcaccgggc	caggacggcc	cgaggacgcg	aggaagaagg	4560
cttcctgtat	gacgcggggg	atgtcctcca	catcaaggac	aaggtaattg	tgcttggtga	4620
tggagcgggt	gacctcgact	atgggctgtc	cctggaaggc	gtcggtgccg	atcatgcggc	4680
gggggacctg	gcccgtgatg	gcgaccatcg	ggacggagtc	gagcagcgcg	tcggcgagcg	4740
cggacacgag	gttggttgcc	ccggggccgg	aggtggcgac	gcagaccccg	acgcgccggg	4800
acgcgcgcgc	gtacccggac	gccgcgaacg	cctcgccctg	ctcgtggcgg	aagaggtggt	4860
tggtgatgac	cggggagcgc	gtcagcgcct	ggtggatctc	catggacgcg	ccgcccgggt	4920
aggcgaacac	gtcgtgacg	ccgcaccgct	ccagcgcctc	cacgaggatg	tccgcgcctt	4980
tcgggggctc	ggccggcccc	cacggccgga	gcggcgtggc	cggcggcgcc	ggggacggcg	5040
gggtgaccgg	ggacaccgcc	gagcacctga	ccgccgccgc	ccccacccgg	cctcgagcgg	5100
gaaggacgtg	gtgtcgctgg	tggttcttac	ggccggtctt	ggccgtcgcg	gcggcggaca	5160
gggcggcggc	cgcgcccgcg	gcggtcgtag	ccatggttta	tcgatagctt	atcgtctacc	5220
tacaaaaaag	ctccgcacga	ggctgcattt	gtcacaaatc	atgaaaagaa	aaactaccga	5280
tgaacaatgc	tgagggattc	aaattctacc	cacaaaaaga	agaaagaaag	atctagcaca	5340
tctaagcctg	acgaagcagc	agaaatatat	aaaaatataa	accatagtgc	ccttttcccc	5400
tcttcctgat	cttgttttag	atggcggaag	ttttaaaccc	cccatcatct	cccccaacaa	5460
cggcggatcg	cagatctaca	tccgagagcc	ccattccccg	cgagatccgg	gccggatcca	5520
cgccggcgag	agccccagcc	gcgagatccc	gcccctcccc	cgcaccgatc	tgggcgcgca	5580
cgaagccgcc	tctcgcccac	ccaaactacc	aaggccaaag	atcgagaccg	agacggaaaa	5640
aaaaaacgga	gaaagaaaga	ggagaggggc	gggggtggtta	ccggcgcggc	ggcggcggag	5700
ggggaggggg	gaggagctcg	tcgtccggca	gcgagggggg	aggaggtgga	ggtggtggtg	5760
gtggtggtgg	tagggttggg	gggatgggag	gagagggggg	ggtatgtata	tagtggcgat	5820
ggggggcggt	tctttggaag	cggagggagg	gccggcctcg	tcgctggctc	gcgatcctcc	5880
tcgcgttttc	ggcccccacg	acccggaccc	acctgctggt	ttttcttttt	cttttttttc	5940
tttctttttt	tttttttggc	tgcgagacgt	gcggtgcgtg	cggacaactc	acggtgatag	6000
tgggggggtg	tggagactat	tgtccagttg	gctggactgg	ggtgggttgg	gttgggttgg	6060
gttgggctgg	gcttgctatg	gatcgtggat	agcacttttg	gctttaggaa	ctttaggggt	6120
tgtttttgta	aatgttttga	gtctaagttt	atctttttatt	tttactagaa	aaaataacca	6180
tgcgctgcaa	cgggggaaag	ctattttaat	cttattattg	ttcattgtga	gaattcgcct	6240
gaatatatat	ttttctcaaa	aattatgtca	aattagcata	tgggtttttt	taaagatatt	6300
tcttatacaa	atccctctgt	atttataaaa	gcaaacgaac	ttaaaacccg	actcaaatac	6360
agatatgcat	ttccaaaagc	gaataaaact	aaaaaccaat	tcatacaaaa	atgacgtatc	6420

Sequence Listing.txt

aaagtaccga	caaaaacatc	ctcaatTTTT	ataatagtag	aaaagagtaa	atttcacttt	6480
gggccacctt	ttattaccga	tattttactt	tataccacct	tttaactgat	gttttcactt	6540
ttgaccaggt	aatcttacct	ttgttttatt	ttggactatc	ccgactctct	tctcaagcat	6600
atgaatgacc	tcgaccggca	tgcagatctg	gcgcgccatg	caggtcctgc	tgagcctcga	6660
catgttgctg	caaaattcgc	cctggacccg	cccaacgatt	tgtcgtcact	gtcaagggtt	6720
gacctgcact	tcatttggca	catacaccaa	aaaaatgctg	cataattctc	ggggcagcaa	6780
gtcggttacc	cggccgccgt	gctggaccgg	gttgaatggg	gcccgttaact	ttcggtagag	6840
cggacggcca	atactcaact	tcaaggaatc	tcacccatgc	gcgccggcgg	ggaaccggag	6900
ttcccttcag	tgagcggtat	tagttcgccg	ctcgggtgtg	cgtagatact	agcccctggg	6960
gcacttttga	aatttgaata	agatttatgt	aatcagtctt	ttaggtttga	ccggttctgc	7020
cgcttttttt	aaaattggat	ttgtaataat	aaaacgcaat	tgtttggtat	tgtggcgctc	7080
tatcatagat	gtcgtataa	acctattcag	cacaatatat	tgttttcatt	ttaatattgt	7140
acataaagt	agtaggttac	aatcagtaaa	ttgaacggag	aatattattc	ataaaaatac	7200
gatagtaacg	ggtgatatat	tcattagaat	gaaccgaaac	cggcggtaag	gatctgagct	7260
acacatgctc	aggtttttta	caacgtgcac	aacagaattg	aaagcaaata	tcatgcgatc	7320
ataggcgctc	cgcatatctc	attaaagcag	gactctagac	tgcagtcaga	gctggagggg	7380
ggaggattcg	agcttgcgcg	ggagggcgat	gtgctccttg	agggacagct	cgtcgagggc	7440
cttcagccg	tcgatggtga	ggaagcgggt	gttggcgggt	gccttgatgg	tcctgccgag	7500
gcgggtcttg	aggatataga	cgagcttctt	gccggtgcag	aacacgcggg	acaccttggc	7560
ggactccagc	ttcatggtct	gctcgttgat	ggcccaaatc	tcgaagtcct	tctcgtcgag	7620
gaggtccttg	atggacacgc	gcttgccggg	ggaggcgagg	gagatgaggg	agtcgccgga	7680
gatgcagccg	gactccctcc	agccgagggc	ctgggcctcg	gacttggtga	tgtagttgtc	7740
cgggagcttg	tggtaggtct	ggaggtagtc	ggccacgccg	tcgaagggtg	taatcacttg	7800
ggccatatcg	atgcttaatt	agctttgggt	aattggagtg	atgggagtg	gtgtagatga	7860
ggctaattgc	ttgtgtctat	ttataatggc	tgtgattagg	acttttgcta	gctaagagtg	7920
ttctaagctg	tttagtgtaa	gtttgagctg	gatcaaacat	gaaaatgggtg	tgaatgatca	7980
gaaaagtttg	taattagcaa	tgcttaattt	ccactgtttt	tgttttgctg	ttatgtcttc	8040
ctgttttttt	tttctgtgcc	tgccctgacc	aaatttatta	agattgagag	aaggtaaaac	8100
attttcaaca	aataactcc	ctccgtttct	aaatatattga	taccattgac	tttttagcac	8160
atatttaacc	gttcgtcata	ttcaaaaact	tttgtgaaat	atgtaaaact	atatgtatac	8220
atataagtat	atttaacaat	aatcaaatg	atagaaaaat	aattaataat	tacttaaatt	8280
tttttaata	agatgaacat	tcaaacatat	ttaaaaaaa	atcaatggcg	tcaaatat	8340
agaaactgat	ggagtagtta	ttaatattac	atctcttcct	atggataaac	agcactttac	8400
atcgaacaaa	tggaagcata	cacgccgggt	tggctgccgg	cattgcaatt	aaagttat	8460

Sequence Listing.txt

cttcagtttg	agatatttgt	aaatgttaat	ttgcaggaac	taattaaata	agtttgttgg	8520
agcttctaga	atgtagatta	attgtggcta	tgtgatcgaa	atattctcta	cgaaatcgat	8580
ctaaaatgtg	gtgcatgcat	tgtgctgtgt	tgttgattta	agggattgta	tcgtgggagc	8640
acaaaacaaa	tgccgttcgt	tggtttcgct	acaacccaac	ttaatttgca	tctattaaga	8700
tagtgacca	cctaaactga	ttaactgcca	tcattgtttt	tatatgatac	ctttattgtg	8760
gatttttttt	tttgccgcgc	cgggacaaaag	atgcaagcgg	aattttgtaa	aaagaaattt	8820
gaactgaacc	aaggcggcac	aacaattata	gtgttatcga	aagatgtatg	ttccctccgt	8880
tacaaaataa	gctaattctt	tacagtgtag	gtaacattga	agatgtattc	acaccgtacg	8940
agtttggttt	atttttggac	aaagagacga	gtaggtaaca	acatttcaga	aatttttagtg	9000
actgaccctg	agtgtcactc	agtgtatttg	gagctcattt	gtgtggcaaa	aacatttccg	9060
aatgattcag	ggttttaacc	cttgtgacca	ctcttcaatc	caagtgcaaa	gacaatagaa	9120
aggtggctgg	tatgggtgta	cctattcagt	gatcgtctgt	cacctttatt	tctagtggac	9180
gaccctttca	ttggatgcca	tgtgtcatgg	ctaaaatatt	gaactgtcat	ttaaattatt	9240
aagtattaaa	cttctgttaa	ttggaaatat	actgaggccc	cgtttggtta	atgggaaagg	9300
aaaatcattt	cccaccactc	aaaagacatc	tttaaattct	aaccttttat	tctccttctt	9360
ccatttaatc	ctaacccttc	atttatttcc	caatcccaat	tccaccacat	atttcccatt	9420
gtccaaatac	aacctgaggg	ttttaaccaa	aattcacttt	gaactgtgta	aaaaaaaggc	9480
gccgaattcc	ctacgcccc	aactgagaga	actcaaaggt	taccccagtt	ggggcacaga	9540
tctgtcgagt	agcttagatc	agattgtcgt	ttccgcctt	cagtttaaac	tatcagtgtt	9600
tgacaggata	tattggcggg	taaacctaag	agaaaagagc	gtttattaga	ataatcggat	9660
atttaaaagg	gcgtgaaaag	gtttatccgt	tcgtccattt	gtatgtgcat	gccaaccaca	9720
gggttcccc	gatcaggcgc	tggctgctga	acccccagcc	ggaactgacc	ccacaaggcc	9780
ctagcgtttg	caatgcacca	ggtcatcatt	gaccagggcg	tgttccacca	ggccgctgcc	9840
tcgcaactct	tcgcaggctt	cgccgacctg	ctcgcgccac	ttcttcacgc	gggtggaatc	9900
cgatccgcac	atgaggcgga	aggtttccag	cttgagcggg	tacggctccc	ggtgctgact	9960
gaaatagtcg	aacatccgtc	gggccgtcgg	cgacagcttg	cggtacttct	cccatatgaa	10020
tttcgtgtag	tggctgccag	caaacagcac	gacgatttcc	tcgtcgatca	ggacctggca	10080
acgggacgtt	ttcttgccac	ggtccaggac	gcggaagcgg	tgcagcagcg	acaccgattc	10140
caggtgcca	acgcggtcgg	acgtgaagcc	catcgccgtc	gcctgtaggc	gcgacaggca	10200
ttcctcggcc	ttcgtgtaat	accggccatt	gatcgaccag	cccaggctct	ggcaaagctc	10260
gtagaacgtg	aagggtgatc	gctcgccgat	aggggtgcgc	ttcgcgtact	ccaacacctg	10320
ctgccacacc	agttcgtcat	cgtcggcccc	cagctcgacg	ccggtgtagg	tgatcttcac	10380
gtccttggtg	acgtggaaaa	tgaccttggt	ttgcagcgcc	tcgcgcggga	ttttcttggt	10440
gcgcgtgggt	aacagggcag	agcgggccgt	gtcgtttggc	atcgctcgca	tcgtgtccgg	10500
ccacggcgca	atatcgaaca	aggaaagctg	catttccttg	atctgctgct	tcgtgtgttt	10560

Sequence Listing.txt

cagcaacgcg	gcctgcttgg	cctcgcgtgac	ctgttttgcc	aggtcctcgc	cggcgggtttt	10620
tcgcttcttg	gtcgtcatag	ttcctcgcgt	gtcgatggtc	atcgacttcg	ccaaacctgc	10680
cgcctcctgt	tcgagacgac	gcgaacgctc	cacggcggcc	gatggcgcg	gcagggcagg	10740
gggagccagt	tgcacgctgt	cgcgctcgat	cttggccgta	gcttgctgga	ccatcgagcc	10800
gacggactgg	aaggtttcgc	ggggcgcacg	catgacgggtg	cggcttgcca	tggtttcggc	10860
atcctcggcg	gaaaaccccc	cgtcgatcag	ttcttgccctg	tatgccttcc	ggtcaaactgt	10920
ccgattcatt	caccctcctt	gcgggattgc	cccgaactcac	gccggggcaa	tgtgccctta	10980
ttcctgattt	gacccgcctg	gtgccttgggt	gtccagataa	tccaccttat	cggcaatgaa	11040
gtcgggtccc	tagaccgtct	ggccgtcctt	ctcgtacttg	gtattccgaa	tcttgccctg	11100
cacgaatacc	agcgaccctt	tgcccaaata	cttgccgtgg	gcctcggcct	gagagccaaa	11160
acacttgatg	cgaagaagt	cggtgcgctc	ctgcttgctg	ccggcatcgt	tgcgccacat	11220
ctaggatctg	ccaggaaccg	taaaaaggcc	gcgttgctgg	cgtttttcca	taggctccgc	11280
ccccctgacg	agcatcacia	aatcgacgc	tcaagtcaga	ggtggcgaaa	cccgacagga	11340
ctataaagat	accaggcggt	tccccctgga	agctccctcg	tgcgctctcc	tgttccgacc	11400
ctgccgctta	ccgatacct	gtccgccttt	ctcccttcgg	gaagcgtggc	gctttctcat	11460
agctcacgct	gtaggtatct	cagttcggtg	taggtcgttc	gctccaagct	gggctgtgtg	11520
cacgaacccc	ccgttcagcc	cgaccgctgc	gccttatccg	gtaactatcg	tcttgagtcc	11580
aacccggtaa	gacacgactt	atcgccactg	gcagcagcca	ctggtaacag	gattagcaga	11640
gcgaggtatg	taggcggtgc	tacagagttc	ttgaagtgggt	ggcctaacta	cggctacact	11700
agaaggacag	tatttggtat	ctgcgctctg	ctgaagccag	ttaccttcgg	aaaaagagtt	11760
ggtagctctt	gatccggcaa	acaaaccacc	gctggtagcg	gtgggtttttt	tgtttgcaag	11820
cagcagatta	cgcgagaaa	aaaaggatct	caagaagatc	ctttgatctt	ttctacgggg	11880
tctgacgctc	agtgaacga	aaactcacgt	taagggattt	tggatcatgag	attatcaaaa	11940
aggatcttca	cctagatcct	tttaaattaa	aatgaagtt	ttaaatcaat	ctaaagtata	12000
tatgagtaaa	cttggctctga	cagctaaaac	aattcatcca	gtaaaatata	atattttatt	12060
ttctcccaat	caggcttgat	cccagtaag	tcaaaaaata	gctcgacata	ctgttcttcc	12120
ccgatatcct	ccctgatcga	ccggacgcag	aaggcaatgt	cataccactt	gtccgcccctg	12180
ccgcttctcc	caagatcaat	aaagccactt	actttgccat	ctttcacaaa	gatgttgctg	12240
tctcccagggt	cgccgtggga	aaagacaagt	tcctcttcgg	gcttttccgt	ctttaaaaaa	12300
tcatacagct	cgcgcggtat	tttaaattga	gtgtcttctt	cccagttttc	gcaatccaca	12360
tcggccagat	cgttattcag	taagtaatcc	aattcggcta	agcggctgtc	taagctattc	12420
gtatagggac	aatccgatat	gtcgatggag	tgaaagagcc	tgatgcactc	cgcatacagc	12480
tcgataatct	tttcagggtc	ttgttcatct	tcatactctt	ccgagcaaag	gacgccatcg	12540
gcctcactca	tgagcagatt	gctccagcca	tcatgccgtt	caaagtgcag	gacctttgga	12600

Sequence Listing.txt

```

acaggcagct ttccttccag ccatagcatc atgtcctttt cccgttccac atcataggtg 12660
gtccctttat accggctgtc cgtcattttt aaatataggt tttcattttc tcccaccagc 12720
ttatatacct tagcaggaga cattccttcc gtatctttta cgcagcggta tttttcgatc 12780
agttttttca attccggtga tattctcatt ttagccatac tcttcctttt tcaatattat 12840
tgaagcattt atcaggggta ttgtctcatg agcggataca tatttgaatg tatttagaaa 12900
aataaacaaa taggggttcc gcgcacgaat tggccagcgc tgccattttt ggggtgaggc 12960
cgttcgcggc cgagggggcg agccccctgg gggatgggag gcccgcgtta gcgggcccgg 13020
aggggttcgag aagggggggc accccccttc ggcgtgcgcg gtcacgcgca cagggcgcag 13080
ccctgggtta aaacaagggt tataaatatt ggtttaaaag cagggttaaaa gacagggttag 13140
cgggtggccga aaaacgggcg gaaacccttg caaatgctgg attttctgcc tgtggacagc 13200
ccctcaaagt tcaataggtg cggccctcat ctgtcagcac tctgcccctc aagtgtcaag 13260
gatcgcgccc ctcatctgtc agtagtcgcg cccctcaagt gtcaataaccg cagggcactt 13320
atccccaggc ttgtccacat catctgtggg aaactcgcgt aaaatcaggc gttttcgccg 13380
atttgcgagg ctggccagct ccacgtcgcc ggccgaaatc gagcctgccc ctcatctgtc 13440
aacgccgcgc cgggtgagtc ggccccctca gtgtcaacgt ccgccccctc tctgtcagtg 13500
agggccaagt tttccgcgag gtatccacaa cgccggcggc cgcggtgtct cgcacacggc 13560
ttcgacggcg tttctggcgc gtttgcaggg ccatagacgg ccgccagccc agcggcgagg 13620
gcaaccagcc cggtgagcgt cgcaaaggag atcctgatct gactgatggg ctgcctgtat 13680
cgagtgggtg ttttgtgccg agctgccggg cggggagctg ttggctggct ggtggcagga 13740
tatattgtgg tgtaaacaaa ttgacgctta gacaacttaa taacacattg cggacgtttt 13800
taatgtactg gggatgatgc actctagcgg gcc 13833

```

```

<210> 46
<211> 13863
<212> DNA
<213> Artificial

```

```

<220>
<223> DNA sequence

```

```

<220>
<221> misc_feature
<222> (1)..(13863)
<223> complete sequence of vector pICH25301

```

```

<400> 46
cacaactagt gatgggtgag gtggagtacg cgcccgggga gcccaagggc acgccctggc 60
acccgcaccg cggcttcgag ctcgagtgca ggtcgatcta gtaacataga tgacaccgcg 120
cgcgataatt tatcctagtt tgcgcgctat attttgtttt ctatcgcgta ttaaatgtat 180
aattgcggga ctctaatcat aaaaacccat ctcataaata acgtcatgca ttacatgtta 240
attattacat gcttaacgta attcaacaga aattatatga taatcatcgc aagaccggca 300
acaggattca atcttaagaa actttattgc caaatgtttg aacgatctgc ttgactctag 360

```

Sequence Listing.txt

agcttagcat	tagtacacag	tcctgccatc	accatccagg	atcatgtcct	tgaatgcgcc	420
cccacttggg	atcataggca	gcacatgctc	ctggtgcggg	acgatgatat	ccaacaagta	480
tggccctgga	gtctcgagca	tcttcttgat	ggcggcacgg	acttcactct	tctttgttac	540
acggactgca	ggaatattga	accccttagc	aatagtcaca	aaatctggat	atatctcgct	600
ctcacattcc	gggttgccca	agtatgtatg	cgccctattc	gccttgtaaa	acctatcctc	660
aagttgcacc	accataccca	aatgttggtt	gttcaacacc	atcaccttca	cagggaggtt	720
ctcaatgcgg	atcaatgcca	gctcctgaat	gttcatgagg	aagctaccat	ccccatcaat	780
atcaacaact	gtgacacctg	ggtagccac	agaagcacca	gctgcagcag	gcagcccaaa	840
tcccattgcg	cccagaccag	ccgaagacag	ccactgccgt	ggccgcttgt	aggtgtaata	900
ttgtgccgcc	cacatctggt	gctgccaac	accagtagcg	atgattgcct	cacctttcgt	960
cagctcatcc	agcacctgaa	tggcatattg	cggtgggatc	tcttcaccaa	aagttttgta	1020
ccccagagga	aactccctct	tctgctggtc	caactcattg	tgccatgcac	taaaatcaga	1080
acttgtcttt	gttgtgctct	gtttagcag	agcattcaag	ccctgtaaag	caagcttaac	1140
atctgcgcaa	attgacacat	gtggttgctt	gttctttcca	atctctgctg	gatcaatgtc	1200
aatgtgcaca	atcttgccc	tgcttgcaaa	agcctcaatt	ttccctgtca	cacgatcatc	1260
aaaccgcaca	ccaaacgcaa	gcaacaggtc	agccttatcc	acggcataat	ttgcgtacac	1320
cgtgccatgc	atcccaagca	tgcgcagggg	caacgggtcg	tcactgggga	aattgccgag	1380
gcccatacaga	gtggttgtaa	ctgggatacc	agtcagctca	acaaaccagc	gcaattcgtc	1440
accagatgca	gagcagccac	caccgacata	gagaatcggg	cgccgtgact	cgccaaccag	1500
acgcaagacc	tgctcaagca	attctgtcgc	gggtggcttg	ggcaggcgtg	cgatgtaccc	1560
tggtagattc	atcgagggtg	cccagaccgg	cacggccatc	tgctgctgga	tgctcctggg	1620
gatgtcgacc	agcaccgggc	caggacggcc	cgaggacgcg	aggaagaagg	cttcctgtat	1680
gacgcggggg	atgtcctcca	catcaaggac	aaggtaattg	tgcttggtga	tggagcgggt	1740
gacctcgact	atgggcgtct	cctggaaggc	gtcggtgccg	atcatgcggc	gggggacctg	1800
gcccgtgatg	gcgaccatcg	ggacggagtc	gagcagcgcg	tcggcgagcg	cggacacgag	1860
gttggttgcc	ccggggccgg	aggtggcgac	gcagaccccg	acgcggccgg	acgcgcgcgc	1920
gtacccggac	gccgcgaacg	cctcgccctg	ctcgtggcgg	aagaggtggt	tggatgatgac	1980
cggggagcgc	gtcagcgcct	ggtggatctc	catggacgcg	ccgcccgggt	aggcgaacac	2040
gtcgtgacg	ccgcaccgct	ccagcgcctc	cacgaggatg	tccgcgccct	tgcggggctc	2100
ggccggcccc	cacggccgga	gcggcggtgg	cggcggcgcc	ggggacggcg	gggtgaccgg	2160
ggacaccgcc	gagcacctga	ccgccgccgc	ccccaccggg	cctcgagcgg	gaaggacgtg	2220
gtgtcgctgg	tggttcttac	ggccggtctt	ggccgtcgcg	gcggcggaaca	gggcggcggc	2280
cgcggccgcg	gcggtcgtag	ccatggttta	tcgatagctt	atcgtctacc	tacaaaaaag	2340
ctccgcacga	ggctgcattt	gtcacaaatc	atgaaaagaa	aaactaccga	tgaacaatgc	2400

Sequence Listing.txt

tgaggggattc	aaattctacc	cacaaaaaga	agaaagaaag	atctagcaca	tctaagcctg	2460
acgaagcagc	agaaatatat	aaaaatataa	accatagtgc	ccttttcccc	tcttcctgat	2520
cttgtttagc	atggcgga	ttttaaaccc	cccatcatct	cccccaaca	cggcggatcg	2580
cagatctaca	tccgagagcc	ccattccccg	cgagatccgg	gccggatcca	cgccggcgag	2640
agccccagcc	gcgagatccc	gcccctcccc	cgccaccgatc	tgggcgcgca	cgaagccgcc	2700
tctcgcccac	ccaaactacc	aaggccaaag	atcgagaccg	agacggaaaa	aaaaaacgga	2760
gaaagaaaga	ggagaggggc	ggggtggtta	ccggcgcggc	ggcggcggag	ggggaggggg	2820
gaggagctcg	tcgtccggca	gcgagggggg	aggaggtgga	ggtggtggtg	gtggtggtgg	2880
tagggttggg	gggatgggag	gagagggggg	ggtatgtata	tagtggcgat	ggggggcggt	2940
tctttggaag	cggagggagg	gccggcctcg	tcgctggctc	gcgatcctcc	tcgcgtttcc	3000
ggccccacg	acccggaccc	acctgctgtt	ttttcttttt	cttttttttc	tttctttttt	3060
tttttttggc	tgcgagacgt	gcggtgcgtg	cggacaactc	acggtgatag	tggggggggtg	3120
tggagactat	tgtccagttg	gctggactgg	ggtgggttgg	gttgggttgg	gttgggctgg	3180
gcttgctatg	gatcgtggat	agcacttttg	gcttttaggaa	ctttaggggt	tgtttttgta	3240
aatgttttga	gtctaagttt	atcttttatt	tttactagaa	aaaataacca	tgcgctgcaa	3300
cgggggaaag	ctattttaat	cttattattg	ttcattgtga	gaattcgcct	gaatatatat	3360
ttttctcaaa	aattatgtca	aattagcata	tgggtttttt	taaagatatt	tcttatacaa	3420
atccctctgt	atttacaaaa	gcaaacgaac	ttaaaacccg	actcaaatac	agatatgcat	3480
ttccaaaagc	gaataaacctt	aaaaaccaat	tcatacaaaa	atgacgtatc	aaagtaccga	3540
caaaaacatc	ctcaattttt	ataatagtag	aaaagagtaa	atttcacttt	gggccacctt	3600
ttattaccga	tattttactt	tataccacct	tttaactgat	gttttcactt	ttgaccaggt	3660
aatcttacct	ttgttttatt	ttggactatc	ccgactctct	tctcaagcat	atgaatgacc	3720
tcgaccggca	tgcagatctg	gcgcgccatg	caggctctgc	tgagcctcga	catgtttgtc	3780
caaaattcgc	cctggacccg	ccaacgatt	tgctgctact	gtcaagggtt	gacctgcact	3840
tcatttggca	catacaccaa	aaaaatgctg	cataattctc	ggggcagcaa	gtcggttacc	3900
cggccgccgt	gctggaccgg	gttgaatgg	gcccgtaact	ttcggtagag	cggacggcca	3960
atactcaact	tcaaggaatc	tcacccatgc	gcgccggcgg	ggaaccggag	ttcccttcag	4020
tgagcgttat	tagttcgccg	ctcgggtgtg	cgtagatact	agcccctggg	gcacttttga	4080
aatttgaata	agatttatgt	aatcagtctt	ttaggtttga	ccggttctgc	cgcttttttt	4140
aaaattggat	ttgtaataat	aaaacgcaat	tgtttggtat	tgtggcgctc	tatcatagat	4200
gtcgtataaa	acctattcag	cacaatatat	tgttttcatt	ttaatatatt	acataatagt	4260
agtagggtag	aatcagtaaa	ttgaacggag	aatattattc	ataaaaatac	gatagtaacg	4320
ggtgatatat	tcattagaat	gaaccgaaac	cggcggttaag	gatctgagct	acacatgctc	4380
aggtttttta	caacgtgcac	aacagaattg	aaagcaaata	tcatgcgatc	ataggcgctt	4440
cgcatatctc	attaaagcag	gactctagac	tgcagtcaga	gctggaggga	ggaggattcg	4500

Sequence Listing.txt

agcttgcgcg	ggagggcgat	gtgctccttg	agggacagct	cgtcgaggcg	cttccagccg	4560
tcgatggtga	ggaagcgggtg	gttggcggtg	gccttgatgg	tcctgccgag	gcgggtcttg	4620
aggatataga	cgagcttctt	gccggtgcag	aacacgcggg	acaccttggc	ggactccagc	4680
ttcatggtct	gctcgttgat	ggcccaaadc	tcgaagtcct	tctcgtcgag	gaggtccttg	4740
atggacacgc	gcttgccggt	ggaggcgagg	gagatgaggg	agtcgccgga	gatgcagccg	4800
gactccctcc	agccgagggc	ctgggcctcg	gacttggtga	tgtagtgtgc	cgggagcttg	4860
tggtaggtct	ggaggtagtc	ggccacgccg	tcgaagggtg	taatcacttg	ggccatatcg	4920
atgcttaatt	agctttgggt	aattggagtg	atgggagtg	gtgtagatga	ggctaattgc	4980
ttgtgtctat	ttataatggc	tgtgattagg	acttttgcta	gctaagagtg	ttctaagctg	5040
ttgtagtgaa	gtttgagctg	gatcaaacad	gaaaatgggtg	tgaatgatca	gaaaagtttg	5100
taattagcaa	tgcttaattt	ccactgtttt	tgttttgctg	ttatgtcttc	ctgttttttt	5160
tttctgtgcc	tgccctgacc	aaatttatta	agattgagag	aaggtaaaac	attttcaaca	5220
aatatactcc	ctccgtttct	aaatatttga	taccattgac	tttttagcac	atattttaacc	5280
gttcgtcata	ttcaaaaact	tttgtgaaat	atgtaaaact	atatgtatac	atataagtat	5340
atttaacaat	aaatcaaagt	atagaaaaat	aattaataat	tacttaaat	tttttaata	5400
agatgaacat	tcaaacatat	ttaaaaaaa	atcaatggcg	tcaaatattt	agaaactgat	5460
ggagtagtta	ttaatattac	atctcttcct	atggataaac	agcactttac	atcgaacaaa	5520
tggaagcata	cacgccgggt	tggctgccgg	cattgcaatt	aaagtatttt	cttcagtttg	5580
agatatttgt	aaatgttaat	ttgcaggaac	taattaaata	agtttggttg	agcttctaga	5640
atgtagatta	attgtggcta	tgtgatcgaa	atattctcta	cgaaatcgat	ctaaaatgtg	5700
gtgcatgcat	tgtgctgtg	tgctgattta	agggattgta	tcgtgggagc	acaaaacaaa	5760
tgccgttcgt	tggtttcgct	acaaccaaac	ttaatttgca	tctattaaga	tagtgaccaa	5820
cctaaactga	ttaactgcca	tcattgtttt	tatatgatac	ctttattgtg	gatttttttt	5880
tttgccgcgc	cgggacaaag	atgcaagcgg	aattttgtaa	aaagaaattt	gaactgaacc	5940
aaggcggcac	aacaattata	gtgttatcga	aagatgtatg	ttccctccgt	tacaaaataa	6000
gctaattctg	tacagtgtag	gtaacattga	agatgtattc	acaccgtacg	agtttggttt	6060
atttttggac	aaagagacga	gtaggtaaca	acatttcaga	aatttttagtg	actgaccctg	6120
agtgtcactc	agtgtatttg	gagctcattt	gtgtggcaaa	aacatttccg	aatgattcag	6180
ggttttaacc	cttgtgacca	ctcttcaatc	caagtgcaaa	gacaatagaa	aggtggctgg	6240
tatgggtgta	cctattcagt	gatcgtctgt	cacctttatt	tctagtggac	gaccctttca	6300
ttggatgcca	tgtgtcatgg	ctaaaatatt	gaactgtcat	ttaaattatt	aagtattaaa	6360
cttctgttaa	ttggaaatat	actgaggccc	cgtttggtta	atgggaaagg	aaaatcattt	6420
cccaccact	aaaagacatc	tttaaatctt	aaccttttat	tctccttctt	ccatttaatc	6480
ctaacccttc	atttatttcc	caatcccaat	tccaccacat	atttccatt	gtccaaatac	6540

Sequence Listing.txt

aacctgaggg	ttttaaccaa	aattcacttt	gaactgtgta	aaaaaaaggc	gccgaattcc	6600
ctacgcccc	aactgagaga	actcaaaggt	tacccagatt	ggggcacaga	tctgtcgagt	6660
agcttagatc	agattgtcgt	ttcccgctt	cagtttaaac	tatcagtgtt	tgacaggata	6720
tattggcggg	taaacctaag	agaaaagagc	gtttattaga	ataatcggat	atttaaaagg	6780
gcgtgaaaag	gtttatccgt	tcgtccattt	gtatgtgcat	gccaaccaca	gggttcccca	6840
gatcaggcgc	tggctgctga	acccccagcc	ggaactgacc	ccacaaggcc	ctagcgtttg	6900
caatgcacca	ggcatcatt	gaccagggc	tgttccacca	ggccgctgcc	tcgcaactct	6960
tcgcaggctt	cgccgacctg	ctcgcgccac	ttcttcacgc	gggtggaatc	cgatccgcac	7020
atgaggcgga	aggtttccag	cttgagcggg	tacggctccc	ggtgcgagct	gaaatagtcg	7080
aacatccgtc	gggccgtcgg	cgacagcttg	cggtacttct	cccatatgaa	tttcgtgtag	7140
tggtcgccag	caaacagcac	gacgatttcc	tcgtcgatca	ggacctggca	acgggacgtt	7200
ttcttgccac	ggtccaggac	gcggaagcgg	tgcagcagcg	acaccgattc	caggtgccca	7260
acgcggtcgg	acgtgaagcc	catcgccgtc	gcctgtaggc	gcgacaggca	ttcctcggcc	7320
ttcgtgtaat	accggccatt	gatcgaccag	cccaggctct	ggcaaagctc	gtagaacgtg	7380
aaggtgatcg	gctcgccgat	aggggtgctc	ttcgcgtact	ccaacacctg	ctgccacacc	7440
agttcgtcat	cgtcggcccc	cagctcgacg	ccggtgtagg	tgatcttcac	gtccttgttg	7500
acgtggaaaa	tgaccttggt	ttgcagcgcc	tcgcgcggga	ttttcttggt	gcgcgtggtg	7560
aacagggcag	agcgggccgt	gtcgtttggc	atcgctcgca	tcgtgtccgg	ccacggcgca	7620
atatcgaaca	aggaaagctg	catttccttg	atctgctgct	tcgtgtgttt	cagcaacgcg	7680
gcctgcttgg	cctcgctgac	ctgttttgcc	aggtcctcgc	cggcggtttt	tcgcttcttg	7740
gtcgtcatag	ttcctcgctg	gtcgatggtc	atcgacttcg	ccaaacctgc	cgctcctgtg	7800
tcgagacgac	gcgaacgctc	cacggcggcc	gatggcgcg	gcagggcagg	gggagccagt	7860
tgcacgctgt	cgcgctcgat	cttggccgta	gcttgctgga	ccatcgagcc	gacggactgg	7920
aaggtttcgc	ggggcgcacg	catgacggtg	cggcttgcca	tggtttcggc	atcctcggcg	7980
gaaaaccccg	cgtcgatcag	ttcttgccctg	tatgccttcc	ggtcaaactg	ccgattcatt	8040
caccctcctt	gcgggattgc	cccgactcac	gccggggcaa	tgtgccctta	ttcctgattt	8100
gacccgcctg	gtgccttggt	gtccagataa	tccaccttat	cggcaatgaa	gtcgggtccc	8160
tagaccgtct	ggccgtcctt	ctcgtaactg	gtattccgaa	tcttgccctg	cacgaatacc	8220
agcgacccct	tgcccaaata	cttgccgtgg	gcctcggcct	gagagccaaa	acacttgatg	8280
cggagaaggt	cgggtgcgctc	ctgcttgctg	ccggcatcgt	tgcgccacat	ctaggatctg	8340
ccaggaaccg	taaaaaggcc	gcgttgctgg	cgtttttcca	taggctccgc	ccccctgacg	8400
agcatcacia	aaatcgacgc	tcaagtcaga	ggtggcgaaa	cccgacagga	ctataaagat	8460
accaggcgtt	ttcccctgga	agctccctcg	tgcgctctcc	tgttccgacc	ctgccgctta	8520
ccggatacct	gtccgccttt	ctcccttcgg	gaagcgtggc	gctttctcat	agctcacgct	8580
gtaggtatct	cagttcgggtg	taggtcgttc	gctccaagct	gggctgtgtg	cacgaacccc	8640

Sequence Listing.txt

ccgttcagcc	cgaccgctgc	gccttatccg	gtaactatcg	tcttgagtcc	aacccggtaa	8700
gacacgactt	atcgccactg	gcagcagcca	ctggtaacag	gattagcaga	gcgaggtatg	8760
taggcggtgc	tacagagttc	ttgaagtgg	ggcctaacta	cggctacact	agaaggacag	8820
tatttggtat	ctgcgctctg	ctgaagccag	ttaccttcgg	aaaaagagtt	ggtagctctt	8880
gatccggcaa	acaaaccacc	gctggtagcg	gtgggttttt	tgtttgcaag	cagcagatta	8940
cgcgcagaaa	aaaaggatct	caagaagatc	ctttgatctt	ttctacgggg	tctgacgctc	9000
agtggaacga	aaactcacgt	taagggatgt	tggtcatgag	attatcaaaa	aggatcttca	9060
cctagatcct	tttaaattaa	aatgaagtt	ttaaataaat	ctaaagtata	tatgagtaaa	9120
cttggcttga	cagctaaaac	aattcatcca	gtaaaatata	atattttatt	ttctcccaat	9180
caggcttgat	ccccagtaag	tcaaaaaata	gctcgacata	ctgttcttcc	ccgatatcct	9240
ccctgatcga	ccggacgcag	aaggcaatgt	cataccactt	gtccgccctg	ccgcttctcc	9300
caagatcaat	aaagccactt	actttgccat	ctttcacaaa	gatgttgctg	tctcccaggt	9360
cgccgtggga	aaagacaagt	tcctcttcgg	gcttttccgt	ctttaaaaaa	tcatacagct	9420
cgcgcggtatc	tttaaagtga	gtgtcttctt	cccagttttc	gcaatccaca	tcggccagat	9480
cgttattcag	taagtaatcc	aattcggcta	agcggctgtc	taagctattc	gtatagggac	9540
aatccgatat	gtcgatggag	tgaaagagcc	tgatgcactc	cgcatacagc	tcgataatct	9600
tttcagggct	ttgttcatct	tcatactctt	ccgagcaaag	gacgccatcg	gcctcactca	9660
tgagcagatt	gctccagcca	tcatgccgtt	caaagtgcag	gacctttgga	acaggcagct	9720
ttccttccag	ccatagcatc	atgtcctttt	cccgttccac	atcataggtg	gtccctttat	9780
accggctgtc	cgtcattttt	aaatataggt	tttcattttc	tcccaccagc	ttatatacct	9840
tagcaggaga	cattccttcc	gtatctttta	cgcagcggta	tttttcgatc	agttttttca	9900
attccggtga	tattctcatt	ttagccatac	tcttcctttt	tcaatattat	tgaagcattt	9960
atcagggtta	ttgtctcatg	agcggataca	tatttgaatg	tatttagaaa	aataaacaaa	10020
taggggttcc	gcgcacgaat	tggccagcgc	tgccattttt	ggggtgaggg	cgttcgcggc	10080
cgaggggagc	agcccctggg	gggatgggag	gcccgcgtta	gcggggccggg	agggttcgag	10140
aagggggggc	accccccttc	ggcgtgcgcg	gtcacgcgca	cagggcgagc	ccctgggttaa	10200
aaacaagggt	tataaatatt	ggtttaaaag	caggttaaaa	gacagggttag	cggtggccga	10260
aaaacgggag	gaaacccttg	caaatgctgg	atcttctgcc	tgtggacagc	ccctcaaagt	10320
tcaataggtg	cgcccctcat	ctgtcagcac	tctgcccctc	aagtgtcaag	gatcgcgccc	10380
ctcatctgtc	agtagtcgag	cccctcaagt	gtcaataacc	cagggcactt	atccccaggc	10440
ttgtccacat	catctgtggg	aaactcgcgt	aaaatcaggc	gttttcgccc	atttgcgagg	10500
ctggccagct	ccacgtcgcc	ggccgaaatc	gagcctgccc	ctcatctgtc	aacgccgcgc	10560
cgggtgagtc	ggcccctcaa	gtgtcaacgt	ccgcccctca	tctgtcagtg	agggccaaagt	10620
tttccgcgag	gtatccacaa	cgccggcggc	cgcggtgtct	cgcacacggc	ttcgacggcg	10680

Sequence Listing.txt

tttctggcgc	gtttgcaggg	ccatagacgg	ccgccagccc	agcggcgagg	gcaaccagcc	10740
cggtgagcgt	cgcaaaggag	atcctgatct	gactgatggg	ctgcctgtat	cgagtgggtga	10800
ttttgtgccg	agctgccggt	cggggagctg	ttggctggct	ggtggcagga	tatattgtgg	10860
tgtaaacaaa	ttgacgctta	gacaacttaa	taacacattg	cggacgtttt	taatgtactg	10920
gggtggatgc	actctagcgg	gccctacgcc	cccaactgag	agaactcaaa	ggttacccca	10980
gttggggcac	ggcgcgccac	actcgagaat	tcggcgcctt	ttttttacac	agttcaaagt	11040
gaattttggt	taaaaccctc	aggttgtatt	tggataatgg	ggaataatgt	gggtgggaat	11100
tgggattggg	aatgaacga	agggttagga	ttaaattggaa	gaaggagaat	aatgggttaa	11160
aatttaaaga	tgtcttttag	tgggtgggaa	atgatttccc	tttcccatta	gccaaacggg	11220
gcctcagtat	attttcaatt	aacagaagtt	taatacttaa	taatttaaatt	gacagttcaa	11280
tatttttagcc	atgacacatg	gcatccaatg	aaagggctgt	ccactagaaa	taaaggtgac	11340
agacggtcac	tgaataggta	caccataacc	agccaccttt	ctattgtctt	tgcacttggg	11400
attgaaaagg	tggtcaccaa	gggggttaaaa	ccctgtattc	attcgggaaa	tgtttttgcc	11460
acacaaatga	gttccaaata	cactgagtga	cactacgggt	cagtccctaa	aattttctgaa	11520
atgttgttac	ctaccctgtc	ctttgtccaa	aaataaacca	aaccctgacg	gtgtgaatat	11580
accttcaatg	ttacctacac	tgtacaaggt	tagcttattt	tgtaacggag	ggaacataca	11640
tctttccgat	accagcatt	aataattgtt	gtgccgcctt	ggttcagttc	aaatttcttt	11700
ttacaaaatt	ccgcttgcat	ctttgtcccg	gcgcggcaaa	aaaaaaatcc	acaataaagg	11760
tatcatataa	aaacaatgat	ggcagttaat	cagtttaggt	tggtcactat	cttaatatagat	11820
gcaaattaag	ttgggttgta	gcgaaaccaa	cgaacggcat	ttgttttgtg	ctcccacgat	11880
acaatccctt	aatcagcac	acacgcacaa	tgcatgcacc	acattttaga	tcgatttcgt	11940
agagaatatt	tcgatcacat	agccacaatt	aatctacatt	ctagaagctc	caacaaactt	12000
atttaattag	ttcctgcaaa	ttaacattta	caaatatctc	aaactgaaga	aataacttta	12060
attgcaatgc	cggcagccaa	cccggcgtgt	atgcttccat	ttgttcggat	gtaaaagggtg	12120
ctgtttatcc	ataggaagag	gtgtaatat	aataactact	ccatccgttt	ctaaatatatt	12180
gacgtcattg	actatttggt	taaatatgtt	tgaatgttcg	tcttatttta	aaaaaattta	12240
agtaattatt	aattattttc	tatcattttg	atttattgggt	taaatatacc	ttatatgtat	12300
acatatagtt	ttacatatatt	cacaaaagtt	tttgaatatg	acgaaagggt	aaacatgtgc	12360
taaaaagtca	atggatatcaa	atatttagaa	acggagggag	tatgtttggt	gaaaatgttt	12420
taccttctct	caatcttaat	aaatttggtc	agggcaggca	ccggaaaaaa	aaaacaggaa	12480
ggcataacag	caaaacaaaa	acagtggaaa	ttaagcattg	ctaattacaa	acttttctga	12540
tcattcacac	cattttcatg	tttgatcccg	ctcaaacttc	acttcaacag	cttagacact	12600
cttagctagc	aaaagtccta	atcacaggca	ttataaatgg	cacaggcaat	tagcctcatc	12660
tacacacact	gccatcactc	caattaacca	aagctaatta	agcatcgatt	catgagccccg	12720
gagatcgaga	agctctccca	gtccgacatc	tactgggact	ccatcgtgtc	catcaccgaa	12780

Sequence Listing.txt

```

acgggcggtg aggaggtgtt cgacctcacc gtgccaggcc cgcacaactt cgtggccaac 12840
gacatcatcg tgcacaactc catcgagcag gacggaggcg gaggaagtgg aggcgggtgga 12900
tcagtggcct ccaagggcaa cctcgccgac gtggccccag ggaagtccat cggcggcgac 12960
atcttctcta accgcgaggg caagctccca ggcaagtcgg gcaggacctg gagggaggcc 13020
gacatcaact acacctccgg cttccgcaac tccgaccgca tcctctactc ctccgactgg 13080
ctcatctaca agaccaccga ccactaccag accttcacca agatccgctg aggatcctct 13140
agagtcctgc tttaatgaga tatgcgagac gcctatgata gcatgatatt tgctttcaat 13200
tctgttggtg acgttgtaaa aaacctgagc atgtgtagct cagatcctta ccgccggttt 13260
cggttcattc taatgaatat atcacccgtt actatcgat ttttatgaat aatattctcc 13320
gttcaattta ctgattgtac cttactactt atatgtacaa tattaatatg aaaacaatat 13380
attgtgctga ataggtttat agcgacatct atgatagagc gccacaataa caaacaattg 13440
cgttttatta ttacaaatcc aattttaaaa aaagcggcag aaccgggtcaa acctaaaaga 13500
ctgattacat aaatcttatt caaatattca aagtgccccg ggggctagta tctacgacac 13560
accgagcggc gaactaataa cgctcactga agggaactcc ggttccccgc cggcgcgcac 13620
gggtgagatt cttgaagtt gagtattggc cgtccgctct accgaaagtt acgggcacca 13680
ttcaaccggg tccagcacgg cggccgggta accgacttgc tgccccgaga attatgcagc 13740
atTTTTTTgg tgtatgtgcc aaatgaagtg cagggtcaaac cttgacagtg acgacaaatc 13800
gttgggcggg tccagggcga attttgcgac aacatgtcga ggctcagcag gacctgcagg 13860
tac 13863

```

```

<210> 47
<211> 13878
<212> DNA
<213> Artificial

```

```

<220>
<223> DNA sequence

```

```

<220>
<221> misc_feature
<222> (1)..(13878)
<223> complete sequence of vector pICH27371

```

```

<400> 47
ctacgcccc aactgagaga actcaaaggt taccacagtt ggggcacggc gcgccacact 60
cgagaattcg gcgccttttt ttacacagt tcaaagtga ttttggttaa aaccctcagg 120
ttgtatttgg ataatgggga ataatgtggg tgggaattgg gattgggaaa tgaacgaagg 180
gttaggatta aatggaagaa ggagaataaa tggttaaaat ttaaagatgt cttttagtgg 240
gtgggaaatg atttcccttt ccattagcc aaacggggcc tcagtatat ttcaattaac 300
agaagttaa tacttaataa tttaaatgac agttcaatat tttagccatg acacatggca 360
tccaatgaaa gggtcgtcca ctagaataa aggtgacaga cggtcactga ataggtacac 420

```

Sequence Listing.txt

ccataccagc	cacctttcta	ttgtccttgc	acttgggatt	gaaaaggtgg	tcaccaaggg	480
gttaaaaccc	tgtattcatt	cgggaaatgt	ttttgccaca	caaagagtt	ccaaatacac	540
tgagtgcac	tacgggtcag	tccctaaaat	ttctgaaatg	ttgttaccta	cccgtctctt	600
tgtccaaaaa	taaaccaaac	ccgtacggtg	tgaatatacc	ttcaatgtta	cctacactgt	660
acaagggttag	cttattttgt	aacggaggga	acatacatct	ttccgatacc	cagcattaat	720
aattgtttgtg	ccgccttggt	tcagttcaaa	tttcttttta	caaaattccg	cttgcattctt	780
tgtcccggtg	cggcaaaaaa	aaaatccaca	ataaaggat	catataaaaa	caatgatggc	840
agttaatcag	tttaggttgg	tcactatctt	aatagatgca	aattaagttg	ggttgtagcg	900
aaaccaacga	acggcatttg	ttttgtgctc	ccacgataca	atcccttaaa	tcagcacaca	960
cgcacaatgc	atgcaccaca	ttttagatcg	atttcgtaga	gaatatttcg	atcacatagc	1020
cacaattaat	ctacattcta	gaagctccaa	caaacttatt	taattagttc	ctgcaaat	1080
acatttaca	atatctcaa	ctgaagaaat	aactttaatt	gcaatgccgg	cagccaaccc	1140
ggcgtgtatg	cttcatttg	ttcggatgta	aaagggtgctg	tttatccata	ggaagaggtg	1200
taatattaat	aactactcca	tccgtttcta	aatatttgac	gtcattgact	atttgtttaa	1260
atatgtttga	atgttcgtct	tattttaaaa	aaatttaagt	aattattaat	tattttctat	1320
cattttgatt	tattggttaa	atatacctta	tatgtataca	tatagtttta	catatttcac	1380
aaaagttttt	gaatatgacg	aaagggttaa	catgtgctaa	aaagtcaatg	gtatcaaata	1440
tttagaaacg	gagggagtat	gtttgttgaa	aatgttttac	cttctctcaa	tcttaataaa	1500
tttggtcagg	gcaggcaccg	gaaaaaaaaa	acaggaaggc	ataacagcaa	aacaaaaaca	1560
gtggaaatta	agcattgcta	attacaaact	tttctgatca	ttcacaccat	tttcatgttt	1620
gatcccgtc	aaacttcact	tcaacagctt	agacactctt	agctagcaaa	agtcctaatac	1680
acaggcatta	taaatggcac	aggcaattag	cctcatctac	acacactgcc	atcactccaa	1740
ttaaccaaaag	ctaattaagc	atcgattcat	gagcccggag	atcgagaagc	tctcccagtc	1800
cgacatctac	tgggactcca	tcgtgtccat	caccgaaacg	ggcgtggagg	aggtgttcga	1860
cctcaccgtg	ccaggccccg	acaacttcgt	ggccaacgac	atcatcgtgc	acaactccat	1920
cgagcaggac	ggaggcgggtg	gaagtggagg	cggtggatca	ggaggcgggtg	gctcagtggc	1980
ctccaagggc	aacctcgccg	acgtggcccc	agggaagtcc	atcggcggcg	acatcttctc	2040
caaccgcgag	ggcaagctcc	caggcaagtc	gggcaggacc	tggaggagg	ccgacatcaa	2100
ctacacctcc	ggcttccgca	actccgaccg	catcctctac	tcctccgact	ggctcatcta	2160
caagaccacc	gaccactacc	agaccttcac	caagatccgc	tgaggatcct	ctagagtcct	2220
gctttaatga	gatatgcgag	acgcctatga	tcgcatgata	tttgctttca	attctgttgt	2280
gcacgttgta	aaaaacctga	gcatgtgtag	ctcagatcct	taccgccggt	ttcggttcat	2340
tctaataaat	atatcaccgg	ttactatcgt	atttttatga	ataatattct	ccgttcaatt	2400
tactgattgt	accctactac	ttatatgtac	aatattaaaa	tgaaaacaat	atattgtgct	2460
gaatagggtt	atagcgacat	ctatgataga	gcgccacaat	aacaaacaat	tgcgttttat	2520

Sequence Listing.txt

tattacaaat	ccaattttta	aaaaagcggc	agaaccggtc	aaacctaata	gactgattac	2580
ataaatctta	ttcaaatttc	aaaagtgtcc	caggggctag	tatctacgac	acaccgagcg	2640
gcgaactaat	aacgctcact	gaagggaact	ccggttcccc	gccggcgcg	atgggtgaga	2700
ttccttgaag	ttgagtattg	gccgtccgct	ctaccgaaag	ttacgggcac	cattcaaccc	2760
gggccagcac	ggcgccggg	taaccgactt	gctgccccga	gaattatgca	gcattttttt	2820
gggtgatgtg	ccaaatgaag	tgcaggtcaa	accttgacag	tgacgacaaa	tcgttggg	2880
gggccagggc	gaattttg	acaacatgtc	gaggctcagc	aggacctgca	gggtaccacaa	2940
ctagtgatgg	gtgaggtgga	gtacgcgccc	ggggagccca	agggcacgcc	ctggcacc	3000
caccgaggct	tcgagctcga	gtgcaggtcg	atctagtaac	atagatgaca	ccgcgcgcga	3060
taatttatcc	tagtttg	gctatat	gttttctatc	gcgtattaaa	tgtataattg	3120
cgggactcta	atcataaaaa	cccatctcat	aaataacgtc	atgcattaca	tgtaattat	3180
tacatgctta	acgtaattca	acagaaatta	tatgataatc	atcgcaagac	cggcaacagg	3240
attcaatctt	aagaaacttt	attgccaaat	gtttgaacga	tctgcttgac	tctagagctt	3300
agcattagta	cacagtcctg	ccatcaccat	ccaggatcat	gtccttgaat	gcgccccac	3360
ttgggatcat	aggcagcaca	tgctcctgg	gcgggacgat	gatatccaac	aagtatggcc	3420
ctggagtctc	gagcatcttc	ttgatggcgg	cacggacttc	actcttcttt	gttacacgga	3480
ctgcaggaat	attgaacccc	ttagcaatag	tcacaaaatc	tgatatatac	tcgctctcac	3540
attccgggtt	gccaagtat	gtatgcgccc	tattcgcctt	gtaaaacct	tcctcaagtt	3600
gcaccacat	accaaagt	tggttgttca	acaccatcac	cttcacagg	aggttctcaa	3660
tgcggatcaa	tgccagctcc	tgaatgttca	tgaggaagct	accatcccc	tcaatatcaa	3720
caactgtgac	acctgggtta	gccacagaag	caccagctgc	agcaggcagc	ccaaatcccc	3780
ttgcgcccag	accagccgaa	gacagccact	gccgtggccg	cttgtaggtg	taatattgtg	3840
ccgcccacat	ctggtgctgc	ccaacaccag	tagcgatgat	tgctcacct	ttcgtcagct	3900
catccagcac	ctgaatggca	tattgcggtg	ggatctcttc	acaaaagt	ttgtacccca	3960
gaggaaactc	cctcttctgc	tggtccaact	cattgtgcc	tgactaaaa	tcagaacttg	4020
tctttgttgt	gctctgttgt	agcagagcat	tcaagccctg	taaagcaagc	ttaacatctg	4080
cgaaattga	cacatgtggt	tgcttgttct	ttccaatctc	tgctggatca	atgtcaatgt	4140
gcacaatctt	ggccctgctt	gcaaaagcct	caattttccc	tgctcacacga	tcatacaacc	4200
gcacacaaaa	cgcaagcaac	aggtcagcct	tatccacggc	ataatttg	tacaccgtgc	4260
catgcatccc	aagcatgcgc	agggacaacg	ggctcgtcact	ggggaaattg	ccgaggccca	4320
tcagagtgg	tgtaactggg	ataccagtca	gctcaacaaa	ccagcgcaat	tcgtcaccag	4380
atgcagagca	gccaccaccg	acatagagaa	tcgggcgccc	tgactcgcca	accagacgca	4440
agacctgctc	aagcaattct	gtcgcgggtg	gcttgggcag	gcgtgcgatg	taccctggta	4500
gattcatcga	gggtgtcccag	accggcacgg	ccatctgctg	ctggatgtcc	ttggggatgt	4560

Sequence Listing.txt

cgaccagcac	cgggccagga	cggcccagagg	acgcgaggaa	gaaggcttcc	tgtatgacgc	4620
gggggatgtc	ctccacatca	aggacaaggt	aatttgtgctt	ggtgatggag	cgggtgacct	4680
cgactatggg	cgtctccttg	aaggcgtcgg	tgccgatcat	gcggcggggg	acctggccccg	4740
tgatggcgac	catcgggacg	gagtcgagca	gcgcgtcggc	gagcgcggac	acgaggttgg	4800
ttgccccggg	gccggaggtg	gcgacgcaga	ccccgacgcg	gccggacgcg	cgcgcggtacc	4860
cggacgccgc	gaacgcctcg	ccctgctcgt	ggcggaagag	gtggttggtg	atgaccgggg	4920
agcgcgtcag	cgcttggtgg	atctccatgg	acgcgccgcc	cgggtaggcg	aacacgtcgc	4980
tgacgccgca	ccgctccagc	gcctccacga	ggatgtccgc	gcccttgcgg	ggctcggccg	5040
gccccacgg	ccggagcggc	gtggccggcg	gcgccgggga	cggcggggtg	accggggaca	5100
ccgccgagca	cctgaccgcc	gccgccccca	cccgccctcg	agcgggaagg	acgtggtgtc	5160
gctggtggtt	cttacggccg	gtcttgcccg	tcgcggcggc	ggacagggcg	gcggccgcgg	5220
ccgcggcggt	cgtagccatg	gtttatcgat	agcttatcgt	ctacctaca	aaaagctccg	5280
cacgaggctg	catttgtcac	aaatcatgaa	aagaaaaact	accgatgaac	aatgctgagg	5340
gattcaaatt	ctaccacaa	aaagaagaaa	gaaagatcta	gcacatctaa	gcctgacgaa	5400
gcagcagaaa	tatataaaaa	tataaaccat	agtgcccttt	tcccctcttc	ctgatcttgt	5460
ttagcatggc	ggaaatttta	aaccccccat	catctcccc	aacaacggcg	gatcgcagat	5520
ctacatccga	gagccccatt	ccccgcgaga	tccgggccgg	atccacgccg	gcgagagccc	5580
cagccgcgag	atcccgcgcc	tcccgcgcac	cgatctgggc	gcgcacgaag	ccgcctctcg	5640
cccacccaaa	ctaccaaggc	caaagatcga	gaccgagacg	gaaaaaaaaa	acggagaaaag	5700
aaagaggaga	ggggcggggg	ggttaccggc	gcggcgccgg	cggaggggga	ggggggagga	5760
gctcgtcgtc	cggcagcgag	gggggaggag	gtggagggtg	tgggtggtgt	ggtggtaggg	5820
ttggggggat	gggaggagag	gggggggtat	gtatatagtg	gcgatggggg	gcgtttcttt	5880
ggaagcggag	ggagggccgg	cctcgtcgtc	ggctcgcgat	cctcctcgcg	tttccggccc	5940
ccacgacccg	gaccacactg	ctgttttttc	tttttctttt	ttttctttct	tttttttttt	6000
ttggctgcga	gacgtgcggt	gcgtgcggac	aactcacggt	gatagtgggg	gggtgtggag	6060
actattgtcc	agttggctgg	actgggggtg	gttgggttgg	gttgggttgg	gctgggcttg	6120
ctatggatcg	tggatagcac	tttgggcctt	aggaacttta	gggggttgtt	ttgtaaatgt	6180
tttgagtcta	agtttatctt	ttatttttac	tagaaaaaat	acccatgcgc	tgcaacgggg	6240
gaaagctatt	ttaatcttat	tattgttcat	tgtgagaatt	cgctgaata	tatatatttc	6300
tcaaaaatta	tgtcaaat	gcatatgggt	ttttttaaag	atatttctta	tacaaatccc	6360
tctgtattta	caaaagcaaa	cgaacttaaa	acccgactca	aatacagata	tgcatttcca	6420
aaagcgaata	aacttaaaaa	ccaattcata	caaaaatgac	gtatcaaagt	accgacaaaa	6480
acatcctcaa	tttttataat	agtagaaaag	agtaaatttc	actttggggc	acctttttatt	6540
accgatattt	tactttatac	caccttttaa	ctgatgtttt	cacttttgac	caggtaatct	6600
tacctttgtt	ttattttgga	ctatccccgac	tctcttctca	agcatatgaa	tgacctcgac	6660

Sequence Listing.txt

cgcatgcag	atctggcgcg	ccatgcaggt	cctgctgagc	ctcgacatgt	tgtcgcaaaa	6720
ttcgccctgg	acccgccc	cgatttgtcg	tactgtcaa	ggtttgacct	gcatttcatt	6780
tggcacatac	acaaaaaaaa	tgctgcataa	ttctcggggc	agcaagtcgg	ttacccggcc	6840
gccgtgctgg	accgggttga	atggtgccc	taactttcgg	tagagcggac	ggccaatact	6900
caacttcaag	gaatctcacc	catgcgcgcc	ggcggggaac	cggagttccc	ttcagtgcgc	6960
gttattagtt	cgccgctcgg	tgtgtcgtag	atactagccc	ctggggcact	tttgaaat	7020
gaataagatt	tatgtaatca	gtcttttagg	tttgaccggt	tctgccgctt	tttttaaaat	7080
tggatttcta	ataataaaac	gcaattgttt	gttattgtgg	cgctctatca	tagatgtcgc	7140
tataaaccta	ttcagcacia	tatattgttt	tcattttaat	attgtacata	taagtagtag	7200
ggtacaatca	gtaaattgaa	cggagaatat	tattcataaa	aatacgatag	taacgggtga	7260
tatattcatt	agaatgaacc	gaaaccggcg	gtaaggatct	gagctacaca	tgctcaggtt	7320
ttttacaacg	tgcaaacag	aattgaaagc	aaatatcatg	cgatcatagg	cgtctcgc	7380
atctcattaa	agcaggactc	tagactgcag	tcagagctgg	agggaggagg	attcgagctt	7440
gcgcgggagg	gcgatgtgct	ccttgaggga	cagctcgtcg	aggcgcttcc	agccgtcgat	7500
ggtgaggaag	cgggtggttg	cgggtgcctt	gatggtcctg	ccgaggcggg	tcttgaggat	7560
atagacgagc	ttcttgccgg	tgcaaacac	gcgggacacc	ttggcggact	ccagcttc	7620
ggtctgctcg	ttgatggccc	aatctcga	gtccttctcg	tcgaggaggt	ccttgatgga	7680
cacgcgcttg	ccggtggagg	cgagggagat	gagggagtcg	ccggagatgc	agccggactc	7740
cctccagccg	agggcctggg	cctcggactt	ggtgatgtag	ttgtccggga	gcttggtgta	7800
ggtctggagg	tagtcggcca	cgccgtcgaa	ggtgttaatc	acttgggcca	tatcgatgct	7860
taattagctt	tgggttaattg	gagtgatggg	agtgtgtgta	gatgaggcta	attgcttg	7920
tctatttata	atggctgtga	ttaggacttt	tgctagctaa	gagtgttcta	agctgttgta	7980
gtgaagtttg	agctggatca	aacatgaaaa	tgggtgtgaat	gatcagaaaa	gtttgtaatt	8040
agcaatgctt	aatttccact	gtttttgttt	tgctgttatg	tcttcctgtt	ttttttttct	8100
gtgcctgccc	tgaccaaatt	tattaagatt	gagagaaggt	aaaacatttt	caacaaatat	8160
actccctccg	tttctaaata	tttgatacca	ttgacttttt	agcacatatt	taaccgttcg	8220
tcataattcaa	aaacttttgt	gaaatatgta	aaactatatg	tatacatata	agtatattta	8280
acaataaatc	aatgataga	aaaataatta	ataattactt	aaat	aaataagatg	8340
aacattcaaa	catatttaaa	aaaaaatcaa	tggcgtcaaa	tatttagaaa	ctgatggagt	8400
agttattaat	attacatctc	ttcctatgga	taaacagcac	tttacatcga	acaaatggaa	8460
gcatacacgc	cgggttggt	gccggcattg	caattaaagt	tatttcttca	gtttgagata	8520
tttgtaaatg	ttaatttgca	ggaactaatt	aaataagttt	gttgaggctt	ctagaatgta	8580
gattaattgt	ggctatgtga	tcgaaatatt	ctctacgaaa	tcgatctaaa	atgtggtgca	8640
tgcatgtgc	gtgtgtgctg	atttaaggga	ttgtatcgtg	ggagcacaaa	acaaatgccg	8700

Sequence Listing.txt

ttcgttggtt	tcgctacaac	ccaacttaat	ttgcatctat	taagatagtg	accaacctaa	8760
actgattaac	tgccatcatt	gtttttatat	gataccttta	ttgtggattt	ttttttttgc	8820
cgcgccggga	caaagatgca	agcggaattt	tgtaaaaaga	aatttgaact	gaaccaaggc	8880
ggcacaacaa	ttatagtgtt	atcgaaagat	gtatgttccc	tccgttaca	aataagctaa	8940
tcttgtacag	tgtaggtaac	attgaagatg	tattcacacc	gtacgagttt	ggttttat	9000
tggacaaaga	gacgagtagg	taacaacatt	tcagaaattt	tagtgactga	cccgtagtgt	9060
cactcagtgt	atttgagct	catttgtgtg	gcaaaaacat	ttccgaatga	ttcagggttt	9120
taacccttgt	gaccactctt	caatccaagt	gcaagacaa	tagaaagggtg	gctgggtatgg	9180
gtgtacctat	tcagtgatcg	tctgtcacct	ttatttctag	tggacgaccc	tttcattgga	9240
tgccatgtgt	catggctaaa	atattgaact	gtcatttaaa	ttattaagta	ttaaacttct	9300
gttaattgga	aataactga	ggccccgttt	ggctaattggg	aaaggaaaat	catttccac	9360
ccactaaaag	acatctttaa	atcttaacct	tttattctcc	ttcttccatt	taatcctaac	9420
ccttcattta	tttccaatc	ccaattccac	cacatatttc	ccattgtcca	aataacaacct	9480
gagggtttta	acaaaaattc	actttgaact	gtgtaaaaaa	aaggcgccga	attccctacg	9540
cccccaactg	agagaactca	aaggttaccc	cagttggggc	acagatctgt	cgagtagctt	9600
agatcagatt	gtcgtttccc	gccttcagtt	taaactatca	gtgtttgaca	ggatatattg	9660
gcgggtaaac	ctaagagaaa	agagcgttta	ttagaataat	cggatattta	aaagggcggtg	9720
aaaaggttta	tccgttcgtc	catttgtatg	tgcatgccaa	ccacaggggt	ccccagatca	9780
ggcgctggct	gctgaacccc	cagccggaac	tgacccca	aggccctagc	gtttgcaatg	9840
caccaggtca	tcattgaccc	aggcgtgttc	caccaggccg	ctgcctcgca	actcttcgca	9900
ggcttcgccg	acctgctcgc	gccattctt	cacgcgggtg	gaatccgatc	cgcacatgag	9960
gcggaagggt	tccagcttga	gcgggtacgg	ctcccgtgc	gagctgaaat	agtcgaacat	10020
ccgtcggggc	gtcggcgaca	gcttgcggtg	cttctcccat	atgaatttcg	tgtagtggtc	10080
gccagcaaac	agcacgacga	tttcctcgtc	gatcaggacc	tggcaacggg	acgttttctt	10140
gccacgggtc	aggacgcgga	agcgggtgcag	cagcgacacc	gattccaggt	gccaacgcg	10200
gtcggacgtg	aagcccatcg	ccgtcgcctg	taggcgcgac	aggcattcct	cggccttcgt	10260
gtaataccgg	ccattgatcg	accagcccag	gtcctggcaa	agctcgtaga	acgtgaagggt	10320
gatcggctcg	ccgatagggg	tgcgcttcgc	gtactccaac	acctgctgcc	acaccagttc	10380
gtcatcgtcg	gcccgcagct	cgacgccggt	gtaggatgatc	ttcacgtcct	tgttgacgtg	10440
gaaaatgacc	ttgttttgca	gcgcttcgcg	cgggattttc	ttgttgcgcg	tggtgaacag	10500
ggcagagcgg	gccgtgtcgt	ttggcatcgc	tcgcatcgtg	tccggccacg	gcgcaatatc	10560
gaacaaggaa	agctgcattt	ccttgatctg	ctgcttcgtg	tgtttcagca	acgcggcctg	10620
cttggcctcg	ctgacctgtt	ttgccagggtc	ctcgccggcg	gtttttcgct	tcttggtcgt	10680
catagttcct	cgcggtgcga	tgggtcatcga	cttcgccaaa	cctgccgcct	cctgttcgag	10740
acgacgcgaa	cgctccacgg	cggccgatgg	cgcgggcagg	gcagggggag	ccagttgcac	10800

Sequence Listing.txt

gctgtcgcgc	tcgatcttgg	ccgtagcttg	ctggaccatc	gagccgacgg	actggaaggt	10860
ttcgcggggc	gcacgcatga	cgggtcgggt	tgcgatgggt	tcggcatcct	cggcggaaaa	10920
ccccgcgtcg	atcagttctt	gcctgtatgc	cttccgggtca	aacgtccgat	tcattcaccc	10980
tccttgcggg	attgccccga	ctcacgccgg	ggcaatgtgc	ccttattcct	gatttgaccc	11040
gcctgggtgcc	ttgggtgtcca	gataatccac	cttatcgga	atgaagtcgg	tcccgtagac	11100
cgtctggccg	tccttctcgt	acttgggtatt	ccgaatcttg	ccctgcacga	ataccagcga	11160
ccccttgccc	aaatacttgc	cgtgggcctc	ggcctgagag	ccaaaacact	tgatgcggaa	11220
gaagtcggtg	cgctcctgct	tgtcgccggc	atcgttgccg	cacatctagg	atctgccagg	11280
aaccgtaaaa	aggccgcgtt	gctggcggtt	ttccataggc	tccgcccccc	tgacgagcat	11340
cacaaaaatc	gacgctcaag	tcagaggttg	cgaaaccgga	caggactata	aagataccag	11400
gcgtttcccc	ctggaagctc	cctcgtgcgc	tctcctgttc	cgaccctgcc	gcttaccgga	11460
tacctgtccg	cctttctccc	ttcgggaagc	gtggcgcttt	ctcatagctc	acgctgtagg	11520
tatctcagtt	cgggtgtagg	cgttcgctcc	aagctgggct	gtgtgcacga	acccccggt	11580
cagccccgac	gctgcgcctt	atccggtaac	tatcgtcttg	agtccaaccc	ggtaagacac	11640
gacttatcgc	cactggcagc	agccactgg	aacaggatta	gcagagcgag	gtatgtaggc	11700
ggtgctacag	agttcttgaa	gtggtggcct	aactacggct	acactagaag	gacagtattt	11760
ggtatctgcg	ctctgctgaa	gccagttacc	ttcggaaaaa	gagttggtag	ctcttgatcc	11820
ggcaaacaaa	ccaccgctgg	tagcggtggt	ttttttgttt	gcaagcagca	gattacgcgc	11880
agaaaaaaag	gatctcaaga	agatcctttg	atctttttcta	cgggggtctga	cgctcagtg	11940
aacgaaaact	cacgttaagg	gattttggtc	atgagattat	caaaaaggat	cttcacctag	12000
atccttttaa	attaaaaatg	aagtttttaa	tcaatctaaa	gtatatatga	gtaaacttgg	12060
tctgacagct	aaaacaattc	atccagtaaa	atataatatt	ttattttctc	ccaatcaggc	12120
ttgatcccca	gtaagtcaaa	aaatagctcg	acatactgtt	cttccccgat	atcctccctg	12180
atcgaccgga	cgcagaaggc	aatgtcatac	cacttgctcg	ccctgccgct	tctccaaga	12240
tcaataaagc	cacttacttt	gccatctttc	acaaagatgt	tgctgtctcc	caggtcgccg	12300
tgggaaaaga	caagttcctc	ttcgggcttt	tccgtcttta	aaaaatcata	cagctcgcg	12360
ggatctttta	atggagtgtc	ttcttcccag	ttttcgcaat	ccacatcggc	cagatcggtt	12420
ttcagtaagt	aatccaattc	ggctaagcgg	ctgtctaagc	tattcgtata	gggacaatcc	12480
gatatgtcga	tggagtgaag	gagcctgatg	cactccgcat	acagctcgat	aatcttttca	12540
gggctttgtt	catcttcata	ctcttccgag	caaaggacgc	catcggcctc	actcatgagc	12600
agattgtctc	agccatcatg	ccgttcaaag	tgcaggacct	ttggaacagg	cagctttcct	12660
tccagccata	gcatcatgtc	cttttcccgt	tccacatcat	aggtgggtccc	tttataaccg	12720
ctgtccgtca	tttttaaata	taggttttca	ttttctccca	ccagcttata	taccttagca	12780
ggagacattc	cttccgtatc	ttttacgcag	cggtattttt	cgatcagttt	tttcaattcc	12840

Sequence Listing.txt

```

ggtgatattc tcatttttagc catactcttc ctttttcaat attattgaag catttatcag 12900
ggttattgtc tcatgagcgg atacatattt gaatgtattt agaaaaataa acaaataggg 12960
gttccgcgca cgaattggcc agcgtgcca tttttggggt gaggccgttc gcggccgagg 13020
ggcgcagccc ctggggggat gggaggcccg cgtttagcggg ccgggagggt tcgagaaggg 13080
gggggcacccc ctttcggcgt gcgcggtcac gcgcacaggg cgagccctg gttaaaaaca 13140
aggtttataa atattggttt aaaagcaggt taaaagacag gtttagcgggt gccgaaaaac 13200
gggcggaaac ctttgcaaat gctggatttt ctgcctgtgg acagcccctc aaatgtcaat 13260
agggtgcgcc ctcatctgtc agcactctgc ccctcaagt tcaaggatcg cgcccctcat 13320
ctgtcagtag tcgcgcccct caagtgtcaa taccgcaggg cacttatccc caggcttgtc 13380
cacatcatct gtgggaaact cgcgtaaaat caggcgtttt cgccgatttg cgaggctggc 13440
cagctccacg tcgccggccg aaatcgagcc tgcccctcat ctgtcaacgc cgcgccgggt 13500
gagtcggccc ctcaagtgtc aacgtccgcc cctcatctgt cagtgagggc caagttttcc 13560
gcgaggatc cacaacgccg gcggccgcgg tgtctcgcac acggcttcga cggcgtttct 13620
ggcgcgtttg cagggccata gacggccgcc agcccagcgg cgagggaac cagcccgggt 13680
agcgtcgcaa aggagatcct gatctgactg atgggctgcc tgtatcgagt ggtgattttg 13740
tgccgagctg ccggtcgggg agctgttggc tggctggtgg caggatatat tgtggtgtaa 13800
acaaattgac gcttagacaa ctttaataca cattgcggac gtttttaatg tactgggggt 13860
gatgcactct agcgggcc                                     13878

```

<210> 48
 <211> 16277
 <212> DNA
 <213> Artificial

<220>
 <223> DNA sequence

<220>
 <221> misc_feature
 <222> (1)..(16277)
 <223> complete sequence of vector pICH25881

```

<400> 48
ctgcaggctc tgctgagcct cgacatgttg tcgcaaaatt cgccctggac ccgccaacg 60
atttgcgtc actgtcaagg tttgacctgc acttcatttg gcacatacac caaaaaaatg 120
ctgcataatt ctcggggcag caagtcggtt acccgccgc cgtgctggac cgggttgaat 180
ggtgcccgtg actttcggta gagcggacgg ccaataactca acttcaagga atctcaccca 240
tgcgcgccgg cggggaaccg gagttccctt cagtgagcgt tattagttcg ccgctcgggt 300
tgtcgtagat actagcccct ggggcacttt tgaaatttga ataagattta tgtaatcagt 360
cttttaggtt tgaccgggtc tgccgctttt tttaaaattg gatttgtaat aataaaacgc 420
aattgtttgt tattgtggcg ctctatcata gatgtcgcta taaacctatt cagcacaata 480
tattgttttc attttaatat tgtacatata agtagtaggg tacaatcagt aaattgaacg 540

```

Sequence Listing.txt

gagaatatta	ttcataaaaa	tacgatagta	acgggtgata	tattcattag	aatgaaccga	600
aaccggcggt	aaggatctga	gctacacatg	ctcaggtttt	ttacaacgtg	cacaacagaa	660
ttgaaagcaa	atatcatgcg	atcataggcg	tctcgcatat	ctcattaaag	caggactcta	720
gaggatcctc	agcggatctt	ggtgaaggtc	tggtagtgg	cgggtggtctt	gtagatgagc	780
cagtcggagg	agtagaggat	gcggtcggag	ttgcggaagc	cggaggtgta	gttgatgtcg	840
gcctccctcc	aggtcctgcc	cgacttgcct	gggagcttgc	cctcgcggtt	tgagaagatg	900
tcgccgccga	tggacttccc	tggggccacg	tcggcgagg	tgcccttgga	ggccactgat	960
ccaccgcctc	cacttccctc	gcctccgtcc	tgctcgatgg	agttgtgcac	gatgatgtcg	1020
ttggccacga	agttgtgcgg	gcctggcacg	gtgaggtcga	acacctcctc	cacgcccgtt	1080
tcggtgatgg	acacgatgga	gtcccagtag	atgtcggact	gggagagctt	ctcgatctcc	1140
gggctcatga	atcgatgctt	aattagcttt	ggttaattgg	agtgatggca	gtgtgtgtag	1200
atgaggctaa	ttgcctgtgc	catttataat	gcctgtgatt	aggacttttg	ctagctaaga	1260
gtgtctaagc	tgttgaagtg	aagtttgagc	gggatcaaac	atgaaaatgg	tgtgaatgat	1320
cagaaaagtt	tgtaattagc	aatgcttaat	ttccactggt	tttgttttgc	tgttatgcct	1380
tcctgttttt	tttttccggt	gcctgccctg	accaaattta	ttaagattga	gagaaggtaa	1440
aacattttca	acaaacatac	tccctccgtt	tctaaatatt	tgataccatt	gacttttttag	1500
cacatgttta	acctttcgtc	atattcaaaa	actttttgtga	aatatgtaaa	actatatgta	1560
tacatataag	gtatatttta	ccaataaatc	aaaatgatag	aaaataatta	ataattactt	1620
aaattttttt	aaaataagac	gaacattcaa	acatatttta	acaaatagtc	aatgacgtca	1680
aatattttaga	aacggatgga	gtagttatta	atattacacc	tcttcctatg	gataaacagc	1740
acctttttaca	tccgaacaaa	tggaagcata	cacgccgggt	tggctgccgg	cattgcaatt	1800
aaagttat	cttcagtttg	agatatttgt	aaatgttaat	ttgcaggaac	taattaaata	1860
agtttgttg	agcttctaga	atgtagatta	attgtggcta	tgtgatcgaa	atattctcta	1920
cgaaatcgat	ctaaaatgtg	gtgcatgcat	tgtgcgtgtg	tgctgattta	agggattgta	1980
tcgtgggagc	acaaaacaaa	tgccgttcgt	tggtttcgtc	acaaccaaac	ttaatttgca	2040
tctattaaga	tagtgaccaa	cctaaactga	ttaactgcca	tcattgtttt	tatatgatac	2100
ctttattgtg	gatttttttt	ttgccgcgcc	gggacaaaga	tgcaagcgga	attttgtaaa	2160
aagaaatttg	aactgaacca	aggcggcaca	acaattatta	atgctgggta	tcggaaagat	2220
gtatgttccc	tccgttacaa	aataagctaa	ccttgtacag	tgtaggtaac	attgaaggta	2280
tattcacacc	gtacgggttt	ggtttatttt	tggacaaaga	gacgggtagg	taacaacatt	2340
tcagaaattt	tagggactga	cccgtagtgt	cactcagtgt	atttggaact	catttgtgtg	2400
gcaaaaacat	ttcccgaatg	aatacagggt	tttaaccctt	tggtgaccac	cttttcaatc	2460
ccaagtgcaa	agacaataga	aagggtggctg	gtatgggtgt	acctattcag	tgaccgtctg	2520
tcacctttat	ttctagtgga	cgaccctttc	attggatgcc	atgtgtcatg	gctaaaatat	2580

Sequence Listing.txt

tgaactgtca	tttaaattat	taagtattaa	acttctgtta	attgaaaata	tactgaggcc	2640
ccgtttggct	aatgggaaag	ggaaatcatt	tcccacccac	taaaagacat	ctttaaattt	2700
taaccattta	ttctccttct	tccatttaat	cctaaccctt	cgttcatttc	ccaatcccaa	2760
ttcccaccca	cattattccc	cattatccaa	atacaacctg	agggttttta	ccaaaattca	2820
ctttgaactg	tgtaaaaaaa	aggcgccgaa	ttctcgagtg	caggctcgatc	tagtaacata	2880
gatgacaccg	cgcgcgataa	tttatcctag	tttgcgcgct	atattttgtt	ttctatcgcg	2940
tattaaatgt	ataattgcgg	gactctaadc	ataaaaaccc	atctcataaa	taacgtcatg	3000
cattacatgt	taattattac	atgcttaacg	taattcaaca	gaaattatat	gataatcatc	3060
gcaagaccgg	caacaggatt	caatcttaag	aaactttatt	gccaaatggt	tgaacgatct	3120
gcttgactct	agagcttagc	attagtagac	agtcctgcc	tcaccatcca	ggatcatgtc	3180
cttgaatgcg	ccccacttg	ggatcatagg	cagcacatgc	tcctgggtgcg	ggacgatgat	3240
atccaacaag	tatggccctg	gagtctcgag	catcttcttg	atggcgggcac	ggacttcact	3300
cttctttgtt	acacggactg	caggaatatt	gaacccttta	gcaatagtca	caaaatctgg	3360
atatatctcg	ctctcacatt	ccgggttgcc	caagtatgta	tgcgccctat	tcgccttgta	3420
aaacctatcc	tcaagttgca	ccaccatacc	caaagtgttg	ttgttcaaca	ccatcacctt	3480
cacagggagg	ttctcaatgc	ggatcaatgc	cagctcctga	atgttcatga	ggaagctacc	3540
atccccatca	atatcaacaa	ctgtgacacc	tgggttagcc	acagaagcac	cagctgcagc	3600
aggcagccca	aatcccattg	cgcccagacc	agccgaagac	agccactgcc	gtggccgctt	3660
gtaggtgtaa	tattgtgccg	cccacatctg	gtgctgcccc	acaccagtag	cgatgattgc	3720
ctcacctttc	gtcagctcat	ccagcacctg	aatggcatat	tgcggtggga	tctcttcacc	3780
aaaagttttg	tacccagag	gaaactccct	cttctgctgg	tccaactcat	tgtgccatgc	3840
actaaaatca	gaacttgtct	ttgttgctcc	atgggttaaaa	caattggcgg	cgatcgcccc	3900
attggctagc	agaaaattat	ggtcttgggg	aagaccaata	tcaaattattc	tttgcactcc	3960
gagggaaacga	cgaccgataa	ctttaaccat	agcgcattga	actcttcctc	cgttactagc	4020
aatagaagta	atatcaaggt	tgttttgctt	tctagtaaca	ggaaaagaag	cagcagactt	4080
aagtccagta	aaaggagcaa	ccatactagc	ttgagcagca	ctagcacgag	tagcaacaac	4140
agcagcagaa	gaaagcatag	aagaagccat	gttatcgata	gcttatcgtc	tacctacaaa	4200
aaagctccgc	acgaggctgc	atttgtcaca	aatcatgaaa	agaaaaacta	ccgatgaaca	4260
atgctgaggg	attcaaattc	taccacaaaa	aagaagaaag	aaagatctag	cacatctaag	4320
cctgacgaag	cagcagaaat	atataaaaaat	ataaaccata	gtgccctttt	cccctcttcc	4380
tgatcttgtt	tagcatggcg	gaaattttta	acccccatc	atctcccca	acaacggcgg	4440
atcgagatc	tacatccgag	agccccattc	cccgcgagat	ccgggccgga	tccacgccgg	4500
cgagagcccc	agccgcgaga	tcccgccct	cccgcgcacc	gatctggggc	cgcacgaagc	4560
cgctctctgc	ccacccaaac	taccaaggcc	aaagatcgag	accgagacgg	aaaaaaaaaa	4620
cggagaaaga	aagaggagag	gggcgggggtg	gttaccggcg	cggcgccggc	ggagggggag	4680

Sequence Listing.txt

gggggaggag	ctcgtcgtcc	ggcagcgagg	ggggaggagg	tggaggtggt	ggtggtggtg	4740
gtggtagggt	tgggggggatg	ggaggagagg	gggggggatg	tatatagtgg	cgatgggggg	4800
cgtttctttg	gaagcggagg	gagggccggc	ctcgtcgtctg	gctcgcgatc	ctcctcgcgt	4860
ttccggcccc	cacgaccggg	accacactgc	tgttttttct	ttttcttttt	tttctttctt	4920
tttttttttt	tggctgagag	acgtgagggtg	cgtagcgagca	actcacgggtg	atagtggggg	4980
ggtgtggaga	ctattgtcca	gttggctgga	ctgggggtggg	ttggggtggg	ttggggtggg	5040
ctgggcttgc	tatggatcgt	ggatagcact	ttgggcttta	ggaacttttag	gggttggttt	5100
tgtaaagtgt	ttgagtctaa	gtttatcttt	tattttttact	agaaaaaata	cccatgcgct	5160
gcaacggggg	aaagctattt	taatcttatt	attgttcatt	gtgagaattc	gcctgaatat	5220
atatttttct	caaaaattat	gtcaaattag	catatgggtt	tttttaaaga	tatttcttat	5280
acaaatccct	ctgtatttac	aaaagcaaac	gaacttaaaa	cccgactcaa	atacagatat	5340
gcatttccaa	aagcgaataa	acttaaaaac	caattcatac	aaaaatgacg	tatcaaagta	5400
ccgacaaaaa	catcctcaat	ttttataata	gtagaaaaga	gtaaatttca	ctttggggcca	5460
ccttttatta	ccgatatttt	actttatacc	accttttaac	tgatgttttc	acttttgacc	5520
aggtaatctt	acctttgttt	tattttggac	tatcccgact	ctcttctcaa	gcatatgaat	5580
gacctcgacc	ggcatgcaga	tctggcgcg	cgtagcccaa	ctggggtaac	ctttgagttc	5640
tctcagttgg	ggcgtagggg	cccgctagag	tgcatccacc	ccagtacatt	aaaaacgtcc	5700
gcaatgtgtt	attaagttgt	ctaagcgtca	atttgtttac	accacaatat	atcctgccac	5760
cagccagcca	acagctcccc	gaccggcagc	tcggcacaaa	atcaccactc	gatacaggca	5820
gcccattcagt	cagatcagga	tctcctttgc	gacgctcacc	gggctgggtg	ccctcgccgc	5880
tgggctggcg	gccgtctatg	gccctgcaaa	cgcgccagaa	acgccgtcga	agccgtgtgc	5940
gagacaccgc	ggccgccggc	gttgtggata	cctcgcgga	aacttgggcc	tcactgacag	6000
atgagggggc	gacgttgaca	cttgaggggc	cgactcacc	ggcgcggcgt	tgacagatga	6060
ggggcaggct	cgatttcggc	cggcgacgtg	gagctggcca	gcctcgcaaa	tcggcgaaaa	6120
cgcctgattt	tacgcgagtt	tcccacagat	gatgtggaca	agcctgggga	taagtgcctt	6180
gcggtattga	cacttgaggg	gcgcgactac	tgacagatga	ggggcgcgat	ccttgacact	6240
tgaggggcag	agtgtgaca	gatgaggggc	gcacctattg	acatttgagg	ggctgtccac	6300
aggcagaaaa	tccagcattt	gcaagggttt	ccgcccgttt	ttcgccacc	gctaacctgt	6360
cttttaacct	gcttttaaac	caatatttat	aaaccttggt	tttaaccagg	gctgcgccct	6420
gtgcgcgtga	ccgcgcacgc	cgaagggggg	tgccccctt	tctcgaacct	tcccgccccg	6480
ctaacgcggg	cctcccatcc	ccccaggggc	tgccccctc	ggccgcgaac	ggcctcacc	6540
caaaaatggc	agcgctggcc	aattcgtg	cggaaccctt	atttgtttat	ttttctaaat	6600
acattcaaat	atgtatccgc	tcatgagaca	ataaccctga	taaatgcttc	aataatattg	6660
aaaaaggaag	agtatggcta	aatgagaat	atcaccggaa	ttgaaaaaac	tgatcgaaaa	6720

Sequence Listing.txt

ataccgctgc	gtaaaagata	cggaaggaat	gtctcctgct	aaggtatata	agctggtggg	6780
agaaaatgaa	aacctatatt	taaaaatgac	ggacagccgg	tataaaggga	ccacctatga	6840
tgtggaacgg	gaaaaggaca	tgatgctatg	gctggaagga	aagctgcctg	ttccaaaggt	6900
cctgcacttt	gaacggcatg	atggctggag	caatctgctc	atgagtgagg	ccgatggcgt	6960
cctttgctcg	gaagagtatg	aagatgaaca	aagccctgaa	aagattatcg	agctgtatgc	7020
ggagtgcata	aggctctttc	actccatcga	catatcggat	tgtccctata	cgaatagctt	7080
agacagccgc	ttagccgaat	tggattactt	actgaataac	gatctggccg	atgtggattg	7140
cgaaaactgg	gaagaagaca	ctccatttaa	agatccgcgc	gagctgtatg	atTTTTTaaa	7200
gacggaaaag	cccgaagagg	aacttgtctt	ttcccacggc	gacctgggag	acagcaacat	7260
ctttgtgaaa	gatggcaaag	taagtggctt	tattgatctt	gggagaagcg	gcagggcgga	7320
caagtgggat	gacattgcct	tctgcgtccg	gtcgcagcag	gaggatatcg	gggaagaaca	7380
gtatgtcgag	ctatTTTTtg	acttactggg	gatcaagcct	gattgggaga	aaataaaaata	7440
ttatatTTTa	ctggatgaat	tgttttagct	gtcagaccaa	gtttactcat	atatactTTa	7500
gattgattta	aaacttcatt	TTtaatttaa	aaggatctag	gtgaagatcc	TTTTtgataa	7560
tctcatgacc	aaaatccctt	aacgtgagtt	ttcgttccac	tgagcgtcag	accccgtaga	7620
aaagatcaaa	ggatcttctt	gagatccttt	TTTTctgcgc	gtaatctgct	gcttgcaaac	7680
aaaaaaacca	ccgctaccag	cggtggtttg	tttgccggat	caagagctac	caactctttt	7740
tccgaaggta	actggcttca	gcagagcgca	gataccaaat	actgtccttc	tagtgtagcc	7800
gtagttaggc	caccacttca	agaactctgt	agcaccgcct	acatacctcg	ctctgctaata	7860
cctgttacca	gtggctgctg	ccagtggcga	taagtcgtgt	cttaccgggt	tggactcaag	7920
acgatagtta	ccggataagg	cgcagcggtc	gggctgaacg	gggggttcgt	gcacacagcc	7980
cagcttggag	cgaacgacct	acaccgaact	gagataccta	cagcgtgagc	tatgagaaaag	8040
cgccacgctt	cccgaaggga	gaaaggcgga	caggtatccg	gtaagcggca	gggtcggaac	8100
aggagagcgc	acgagggagc	ttccaggggg	aaacgcctgg	tatctttata	gtcctgtcgg	8160
gtttcgccac	ctctgacttg	agcgtcgatt	tttgtgatgc	tcgtcagggg	ggcggagcct	8220
atggaaaaac	gccagcaacg	cggccttttt	acggttcctg	gcagatccta	gatgtggcgc	8280
aacgatgccg	gcgacaagca	ggagcgcacc	gacttcttcc	gcatcaagtg	TTTTggctct	8340
caggccgagg	cccacggcaa	gtatttgggc	aaggggtcgc	tggatttcgt	gcagggcaag	8400
attcggaata	ccaagtacga	gaaggacggc	cagacggtct	acgggaccga	cttcattgcc	8460
gataaggtgg	attatctgga	caccaaggca	ccaggcgggt	caaatacagga	ataagggcac	8520
attgccccgg	cgtgagtcgg	ggcaatcccc	caaggagggt	gaatgaatcg	gacgtttgac	8580
cggaaaggcat	acaggcaaga	actgatcgac	gcggggTTTT	ccgccgagga	tgccgaaacc	8640
atcgcaagcc	gcaccgtcat	gcgtgcgccc	cgcgaaacct	tccagtcctg	cggctcgatg	8700
gtccagcaag	ctacggccaa	gatcgagcgc	gacagcgtgc	aactggctcc	ccctgccctg	8760
cccgcgccat	cggccgccgt	ggagcgttcg	cgctcgtctg	aacaggaggc	ggcaggtttg	8820

Sequence Listing.txt

gcgaagtcga	tgaccatcga	cacgcgagga	actatgacga	ccaagaagcg	aaaaaccgcc	8880
ggcgaggacc	tggaacaaaca	ggtcagcgag	gccaaagcagg	ccgcgttgct	gaaacacacg	8940
aagcagcaga	tcaaggaaat	gcagctttcc	ttgttcgata	ttgcgccgtg	gccggacacg	9000
atgcgagcga	tgccaaacga	cacggcccgc	tctgccctgt	tcaccacgcg	caacaagaaa	9060
atccccgcgcg	aggcgctgca	aaacaaggtc	atctttccacg	tcaacaagga	cgtgaagatc	9120
acctacaccg	gcgtcgagct	gcggggccgac	gatgacgaac	tggtgtggca	gcaggtgttg	9180
gagtacgcga	agcgcacccc	tatcggcgag	ccgatcacct	tcacgttcta	cgagctttgc	9240
caggacctgg	gctggctgat	caatggccgg	tattacacga	aggccgagga	atgcctgtcg	9300
cgcctacagg	cgacggcgat	gggcttcacg	tccgaccgcg	ttgggcacct	ggaatcgggtg	9360
tcgctgctgc	accgcttccg	cgtcctggac	cgtggcaaga	aaacgtcccg	ttgccagggtc	9420
ctgatcgacg	aggaaatcgt	cgtgctgttt	gctggcgacc	actacacgaa	attcatatgg	9480
gagaagtacc	gcaagctgtc	gccgacggcc	cgacggatgt	tcgactatct	cagctcgcac	9540
cgggagccgt	acccgctcaa	gctggaaacc	ttccgcctca	tgtgcggatc	ggattccacc	9600
cgcgtgaaga	agtggcgcg	gcaggtcggc	gaagcctgcg	aagagttgcg	aggcagcggc	9660
ctggtggaac	acgcctgggt	caatgatgac	ctggtgcatt	gcaaacgcta	gggccttggtg	9720
gggtcagttc	cggctggggg	ttcagcagcc	agcgcctgat	ctggggaacc	ctgtggttgg	9780
catgcacata	caaatggacg	aacggataaa	ccttttcacg	cccttttaaa	tatccgatta	9840
ttctaataaa	cgctcttttc	tcttaggttt	acccgccaat	atatcctgtc	aaacactgat	9900
agtttaaaact	gaaggcgggg	aacgacaatc	tgatctaagc	tactcgacag	atctgtgccc	9960
caactgggggt	aacctttgag	ttctctcagt	tgggggcgta	gggaattcgg	cgcctttttt	10020
ttacacagtt	caaagtgaat	tttggttaaa	accctcaggt	tgtattttgga	caatgggaaa	10080
tatgtggtgg	aattgggatt	gggaaataaa	tgaagggtta	ggattaaatg	gaagaaggag	10140
aataaaagggt	taagatttaa	agatgtcttt	tagtgggtgg	gaaatgattt	tcctttccca	10200
ttagccaaac	ggggcctcag	tatatctcca	attaacagaa	gtttaatact	taataattta	10260
aatgacagtt	caatatttta	gccatgacac	atggcatcca	atgaaagggt	cgtccactag	10320
aaataaagggt	gacagacgat	cactgaatag	gtacacccat	accagccacc	tttctattgt	10380
ctttgcactt	ggattgaaga	gtggtcacaa	gggttaaaac	cctgaatcat	tcggaaatgt	10440
ttttgccaca	caaatgagct	ccaaatacac	tgagtgcac	tacgggtcag	tcactaaaat	10500
ttctgaaatg	ttgttaccta	ctcgtctctt	tgtccaaaaa	taaaccaaac	tcgtacgggtg	10560
tgaatacatc	ttcaatgtta	cctacactgt	acaagattag	cttattttgt	aacggaggga	10620
acatacatct	ttcgataaca	ctataattgt	tgtgccgcct	tggttcagtt	caaatttctt	10680
tttacaaaat	tccgcttgca	tctttgtccc	ggcgcgggcaa	aaaaaaaaat	ccacaataaa	10740
ggatatcatat	aaaaacaatg	atggcagtta	atcagtttag	gttggtcact	atcttaatag	10800
atgcaaatta	agttgggttg	tagcgaaacc	aacgaacggc	atctgttttg	tgctcccacg	10860

Sequence Listing.txt

atacaatccc	ttaaatacagc	acacacgcac	aatgcatgca	ccacatttta	gatcgatttc	10920
gtagagaata	tttcgatcac	atagccacaa	ttaatctaca	ttctagaagc	tccaacaaac	10980
ttatttaatt	agttcctgca	aattaacatt	tacaaatatc	tcaaactgaa	gaaataaactt	11040
taattgcaat	gccggcagcc	aaccggcggt	gtatgcttcc	atttgttcga	tgtaaagtg	11100
tgtttatcca	taggaagaga	tgtaatatta	ataactactc	catcagtttc	taaatatttg	11160
acgccattga	ttttttttta	aatatgtttg	aatgttcac	ttattttaaa	aaatttaagt	11220
aattattaat	tatttttcta	tcatttgatt	tattgttaaa	tatacttata	tgtatacata	11280
tagttttaca	tatttcacaa	aagtttttga	atatgacgaa	cggttaaata	tgtgctaaaa	11340
agtcaatggt	atcaaataat	tagaaacgga	gggagtatat	ttgttgaaaa	tgttttacct	11400
tctctcaatc	ttaataaatt	tggtcagggc	aggcacagaa	aaaaaaaaca	ggaagacata	11460
acagcaaaac	aaaaacagtg	gaaattaagc	attgctaatt	acaaactttt	ctgatcattc	11520
acaccatttt	catgtttgat	ccagctcaaa	cttactaca	acagcttaga	acactcttag	11580
ctagcaaaaag	tcctaatac	agccattata	aatagacaca	agcaattagc	ctcatctaca	11640
cacactcca	tcactccaat	taaccaaagc	taattaagca	tcgatatggc	ccaagtgatt	11700
aacaccttcg	acggcggtggc	cgactacctc	cagacctacc	acaagctccc	ggacaactac	11760
atcaccaagt	ccgaggccca	ggccctcggc	tgaggaggag	ccggctgcat	ctccggcgac	11820
tccctcatct	ccctcgccctc	caccggcaag	cgcggtgtcca	tcaaggacct	cctcgacgag	11880
aaggacttcg	agatttgggc	catcaacgag	cagaccatga	agctggagtc	cgccaagggtg	11940
tcccgcgtgt	tctgcaccgg	caagaagctc	gtctatatcc	tcaagaccgc	cctcggcagg	12000
accatcaagg	ccaccgcca	ccaccgcttc	ctcaccatcg	acggctggaa	gcgcctcgac	12060
gagctgtccc	tcaaggagca	catcgccctc	ccgcgcaagc	tcgaatcctc	ctccctccag	12120
ctctgactgc	agtctagagt	cctgctttta	tgagatatgc	gagacgccta	tgatcgcatg	12180
atatttgctt	tcaattctgt	tgtgcacggt	gtaaaaaacc	tgagcatgtg	tagctcagat	12240
ccttaccgcc	ggtttcggtt	cattctaata	aatatatcac	ccgttactat	cgtattttta	12300
tgaataatat	tctccgttca	atttactgat	tgtaccctac	tacttatatg	tacaatatta	12360
aaatgaaaac	aatatattgt	gctgaatagg	tttatagcga	catctatgat	agagcgccac	12420
aataacaaac	aattgcgttt	tattattaca	aatccaattt	taaaaaaagc	ggcagaaccg	12480
gtcaaaccta	aaagactgat	tacataaatc	ttattcaaat	ttcaaaagtg	ccccaggggc	12540
tagtatctac	gacacaccga	gcggcgaaact	aataacgctc	actgaaggga	actccggttc	12600
cccgccggcg	cgcatgggtg	agattccttg	aagttgagta	ttggccgtcc	gctctaccga	12660
aagttacggg	caccattcaa	cccgggtccag	cacggcgggc	gggtaaccga	cttgctgccc	12720
cgagaattat	gcagcatttt	tttgggtgat	gtgccaaatg	aagtgcaggt	caaaccttga	12780
cagtgcagac	aaatcggttg	gcgggtccag	ggcgaatttt	gcgacaacat	gtcgaggctc	12840
agcaggacct	gcatggcgcg	ccagatctgc	atgccggctc	aggtcattca	tatgcttgag	12900
aagagagtcg	ggatagtcca	aaataaaaaca	aaggtaagat	tacctgggtca	aaagtgaaaa	12960

Sequence Listing.txt

catcagttaa	aaggtggtat	aaagtaaaat	atcggttaata	aaaggtggcc	caaagtgaaa	13020
tttactcttt	tctactatta	taaaaattga	ggatgttttt	gtcgggtactt	tgatacgtca	13080
tttttgtatg	aattggtttt	taagttttatt	cgctttttgga	aatgcatatc	tgtattttgag	13140
tcgggtttta	agttcgtttg	cttttgtaaa	tacagaggga	tttgtataag	aaatatcttt	13200
aaaaaaaccc	atatgctaata	ttgacataat	ttttgagaaa	aatatatatt	caggcgaatt	13260
ctcacaatga	acaataataa	gattaaaata	gctttccccc	gttgcagcgc	atgggtattt	13320
tttctagtaa	aaataaaaaga	taaacttaga	ctcaaaacat	ttacaaaaac	aaccacctaaa	13380
gttcctaaag	cccaaagtgc	tatccacgat	ccatagcaag	cccagcccaa	cccaacccaa	13440
cccaaccac	cccagtccag	ccaactggac	aatagtctcc	acaccccccc	actatcaccg	13500
tgagttgtcc	gcacgcaccg	cacgtctcgc	agccaaaaaa	aaaaaaagaa	agaaaaaaa	13560
gaaaaagaaa	aaacagcagg	tgggtccggg	tcgtgggggc	cggaaacgcg	aggaggatcg	13620
cgagccagcg	acgaggccgg	ccctccctcc	gcttccaaag	aaacgcccc	catcgccact	13680
atatacatat	ccccccctct	cctcccatcc	cccccaacct	accaccacca	ccaccaccac	13740
ctccacctcc	tccccctcg	ctgccggacg	acgagctcct	ccccctccc	cctccgcccgc	13800
cgccgcgccc	gtaaccaccc	cgcccctctc	ctctttcttt	ctccgttttt	tttttccgtc	13860
tcggtctcga	tctttggcct	tggtagtttg	ggtgggagcg	aggcggttcc	gtgcgcgccc	13920
agatcggtgc	gcgggagggg	cgggatctcg	cggctggggc	tctcgccggc	gtggatccgg	13980
cccggatctc	gcggggaatg	gggctctcgg	atgtagatct	gcgatccgcc	gttggtgggg	14040
gagatgatgg	ggggttttaa	atttccgcca	tgctaaacaa	gatcaggaag	aggggaaaag	14100
ggcactatgg	tttatatttt	tatatatttc	tgctgcttcg	tcaggcttag	atgtgctaga	14160
tctttctttc	ttctttttgt	gggtagaatt	tgaatccctc	agcattgttc	atcggtagtt	14220
tttcttttca	tgatttgtga	caaatgcagc	ctcgtgcgga	gcttttttgt	aggtagacga	14280
taagctatcg	ataaacccat	ggctacgacc	gccgcggccg	cggccgcccgc	cctgtccgcc	14340
gccgcgacgg	ccaagaccgg	ccgtaagaac	caccagcgac	accacgtcct	tcccgctcga	14400
ggccgggtgg	gggcggcggc	ggtcaggtgc	tcggcggtgt	ccccggtcac	cccgcggtcc	14460
ccggcgcccgc	cggccacgcc	gctccggccg	tgggggcccgc	ccgagccccg	caagggcgcg	14520
gacatcctcg	tggaggcgct	ggagcggtgc	ggcgtcagcg	acgtgttcgc	ctacccgggc	14580
ggcgcgtcca	tggagatcca	ccaggcgctg	acgcgtctcc	cggtcatcac	caaccacctc	14640
ttccgccacg	agcagggcga	ggcgttcgcg	gcgtccgggt	acgcgcgcgc	gtccggcccgc	14700
gtcgggggtct	gcgtcgccac	ctccggcccc	ggggcaacca	acctcgtgtc	cgcgctcgcc	14760
gacgcgctgc	tcgactccgt	cccgatggtc	gccatcacgg	gccaggctcc	ccgccgcatg	14820
atcggcaccg	acgccttcca	ggagacgccc	atagtcgagg	tcacccgctc	catcaccaag	14880
cacaattacc	ttgtccttga	tgtggaggac	atccccgcgc	tcatacagga	agccttcttc	14940
ctcgcgtcct	cgggccgtcc	tggccccgtg	ctggtcgaca	tccccaaagga	catccagcag	15000

Sequence Listing.txt

cagatggccg	tgccggtctg	ggacacctcg	atgaatctac	caggggtacat	cgcacgcctg	15060
cccaagccac	ccgcgacaga	attgcttgag	caggtcttgc	gtctggttgg	cgagtcacgg	15120
cgcccgattc	tctatgtcgg	tggtggctgc	tctgcatctg	gtgacgaatt	gcgctggttt	15180
gttgagctga	ctggtatccc	agttacaacc	actctgatgg	gcctcggcaa	tttccccagt	15240
gacgacccgt	tgtccctgcg	catgcttggg	atgcatggca	cgggtgtacgc	aaattatgcc	15300
gtggataagg	ctgacctggt	gcttgcgttt	ggtgtgcggt	ttgatgatcg	tgtgacaggg	15360
aaaattgagg	cttttgcaag	cagggccaag	attgtgcaca	ttgacattga	tccagcagag	15420
attggaaaga	acaagcaacc	acatgtgtca	atttgcgtag	atgttaagct	tgctttacag	15480
ggcttgaatg	ctctgctaca	acagagcgac	gtcaagtttg	cggaatattg	cctcagtttt	15540
ggcaccgaaa	ttttaaccgt	tgagtacggc	ccattgccca	ttggcaaaat	tgtgagtga	15600
gaaattaatt	gttctgtgta	cagtgttgat	ccagaaggga	gagtttacac	ccaggcgatc	15660
gccaatggc	atgaccgggg	agagcaggaa	gtattggaat	atgaattgga	agatggttca	15720
gtaatccgag	ctacctctga	ccaccgcttt	ttaaccaccg	attatcaact	gttggcgatc	15780
gaagaaattt	ttgctaggca	actggacttg	ttgactttag	aaaatattaa	gcaaaactgaa	15840
gaagctcttg	acaaccatcg	tcttcccttt	ccattacttg	acgctgggac	aattaaataa	15900
ctgcaggtcg	actctagagt	caagcagatc	gttcaaacat	ttggcaataa	agtttcttaa	15960
gattgaatcc	tgttgccggt	cttgcgatga	ttatcatata	atttctgttg	aattacgtta	16020
agcatgtaat	aattaacatg	taatgcatga	cgttatttat	gagatggggt	tttatgatta	16080
gagtcccgca	attatacatt	taatacgcg	tagaaaacaa	aatatagcgc	gcaaaactagg	16140
ataaattatc	gcgcgcggtg	tcattctatg	tactagatcg	acctgcactc	gagctcgaag	16200
ccgcggtg	gggtgccagg	cgtgcccttg	ggctccccgg	gcgcgtactc	cacctcacc	16260
atcactagtt	gtggtac					16277

<210> 49
 <211> 333
 <212> DNA
 <213> Artificial

<220>
 <223> DNA sequence

<220>
 <221> misc_feature
 <222> (1)..(333)
 <223> codon-optimized barnase sequence from Bacillus amyloliquefaciens

<400> 49	
atggcccaag	tgattaacac cttcgacggc gtggccgact acctccagac ctaccacaag 60
ctcccggaca	actacatcac caagtccgag gcccaggccc tcggctgggt ggcctccaag 120
ggcaacctcg	ccgacgtggc cccagggaag tccatcggcg gcgacatctt ctccaaccgc 180
gagggcaagc	tcccaggcaa gtcgggcagg acctggaggg aggccgacat caactacacc 240
tccggcttcc	gcaactccga ccgcatcctc tactcctccg actggctcat ctacaagacc 300

Sequence Listing.txt

accgaccact accagacctt caccaagatc cgc

333

<210> 50
<211> 111
<212> PRT
<213> Artificial

<220>
<223> amino acid sequence

<220>
<221> MISC_FEATURE
<222> (1)..(111)
<223> codon-optimized amino acid sequence of the barnase enzyme from
Bacillus amyloliquefaciens

<400> 50

Met Ala Gln Val Ile Asn Thr Phe Asp Gly Val Ala Asp Tyr Leu Gln
1 5 10 15

Thr Tyr His Lys Leu Pro Asp Asn Tyr Ile Thr Lys Ser Glu Ala Gln
20 25 30

Ala Leu Gly Trp Val Ala Ser Lys Gly Asn Leu Ala Asp Val Ala Pro
35 40 45

Gly Lys Ser Ile Gly Gly Asp Ile Phe Ser Asn Arg Glu Gly Lys Leu
50 55 60

Pro Gly Lys Ser Gly Arg Thr Trp Arg Glu Ala Asp Ile Asn Tyr Thr
65 70 75 80

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

Ile Tyr Lys Thr Thr Asp His Tyr Gln Thr Phe Thr Lys Ile Arg
100 105 110

<210> 51
<211> 1932
<212> DNA
<213> Artificial

<220>
<223> DNA sequence

<220>
<221> misc_feature
<222> (1)..(1932)
<223> codon-optimized ALS (acetolactate synthase) sequence from Oryza
sativa

<400> 51

atggctacga ccgccgcggc cgcggccgcc gccctgtccg ccgccgcgac ggccaagacc 60

ggccgtaaga accaccagcg acaccacgtc cttcccgctc gaggccgggt gggggcggcg 120

Sequence Listing.txt

gcggtcaggt gctcggcggt gtccccggtc accccgccgt ccccggcgcc gccggccacg	180
ccgctccggc cgtggggggc ggccgagccc cgcaagggcg cggacatcct cgtggaggcg	240
ctggagcggg gcggcgctcag cgacgtgttc gcctaccggt gcggcgcgtc catggagatc	300
caccaggcgc tgacgcgctc cccggtcatc accaaccacc tcttcgcgca cgagcagggc	360
gaggcggttcg cggcggtccgg gtacgcgcgc gcgtccggcc gcgtcggggg ctgcgtcgcc	420
acctccggcc ccgggggcaac caacctcgtg tccgcgctcg ccgacgcgct gctcgactcc	480
gtcccgatgg tcgccatcac gggccagggt ccccgccgca tgatcggcac cgacgccttc	540
caggagacgc ccatagtcga ggtcaccgct tccatcacca agcacaatta cttgttcctt	600
gatgtggagg acatcccccg cgtcatacag gaagccttct tcctcgcgtc ctcgggccgt	660
cctggccccg tgctgggtcga catccccaag gacatccagc agcagatggc cgtgccggtc	720
tgggacacct cgatgaatct accagggtac atcgcacgcc tgcccaagcc acccgcgaca	780
gaattgcttg agcaggctct gcgtctggtt ggcgagtcac ggcgcccgat tctctatgtc	840
ggtggtggct gctctgcatc tgggtgacgaa ttgcgctggt ttgttgagct gactggtatc	900
ccagttacaa ccactctgat gggcctcggc aatttcccca gtgacgacct gttgtccctg	960
cgcatgcttg ggatgcatgg cacggtgtac gcaaattatg ccgtggataa ggctgacctg	1020
ttgcttgctg ttggtgtgct gtttgatgat cgtgtgacag ggaaaattga ggcttttgca	1080
agcaggggcca agattgtgca cattgacatt gatccagcag agattggaaa gaacaagcaa	1140
ccacatgtgt caatttgctc agatgttaag cttgctttac agggcttgaa tgctctgcta	1200
caacagagca caacaaagac aagttctgat tttagtgcac ggcacaatga gttggaccag	1260
cagaagaggg agtttctctt ggggtacaaa acttttggtg aagagatccc accgcaatat	1320
gccattcagg tgctggatga gctgacgaaa ggtgaggcaa tcacgctac tgggtgttggg	1380
cagcaccaga tgtggggcgc acaatattac acctacaagc ggccacggca gtggctgtct	1440
tcggctggtc tgggcgcaat gggatttggg ctgcctgctg cagctggtgc ttctgtggct	1500
aaccaggtg tcacagttgt tgatattgat ggggatggta gcttcctcat gaacattcag	1560
gagctggcat tgatccgcat tgagaacctc cctgtgaagg tgatggtgtt gaacaaccaa	1620
catttgggta tgggtggtgca acttgaggat aggttttaca aggcgaatag ggcgcataca	1680
tacttgggca acccggaatg tgagagcgag atatatccag attttgtgac tattgctaag	1740
gggttcaata ttcctgcagt ccgtgtaaca aagaagagtg aagtcctgtc cgccatcaag	1800
aagatgctcg agactccagg gccatacttg ttggatatca tcgtcccgca ccaggagcat	1860
gtgctgccta tgatcccaag tggggggcgca ttcaaggaca tgatcctgga tggatggtgc	1920
aggactgtgt ac	1932

<210> 52
 <211> 644
 <212> PRT
 <213> Artificial

<220>

Sequence Listing.txt

<223> amino acid sequence

<220>

<221> MISC_FEATURE

<222> (1)..(644)

<223> codon-optimized amino acid sequence of the ALS (acetolactate synthase) sequence from Oryza sativa

<400> 52

Met Ala Thr Thr Ala Ala Ala Ala Ala Ala Ala Leu Ser Ala Ala Ala
1 5 10 15

Thr Ala Lys Thr Gly Arg Lys Asn His Gln Arg His His Val Leu Pro
20 25 30

Ala Arg Gly Arg Val Gly Ala Ala Ala Val Arg Cys Ser Ala Val Ser
35 40 45

Pro Val Thr Pro Pro Ser Pro Ala Pro Pro Ala Thr Pro Leu Arg Pro
50 55 60

Trp Gly Pro Ala Glu Pro Arg Lys Gly Ala Asp Ile Leu Val Glu Ala
65 70 75 80

Leu Glu Arg Cys Gly Val Ser Asp Val Phe Ala Tyr Pro Gly Gly Ala
85 90 95

Ser Met Glu Ile His Gln Ala Leu Thr Arg Ser Pro Val Ile Thr Asn
100 105 110

His Leu Phe Arg His Glu Gln Gly Glu Ala Phe Ala Ala Ser Gly Tyr
115 120 125

Ala Arg Ala Ser Gly Arg Val Gly Val Cys Val Ala Thr Ser Gly Pro
130 135 140

Gly Ala Thr Asn Leu Val Ser Ala Leu Ala Asp Ala Leu Leu Asp Ser
145 150 155 160

Val Pro Met Val Ala Ile Thr Gly Gln Val Pro Arg Arg Met Ile Gly
165 170 175

Thr Asp Ala Phe Gln Glu Thr Pro Ile Val Glu Val Thr Arg Ser Ile
180 185 190

Thr Lys His Asn Tyr Leu Val Leu Asp Val Glu Asp Ile Pro Arg Val
195 200 205

Ile Gln Glu Ala Phe Phe Leu Ala Ser Ser Gly Arg Pro Gly Pro Val
210 215 220

Leu Val Asp Ile Pro Lys Asp Ile Gln Gln Gln Met Ala Val Pro Val
225 230 235 240

Sequence Listing.txt

Trp Asp Thr Ser Met₂₄₅ Asn Leu Pro Gly Tyr₂₅₀ Ile Ala Arg Leu Pro₂₅₅ Lys

Pro Pro Ala Thr₂₆₀ Glu Leu Leu Glu Gln₂₆₅ Val Leu Arg Leu Val₂₇₀ Gly Glu

Ser Arg Arg₂₇₅ Pro Ile Leu Tyr Val₂₈₀ Gly Gly Gly Cys Ser₂₈₅ Ala Ser Gly

Asp Glu₂₉₀ Leu Arg Trp Phe Val₂₉₅ Glu Leu Thr Gly Ile₃₀₀ Pro Val Thr Thr

Thr₃₀₅ Leu Met Gly Leu Gly₃₁₀ Asn Phe Pro Ser Asp₃₁₅ Asp Pro Leu Ser Leu₃₂₀

Arg Met Leu Gly Met₃₂₅ His Gly Thr Val Tyr₃₃₀ Ala Asn Tyr Ala Val₃₃₅ Asp

Lys Ala Asp Leu₃₄₀ Leu Leu Ala Phe Gly₃₄₅ Val Arg Phe Asp Asp₃₅₀ Arg Val

Thr Gly Lys₃₅₅ Ile Glu Ala Phe Ala₃₆₀ Ser Arg Ala Lys Ile₃₆₅ Val His Ile

Asp Ile₃₇₀ Asp Pro Ala Glu Ile₃₇₅ Gly Lys Asn Lys Gln₃₈₀ Pro His Val Ser

Ile₃₈₅ Cys Ala Asp Val Lys₃₉₀ Leu Ala Leu Gln Gly₃₉₅ Leu Asn Ala Leu Leu₄₀₀

Gln Gln Ser Thr Thr₄₀₅ Lys Thr Ser Ser Asp₄₁₀ Phe Ser Ala Trp His₄₁₅ Asn

Glu Leu Asp Gln₄₂₀ Gln Lys Arg Glu Phe₄₂₅ Pro Leu Gly Tyr Lys₄₃₀ Thr Phe

Gly Glu Glu₄₃₅ Ile Pro Pro Gln Tyr₄₄₀ Ala Ile Gln Val Leu₄₄₅ Asp Glu Leu

Thr Lys₄₅₀ Gly Glu Ala Ile Ile₄₅₅ Ala Thr Gly Val Gly₄₆₀ Gln His Gln Met

Trp₄₆₅ Ala Ala Gln Tyr Tyr₄₇₀ Thr Tyr Lys Arg Pro₄₇₅ Arg Gln Trp Leu Ser₄₈₀

Ser Ala Gly Leu Gly₄₈₅ Ala Met Gly Phe Gly₄₉₀ Leu Pro Ala Ala Ala₄₉₅ Gly

Ala Ser Val Ala₅₀₀ Asn Pro Gly Val Thr₅₀₅ Val Val Asp Ile Asp₅₁₀ Gly Asp

Sequence Listing.txt

Gly Ser Phe Leu Met Asn Ile Gln Glu Leu Ala Leu Ile Arg Ile Glu
515 520 525

Asn Leu Pro Val Lys Val Met Val Leu Asn Asn Gln His Leu Gly Met
530 535 540

Val Val Gln Leu Glu Asp Arg Phe Tyr Lys Ala Asn Arg Ala His Thr
545 550 555 560

Tyr Leu Gly Asn Pro Glu Cys Glu Ser Glu Ile Tyr Pro Asp Phe Val
565 570 575

Thr Ile Ala Lys Gly Phe Asn Ile Pro Ala Val Arg Val Thr Lys Lys
580 585 590

Ser Glu Val Arg Ala Ala Ile Lys Lys Met Leu Glu Thr Pro Gly Pro
595 600 605

Tyr Leu Leu Asp Ile Ile Val Pro His Gln Glu His Val Leu Pro Met
610 615 620

Ile Pro Ser Gly Gly Ala Phe Lys Asp Met Ile Leu Asp Gly Asp Gly
625 630 635 640

Arg Thr Val Tyr

<210> 53
<211> 1209
<212> DNA
<213> Artificial

<220>
<223> DNA sequence

<220>
<221> misc_feature
<222> (1)..(1209)
<223> not codon-optimized N-terminus of the ALS (acetylactate synthase)
sequence from Oryza sativa

<400> 53
atggctacga ccgccgcggc cgcggccgcc gccctgtccg ccgccgcgac ggccaagacc 60
ggccgtaaga accaccagcg acaccacgtc cttcccgctc gaggccgggt gggggcggcg 120
gcggtcaggt gtcggcggt gtccccggtc accccgccgt ccccggcgcc gccggccacg 180
ccgctccggc cgtggggggc ggccgagccc cgcaagggcg cggacatcct cgtggaggcg 240
ctggagcggg gcggcgctcag cgacgtgttc gcctaccg ggcgcgcgtc catggagatc 300
caccaggcgc tgacgcgctc cccggctcgc accaaccacc tcttcgcca cgagcagggc 360
gaggcggtcg cggcgctccg gtacgcgcgc gcgtccggcc gcgtcggggg ctgcgtcgcc 420
acctccggcc ccggggcaac caacctcgtg tccgcgctcg ccgacgcgct gctcgactcc 480

Sequence Listing.txt

```
gtcccgatgg tcgccatcac gggccagggtc ccccgccgca tgatcggcac cgacgccttc 540
caggagacgc ccatagtcga ggtcacccgc tccatcacca agcacaatta ccttgtcctt 600
gatgtggagg acatcccccg cgtcatacag gaagccttct tcctcgcgtc ctcgggccgt 660
cctggccccg tgctggtcga catccccaag gacatccagc agcagatggc cgtgccggtc 720
tgggacacct cgatgaatct accaggggtac atcgcacgcc tgcccaagcc acccgcgaca 780
gaattgcttg agcagggtctt gcgtctggtt ggcgagtcac ggcgcccgat tctctatgtc 840
ggtggtggct gctctgcatc tggtagcgaa ttgcgctggt ttgttgagct gactggtatc 900
ccagttacaa ccactctgat gggcctcggc aatttcccca gtgacgaccc gttgtccctg 960
cgcatgcttg ggatgcatgg cacggtgtac gcaaattatg ccgtggataa ggctgacctg 1020
ttgcttgctt ttggtgtgct gtttgatgat cgtgtgacag ggaaaattga ggcttttgca 1080
agcaggggcca agattgtgca cattgacatt gatccagcag agattggaaa gaacaagcaa 1140
ccacatgtgt caatttgctc agatgttaag cttgctttac agggcttgaa tgctctgcta 1200
caacagagc 1209
```

<210> 54
<211> 403
<212> PRT
<213> Artificial

<220>
<223> amino acid sequence

<220>
<221> MISC_FEATURE
<222> (1)..(403)
<223> not codon-optimized N-terminus of the ALS (acetolactate synthase) sequence from *Oryza sativa*

<400> 54

Met Ala Thr Thr Ala Ala Ala Ala Ala Ala Ala Leu Ser Ala Ala Ala
1 5 10 15

Thr Ala Lys Thr Gly Arg Lys Asn His Gln Arg His His Val Leu Pro
20 25 30

Ala Arg Gly Arg Val Gly Ala Ala Ala Val Arg Cys Ser Ala Val Ser
35 40 45

Pro Val Thr Pro Pro Ser Pro Ala Pro Pro Ala Thr Pro Leu Arg Pro
50 55 60

Trp Gly Pro Ala Glu Pro Arg Lys Gly Ala Asp Ile Leu Val Glu Ala
65 70 75 80

Leu Glu Arg Cys Gly Val Ser Asp Val Phe Ala Tyr Pro Gly Gly Ala
85 90 95

Ser Met Glu Ile His Gln Ala Leu Thr Arg Ser Pro Val Ile Thr Asn
Seite 63

Sequence Listing.txt

100

105

110

His Leu Phe Arg His Glu Gln Gly Glu Ala Phe Ala Ala Ser Gly Tyr
 115 120 125
 Ala Arg Ala Ser Gly Arg Val Gly Val Cys Val Ala Thr Ser Gly Pro
 130 135 140
 Gly Ala Thr Asn Leu Val Ser Ala Leu Ala Asp Ala Leu Leu Asp Ser
 145 150 155 160
 Val Pro Met Val Ala Ile Thr Gly Gln Val Pro Arg Arg Met Ile Gly
 165 170 175
 Thr Asp Ala Phe Gln Glu Thr Pro Ile Val Glu Val Thr Arg Ser Ile
 180 185 190
 Thr Lys His Asn Tyr Leu Val Leu Asp Val Glu Asp Ile Pro Arg Val
 195 200 205
 Ile Gln Glu Ala Phe Phe Leu Ala Ser Ser Gly Arg Pro Gly Pro Val
 210 215 220
 Leu Val Asp Ile Pro Lys Asp Ile Gln Gln Gln Met Ala Val Pro Val
 225 230 235 240
 Trp Asp Thr Ser Met Asn Leu Pro Gly Tyr Ile Ala Arg Leu Pro Lys
 245 250 255
 Pro Pro Ala Thr Glu Leu Leu Glu Gln Val Leu Arg Leu Val Gly Glu
 260 265 270
 Ser Arg Arg Pro Ile Leu Tyr Val Gly Gly Gly Cys Ser Ala Ser Gly
 275 280 285
 Asp Glu Leu Arg Trp Phe Val Glu Leu Thr Gly Ile Pro Val Thr Thr
 290 295 300
 Thr Leu Met Gly Leu Gly Asn Phe Pro Ser Asp Asp Pro Leu Ser Leu
 305 310 315 320
 Arg Met Leu Gly Met His Gly Thr Val Tyr Ala Asn Tyr Ala Val Asp
 325 330 335
 Lys Ala Asp Leu Leu Leu Ala Phe Gly Val Arg Phe Asp Asp Arg Val
 340 345 350
 Thr Gly Lys Ile Glu Ala Phe Ala Ser Arg Ala Lys Ile Val His Ile
 355 360 365
 Asp Ile Asp Pro Ala Glu Ile Gly Lys Asn Lys Gln Pro His Val Ser
 370 375 380

Sequence Listing.txt

Ile Cys Ala Asp Val Lys Leu Ala Leu Gln Gly Leu Asn Ala Leu Leu
385 390 395 400

Gln Gln Ser

<210> 55
<211> 723
<212> DNA
<213> Artificial

<220>
<223> DNA sequence

<220>
<221> misc_feature
<222> (1)..(723)
<223> not codon-optimized C-terminus of the ALS (acetylactate synthase)
sequence from Oryza sativa

<400> 55
acaacaaaga caagttctga ttttagtgca tggcacaatg agttggacca gcagaagagg 60
gagtttcctc tgggggtacaa aacttttggg gaagagatcc caccgcaata tgccattcag 120
gtgctggatg agctgacgaa aggtgaggca atcatcgcta ctggtgttgg gcagcaccag 180
atgtgggcg cacaatatta cacctacaag cggccacggc agtggctgtc ttcggctggg 240
ctgggcgcaa tgggatttgg gctgcctgct gcagctgggt cttctgtggc taaccaggt 300
gtcacagttg ttgatattga tggggatggg agcttcctca tgaacattca ggagctggca 360
ttgatccgca ttgagaacct ccctgtgaag gtgatgggtg tgaacaacca acatttgggt 420
atggtgggtg aacttgagga taggttttac aaggcgaata gggcgcatat atacttgggc 480
aaccgggaat gtgagagcga gatatatcca gattttgtga ctattgctaa ggggttcaat 540
attcctgcag tccgtgtaac aaagaagagt gaagtccgtg ccgccatcaa gaagatgctc 600
gagactccag ggccatactt gttggatatc atcgccccgc accaggagca tgtgctgcct 660
atgatcccaa gtggggggcg attcaaggac atgatcctgg atggtgatgg caggactgtg 720
tac 723

<210> 56
<211> 241
<212> PRT
<213> Artificial

<220>
<223> amino acid sequence

<220>
<221> MISC_FEATURE
<222> (1)..(241)
<223> not codon-optimized C-terminus of the ALS (acetylactate synthase)
sequence from Oryza sativa

<400> 56

Sequence Listing.txt

Thr Thr Lys Thr Ser Ser Asp Phe Ser Ala Trp His Asn Glu Leu Asp
1 5 10 15

Gln Gln Lys Arg Glu Phe Pro Leu Gly Tyr Lys Thr Phe Gly Glu Glu
20 25 30

Ile Pro Pro Gln Tyr Ala Ile Gln Val Leu Asp Glu Leu Thr Lys Gly
35 40 45

Glu Ala Ile Ile Ala Thr Gly Val Gly Gln His Gln Met Trp Ala Ala
50 55 60

Gln Tyr Tyr Thr Tyr Lys Arg Pro Arg Gln Trp Leu Ser Ser Ala Gly
65 70 75 80

Leu Gly Ala Met Gly Phe Gly Leu Pro Ala Ala Ala Gly Ala Ser Val
85 90 95

Ala Asn Pro Gly Val Thr Val Val Asp Ile Asp Gly Asp Gly Ser Phe
100 105 110

Leu Met Asn Ile Gln Glu Leu Ala Leu Ile Arg Ile Glu Asn Leu Pro
115 120 125

Val Lys Val Met Val Leu Asn Asn Gln His Leu Gly Met Val Val Gln
130 135 140

Leu Glu Asp Arg Phe Tyr Lys Ala Asn Arg Ala His Thr Tyr Leu Gly
145 150 155 160

Asn Pro Glu Cys Glu Ser Glu Ile Tyr Pro Asp Phe Val Thr Ile Ala
165 170 175

Lys Gly Phe Asn Ile Pro Ala Val Arg Val Thr Lys Lys Ser Glu Val
180 185 190

Arg Ala Ala Ile Lys Lys Met Leu Glu Thr Pro Gly Pro Tyr Leu Leu
195 200 205

Asp Ile Ile Val Pro His Gln Glu His Val Leu Pro Met Ile Pro Ser
210 215 220

Gly Gly Ala Phe Lys Asp Met Ile Leu Asp Gly Asp Gly Arg Thr Val
225 230 235 240

Tyr

<210> 57
<211> 60
<212> PRT
<213> Artificial

Sequence Listing.txt

<220>
<223> amino acid sequence

<220>
<221> SIGNAL
<222> (1)..(60)
<223> artificial chloroplast targeting sequence used as an N-terminal
signal sequence

<400> 57

Met Ala Ser Ser Met Leu Ser Ser Ala Ala Val Val Ala Thr Arg Ala
1 5 10 15

Ser Ala Ala Gln Ala Ser Met Val Ala Pro Phe Thr Gly Leu Lys Ser
20 25 30

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

Ser Ile Ala Ser Asn Gly Gly Arg Val Gln Cys Ala
50 55 60

<210> 58
<211> 20
<212> DNA
<213> Artificial

<220>
<223> DNA primer

<400> 58
gcatcgatat ggccaagtg 20

<210> 59
<211> 22
<212> DNA
<213> Artificial

<220>
<223> DNA primer

<400> 59
gagctggagg gaggaggatt cg 22

<210> 60
<211> 20
<212> DNA
<213> Artificial

<220>
<223> DNA primer

<400> 60
gatcttggtg aagtctgtag 20

<210> 61
<211> 21
<212> DNA
<213> Artificial

Sequence Listing.txt

```

<220>
<223> DNA primer

<400> 61
gggactccat cgtgtccatc c 21

<210> 62
<211> 21
<212> DNA
<213> Artificial

<220>
<223> DNA primer

<400> 62
gtcagcgacg tgttcgcta c 21

<210> 63
<211> 20
<212> DNA
<213> Artificial

<220>
<223> DNA primer

<400> 63
gtcctccaat caaggacaag 20

<210> 64
<211> 20
<212> DNA
<213> Artificial

<220>
<223> DNA primer

<400> 64
gcaatatgcc attcaggtgc 20

<210> 65
<211> 20
<212> DNA
<213> Artificial

<220>
<223> DNA primer

<400> 65
cacggactgc aggaatattg 20

<210> 66
<211> 20
<212> DNA
<213> Artificial

<220>
<223> DNA primer

<400> 66
gattctctat gtcggtggtg 20

<210> 67

```

Sequence Listing.txt

<211>	21	
<212>	DNA	
<213>	Artificial	
<220>		
<223>	DNA primer	
<400>	67	
	gcgacagaat tgcttgagca g	21
<210>	68	
<211>	20	
<212>	DNA	
<213>	Artificial	
<220>		
<223>	DNA primer	
<400>	68	
	ctgggggtgga tgcactctag	20
<210>	69	
<211>	19	
<212>	DNA	
<213>	Artificial	
<220>		
<223>	DNA primer	
<400>	69	
	ggtgcaactt gaggatagg	19
<210>	70	
<211>	22	
<212>	DNA	
<213>	Artificial	
<220>		
<223>	DNA primer	
<400>	70	
	ctaccagacc ttcaccaaga tc	22
<210>	71	
<211>	22	
<212>	DNA	
<213>	Artificial	
<220>		
<223>	DNA primer	
<400>	71	
	gatctaagct actcgacaga tc	22