

SEQUENCE LISTING

<110> EMD MILLIPORE CORPORATION

<120> SYNTHETIC SELF-REPLICATING RNA VECTORS ENCODING CRISPR PROTEINS
AND USES THEREOF

<130> P19-084 WO-PCT

<140>

<141>

<150> 62/847,032

<151> 2019-05-13

<160> 40

<170> PatentIn version 3.5

<210> 1

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 1

Pro Lys Lys Lys Arg Lys Val

1 5

<210> 2

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 2

Pro Lys Lys Lys Arg Arg Val

1 5

<210> 3

<211> 16

<212> PRT

<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 3
Lys Arg Pro Ala Ala Thr Lys Lys Ala Gly Gln Ala Lys Lys Lys Lys
1 5 10 15

<210> 4
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 4
Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg
1 5 10

<210> 5
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 5
Arg Lys Lys Arg Arg Gln Arg Arg Arg
1 5

<210> 6
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 6
Pro Ala Ala Lys Arg Val Lys Leu Asp
1 5

<210> 7
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 7
Arg Gln Arg Arg Asn Glu Leu Lys Arg Ser Pro
1 5 10

<210> 8
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 8
Val Ser Arg Lys Arg Pro Arg Pro
1 5

<210> 9
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 9
Pro Pro Lys Lys Ala Arg Glu Asp
1 5

<210> 10
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

peptide"

<400> 10

Pro Gln Pro Lys Lys Lys Pro Leu
1 5

<210> 11

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 11

Ser Ala Leu Ile Lys Lys Lys Lys Lys Met Ala Pro
1 5 10

<210> 12

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 12

Pro Lys Gln Lys Lys Arg Lys
1 5

<210> 13

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 13

Arg Lys Leu Lys Lys Lys Ile Lys Lys Leu
1 5 10

<210> 14

<211> 10

<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 14
Arg Glu Lys Lys Lys Phe Leu Lys Arg Arg
1 5 10

<210> 15
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 15
Lys Arg Lys Gly Asp Glu Val Asp Gly Val Asp Glu Val Ala Lys Lys
1 5 10 15

Lys Ser Lys Lys
20

<210> 16
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 16
Arg Lys Cys Leu Gln Ala Gly Met Asn Leu Glu Ala Arg Lys Thr Lys
1 5 10 15

Lys

<210> 17
<211> 38
<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 17

Asn Gln Ser Ser Asn Phe Gly Pro Met Lys Gly Gly Asn Phe Gly Gly
1 5 10 15

Arg Ser Ser Gly Pro Tyr Gly Gly Gly Gly Gln Tyr Phe Ala Lys Pro
20 25 30

Arg Asn Gln Gly Gly Tyr
35

<210> 18

<211> 42

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 18

Arg Met Arg Ile Glx Phe Lys Asn Lys Gly Lys Asp Thr Ala Glu Leu
1 5 10 15

Arg Arg Arg Arg Val Glu Val Ser Val Glu Leu Arg Lys Ala Lys Lys
20 25 30

Asp Glu Gln Ile Leu Lys Arg Arg Asn Val
35 40

<210> 19

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 19

Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Pro Lys Lys
1 5 10 15

Lys Arg Lys Val
20

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

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 20
Pro Leu Ser Ser Ile Phe Ser Arg Ile Gly Asp Pro Pro Lys Lys Lys
1 5 10 15

Arg Lys Val

<210> 21
<211> 24
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 21
Gly Ala Leu Phe Leu Gly Trp Leu Gly Ala Ala Gly Ser Thr Met Gly
1 5 10 15

Ala Pro Lys Lys Lys Arg Lys Val
20

<210> 22
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic

peptide"

<400> 22

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

Ala Trp Ser Gln Pro Lys Lys Lys Arg Lys Val
20 25

<210> 23

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 23

Lys Glu Thr Trp Trp Glu Thr Trp Trp Thr Glu Trp Ser Gln Pro Lys
1 5 10 15

Lys Lys Arg Lys Val
20

<210> 24

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 24

Tyr Ala Arg Ala Ala Ala Arg Gln Ala Arg Ala
1 5 10

<210> 25

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 25
Thr His Arg Leu Pro Arg Arg Arg Arg Arg Arg
1 5 10

<210> 26
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 26
Gly Gly Arg Arg Ala Arg Arg Arg Arg Arg Arg
1 5 10

<210> 27
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 27
Arg Arg Gln Arg Arg Thr Ser Lys Leu Met Lys Arg
1 5 10

<210> 28
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 28
Gly Trp Thr Leu Asn Ser Ala Gly Tyr Leu Leu Gly Lys Ile Asn Leu
1 5 10 15

Lys Ala Leu Ala Ala Leu Ala Lys Lys Ile Leu
20 25

<210> 29
<211> 33
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 29
Lys Ala Leu Ala Trp Glu Ala Lys Leu Ala Lys Ala Leu Ala Lys Ala
1 5 10 15

Leu Ala Lys His Leu Ala Lys Ala Leu Ala Lys Ala Leu Lys Cys Glu
20 25 30

Ala

<210> 30
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 30
Arg Gln Ile Lys Ile Trp Phe Gln Asn Arg Arg Met Lys Trp Lys Lys
1 5 10 15

<210> 31
<211> 17062
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 31
atgggcggcg catgagagaa gcccagacca attacctacc caaaatggag aaagttcacg 60
ttgacatcga ggaagacagc ccattcctca gagctttgca gcggagcttc ccgcagtttg 120

aggtagaagc caagcaggtc actgataatg accatgctaa tgccagagcg ttttcgcatc	180
tggcttcaaa actgatcgaa acggaggtgg acccatccga cacgatcctt gacattggaa	240
gtgcgcccgc ccgcagaatg tattctaagc acaagtatca ttgtatctgt ccgatgagat	300
gtgcggaaga tccggacaga ttgtataagt atgcaactaa gctgaagaaa aactgtaagg	360
aaataactga taaggaattg gacaagaaaa tgaaggagct ggccgccgtc atgagcgacc	420
ctgacctgga aactgagact atgtgcctcc acgacgacga gtcgtgtcgc tacgaagggc	480
aagtcgctgt ttaccaggat gtatacgcggt ttgacggacc gacaagtctc tatcaccaag	540
ccaataaggg agttagagtc gcctactgga taggctttga caccaccctt tttatgttta	600
agaacttggc tggagcatat ccatcatact ctaccaactg ggccgacgaa accgtgttaa	660
cggctcgtaa cataggccta tgcagctctg acgttatgga gcggtcacgt agagggatgt	720
ccattcttag aaagaagtat ttgaaaccat ccaacaatgt tctattctct gttggctcga	780
ccatctacca cgagaagagg gacttactga ggagctggca cctgccgtct gtatttcact	840
tacgtggcaa gcaaaattac acatgtcggg gtgagactat agttagttgc gacgggtacg	900
tcgttaaaaag aatagctatc agtccaggcc tgtatgggaa gccttcaggc tatgctgcta	960
cgatgcaccg cgagggattc ttgtgctgca aagtgacaga cacattgaac ggggagaggg	1020
tctcttttcc cgtgtgcacg tatgtgccag ctacattgtg tgaccaaagc actggcatac	1080
tggcaacaga tgtcagtgcg gacgacgcg aaaaactgct ggttgggctc aaccagcgta	1140
tagtcgtcaa cggctgcacc cagagaaaca ccaataccat gaaaaattac cttttgcccg	1200
tagtggccca ggcatttgct aggtgggcaa aggaatataa ggaagatcaa gaagatgaaa	1260
ggccactagg actacgagat agacagttag tcatgggggtg ttgttgggct tttagaaggc	1320
acaagataac atctatttat aagcgcccgg ataccctaac catcatcaaa gtgaacagcg	1380
atttcactc attcgtgctg cccaggatag gcagtaacac attggagatc gggctgagaa	1440
caagaatcag gaaaatgtta gaggagcaca aggagccgtc acctctcatt accgccgagg	1500
acgtacaaga agctaagtgc gcagccgatg aggctaagga ggtgcgtgaa gccgaggagt	1560
tgcgcgcagc tctaccacct ttggcagctg atgttgagga gccactctg gaggcagacg	1620
tcgacttgat gttacaagag gctggggccg gctcagtgga gacacctcgt ggcttgataa	1680
aggttaccag ctacgatggc gaggacaaga tcggctctta cgctgtgctt tctccgcagg	1740

ctgtactcaa	gagtgaaaaa	ttatcttgca	tccaccctct	cgctgaacaa	gtcatagtga	1800
taacacactc	tggccgaaaa	gggcgttatg	ccgtggaacc	ataccatggg	aaagtagtgg	1860
tgccagaggg	acatgcaata	cccgtccagg	actttcaagc	tctgagtga	agtgccacca	1920
ttgtgtacaa	cgaacgtgag	ttcgtaaaca	ggtacctgca	ccatattgcc	acacatggag	1980
gagcgctgaa	cactgatgaa	gaatattaca	aaactgtcaa	gcccagcgag	cacgacggcg	2040
aatacctgta	cgacatcgac	aggaaacagt	gcgtcaagaa	agaactagtc	actgggctag	2100
ggctcacagg	cgagctgggt	gacccctcct	tccatgaatt	cgcttacgag	agtctgagaa	2160
cacgaccagc	cgctccttac	caagtaccaa	ccataggggt	gtatggcgtg	ccaggatcag	2220
gcaagtctgg	catcattaaa	agcgcagtca	ccaaaaaaga	tctagtgggtg	agcgccaaga	2280
aagaaaactg	tgcagaaatt	ataagggacg	tcaagaaaat	gaaagggtg	gacgtcaatg	2340
ccagaactgt	ggactcagtg	ctcttgaatg	gatgcaaaca	ccccgtagag	accctgtata	2400
ttgacgaagc	ttttgcttgt	catgcaggta	ctctcagagc	gctcatagcc	attataagac	2460
ctaaaaaggc	agtgtctctg	ggggatccca	aacagtgcgg	tttttttaac	atgatgtgcc	2520
tgaaagtgca	ttttaaccac	gagatttgca	cacaagtctt	ccacaaaagc	atctctcgcc	2580
gttgactact	atctgtgact	tcggtcgtct	caaccttggt	ttacgacaaa	aaaatgagaa	2640
cgacgaatcc	gaaagagact	aagattgtga	ttgacactac	cggcagtacc	aaacctaagc	2700
aggacgatct	cattctcact	tgtttcagag	ggtgggtgaa	gcagttgcaa	atagattaca	2760
aaggcaacga	aataatgacg	gcagctgcct	ctcaagggtc	gaccgtaaa	ggtgtgtatg	2820
ccgttcggta	caaggtgaat	gaaaatcctc	tgtacgcacc	cacctcagaa	catgtgaacg	2880
tcctactgac	ccgcacggag	gaccgcatcg	tgtggaaaac	actagccggc	gacccatgga	2940
taaaaacact	gactgccaag	taccctggga	atttcactgc	cacgatagag	gagtggcaag	3000
cagagcatga	tgccatcatg	aggcacatct	tggagagacc	ggaccctacc	gacgtcttcc	3060
agaataaggc	aaacgtgtgt	tgggccaagg	ctttagtgcc	ggtgctgaag	accgctggca	3120
tagacatgac	cactgaacaa	tggaaactg	tggattattt	tgaaacggac	aaagctcact	3180
cagcagagat	agtattgaac	caactatgcg	tgaggttctt	tggactcgat	ctggactccg	3240
gtctattttc	tgcaccact	gttccgttat	ccattaggaa	taatcactgg	gataactccc	3300
cgctgcctaa	catgtacggg	ctgaataaag	aagtgggtccg	tcagctctct	cgcaggtacc	3360

cacaactgcc tcgggcagtt gccactggaa gagtctatga catgaacact ggtacactgc	3420
gcaattatga tccgcgcata aacctagtag ctgtaaacag aagactgcct catgcttttag	3480
tcctccacca taatgaacac ccacagagtgc actttttcttc attcgtcagc aaattgaagg	3540
gcagaactgt cctgggtggc ggggaaaagt tgtccgtccc aggcaaaatg gttgactggt	3600
tgtcagaccg gcctgaggct accttcagag ctcggtgga tttaggcatc ccaggatgatg	3660
tgcccaaata tgacataata tttgttaatg tgaggacccc atataaatac catcactatc	3720
agcagtgtga agaccatgcc attaagctta gcatgttgac caagaaagct tgtctgcatc	3780
tgaatcccgg cggaacctgt gtcagcatag gttatggtta cgctgacagg gccagcgaag	3840
gcatcattgg tgctatagcg cggcagttca agttttcccg ggtatgcaaa ccgaaatcct	3900
cacttgaaga gacggaagtt ctgtttgtat tcattgggta cgatcgcaag gcccgtagc	3960
acaattctta caagctttca tcaaccttga ccaacattta tacagggttc agactccacg	4020
aagccggatg tgcaccctca tatcatgtgg tgcgagggga tattgccacg gccaccgaag	4080
gagtattat aaatgctgct aacagcaaag gacaacctgg cggaggggtg tgcggagcgc	4140
tgtataagaa attcccggaa agcttcgatt tacagccgat cgaagtagga aaagcgcgac	4200
tggtcaaagg tgcagctaaa catatcattc atgccgtagg accaaacttc aacaaagttt	4260
cggaggttga aggtgacaaa cagttggcag aggcttatga gtccatcgct aagattgtca	4320
acgataacaa ttacaagtca gtagcgattc cactgttgct caccggcatc ttttccggga	4380
acaaagatcg actaaccctaa tcattgaacc atttgctgac agcttttagac accactgatg	4440
cagatgtagc catatactgc agggacaaga aatgggaaat gactctcaag gaagcagtgg	4500
ctaggagaga agcagtggag gagatatgca tatccgacga ctcttcagtg acagaacctg	4560
atgcagagct ggtgaggggtg catccgaaga gttctttggc tggaaggaag ggctacagca	4620
caagcgtatg caaaactttc tcatatttgg aagggaacaa gtttcaccag gcggccaagg	4680
atatagcaga aattaatgcc atgtggcccc ttgcaacgga ggccaatgag caggtatgca	4740
tgtatatcct cggagaaagc atgagcagta ttaggtcgaa atgccccgtc gaagagtcgg	4800
aagcctccac accacctagc acgctgcctt gcttgtgcat ccatgccatg actccagaaa	4860
gagtacagcg cctaaaagcc tcacgtccag aacaaattac tgtgtgctca tcctttccat	4920
tgccgaagta tagaatcact ggtgtgcaga agatccaatg ctcccagcct atattgttct	4980

caccgaaagt gcctgcgtat attcatccaa ggaagtatct cgtggaaaca ccaccggtag	5040
acgagactcc ggagccatcg gcagagaacc aatccacaga ggggacacct gaacaaccac	5100
cacttataac cgaggatgag accaggacta gaacgcctga gccgatcatc atcgaagagg	5160
aagaagagga tagcataagt ttgctgtcag atggcccgcac ccaccaggtg ctgcaagtcg	5220
aggcagacat tcacgggccg ccctctgtat ctagctcatc ctggtccatt cctcatgcat	5280
ccgactttga tgtggacagt ttatccatac ttgacaccct ggaggaggct agcgtgacca	5340
gcggggcaac gtcagccgag actaactctt acttcgcaaa gagtatggag tttctggcgc	5400
gaccggtgcc tgcgcctcga acagtattca ggaaccctcc acatcccgtc ccgcgcacaa	5460
gaacaccgtc attgacacc agcagggcct gctcgagaac cagcctagtt tccacccgc	5520
caggcgtgaa tagggatgac actagagagg agctcagggc gcttaccgta tcacgcactc	5580
ctagcaggtc ggtctcgaga accagcctgg tctccaacct gccaggcgta aatagggtga	5640
ttacaagaga ggagtttgag gcgttcgtag cacaacaaca atgacggttt gatgcgggtg	5700
catacatctt ttcctccgac accggtcaag ggcatttaca aaaaaatca gtaaggcaaa	5760
cgggtgctatc cgaagtgggtg ttggagagga ccgaattgga gatttcgtat gccccgcgcc	5820
tcgaccaaga aaaagaagaa ttactacgca agaaattaca gttaaattccc acacctgcta	5880
acagaagcag ataccagtcc aggaaggtgg agaactgaa agccataaca gctagacgta	5940
ttctgcaagg cctagggcat tatttgaagg cagaaggaaa agtggagtgct taccgaacct	6000
tgcatcctgt tcctttgtat tcacttagtg tgaaccgtgc cttttcaagc cccaaggctg	6060
cagtggaagc ctgtaacgcc atgttgaaag agaactttcc gactgtggct tcttactgta	6120
ttattccaga gtacgatgcc tatttggaca tggttgacgg agcttcatgc tgcttagaca	6180
ctgccagttt ttgccctgca aagctgcgca gctttccaaa gaaacactcc tatttggaac	6240
ccacaatacg atcggcagtg ctttcagcga tccagaacac gctccagaac gtcctggcag	6300
ctgccacaaa aagaaattgc aatgtcacgc aaatgagaga attgcccgtg ttggattcgg	6360
cggcctttta tgtggaatgc ttcaagaaat atgcgtgtaa taatgaatat tgggaaacgt	6420
ttaaagaaaa ccccatcagg cttactgaag aaaacgtggg aaattacatt accaaattaa	6480
aaggacaaa agctgctgct ctttttgca agacacataa tttgaatatg ttgcaggaca	6540
taccaatgga caggtttgta atggacttaa agagagacgt gaaagtgact ccaggaacaa	6600

aacatactga	agaacggccc	aaggtacagg	tgatccaggc	tgccgatccg	ctagcaacag	6660
cgtatctgtg	cggaatccac	cgagagctgg	ttaggagatt	aaatgcggtc	ctgcttccga	6720
acattcatac	actgtttgat	atgtcggctg	aagactttga	cgctattata	gccgagcact	6780
tccagcctgg	ggattgtgtt	ctggaaactg	acatcgcgtc	gtttgataaa	agtgaggacg	6840
acgccatggc	tctgaccgcg	ttaatgattc	tggaagactt	aggtgtggac	gcagagctgt	6900
tgacgctgat	tgaggcggct	ttcggcgaaa	tttcatcaat	acatttgccc	actaaaacta	6960
aatttaaatt	cggagccatg	atgaaatctg	gaatgttcct	cacactgttt	gtgaacacag	7020
tcattaacat	tgtaatcgca	agcagagtgt	tgagagaacg	gctaaccgga	tcaccatgtg	7080
cagcattcat	tgagatgac	aatatcgtga	aaggagtcaa	atcggacaaa	ttaatggcag	7140
acaggtgcg	cacctgggtg	aatatggaag	tcaagattat	agatgctgtg	gtgggcgaga	7200
aagcgcctta	tttctgtgga	gggtttat	tgtgtgactc	cgtgaccggc	acagcgtgcc	7260
gtgtggcaga	ccccctaaaa	aggctgttta	agcttggcaa	acctctggca	gcagacgatg	7320
aacatgatga	tgacaggaga	agggcattgc	atgaagagtc	aacacgctgg	aaccgagtgg	7380
gtattctttc	agagctgtgc	aaggcagtag	aatcaaggta	tgaaaccgta	ggaacttcca	7440
tcatagtatt	ggccatgact	actctagcta	gcagtgttaa	atcattcagc	tacctgagag	7500
gggcccctat	aactctctac	ggctaacctg	aatggactac	gacatagtct	agtccgccaa	7560
gtctagcata	tgttctagcc	gccacatgg	acaagaagta	cagcatcggc	ctggacatcg	7620
gcaccaactc	tgtgggctgg	gccgtgatca	ccgacgacta	caaggtgccc	agcaagaaat	7680
tcaaggtgct	gggcaacacc	gaccggcaca	gcatcaagaa	gaacctgatc	ggcgccctgc	7740
tgttcggctc	tggcgaaaca	gccgaggcca	cccggctgaa	gagaaccgcc	agaagaagat	7800
acaccagacg	gaagaaccgg	atctgctatc	tgcaagagat	cttcagcaac	gagatggcca	7860
aggtggacga	cagcttcttc	cacagactgg	aagagtcctt	cctggtggaa	gaggataaga	7920
agcacgagcg	gcaccccatc	ttcggcaaca	tcgtggacga	ggtggcctac	cacgagaagt	7980
accccacat	ctaccacctg	agaaagaagc	tggccgacag	caccgacaag	gccgacctga	8040
gactgatcta	cctggccctg	gccacatga	tcaagttccg	gggccacttc	ctgatcgagg	8100
gcgacctgaa	ccccgacaac	agcgacgtgg	acaagctgtt	catccagctg	gtgcagatct	8160
acaatcagct	gttcgaggaa	aaccccatca	acgccagcag	agtggacgcc	aaggccatcc	8220

tgagcgccag actgagcaag agcagacggc tggaaaatct gatcgcccag ctgcccggcg	8280
agaagcggaa tggcctgttc ggcaacctga ttgccctgag cctgggcctg acccccaact	8340
tcaagagcaa cttcgacctg gccgaggatg ccaaactgca gctgagcaag gacacctacg	8400
acgacgacct ggacaacctg ctggcccaga tcggcgacca gtacgccgac ctgttttctg	8460
ccgccaagaa cctgtccgac gccatcctgc tgagcgacat cctgagagtg aacagcgaga	8520
tcaccaaggc cccctgtcc gcctctatga tcaagagata cgacgagcac caccaggacc	8580
tgaccctgct gaaagctctc gtgcggcagc agctgcctga gaagtacaaa gagattttct	8640
tcgaccagag caagaacggc tacgccggct acatcgatgg cggagccagc caggaagagt	8700
tctacaagtt catcaagccc atcctggaaa agatggacgg caccgaggaa ctgctcgtga	8760
agctgaacag agaggacctg ctgcggaagc agcggacctt cgacaacggc agcatcccc	8820
accagatcca cctgggagag ctgcacgcca ttctgcggcg gcaggaagat ttttaccat	8880
tcctgaagga caaccgggaa aagatcgaga agatcctgac cttcagaatc ccctactacg	8940
tgggccctct ggccagggga aacagcagat tcgcctggat gaccagaaaag agcgaggaaa	9000
ccatcacccc ctggaacttc gaggaagtgg tggacaaggg cgccagcgcc cagagcttca	9060
tcgagcggat gaccaacttc gataagaacc tgcccaacga gaagggtgctg cccaagcaca	9120
gcctgctgta cgagtacttc accgtgtaca acgagctgac caaagtgaaa tacgtgaccg	9180
agggaatgcg gaagcccgcc tttctgagcg gcgagcagaa aaaggccatc gtggacctgc	9240
tgttcaagac caaccggaaa gtgaccgtga agcagctgaa agaggactac ttcaagaaaa	9300
tcgagtgtt cgacagcgtg gaaatcagcg gcgtggaaga tcggttcaac gcctccctgg	9360
gcgcttatca cgatctgctg aaaattatca aggacaagga cttcctggac aatgaggaaa	9420
acgaggacat tctggaagat atcgtgctga ccctgacact gtttgaggac cggggcatga	9480
tcgaggaacg gctgaaaacc tatgcccacc tgttcgacga caaagtgatg aagcagctga	9540
agcggcggag atacaccggc tggggcaggc tgagccggaa gctgatcaac ggcacccggg	9600
acaagcagtc cggcaagaca atcctggatt tcctgaagtc cgacggcttc gccaacagaa	9660
acttcatgca gctgatccac gacgacagcc tgacctttaa agaggacatc cagaaagccc	9720
aggtgtccgg ccagggacac tctctgcacg agcagatcgc caatctggcc ggatcccccg	9780
ccattaagaa gggcatcctg cagacagtga agattgtgga cgagctcgtg aaagtgatgg	9840

gccacaagcc cgagaacatc gtgatcgaag tggccagaga gaaccagacc acccagaagg	9900
gacagaagaa cagccgcgag agaataagc ggatcgaaga gggcatcaaa gagctgggca	9960
gccagatcct gaaagaacac cccgtggaaa acaccagct gcagaacgag aagctgtacc	10020
tgtactacct gcagaatggg cgggatatgt acgtggacca ggaactggac atcaaccggc	10080
tgtccgacta cgatgtggac cacattgtgc cccagtcctt catcaaggac gactccatcg	10140
ataacaaagt gctgactcgg agcgacaaga accggggcaa gagcgacaac gtgccctccg	10200
aagaggctcg gaagaagatg aagaactact ggcgccagct gctgaatgcc aagctgatta	10260
cccagaggaa gttcgacaat ctgaccaagg ccgagagagg cggcctgagc gaactggata	10320
aggccggctt cattaagcgg cagctgggtg aaaccggca gatcacaag cacgtggcac	10380
agatcctgga ctcccggatg aactactaag acgacgagaa cgacaaactg atccgggaag	10440
tgaaagtgat caccctgaag tccaagctgg tgtccgactt cagaaaggat ttccagtttt	10500
acaaagtgcg cgagatcaac aactaccacc acgcccacga cgcctacctg aacgccgtcg	10560
tggaaccgc cctgatcaaa aagtacccta agctggaaag cgagttctgt tacggcgatt	10620
acaaggtgta cgacgtgcgg aagatgatcg ccaagagcga gcaggaaatc ggcaaggcta	10680
ccgccaagta cttcttctac agcaacatca tgaacttttt caagaccgag atcacactgg	10740
ccaacggcga gatcagaaag cggcctctga tcgagacaaa cggcgaaacc ggggagatcg	10800
tgtgggataa gggccgggat ttgtccacag tgcggaaagt gctgtccatg cccaagtga	10860
atatctgtaa aaagaccgag gtgcagaccg gcggcttcag caaagagtct atcctgcca	10920
agaggaaact cgacaagctg atcgccagaa agaaggattg ggaccctaag aagtacggcg	10980
gctttgacag cccaccgtg gcctactctg tgctgggtgt ggccaaagtg gaaaagggca	11040
agtccaagaa actgaagagt gtgaaagagc tgctggggat caccatcatg gaaagaagca	11100
gcttcgagaa gaatcccatc gactttctgg aagccaaggg ctacaaagaa gtgaaaaagg	11160
acctgatcat caagctgcct aagtactccc tgttcgagct ggaaaacggc cggaagcgga	11220
tgctggcttc tgccggcgaa ctgcagaagg gaaacgagct ggccctgccc tccaaatatg	11280
tgaacttcct gtacctggcc agccactatg agaagctgaa gggctcccc gaggataatg	11340
agcagaaaca gctgtttgtg gaacagcaca agcactacct ggacgagatc atcgagcaga	11400
ttagcgagtt ctccaagcgc gtgatcctgg ccgatgcaa cctggacaag gtgctgagcg	11460

cctacaacaa gcaccgggat aagcccatca gagagcaggc cgagaatatc atccacctgt	11520
ttaccctgac caacctggga gccctgccg ctttcaagta ctttgacacc accatcgacc	11580
ggaagaggta caccagcacc aaagagggtgc tggacgccac cctgatccac cagagcatca	11640
ccggcctgta cgagacacgg atcgacctgt ctcagctggg aggcgacccc aagaaaaagc	11700
gcaaagtggg taacggcagt ggagagggca gaggaagtct gctaacatgc ggtgacgtcg	11760
aggagaatcc tggcccacga tcgatgcata gcgggggcga ggagctgttc gccggcatcg	11820
tgcccgtgct gatcgagctg gacggcgacg tgcacggcca caagttcagc gtgcgcggcg	11880
agggcgaggg cgacgccgac tacggcaagc tggagatcaa gttcatctgc accaccggca	11940
agctgcccgt gccctggccc accctgggtga ccaccctctg ctacggcatc cagtgtttcg	12000
cccgctaccc cgagcacatg aagatgaacg acttcttcaa gagcgccatg cccgagggt	12060
acatccagga gcgcaccatc cagttccagg acgacggcaa gtacaagacc cgcggcgagg	12120
tgaagttcga gggcgacacc ctggtgaacc gcatcgagct gaagggaag gacttcaagg	12180
aggacggcaa catcctgggc cacaagctgg agtacagctt caacagccac aacgtgtaca	12240
tccgccccga caaggccaac aacggcctgg aggctaactt caagaccgc cacaacatcg	12300
agggcgggcg cgtgcagctg gccgaccact accagaccaa cgtgcccctg ggcgacggcc	12360
ccgtgctgat ccccatcaac cactacctga gcactcagac caagatcagc aaggaccgca	12420
acgaggcccc cgaccacatg gtgctcctgg agtccttcag cgcctgctgc cacaccacg	12480
gcatggacga gctgtacagg gctgttaact gagcggccgc aactaactta agctagcaac	12540
ggtttccctc tagcgggatc aattccgccc ccccccta acgttactgg ccgaagccgc	12600
ttggaataag gccggtgtgc gtttgtctat atgttatttt ccaccatatt gccgtctttt	12660
ggcaatgtga gggcccgga acctggccct gtcttcttga cgagcattcc taggggtctt	12720
tcccctctcg ccaaaggaat gcaaggctctg ttgaatgtcg tgaaggaagc agttcctctg	12780
gaagcttctt gaagacaaac aacgtctgta gcgacccttt gcaggcagcg gaacccccca	12840
cctggcgaca ggtgcctctg cggccaaaag ccacgtgtat aagatacacc tgcaaaggcg	12900
gcacaacccc agtgccacgt tgtgagttgg atagttgtgg aaagagtcaa atggctctcc	12960
tcaagcgtat tcaacaaggg gctgaaggat gccagaagg taccatttg tatgggatct	13020
gatctggggc ctcggtgcac atgctttaca tgtgtttagt cgaggttaaa aaaacgtcta	13080

ggccccccga accacgggga cgtgggttttc ctttgaaaaa cacgataata ccatgagcaa	13140
gatctacatc gacgagcgga gcaacgccga gatttgtgtgc gaggccatca agaccatcgg	13200
aatcgaaggc gccacagccg ctcagctgac cagacagctg aacatggaaa agcgggaagt	13260
gaacaaggcc ctgtacgacc tgcagagaag cgccatggtg tacagcagcg acgacatccc	13320
tcctcgggtg tttatgacca cagaggccga caagcctgac gccgatgcta tggccgacgt	13380
gatcatcgac gacgtgtccc gcgagaagtc catgagagag gaccacaaga gcttcgacga	13440
tgtgatcccc gccaaaga tcatcgattg gaaggcgcc aatcctgtga ccgtgatcaa	13500
cgagtactgc cagatcacca gaagagactg gtccttcgg atcgagagcg tgggccctag	13560
caatagccc accttctacg cctgcgtgga catcgacggc agagtgttcg ataaggccga	13620
cggcaagagc aagcgggacg caaaaaaca tgccgccaag ctggccgtgg ataagctgct	13680
gggctatgtg atcatccggt tctaaggccg caactaactt aagctagcaa cggtttccct	13740
ctagcgggat caattccgcc cccccccct aacgttactg gccgaagccg cttggaataa	13800
ggccggtgtg cgtttgtcta tatgttattt tccaccatat tgccgtcttt tggcaatgtg	13860
agggcccgga aacctggccc tgtcttcttg acgagcattc ctaggggtct tccccctctc	13920
gccaaaggaa tgcaaggtct gttgaatgtc gtgaaggaag cagttcctct ggaagcttct	13980
tgaagacaaa caacgtctgt agcgaccctt tgcaggcagc ggaaccccc acctggcgac	14040
aggtgcctct gcggccaaaa gccacgtgta taagatacac ctgcaaaggc ggcacaaccc	14100
cagtgccacg ttgtgagttg gatagttgtg gaaagagtca aatggctctc ctcaagcgta	14160
ttcaacaagg ggctgaagga tgcccagaag gtacccatt gtatgggatc tgatctgggg	14220
cctcggtgca catgctttac atgtgttttag tcgaggttaa aaaaacgtct agggcccccg	14280
aaccacgggg acgtggtttt ctttgaaaa acacgataat accatgaccg agtacaagcc	14340
cacggtgcgc ctcgccaccc gcgacgacgt cccagggcc gtacgcaccc tcgccgccgc	14400
gttcgccgac taccgccca cgcgccacac cgtcgatccg gaccgccaca tcgagcgggt	14460
caccgagctg caagaactct tcctcacgcg cgtcgggctc gacatcggca aggtgtgggt	14520
cgcggacgac ggcgccgagg tggcggtctg gaccacgccg gagagcgctc aagcgggggc	14580
ggtgttcgcc gagatcggcc cgcgcatggc cgagttgagc gggtcccggc tggccgcgca	14640
gcaacagatg gaaggcctcc tggcgccgca ccggcccaag gagcccgcgt ggttcctggc	14700

caccgtcggc gtctcgcccg accaccaggg caagggtctg ggcagcgccg tcgtgctccc	14760
cggagtggag gcggccgagc gcgccgggggt gcccgcccttc ctggagacct ccgcgccccg	14820
caacctcccc ttctacgagc ggctcggctt caccgtcacc gccgacgtcg aggtgcccga	14880
aggaccgcgc acctggtgca tgacccgcaa gcccggtgcc tgagaattgg caagctgctt	14940
acatagaact cgcggcgatt ggcatgccgc cttaaaattt ttattttatt ttttcttttc	15000
ttttccgaat cggattttgt ttttaatat tcaaaaaaaaa aaaaaaaaaa aaaaaaacgc	15060
gaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa attaatataa	15120
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaattaa taaaaaaaaa	15180
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa attaatatt ctagaacgcg	15240
tcgaggggaa ttaattcttg aagacgaaag ggccaggtgg cacttttcgg ggaaatgtgc	15300
gcggaacccc tatttgttta tttttctaaa tacattcaaa tatgtatccg ctcatgagac	15360
aataaccctg ataaatgctt caataatatt gaaaaaggaa gagtatgagt attcaacatt	15420
tccgtgtcgc cttattccc ttttttgcgg ctttttgcct tcctgttttt gctcaccag	15480
aaacgctggt gaaagtaaaa gatgctgaag atcagttggg tgcacgagtg ggttacatcg	15540
aactggatct caacagcggg aagatccttg agagttttcg ccccgaagaa cgttttccaa	15600
tgatgagcac ttttaaagtt ctgctatgtg gcgcgggtatt atcccgtgtt gacgccgggc	15660
aagagcaact cggtcgccgc atacactatt ctcagaatga cttggttgag tactcaccag	15720
tcacagaaaa gcatcttacg gatggcatga cagtaagaga attatgcagt gctgccataa	15780
ccatgagtga taacactgcg gccaaacttac ttctgacaac gatcggagga ccgaaggagc	15840
taaccgcttt ttgacacaac atgggggatc atgtaactcg ctttgatcgt tgggaaccgg	15900
agctgaatga agccatacca aacgacgagc gtgacaccac gatgcctgta gcaatggcaa	15960
caacgttgcg caaactatta actggcgaac tacttactct agcttcccgg caacaattaa	16020
tagactggat ggaggcggat aaagttgcag gaccacttct gcgctcggcc cttccggctg	16080
gctggtttat tgctgataaa tctggagccg gtgagcgtgg gtctcgcggt atcattgcag	16140
cactggggcc agatggtaag ccctcccgtg tcgtagttat ctacacgacg gggagtcagg	16200
caactatgga tgaacgaaat agacagatcg ctgagatagg tgcctcactg attaatgatt	16260
ggtaactgtc agaccaagtt tactcatata tacttttagat tgatttaaaa cttcatTTTT	16320

aatttaaaag gatctaggtg aagatccttt ttgataatct catgaccaa atcccttaac	16380
gtgagttttc gttccactga gcgtagacc ccgtagaaaa gatcaaagga tcttcttgag	16440
atcctttttt tctgcgcgta atctgctgct tgcaaacaaa aaaaccaccg ctaccagcgg	16500
tggtttggtt gccggatcaa gagctaccaa ctctttttcc gaaggtaact ggcttcagca	16560
gagcgcagat accaaatact gtccttctag tgtagccgta gttaggccac cacttcaaga	16620
actctgtagc accgcctaca tacctcgctc tgctaatcct gttaccagtg gctgctgcca	16680
gtggcgataa gtcgtgtctt accgggttgg actcaagacg atagttaccg gataaggcgc	16740
agcggtcggg ctgaacgggg ggctcgtgca cacagcccag cttggagcga acgacctaca	16800
ccgaactgag atacctacag cgtgagctat gagaaagcgc cacgcttccc gaaggagaaa	16860
aggcggacag gtatccggta agcggcaggg tcggaacagg agagcgcacg agggagcttc	16920
cagggggaaa cgcctggtat ctttatagtc ctgtcgggtt tcgccacctc tgacttgagc	16980
gtcgattttt gtgatgctcg tcaggggggc ggagcctatg gaaaaacgcc agcaacgcga	17040
gctctaatac gactcactat ag	17062

<210> 32

<211> 17065

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 32

atgggcggcg catgagagaa gcccagacca attacctacc caaaatggag aaagttcacg	60
ttgacatcga ggaagacagc ccattcctca gagctttgca gcggagcttc ccgcagtttg	120
aggtagaagc caagcaggtc actgataatg accatgctaa tgccagagcg ttttcgcatc	180
tggtttcaaa actgatcgaa acggaggtgg acccatccga cacgatcctt gacattggaa	240
gtgcgcccgc ccgcagaatg tattctaagc acaagtatca ttgtatctgt ccgatgagat	300
gtgcggaaga tccggacaga ttgtataagt atgcaactaa gctgaagaaa aactgtaagg	360
aaataactga taaggaattg gacaagaaaa tgaaggagct ggccgccgtc atgagcgacc	420
ctgacctgga aactgagact atgtgcctcc acgacgacga gtcgtgtcgc tacgaagggc	480

aagtcgctgt ttaccaggat gtatacgcggt ttgacggacc gacaagtctc tatcaccaag	540
ccaataaggg agttagagtc gcctactgga taggctttga caccaccct tttatgttta	600
agaacttggc tggagcatat ccatcatact ctaccaactg ggccgacgaa accgtgttaa	660
cggctcgtaa cataggccta tgcagctctg acgttatgga gcggtcacgt agagggatgt	720
ccattcttag aaagaagtat ttgaaaccat ccaacaatgt tctattctct gttggctcga	780
ccatctacca cgagaagagg gacttactga ggagctggca cctgccgtct gtatttcact	840
tacgtggcaa gcaaaattac acatgtcggg gtgagactat agttagttgc gacgggtacg	900
tcgttaaaag aatagctatc agtccaggcc tgtatgggaa gccttcaggc tatgctgcta	960
cgatgcaccg cgagggattc ttgtgctgca aagtgcaga cacattgaac ggggagaggg	1020
tctcttttcc cgtgtgcacg tatgtgccag ctacattgtg tgaccaaag actggcatac	1080
tggcaacaga tgtcagtgcg gacgacgcgc aaaaactgct gggtgggctc aaccagcgta	1140
tagtcgtcaa cggctgcacc cagagaaaca ccaataccat gaaaaattac cttttgcccg	1200
tagtggccca ggcatttgct aggtgggcaa aggaatataa ggaagatcaa gaagatgaaa	1260
ggccactagg actacgagat agacagttag tcatgggggtg ttgttgggct tttagaaggc	1320
acaagataac atctatttat aagcgcccgg ataccctaac catcatcaaa gtgaacagcg	1380
atttccactc attcgtgctg cccaggatag gcagtaacac attggagatc gggctgagaa	1440
caagaatcag gaaaatgtta gaggagcaca aggagccgtc acctctcatt accgccgagg	1500
acgtacaaga agctaagtgc gcagccgatg aggctaagga ggtgcgtgaa gccgaggagt	1560
tgcgcgcagc tctaccacct ttggcagctg atgttgagga gccactctg gaggcagacg	1620
tcgacttgat gttacaagag gctggggccg gctcagtgga gacacctcgt ggcttgataa	1680
aggttaccag ctacgatggc gaggacaaga tcggctctta cgctgtgctt tctccgcagg	1740
ctgtactcaa gagtgaaaaa ttatcttgca tccaccctct cgctgaacaa gtcatagtga	1800
taacacactc tggccgaaaa gggcgttatg ccgtggaacc ataccatggt aaagtagtgg	1860
tgccagaggg acatgcaata cccgtccagg actttcaagc tctgagtga agtgccacca	1920
ttgtgtacaa cgaacgtgag ttcgtaaaca ggtacctgca ccatattgcc acacatggag	1980
gagcgtgaa cactgatgaa gaatattaca aaactgtcaa gccagcgag cacgacggcg	2040
aatacctgta cgacatcgac aggaaacagt gcgtcaagaa agaactagtc actgggctag	2100

ggctcacagg	cgagctgggtg	gatcctccct	tccatgaatt	cgcttacgag	agtctgagaa	2160
cacgaccagc	cgctccttac	caagtaccaa	ccataggggt	gtatggcgtg	ccaggatcag	2220
gcaagtctgg	catcattaaa	agcgcagtca	ccaaaaaaga	tctagtgggtg	agcgccaaga	2280
aagaaaactg	tgcagaaatt	ataagggacg	tcaagaaaat	gaaagggtg	gacgtcaatg	2340
ccagaactgt	ggactcagt	ctcttgaatg	gatgcaaaca	ccccgtagag	accctgtata	2400
ttgacgaagc	ttttgcttgt	catgcaggta	ctctcagagc	gctcatagcc	attataagac	2460
ctaaaaaggc	agtgtctctg	ggggatccca	aacagtgcgg	tttttttaac	atgatgtgcc	2520
tgaaagtgca	ttttaaccac	gagatttgca	cacaagtctt	ccacaaaagc	atctctcgcc	2580
gttgactaa	atctgtgact	tcggctgtct	caaccttggt	ttacgacaaa	aaaatgagaa	2640
cgacgaatcc	gaaagagact	aagattgtga	ttgacactac	cggcagtacc	aaacctaaagc	2700
aggacgatct	cattctcact	tgtttcagag	ggtgggtgaa	gcagttgcaa	atagattaca	2760
aaggcaacga	aataatgacg	gcagctgcct	ctcaagggt	gacccgtaaa	ggtgtgtatg	2820
ccgttcggta	caaggtgaat	gaaaatcctc	tgtacgcacc	cacctcagaa	catgtgaacg	2880
tcctactgac	ccgcacggag	gaccgcatcg	tgtggaaaac	actagccggc	gacccatgga	2940
taaaaacact	gactgccaag	taccctggga	atttcactgc	cacgatagag	gagtggcaag	3000
cagagcatga	tgccatcatg	aggcacatct	tggagagacc	ggaccctacc	gacgtcttcc	3060
agaataaggc	aaacgtgtgt	tgggccaagg	ctttagtgcc	ggtgctgaag	accgctggca	3120
tagacatgac	cactgaacaa	tggaacactg	tggattattt	tgaaacggac	aaagctcact	3180
cagcagagat	agtattgaac	caactatgcg	tgaggttctt	tggactcgat	ctggactccg	3240
gtctattttc	tgcaccct	gttccgttat	ccattaggaa	taatcactgg	gataactccc	3300
cgctgcctaa	catgtacggg	ctgaataaag	aagtgggtccg	tcagctctct	cgcagggtacc	3360
cacaactgcc	tcgggcagtt	gccactggaa	gagtctatga	catgaacact	ggtacactgc	3420
gcaattatga	tccgcgcata	aacctagtac	ctgtaaacag	aagactgcct	catgctttag	3480
tcctccacca	taatgaacac	ccacagagt	acttttcttc	attcgtcagc	aaattgaagg	3540
gcagaactgt	cctgggtggtc	ggggaaaagt	tgtccgtccc	aggcaaaatg	gttgactgggt	3600
tgtcagaccg	gcctgaggct	accttcagag	ctcggctgga	tttaggcata	ccaggatgatg	3660
tgcccaaata	tgacataata	tttgttaatg	tgaggacccc	atataaatac	catcactatc	3720

agcagtgtga agaccatgcc attaatgctta gcatgttgac caagaaagct tgtctgcatc	3780
tgaatcccgg cggaacctgt gtcagcatag gttatggtta cgctgacagg gccagcgaaa	3840
gcatcattgg tgctatagcg cggcagttca agttttcccg ggtatgcaaa ccgaaatcct	3900
cacttgaaga gacggaagtt ctgtttgtat tcattgggta cgatcgcaag gcccgtagcg	3960
acaattctta caagctttca tcaaccttga ccaacattta tacaggttcc agactccacg	4020
aagccggatg tgcaccctca tatcatgtgg tgcgagggga tattgccacg gccaccgaag	4080
gagtgattat aaatgctgct aacagcaaag gacaacctgg cggaggggtg tgcggagcgc	4140
tgtataagaa attcccggaa agcttcgatt tacagccgat cgaagtagga aaagcgcgac	4200
tggtcaaagg tgcagctaaa catatcattc atgccgtagg accaaacttc aacaaagttt	4260
cggagggtga aggtgacaaa cagttggcag aggcttatga gtccatcgct aagattgtca	4320
acgataacaa ttacaagtca gtagcgattc cactgttgct caccggcatc ttttccggga	4380
acaaagatcg actaaccaa tcattgaacc atttgctgac agcttttagac accactgatg	4440
cagatgtagc catatactgc agggacaaga aatgggaaat gactctcaag gaagcagtgg	4500
ctaggagaga agcagtggag gagatatgca tatccgacga ctcttcagtg acagaacctg	4560
atgcagagct ggtgaggggtg catccgaaga gttctttggc tggaaggaag ggctacagca	4620
caagcgatgg caaaactttc tcatatttgg aagggaacaa gtttcaccag gcggccaagg	4680
atatagcaga aattaatgcc atgtggcccg ttgcaacgga ggccaatgag caggtatgca	4740
tgtatatcct cggagaaaagc atgagcagta ttaggtcgaa atgccccgtc gaagagtcgg	4800
aagcctccac accacctagc acgctgcctt gcttgtgcat ccatgccatg actccagaaa	4860
gagtacagcg cctaaaagcc tcacgtccag aacaaattac tgtgtgctca tcctttccat	4920
tgccgaagta tagaatcact ggtgtgcaga agatccaatg ctcccagcct atattgttct	4980
caccgaaagt gcctgcgtat attcatcaa ggaagtatct cgtggaaaca ccaccggtag	5040
acgagactcc ggagccatcg gcagagaacc aatccacaga ggggacacct gaacaaccac	5100
cacttataac cgaggatgag accaggacta gaacgcctga gccgatcatc atcgaagagg	5160
aagaagagga tagcataagt ttgctgtcag atggcccgcac ccaccaggtg ctgcaagtcg	5220
aggcagacat tcacgggccg ccctctgtat ctagctcatc ctggtccatt cctcatgcat	5280
ccgactttga tgtggacagt ttatccatac ttgacaccct ggaggagct agcgtgacca	5340

gcggggcaac gtcagccgag actaactctt acttcgcaaa gagtatggag tttctggcgc	5400
gaccggtgcc tgcgcctcga acagtattca ggaaccctcc acatcccgt cgcgcacaaa	5460
gaacaccgtc acttgcaccc agcagggcct gctcgagaac cagcctagtt tccaccccgc	5520
caggcgtgaa tagggtgatc actagagagg agctcgaggc gcttaccg tccacgactc	5580
ctagcaggtc ggtctcgaga accagcctgg tctccaaccc gccaggcgta aatagggtga	5640
ttacaagaga ggagtttgag gcgttcgtag cacaacaaca atgacggttt gatgcgggtg	5700
catacatctt ttcctccgac accggtcaag ggcatttaca aaaaaatca gtaaggcaaa	5760
cgggtgctatc cgaagtgggtg ttggagagga ccgaattgga gatttcgtat gccccgcgc	5820
tcgaccaaga aaaagaagaa ttactacgca agaaattaca gttaaattccc acacctgcta	5880
acagaagcag ataccagtcc aggaagggtg agaacatgaa agccataaca gctagacgta	5940
ttctgcaagg cctagggcat tatttgaagg cagaaggaaa agtggagtgc taccgaaccc	6000
tgcatcctgt tcctttgtat tcatctagtg tgaaccgtgc cttttcaagc cccaaggtcg	6060
cagtggaagc ctgtaacgcc atgttgaaag agaactttcc gactgtggct tcttactgta	6120
ttattccaga gtacgatgcc tatttggaca tggttgacgg agcttcatgc tgcttagaca	6180
ctgccagttt ttgccctgca aagctgcgca gctttccaaa gaaacactcc tatttggaac	6240
ccacaatacg atcggcagtg ctttcagcga tccagaacac gctccagaac gtcctggcag	6300
ctgccacaaa aagaaattgc aatgtcacgc aaatgagaga attgcccgtg ttggattcgg	6360
cggcctttaa tgtggaatgc ttcaagaaat atgcgtgtaa taatgaatat tgggaaacgt	6420
ttaaagaaaa ccccatcagg cttactgaag aaaacgtggt aaattacatt accaaattaa	6480
aaggacaaa agctgctgct ctttttgcga agacacataa tttgaatatg ttgcaggaca	6540
taccaatgga caggtttgta atggacttaa agagagacgt gaaagtgact ccaggaacaa	6600
aacatactga agaacggccc aaggtacagg tgatccaggc tgccgatccg ctagcaacag	6660
cgtatctgtg cggaatccac cgagagctgg ttaggagatt aaatgcggtc ctgcttccga	6720
acattcatac actgtttgat atgtcggctg aagactttga cgctattata gccgagcact	6780
tccagcctgg ggattgtgtt ctggaaactg acatcgcgtc gtttgataaa agtgaggacg	6840
acgcatggc tctgaccgcg ttaatgattc tggaagactt aggtgtggac gcagagctgt	6900
tgacgctgat tgaggcggct ttcggcgaaa tttcatcaat acatttgccc actaaaacta	6960

aatttaaatt	cggagccatg	atgaaatctg	gaatgttcct	cacactgttt	gtgaacacag	7020
tcattaacat	tgtaatcgca	agcagagtgt	tgagagaacg	gctaaccgga	tcaccatgtg	7080
cagcattcat	tggagatgac	aatatcgtga	aaggagtcaa	atcggacaaa	ttaatggcag	7140
acaggtgcg	cacctgggtg	aatatggaag	tcaagattat	agatgctgtg	gtgggcgaga	7200
aagcgcctta	tttctgtgga	gggtttat	tgtgtgactc	cgtgaccggc	acagcgtgcc	7260
gtgtggcaga	ccccctaaaa	aggctgttta	agcttggcaa	acctctggca	gcagacgatg	7320
aacatgatga	tgacaggaga	agggcattgc	atgaagagtc	aacacgctgg	aaccgagtgg	7380
gtattctttc	agagctgtgc	aaggcagtag	aatcaaggta	tgaaaccgta	ggaacttcca	7440
tcatagttat	ggccatgact	actctagcta	gcagtgttaa	atcattcagc	tacctgagag	7500
gggcccctat	aactctctac	ggctaacctg	aatggactac	gacatagtct	agtcgcccaa	7560
gtctagcata	tgttctagcc	gccaccatgg	acaagaagta	cagcatcggc	ctggacatcg	7620
gcaccaactc	tgtgggctgg	gccgtgatca	ccgacgagta	caaggtgccc	agcaagaaat	7680
tcaaggtgct	gggcaacacc	gaccggcaca	gcacaaagaa	gaacctgatc	ggagccctgc	7740
tgttcgacag	cggcgaaaca	gccgaggcca	cccggctgaa	gagaaccgcc	agaagaagat	7800
acaccagacg	gaagaaccgg	atctgctatc	tgcaagagat	cttcagcaac	gagatggcca	7860
aggtggacga	cagcttcttc	cacagactgg	aagagtcctt	cctggtggaa	gaggataaga	7920
agcacgagcg	gcaccccatc	ttcggcaaca	tcgtggacga	ggtggcctac	cacgagaagt	7980
acccaccat	ctaccacctg	agaaagaaac	tggtggacag	caccgacaag	gccgacctgc	8040
ggctgatcta	tctggccctg	gccacatga	tcaagttccg	gggccacttc	ctgatcgagg	8100
gcgacctgaa	ccccgacaac	agcgacgtgg	acaagctgtt	catccagctg	gtgcagacct	8160
acaaccagct	gttcgaggaa	aaccccatca	acgccagcgg	cgtggacgcc	aaggccatcc	8220
tgtctgccag	actgagcaag	agcagacggc	tggaatatct	gatcgcccag	ctgcccggcg	8280
agaagaagaa	tggcctgttc	ggaaacctga	ttgccctgag	cctgggcctg	acccccaact	8340
tcaagagcaa	cttcgacctg	gccgaggatg	ccaaactgca	gctgagcaag	gacacctacg	8400
acgacgacct	ggacaacctg	ctggcccaga	tcggcgacca	gtacgccgac	ctgtttctgg	8460
ccgccaagaa	cctgtccgac	gccatcctgc	tgagcgacat	cctgagagtg	aacaccgaga	8520
tcaccaaggc	ccccctgagc	gcctctatga	tcaagagata	cgacgagcac	caccaggacc	8580

tgaccctgct gaaagctctc gtgcggcagc agctgcctga gaagtacaaa gagattttct	8640
tcgaccagag caagaacggc tacgccggct acattgacgg cggagccagc caggaagagt	8700
tctacaagtt catcaagccc atcctggaaa agatggacgg caccgaggaa ctgctcgtga	8760
agctgaacag agaggacctg ctgcggaagc agcggacctt cgacaacggc agcatcccc	8820
accagatcca cctgggagag ctgcacgcca ttctgcggcg gcaggaagat ttttaccat	8880
tcctgaagga caaccgggaa aagatcgaga agatcctgac cttccgcatc ccctactacg	8940
tgggccctct ggccagggga aacagcagat tcgcctggat gaccagaaag agcgaggaaa	9000
ccatcacccc ctggaacttc gaggaagtgg tggacaaggc cgcttccgcc cagagcttca	9060
tcgagcggat gaccaacttc gataagaacc tgcccaacga gaaggtgctg cccaagcaca	9120
gcctgctgta cgagtacttc accgtgtata acgagctgac caaagtgaag tacgtgaccg	9180
agggaatgag aaagcccgcc ttcctgagcg gcgagcagaa aaaggccatc gtggacctgc	9240
tgttcaagac caaccgaaa gtgacctga agcagctgaa agaggactac ttcaagaaaa	9300
tcgagtgtt cgactccgtg gaaatctccg gcgtggaaga tcggttcaac gcctccctgg	9360
gcacatacca cgatctgctg aaaattatca aggacaagga cttcctggac aatgaggaaa	9420
acgaggacat tctggaagat atcgtgctga ccctgacact gtttgaggac agagagatga	9480
tcgaggaacg gctgaaaacc tatgcccacc tgttcgacga caaagtgatg aagcagctga	9540
agcggcggag atacaccggc tggggcaggc tgagccggaa gctgatcaac ggcacccggg	9600
acaagcagtc cggcaagaca atcctggatt tcctgaagtc cgacggcttc gccaacagaa	9660
acttcatgca gctgatccac gacgacagcc tgacctttaa agaggacatc cagaaagccc	9720
aggtgtccgg ccaggcgcat agcctgcacg agcacattgc caatctggcc ggcagccccg	9780
ccattaagaa gggcatcctg cagacagtga aggtggtgga cgagctcgtg aaagtgatgg	9840
gccggcacia gcccgagaac atcgtgatcg aaatggccag agagaaccag accaccaga	9900
agggacagaa gaacagccgc gagagaatga agcggatcga agaggcatc aaagagctgg	9960
gcagccagat cctgaaagaa cccccgtgg aaaacaccca gctgcagaac gagaagctgt	10020
acctgtacta cctgcagaat gggcgggata tgtacgtgga ccaggaactg gacatcaacc	10080
ggctgtccga ctacgatgtg gaccatatcg tgcctcagag ctttctggcg gacgactcca	10140
tcgacaacia ggtgctgacc agaagcgaca agaaccgggg caagagcgac aacgtgcctt	10200

ccgaagaggt	cgtgaagaag	atgaagaact	actggcggca	gctgctgaac	gccaaagctga	10260
ttacccagag	aaagttcgac	aatctgacca	aggccgagag	aggcggcctg	agcgaactgg	10320
ataaggccgg	cttcatcaag	agacagctgg	tggaaacccg	gcagatcaca	aagcacgtgg	10380
cacagatcct	ggactcccgg	atgaacacta	agtacgacga	gaatgacaag	ctgatccggg	10440
aagtgaaagt	gatcacccctg	aagtccaagc	tggtgtccga	tttccggaag	gattttccagt	10500
tttacaaagt	gcgcgagatc	aacaactacc	accacgcccc	cgacgcctac	ctgaacgccg	10560
tcgtgggaac	cgccctgatc	aaaaagtacc	ctgcgctgga	aagcgagttc	gtgtacggcg	10620
actacaaggt	gtacgacgtg	cggaagatga	tcgccaagag	cgagcaggaa	atcggcaagg	10680
ctaccgccaa	gtactttctt	tacagcaaca	tcatgaactt	tttcaagacc	gagattaccc	10740
tggccaacgg	cgagatccgg	aaggcgcctc	tgatcgagac	aaacggcgaa	accggggaga	10800
tcgtgtggga	taaggggccgg	gatttttgcca	ccgtgcggaa	agtgtctgagc	atgccccaa	10860
tgaatatcgt	gaaaaagacc	gaggtgcaga	caggcggctt	cagcaaagag	tctatcctgc	10920
ccaagaggaa	cagcgataag	ctgatcgcca	gaaagaagga	ctgggaccct	aagaagtacg	10980
gcggcttcga	cagccccacc	gtggcctatt	ctgtgctggg	ggtggccaaa	gtggaaaagg	11040
gcaagtccaa	gaaactgaag	agtgtgaaag	agctgctggg	gatcaccatc	atggaaagaa	11100
gcagcttcga	gaagaatccc	atcgactttc	tggaagccaa	gggctacaaa	gaagtgaaaa	11160
aggacctgat	catcaagctg	cctaagtact	ccctgttcga	gctggaaaac	ggccggaaga	11220
gaatgctggc	ctctgccggc	gaactgcaga	agggaaacga	actggccctg	ccctccaaat	11280
atgtgaactt	cctgtacctg	gccagccact	atgagaagct	gaagggtcc	cccaggagata	11340
atgagcagaa	acagctgttt	gtggaacagc	acaagcacta	cctggacgag	atcatcgagc	11400
agatcagcga	gttctccaag	agagtgatcc	tggccgacgc	taatctggac	aaagtgtgt	11460
ccgcctacaa	caagcaccgg	gataagccca	tcagagagca	ggccgagaat	atcatccacc	11520
tgtttacct	gaccaatctg	ggagcccctg	ccgccttcaa	gtactttgac	accaccatcg	11580
accggaagag	gtacaccagc	accaaagagg	tgctggacgc	caccctgatc	caccagagca	11640
tcaccggcct	gtacgagaca	cggatcgacc	tgtctcagct	gggaggcgac	cccaagaaaa	11700
agcgcaaagt	ggttaacggc	agtggagagg	gcagaggaag	tctgctaaca	tgcggtgacg	11760
tcgaggagaa	tcctggccca	cgatcgatgc	atagcggggg	cgaggagctg	ttcgccggca	11820

tcgtgcccgt gctgatcgag ctggacggcg acgtgcacgg ccacaagttc agcgtgcgcg	11880
gcgagggcgga gggcgacgcc gactacggca agctggagat caagttcatc tgcaccaccg	11940
gcaagctgcc cgtgccctgg cccaccctgg tgaccaccct ctgctacggc atccagtgtt	12000
tcgcccgtta ccccgagcac atgaagatga acgacttctt caagagcgcc atgcccgagg	12060
gctacatcca ggagcgcacc atccagttcc aggacgacgg caagtacaag acccgcggcg	12120
aggtgaagtt cgagggcgac accctggtga accgcatcga gctgaagggc aaggacttca	12180
aggaggacgg caacatcctg ggccacaagc tggagtacag cttcaacagc cacaacgtgt	12240
acatccgccc cgacaaggcc aacaacggcc tggaggctaa cttcaagacc cgccacaaca	12300
tcgagggcgg cggcgtgcag ctggccgacc actaccagac caacgtgccc ctgggcgacg	12360
gccccgtgct gatccccatc aaccactacc tgagcactca gaccaagatc agcaaggacc	12420
gcaacgaggc ccgcgaccac atggtgctcc tggagtcctt cagcgcctgc tgccacaccc	12480
acggcatgga cgagctgtac agggctgtta actgagcggc cgcaactaac ttaagctagc	12540
aacggtttcc ctctagcggg atcaattccg ccccccccc ctaacgttac tggccgaagc	12600
cgcttggaat aaggccggtg tgcgtttgtc tatatgttat tttccaccat attgccgtct	12660
tttggcaatg tgagggcccc gaaacctggc cctgtcttct tgacgagcat tcctaggggt	12720
ctttccccctc tcgccaaagg aatgcaaggt ctgttgaatg tcgtgaagga agcagttcct	12780
ctggaagctt cttgaagaca aacaacgtct gtagcgaccc tttgcaggca gcggaacccc	12840
ccacctggcg acaggtgcct ctgcggccaa aagccacgtg tataagatac acctgcaaag	12900
gcggcacaac cccagtgcc a gttgtgagt tggatagttg tggaaagagt caaatggctc	12960
tcctcaagcg tattcaacaa ggggctgaag gatgcccaga aggtacccca ttgtatggga	13020
tctgatctgg ggcctcgggt cacatgcttt acatgtgttt agtcgaggtt aaaaaaacgt	13080
ctaggcccc cgaaccacgg ggacgtggtt ttcctttgaa aaacacgata ataccatgag	13140
caagatctac atcgacgagc ggagcaacgc cgagattgtg tgcgaggcca tcaagaccat	13200
cggaatcgaa ggcgccacag ccgctcagct gaccagacag ctgaacatgg aaaagcggga	13260
agtgaacaag gccctgtacg acctgcagag aagcgccatg gtgtacagca gcgacgacat	13320
ccctcctcgg tggtttatga ccacagaggc cgacaagcct gacgccgatg ctatggccga	13380
cgtgatcatc gacgacgtgt cccgcgagaa gtccatgaga gaggaccaca agagcttcga	13440

cgatgtgatc	cccgccaaga	agatcatcga	ttggaagggc	gccaatcctg	tgaccgtgat	13500
caacgagtac	tgccagatca	ccagaagaga	ctggtccttc	cggatcgaga	gcgtgggccc	13560
tagcaatagc	cctaccttct	acgcctgcgt	ggacatcgac	ggcagagtgt	tcgataaggc	13620
cgacggcaag	agcaagcggg	acgccaaaaa	caatgccgcc	aagctggccg	tggataagct	13680
gctgggctat	gtgatcatcc	ggttctaagg	ccgcaactaa	cttaagctag	caacggtttc	13740
cctctagcgg	gatcaattcc	gcccccccc	cctaacgtta	ctggccgaag	ccgcttgga	13800
taaggccggt	gtgcgtttgt	ctatatgtta	ttttccacca	tattgccgtc	ttttggcaat	13860
gtgaggggccc	ggaaacctgg	ccctgtcttc	ttgacgagca	ttcctagggg	tctttcccct	13920
ctcgccaaag	gaatgcaagg	tctgttgaat	gtcgtgaagg	aagcagttcc	tctggaagct	13980
tcttgaagac	aaacaacgtc	tgtagcgacc	ctttgcaggc	agcgggaacc	cccacctggc	14040
gacaggtgcc	tctgcggcca	aaagccacgt	gtataagata	cacctgcaaa	ggcggcacaa	14100
ccccagtgcc	acgttgtgag	ttggatagtt	gtggaaagag	tcaaattggct	ctcctcaagc	14160
gtattcaaca	aggggctgaa	ggatgcccg	aaggtacccc	attgtatggg	atctgatctg	14220
gggcctcggg	gcacatgctt	tacatgtgtt	tagtcgaggt	taaaaaacg	tctaggcccc	14280
ccgaaccacg	gggacgtggt	tttcctttga	aaaacacgat	aataccatga	ccgagtacaa	14340
gcccacgggtg	cgcttcgcca	cccgcgacga	cgtccccagg	gccgtacgca	ccctcgccgc	14400
cgcgttcgcc	gactaccccc	ccacgcgcca	caccgtcgat	ccggaccgcc	acatcgagcg	14460
ggtcaccgag	ctgcaagaac	tcttcctcac	gcgcgtcggg	ctcgacatcg	gcaaggtgtg	14520
ggtcgcggac	gacggcgccg	cgggtggcgg	ctggaccacg	ccggagagcg	tcgaagcggg	14580
ggcgggtgttc	gccgagatcg	gcccgcgcat	ggccgagttg	agcggttccc	ggctggccgc	14640
gcagcaacag	atggaaggcc	tcctggcgcc	gcaccggccc	aaggagcccc	cgtggttcct	14700
ggccaccgtc	ggcgtctcgc	ccgaccacca	gggcaagggt	ctgggcagcg	ccgtcgtgct	14760
ccccggagtg	gaggcggccg	agcgcgccgg	ggtgcccgcc	ttcctggaga	cctccgcgcc	14820
ccgcaacctc	cccttctacg	agcggctcgg	cttcaccgtc	accgccgacg	tcgaggtgcc	14880
cgaaggaccg	cgcacctggt	gcatgaccgc	caagcccggg	gcctgagaat	tggcaagctg	14940
cttacataga	actcgcggcg	attggcatgc	cgccttaaaa	tttttatttt	attttttctt	15000
ttcttttccg	aatcggattt	tgtttttaat	atttcaaaaa	aaaaaaaaaa	aaaaaaaaaa	15060

cgcgaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaattaata	15120
aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	taataaaaaa	15180
aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaattaatt	aatctagaac	15240
gcgtcgaggg	gaattaattc	ttgaagacga	aagggccagg	tggcactttt	cggggaaatg	15300
tgcgcggaac	ccctatttgt	ttatTTTTtct	aaatacattc	aaatatgtat	ccgctcatga	15360
gacaataacc	ctgataaatg	cttcaataat	attgaaaaag	gaagagtatg	agtattcaac	15420
atttccgtgt	cgcccttatt	ccctTTTTtTg	cggcattttg	ccttcctggt	tttgctcacc	15480
cagaaacgct	ggtgaaagta	aaagatgctg	aagatcagtt	gggtgcacga	gtgggttaca	15540
tcgaactgga	tctcaacagc	ggtaagatcc	ttgagagttt	tcgccccgaa	gaacgttttc	15600
caatgatgag	cactttttaa	gttctgctat	gtggcgcggt	attatcccgt	gttgacgccg	15660
ggcaagagca	actcggtcgc	cgcatacact	attctcagaa	tgacttggtt	gagtactcac	15720
cagtcacaga	aaagcatctt	acggatggca	tgacagtaag	agaattatgc	agtgctgcca	15780
taaccatgag	tgataacact	gcggccaact	tacttctgac	aacgatcgga	ggaccgaagg	15840
agctaaccgc	ttttttgcac	aacatggggg	atcatgtaac	tcgccttgat	cgttgggaac	15900
cggagctgaa	tgaagccata	ccaaacgacg	agcgtgacac	cacgatgcct	gtagcaatgg	15960
caacaacggt	gcgcaaaacta	ttaactggcg	aactacttac	tctagcttcc	cggcaacaat	16020
taatagactg	gatggaggcg	gataaagttg	caggaccact	tctgcgctcg	gcccttccgg	16080
ctggctgggt	tattgctgat	aaatctggag	ccggtgagcg	tgggtctcgc	ggtatcattg	16140
cagcactggg	gccagatggt	aagccctccc	gtatcgtagt	tatctacacg	acggggagtc	16200
aggcaactat	ggatgaacga	aatagacaga	tcgctgagat	aggtgcctca	ctgattaagc	16260
attggtaact	gtcagaccaa	gtttactcat	atatacttta	gattgattta	aaacttcatt	16320
tttaatttaa	aaggatctag	gtgaagatcc	tttttgataa	tctcatgacc	aaaatccctt	16380
aacgtgagtt	ttcgttcac	tgagcgtcag	accccgtaga	aaagatcaaa	ggatcttctt	16440
gagatccttt	ttttctgcgc	gtaatctgct	gcttgcaaac	aaaaaaacca	ccgctaccag	16500
cggtggtttg	tttgccggat	caagagctac	caactctttt	tccgaaggta	actggcttca	16560
gcagagcgca	gataccaaat	actgtccttc	tagtgtagcc	gtagttaggc	caccacttca	16620
agaactctgt	agcaccgcct	acatacctcg	ctctgctaata	cctgttacca	gtggctgctg	16680

ccagtggcga taagtcgtgt cttaccgggt tggactcaag acgatatgta ccggataagg	16740
cgcagcggtc gggctgaacg gggggttcgt gcacacagcc cagcttggag cgaacgacct	16800
acaccgaact gagataccta cagcgtgagc tatgagaaag cgccacgctt cccgaaggga	16860
gaaaggcgga caggtatccg gtaagcggca gggtcggaac aggagagcgc acgagggagc	16920
ttccaggggg aaacgcctgg tatctttata gtcctgtcgg gtttcgccac ctctgacttg	16980
agcgtcgatt tttgtgatgc tcgtcagggg ggcggagcct atggaaaaac gccagcaacg	17040
cgagctctaa tacgactcac tatag	17065

<210> 33

<211> 16264

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 33

atgggcggcg catgagagaa gcccagacca attacctacc caaaatggag aaagttcacg	60
ttgacatcga ggaagacagc ccattcctca gagctttgca gcggagcttc ccgcagtttg	120
aggtagaagc caagcaggtc actgataatg accatgctaa tgccagagcg ttttcgcatc	180
tggcttcaaa actgatcgaa acggaggtgg acccatccga cacgatacctt gacattggaa	240
gtgcgcccgc ccgcagaatg tattctaagc acaagtatca ttgtatctgt ccgatgagat	300
gtgcggaaga tccggacaga ttgtataagt atgcaactaa gctgaagaaa aactgtaagg	360
aaataactga taaggaattg gacaagaaaa tgaaggagct ggccgccgtc atgagcgacc	420
ctgacctgga aactgagact atgtgcctcc acgacgacga gtcgtgtcgc tacgaagggc	480
aagtcgctgt ttaccaggat gtatacgcgg ttgacggacc gacaagtctc tatcaccaag	540
ccaataaggg agttagagtc gcctactgga taggctttga caccaccctt tttatgttta	600
agaacttggc tggagcatat ccatcatact ctaccaactg ggccgacgaa accgtgttaa	660
cggctcgtaa cataggccta tgcagctctg acgttatgga gcggtcacgt agagggatgt	720
ccattcttag aaagaagtat ttgaaaccat ccaacaatgt tctattctct gttggctcga	780
ccatctacca cgagaagagg gacttactga ggagctggca cctgccgtct gtatttcact	840

tacgtggcaa gcaaaattac acatgtcggg gtgagactat agttagtgtg gacgggtacg	900
tcgttaaaag aatagctatc agtccaggcc tgtatgggaa gccttcaggc tatgctgcta	960
cgatgcaccg cgaggggattc ttgtgctgca aagtgcaga cacattgaac ggggagaggg	1020
tctcttttcc cgtgtgcacg tatgtgccag ctacattgtg tgaccaaatg actggcatac	1080
tggcaacaga tgtcagtgcg gacgacgcgc aaaaactgct gggttgggctc aaccagcgta	1140
tagtcgtcaa cggtcgcacc cagagaaaca ccaataccat gaaaaattac cttttgcccc	1200
tagtggccca ggcatttgct aggtgggcaa aggaatataa ggaagatcaa gaagatgaaa	1260
ggccactagg actacgagat agacagttag tcatgggggtg ttgttgggct tttagaaggc	1320
acaagataac atctatttat aagcgcccgg atacccaaac catcatcaaa gtgaacagcg	1380
atttccactc attcgtgctg cccaggatag gcagtaacac attggagatc gggctgagaa	1440
caagaatcag gaaaatgtta gaggagcaca aggagccgtc acctctcatt accgccgagg	1500
acgtacaaga agctaagtgc gcagccgatg aggctaagga ggtgcgtgaa gccgaggagt	1560
tgcgcgcagc tctaccacct ttggcagctg atgttgagga gccactctg gaggcagacg	1620
tcgacttgat gttacaagag gctggggccg gctcagtgga gacacctcgt ggcttgataa	1680
aggttaccag ctacgatggc gaggacaaga tcggctctta cgctgtgctt tctccgcagg	1740
ctgtactcaa gagtgaaaaa ttatcttgca tccaccctct cgctgaacaa gtcatagtga	1800
taacacactc tggccgaaaa gggcgttatg ccgtggaacc ataccatggg aaagtagtgg	1860
tgccagaggg acatgcaata cccgtccagg actttcaagc tctgagtga agtgccacca	1920
ttgtgtacaa cgaacgtgag ttcgtaaaca ggtacctgca ccatattgcc acacatggag	1980
gagcgtgaa cactgatgaa gaatattaca aaactgtcaa gccagcgag cacgacggcg	2040
aatacctgta cgacatcgac aggaaacagt gcgtcaagaa agaactagtc actgggctag	2100
ggctcacagg cgagctgggt gatcctccct tccatgaatt cgcctacgag agtctgagaa	2160
cacgaccagc cgctccttac caagtaccaa ccataggggt gtatggcgtg ccaggatcag	2220
gcaagtctgg catcattaaa agcgcagtca caaaaaaga tctagtgggtg agcgccaaga	2280
aagaaaactg tgcagaaatt ataagggacg tcaagaaaat gaaagggtg gacgtcaatg	2340
ccagaactgt ggactcagt ctcttgaatg gatgcaaaca cccgtagag accctgtata	2400
ttgacgaagc ttttgcttgt catgcaggta ctctcagagc gtcatagcc attataagac	2460

ctaaaaaggc agtgctctgc ggggatccca aacagtgcgg tttttttaac atgatgtgcc	2520
tgaaagtgca ttttaaccac gagatttgca cacaagtctt ccacaaaagc atctctcgcc	2580
gttgactaa atctgtgact tcggtcgtct caaccttggt ttacgacaaa aaaatgagaa	2640
cgacgaatcc gaaagagact aagattgtga ttgacactac cggcagtacc aaacctgaagc	2700
aggacgatct cattctcact tgtttcagag ggtgggtgaa gcagttgcaa atagattaca	2760
aaggcaacga aataatgacg gcagctgcct ctcaagggtc gacccgtaaa ggtgtgtatg	2820
ccgttcggta caaggtgaat gaaaatcctc tgtacgcacc cacctcagaa catgtgaacg	2880
tcctactgac ccgcacggag gaccgcatcg tgtggaaaac actagccggc gacccatgga	2940
taaaaacact gactgccaag taccctggga atttcactgc cacgatagag gagtggcaag	3000
cagagcatga tgccatcatg aggcacatct tggagagacc ggaccctacc gacgtcttcc	3060
agaataaggc aaacgtgtgt tgggccaagg ctttagtgcc ggtgctgaag accgctggca	3120
tagacatgac cactgaacaa tggaacactg tggattatct tgaaacggac aaagctcact	3180
cagcagagat agtattgaac caactatgcg tgaggttctt tggactcgat ctggactccg	3240
gtctatcttc tgcaccact gttccgttat ccattaggaa taatcactgg gataactccc	3300
cgtcgccctaa catgtacggg ctgaataaag aagtgggtccg tcagctctct cgcaggtacc	3360
cacaactgcc tcgggcagtt gccactggaa gagtctatga catgaacact ggtacactgc	3420
gcaattatga tccgcgcata aacctagtac ctgtaaacag aagactgcct catgcttttag	3480
tcctccacca taatgaacac ccacagagtg acttttcttc attcgtcagc aaattgaagg	3540
gcagaactgt cctgggtggtc ggggaaaagt tgtccgtccc aggcaaaatg gttgactggt	3600
tgtcagaccg gcctgaggct accttcagag ctcggctgga tttaggcatc ccaggtgatg	3660
tgcccaaata tgacataata tttgttaatg tgaggacccc atataaatac catcactatc	3720
agcagtgtga agaccatgcc attaagctta gcatgttgac caagaaagct tgtctgcatc	3780
tgaatcccgg cggaacctgt gtcagcatag gttatggtta cgctgacagg gccagcgaaa	3840
gcatcattgg tgctatagcg cggcagttca agttttcccg ggtatgcaaa ccgaaatcct	3900
cacttgaaga gacggaagtt ctgtttgtat tcattgggta cgatcgcaag gcccgtagcg	3960
acaattctta caagctttca tcaaccttga ccaacattta tacaggttcc agactccacg	4020
aagccggatg tgcaccctca tatcatgtgg tgcgagggga tattgccacg gccaccgaag	4080

gagtgattat aaatgctgct aacagcaaag gacaacctgg cggaggggtg tgcggagcgc	4140
tgtataagaa attcccggaa agcttcgatt tacagccgat cgaagtagga aaagcgcgac	4200
tgggtcaaagg tgcagctaaa catatcattc atgccgtagg accaaacttc aacaaagttt	4260
cggaggttga aggtgacaaa cagttggcag aggcttatga gtccatcgct aagattgtca	4320
acgataacaa ttacaagtca gtagcgattc cactgttgtc caccggcatc ttttccggga	4380
acaaagatcg actaaccaa tcattgaacc atttgctgac agcttttagac accactgatg	4440
cagatgtagc catatactgc agggacaaga aatgggaaat gactctcaag gaagcagtgg	4500
ctaggagaga agcagtggag gagatatgca tatccgacga ctcttcagtg acagaacctg	4560
atgcagagct ggtgaggggtg catccgaaga gttctttggc tggaaggaag ggctacagca	4620
caagcgatgg caaaactttc tcatatttgg aagggaccaa gtttcaccag gcggccaagg	4680
atatagcaga aattaatgcc atgtggcccg ttgcaacgga ggccaatgag caggtatgca	4740
tgtatatcct cggagaaaagc atgagcagta ttaggtcgaa atgccccgtc gaagagtcgg	4800
aagcctccac accacctagc acgctgcctt gcttgtgcat ccatgccatg actccagaaa	4860
gagtacagcg cctaaaagcc tcacgtccag aacaaattac tgtgtgctca tcctttccat	4920
tgccgaagta tagaatcact ggtgtgcaga agatccaatg ctcccagcct atattgttct	4980
caccgaaagt gcctgcgtat attcatcaa ggaagtatct cgtggaaaca ccaccggtag	5040
acgagactcc ggagccatcg gcagagaacc aatccacaga ggggacacct gaacaaccac	5100
cacttataac cgaggatgag accaggacta gaacgcctga gccgatcatc atcgaagagg	5160
aagaagagga tagcataagt ttgctgtcag atggcccgcac ccaccaggtg ctgcaagtcg	5220
aggcagacat tcacgggccg ccctctgtat ctagctcatc ctggtccatt cctcatgcat	5280
ccgactttga tgtggacagt ttatccatac ttgacaccct ggaggagct agcgtgacca	5340
gcggggcaac gtcagccgag actaactctt acttcgcaaa gagtatggag tttctggcgc	5400
gaccggtgcc tgcgcctcga acagtattca ggaaccctcc acatcccgtc ccgcgcacaa	5460
gaacaccgtc acttgacacc agcagggcct gctcgagaac cagcctagtt tccacccgc	5520
caggcgtgaa tagggtgatc actagagagg agctcgaggc gcttaccctg tcacgcactc	5580
ctagcaggtc ggtctcgaga accagcctgg tctccaacct gccaggcgta aatagggtga	5640
ttacaagaga ggagtttgag gcgttcgtag cacaacaaca atgacggttt gatgcgggtg	5700

catacatctt	ttcctccgac	accggtcaag	ggcatttaca	acaaaaatca	gtaaggcaaa	5760
cggtgctatc	cgaagtgggtg	ttggagagga	ccgaattgga	gatttcgtat	gccccgcgcc	5820
tcgaccaaga	aaaagaagaa	ttactacgca	agaaattaca	gttaaattccc	acacctgcta	5880
acagaagcag	ataccagtcc	aggaaggtgg	agaacatgaa	agccataaca	gctagacgta	5940
ttctgcaagg	cctagggcat	tatttgaagg	cagaaggaaa	agtggagtgc	taccgaaccc	6000
tgcatcctgt	tcctttgtat	tcacttagtg	tgaaccgtgc	cttttcaagc	cccaaggtcg	6060
cagtggaagc	ctgtaacgcc	atgttgaaag	agaactttcc	gactgtggct	tcttactgta	6120
ttattccaga	gtacgatgcc	tatttggaca	tggttgacgg	agcttcatgc	tgcttagaca	6180
ctgccagttt	ttgccctgca	aagctgcgca	gctttccaaa	gaaacactcc	tatttggaac	6240
ccacaatacg	atcggcagtg	ccttcagcga	tccagaacac	gctccagaac	gtcctggcag	6300
ctgccacaaa	aagaaattgc	aatgtcacgc	aaatgagaga	attgcccgta	ttggattcgg	6360
cggcctttaa	tgtggaatgc	ttcaagaaat	atgcgtgtaa	taatgaatat	tgggaaacgt	6420
ttaaagaaaa	ccccatcagg	cttactgaag	aaaacgtggt	aaattacatt	accaaattaa	6480
aaggaccaa	agctgctgct	ctttttgcga	agacacataa	tttgaatatg	ttgcaggaca	6540
taccaatgga	caggtttgta	atggacttaa	agagagacgt	gaaagtgact	ccaggaacaa	6600
aacatactga	agaacggccc	aaggtacagg	tgatccaggc	tgccgatccg	ctagcaacag	6660
cgtatctgtg	cggaatccac	cgagagctgg	ttaggagatt	aaatgcggtc	ctgcttccga	6720
acattcatac	actgtttgat	atgtcggctg	aagactttga	cgctattata	gccgagcact	6780
tccagcctgg	ggattgtgtt	ctggaaactg	acatcgcgtc	gtttgataaa	agtgaggacg	6840
acgccatggc	tctgaccgcg	ttaatgattc	tggaagactt	aggtgtggac	gcagagctgt	6900
tgacgctgat	tgaggcggct	ttcggcgaaa	tttcatcaat	acatttgccc	actaaaacta	6960
aatttaaatt	cggagccatg	atgaaatctg	gaatgttcct	cacactgttt	gtgaacacag	7020
tcattaacat	tgtaatcgca	agcagagtgt	tgagagaacg	gctaaccgga	tcaccatgtg	7080
cagcattcat	tggagatgac	aatatcgtga	aaggagtcaa	atcggacaaa	ttaatggcag	7140
acaggtgcgc	cacctggttg	aatatggaag	tcaagattat	agatgctgtg	gtgggcgaga	7200
aagcgcctta	tttctgtgga	gggtttat	tgtgtgactc	cgtgaccggc	acagcgtgcc	7260
gtgtggcaga	ccccctaaaa	aggctgttta	agcttggcaa	acctctggca	gcagacgatg	7320

aacatgatga	tgacaggaga	agggcattgc	atgaagagtc	aacacgctgg	aaccgagtgg	7380
gtattctttc	agagctgtgc	aaggcagtag	aatcaaggta	tgaaacgta	ggaacttcca	7440
tcatagttat	ggccatgact	actctagcta	gcagtgttaa	atcattcagc	tacctgagag	7500
gggcccctat	aactctctac	ggctaacctg	aatggactac	gacatagtct	agtccgcaa	7560
gtctagcata	tgttctagcc	gccaccatgg	acaagaagta	cagcatcggc	ctggacatcg	7620
gcaccaactc	tgtgggctgg	gccgtgatca	ccgacgagta	caaggtgccc	agcaagaaat	7680
tcaaggtgct	gggcaacacc	gaccggcaca	gcatcaagaa	gaacctgac	ggagccctgc	7740
tgttcgacag	cggcgaaaca	gccgaggcca	cccggctgaa	gagaaccgcc	agaagaagat	7800
acaccagacg	gaagaaccgg	atctgctatc	tgcaagagat	cttcagcaac	gagatggcca	7860
aggtggacga	cagcttcttc	cacagactgg	aagagtcctt	cctggtggaa	gaggataaga	7920
agcacgagcg	gcaccccatc	ttcggcaaca	tcgtggacga	ggtggcctac	cacgagaagt	7980
acccacccat	ctaccacctg	agaaagaaac	tggtggacag	caccgacaag	gccgacctgc	8040
ggctgatcta	tctggccctg	gcccacatga	tcaagttccg	gggccacttc	ctgatcgagg	8100
gcgacctgaa	ccccgacaac	agcgacgtgg	acaagctgtt	catccagctg	gtgcagacct	8160
acaaccagct	gttcgaggaa	aaccccatca	acgccagcgg	cgtggacgcc	aaggccatcc	8220
tgtctgccag	actgagcaag	agcagacggc	tggaatatct	gatcgcccag	ctgcccggcg	8280
agaagaagaa	tggcctgttc	ggaaacctga	ttgccctgag	cctgggcctg	acccccaact	8340
tcaagagcaa	cttcgacctg	gccgaggatg	ccaaactgca	gctgagcaag	gacacctacg	8400
acgacgacct	ggacaacctg	ctggcccaga	tcggcgacca	gtacgccgac	ctgtttctgg	8460
ccgccaagaa	cctgtccgac	gccatcctgc	tgagcgacat	cctgagagtg	aacaccgaga	8520
tcaccaaggc	ccccctgagc	gcctctatga	tcaagagata	cgacgagcac	caccaggacc	8580
tgacctgct	gaaagctctc	gtgcggcagc	agctgcctga	gaagtacaaa	gagattttct	8640
tcgaccagag	caagaacggc	tacgccggct	acattgacgg	cggagccagc	caggaagagt	8700
tctacaagtt	catcaagccc	atcctggaaa	agatggacgg	caccgaggaa	ctgctcgtga	8760
agctgaacag	agaggacctg	ctgcggaagc	agcggacctt	cgacaacggc	agcatcccc	8820
accagatcca	cctgggagag	ctgcacgcca	ttctgcggcg	gcaggaagat	ttttacccat	8880
tcctgaagga	caaccgggaa	aagatcgaga	agatcctgac	cttccgcatc	ccctactacg	8940

tgggccctct	ggccagggga	aacagcagat	tcgcctggat	gaccagaaag	agcgaggaaa	9000
ccatcacccc	ctggaacttc	gaggaagtgg	tggacaaggg	cgcttccgcc	cagagcttca	9060
tcgagcggat	gaccaacttc	gataagaacc	tgcccaacga	gaaggtgctg	cccaagcaca	9120
gcctgctgta	cgagtacttc	accgtgtata	acgagctgac	caaagtgaag	tacgtgaccg	9180
agggaatgag	aaagcccgcc	ttcctgagcg	gcgagcagaa	aaaggccatc	gtggacctgc	9240
tgttcaagac	caaccggaaa	gtgaccgtga	agcagctgaa	agaggactac	ttcaagaaaa	9300
tcgagtgttt	cgactccgtg	gaaatctccg	gcgtggaaga	tcggttcaac	gcctccctgg	9360
gcacatacca	cgatctgctg	aaaattatca	aggacaagga	cttcctggac	aatgaggaaa	9420
acgaggacat	tctggaagat	atcgtgctga	ccctgacact	gtttgaggac	agagagatga	9480
tcgaggaacg	gctgaaaacc	tatgcccacc	tgttcgacga	caaagtgatg	aagcagctga	9540
agcggcggag	atacaccggc	tggggcaggc	tgagccggaa	gctgatcaac	ggcatccggg	9600
acaagcagtc	cggcaagaca	atcctggatt	tcctgaagtc	cgacggcttc	gccaacagaa	9660
acttcatgca	gctgatccac	gacgacagcc	tgacctttaa	agaggacatc	cagaaagccc	9720
aggtgtccgg	ccagggcgat	agcctgcacg	agcacattgc	caatctggcc	ggcagccccg	9780
ccattaagaa	gggcatcctg	cagacagtga	aggtggtgga	cgagctcgtg	aaagtgatgg	9840
gccggcacia	gcccgagaac	atcgtgatcg	aaatggccag	agagaaccag	accaccacga	9900
agggacagaa	gaacagccgc	gagagaatga	agcggatcga	agagggcac	aaagagctgg	9960
gcagccagat	cctgaaagaa	caccccgtgg	aaaacaccca	gctgcagaac	gagaagctgt	10020
acctgtacta	cctgcagaat	gggcgggata	tgtacgtgga	ccaggaactg	gacatcaacc	10080
ggctgtccga	ctacgatgtg	gaccatatcg	tgcttcagag	ctttctggcg	gacgactcca	10140
tcgacaacia	ggtgctgacc	agaagcgaca	agaaccgggg	caagagcgac	aacgtgccct	10200
ccgaagaggt	cgtaagaag	atgaagaact	actggcggca	gctgctgaac	gccaagctga	10260
ttaccacagag	aaagtctgac	aatctgacca	aggccgagag	aggcggcctg	agcgaactgg	10320
ataaggccgg	cttcatcaag	agacagctgg	tggaaccccg	gcagatcaca	aagcacgtgg	10380
cacagatcct	ggactcccgg	atgaacacta	agtacgacga	gaatgacaag	ctgatccggg	10440
aagtgaaggt	gatcacctg	aagtccaagc	tggtgtccga	tttccggaag	gatttccagt	10500
tttacaaggt	gcgcgagatc	aacaactacc	accacgccc	cgacgcctac	ctgaacgccg	10560

tcgtgggaac cgccctgac	aaaaagtacc ctg	cgctgga aagcgagttc	gtgtacggcg	10620
actacaaggt gtacgacgtg	cggaagatga tcgccaagag	cgagcaggaa atcggcaagg	10680	
ctaccgccaa gtactttctt	tacagcaaca tcatgaactt	tttcaagacc gagattaccc	10740	
tggccaacgg cgagatccgg	aaggcgcctc tgatcgagac	aaacggcgaa accggggaga	10800	
tcgtgtggga taagggccgg	gatttttgcca ccgtgcggaa	agtgtctgagc atgccccaa	10860	
tgaatatcgt gaaaaagacc	gaggtgcaga caggcggcctt	cagcaaagag tctatcctgc	10920	
ccaagaggaa cagcgataag	ctgatcgcca gaaagaagga	ctgggaccct aagaagtacg	10980	
gcggcttcga cagccccacc	gtggcctatt ctgtgctgg	gttgccaaa gtggaaaagg	11040	
gcaagtccaa gaaactgaag	agtgtgaaag agctgctggg	gatcaccatc atggaaagaa	11100	
gcagcttcga gaagaatccc	atcgactttc tggaagccaa	gggctacaaa gaagtgaaaa	11160	
aggacctgat catcaagctg	cctaagtact ccctgttcga	gctggaaaac ggccggaaga	11220	
gaatgctggc ctctgccggc	gaactgcaga agggaaacga	actggccctg ccctccaaat	11280	
atgtgaactt cctgtacctg	gccagccact atgagaagct	gaagggtcc cccgaggata	11340	
atgagcagaa acagctgttt	gtggaacagc acaagcacta	cctggacgag atcatcgagc	11400	
agatcagcga gttctccaag	agagtgatcc tggccgacgc	taatctggac aaagtgtgt	11460	
ccgcctacaa caagcaccgg	gataagccca tcagagagca	ggccgagaat atcatccacc	11520	
tgtttaccct gaccaatctg	ggagcccctg ccgccttcaa	gtactttgac accaccatcg	11580	
accggaagag gtacaccagc	accaaagagg tgctggacgc	caccctgatc caccagagca	11640	
tcaccggcct gtacgagaca	cggatcgacc tgtctcagct	gggaggcgac cccaagaaaa	11700	
agcgcaaagt gtgagcggcc	gcaactaact taagctagca	acggtttccc tctagcggga	11760	
tcaattccgc ccccccccc	taacgttact ggccgaagcc	gcttggaata aggccggtgt	11820	
gcgtttgtct atatgttatt	ttccaccata ttgccgtctt	ttggcaatgt gagggcccgg	11880	
aaacctggcc ctgtcttctt	gacgagcatt cctaggggtc	tttcccctct cgccaaagga	11940	
atgcaaggtc tgttgaatgt	cgtgaaggaa gcagttcctc	tggaagcttc ttgaagacaa	12000	
acaacgtctg tagcgaccct	ttgcaggcag cggaaccccc	cacctggcga caggtgcctc	12060	
tgcggccaaa agccacgtgt	ataagataca cctgcaaagg	cggcacaacc ccagtgccac	12120	
gttgtgagtt ggatagttgt	ggaaagagtc aaatggctct	cctcaagcgt attcaacaag	12180	

gggctgaagg atgcccagaa ggtaccccat tgtatgggat ctgatctggg gcctcgggtgc	12240
acatgcttta catgtgttta gtcgaggtta aaaaaacgtc taggcccccc gaaccacggg	12300
gacgtggttt tcctttgaaa aacacgataa taccatgagc aagatctaca tcgacgagcg	12360
gagcaacgcc gagatttgtt gcgaggccat caagaccatc ggaatcgaag gcgccacagc	12420
cgctcagctg accagacagc tgaacatgga aaagcgggaa gtgaacaagg ccctgtacga	12480
cctgcagaga agcgccatgg tgtacagcag cgacgacatc cctcctcggg ggtttatgac	12540
cacagaggcc gacaagcctg acgccgatgc tatggccgac gtgatcatcg acgacgtgtc	12600
ccgcgagaag tccatgagag aggaccacaa gagcttcgac gatgtgatcc ccgccaagaa	12660
gatcatcgat tggaagggcg ccaatcctgt gaccgtgatc aacgagtact gccagatcac	12720
cagaagagac tggtccttcc ggatcgagag cgtgggcccct agcaatagcc ctaccttcta	12780
cgcttgcgtg gacatcgacg gcagagtgtt cgataaggcc gacggcaaga gcaagcggga	12840
cgccaaaaac aatgccgcca agctggccgt ggataagctg ctgggctatg tgatcatccg	12900
gttctaaggc cgcaactaac ttaagctagc aacggtttcc ctctagcggg atcaattccg	12960
cccccccccc ctaacgttac tggccgaagc cgcttggaaat aaggccggtg tgcgtttgtc	13020
tatatgttat tttccacat attgccgtct tttggcaatg tgagggcccg gaaacctggc	13080
cctgtcttct tgacgagcat tcctaggggt ctttcccctc tcgccaaagg aatgcaaggt	13140
ctgttgaatg tcgtgaagga agcagttcct ctggaagctt cttgaagaca aacaacgtct	13200
gtagcgaccc tttgcaggca gcggaacccc ccacctggcg acaggtgcct ctgcggccaa	13260
aagccacgtg tataagatac acctgcaaag gcggcacaac cccagtgcc a gtttgtgagt	13320
tggatagttg tggaaagagt caaatggctc tcctcaagcg tattcaacaa ggggctgaag	13380
gatgcccaga aggtacccca ttgtatggga tctgatctgg ggcctcgggtg cacatgcttt	13440
acatgtgttt agtcgagggt aaaaaaacgt ctaggcccc cgaaccacgg ggacgtgggt	13500
ttcctttgaa aaacacgata ataccatgac cgagtacaag cccacggtgc gcctcgccac	13560
ccgcgacgac gtccccaggg ccgtacgcac cctcgccgcc gcgttcgccg actacccgc	13620
cacgcgccac accgtcgatc cggaccgcca catcgagcgg gtcaccgagc tgcaagaact	13680
cttcctcacg cgcgtcgggc tcgacatcgg caaggtgtgg gtcgcggacg acggcgccgc	13740
ggtggcggtc tggaccacgc cggagagcgt cgaagcgggg gcggtgttcg ccgagatcgg	13800

cccgcgcatg gccgagttga gcggttcccc gctggccgcg cagcaacaga tggaaggcct	13860
cctggcgccg caccggccca aggagcccgc gtggttcctg gccaccgtcg gcgtctcgcc	13920
cgaccaccag ggcaagggtc tgggcagcgc cgtcgtgctc cccggagtgg aggcggccga	13980
gcgcgccggg gtgcccgcct tcctggagac ctccgcgccc cgcaacctcc ctttctacga	14040
gcggctcggc ttcaccgtca ccgccgacgt cgaggtgccc gaaggaccgc gcacctggtg	14100
catgaccgc aagcccgggtg cctgagaatt ggcaagctgc ttacatagaa ctcgcggcga	14160
ttggcatgcc gccttaaaat ttttatttta ttttttcttt tcttttccga atcggatttt	14220
gtttttaata tttcaaaaaa aaaaaaaaaa aaaaaaaac gcgaaaaaa aaaaaaaaaa	14280
aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaattaataa aaaaaaaaaa aaaaaaaaaa	14340
aaaaaaaaa aaaaaaaaaa aaaaaaaatt aataaaaaaa aaaaaaaaaa aaaaaaaaaa	14400
aaaaaaaaa aaaaaaaaaa aaattaatta atctagaacg cgtcgagggg aattaattct	14460
tgaagacgaa agggccaggt ggcacttttc ggggaaatgt gcgcggaacc cctatttggt	14520
tatttttcta aatacattca aatatgtatc cgctcatgag acaataacc ctgataaatgc	14580
ttcaataata ttgaaaaagg aagagtatga gtattcaaca tttccgtgtc gcccttattc	14640
ccttttttgc ggcattttgc cttcctgttt ttgctcacc agaaacgtg gtgaaagtaa	14700
aagatgctga agatcagttg ggtgcacgag tgggttacat cgaactggat ctcaacagcg	14760
gtaagatcct tgagagtttt cgccccgaag aacgttttcc aatgatgagc acttttaaag	14820
ttctgctatg tggcgcggtta ttatcccgtg ttgacgccgg gcaagagcaa ctcggtcgcc	14880
gcatacacta ttctcagaat gacttggttg agtactcacc agtcacagaa aagcatctta	14940
cggatggcat gacagtaaga gaattatgca gtgctgcat aaccatgagt gataaactg	15000
cggccaactt acttctgaca acgatcggag gaccgaagga gctaaccgct tttttgcaca	15060
acatggggga tcatgtaact cgccttgatc gttgggaacc ggagctgaat gaagccatac	15120
caaacgacga gcgtgacacc acgatgcctg tagcaatggc aacaacgttg cgcaaactat	15180
taactggcga actacttact ctagcttccc ggcaacaatt aatagactgg atggaggcgg	15240
ataaagttgc aggaccactt ctgcgctcgg cccttccggc tggctggttt attgctgata	15300
aatctggagc cggtgagcgt gggctctcgc gtatcattgc agcactgggg ccagatggta	15360
agccctcccg tatcgtagtt atctacacga cggggagtca ggcaactatg gatgaacgaa	15420

atagacagat cgctgagata ggtgcctcac tgattaagca ttggttaactg tcagaccaag	15480
tttactcata tatacttttag attgatttaa aacttcattt ttaatttaaa aggatctagg	15540
tgaagatcct ttttgataat ctcatgacca aaatccctta acgtgagttt tcgttccact	15600
gagcgtcaga ccccgtagaa aagatcaaag gatcttcttg agatcctttt tttctgcgcg	15660
taatctgctg cttgcaaaca aaaaaaccac cgctaccagc ggtggtttgt ttgccggatc	15720
aagagctacc aactcttttt ccgaaggtaa ctggcttcag cagagcgcag ataccaaata	15780
ctgtccttct agtgtagccg tagttaggcc accacttcaa gaactctgta gcaccgccta	15840
catacctcgc tctgctaatc ctgttaccag tggctgctgc cagtggcgat aagtcgtgtc	15900
ttaccggggt ggactcaaga cgatagttac cggataaggc gcagcggtcg ggctgaacgg	15960
ggggttcgtg cacacagccc agcttggagc gaacgaccta caccgaactg agatacctac	16020
agcgtgagct atgagaaagc gccacgcttc ccgaaggag aaaggcggac aggtatccgg	16080
taagcggcag ggtcggaaca ggagagcgca cgaggagct tccaggggga aacgcctggt	16140
atctttatag tcctgtcggg tttcgccacc tctgacttga gcgtcgattt ttgtgatgct	16200
cgtcaggggg gcggagccta tggaaaaacg ccagcaacgc gagctctaata acgactcact	16260
atag	16264

<210> 34
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 oligonucleotide"

<400> 34
 tagttggagc tgggtggcgta gg

22

<210> 35
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 oligonucleotide"

<400> 35
gagtccgagc agaagaagaa ggg 23

<210> 36
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
primer"

<400> 36
gatacacgtc tgcagtcaac tg 22

<210> 37
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
primer"

<400> 37
gcatattact ggtgcaggac c 21

<210> 38
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
primer"

<400> 38
gcctgagtgt tgaggcccca 20

<210> 39
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> source

<223> /note="Description of Artificial Sequence: Synthetic primer"

<400> 39

gtccctctgt caatggcggc

20

<210> 40

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic 6xHis tag"

<400> 40

His His His His His His

1

5