

eolf-othd-000005  
SEQUENCE LISTING

<110> PsiOxus Therapeutics Limited  
<120> Adenovirus armed with bispecific T cell engager (BiTE)  
<130> P000192\_W0  
<150> GB1614607.8  
<151> 2016-08-29  
<160> 298  
<170> PatentIn version 3.5  
<210> 1  
<211> 1578  
<212> DNA  
<213> Artificial Sequence  
<220>  
<223> Anti-EpCAM BiTE DNA coding sequence, with N-terminal signal  
sequence and C-terminal deca-His affinity tag

<400> 1  
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ctggtgatga ctcagtcccc gtcatccctg acggtgaccg ccggcgagaa ggtcaccatg 120  
tcgtgcaagt cctcgcaaag cctgcttaac agcggcaacc agaaaaacta cctcacgtgg 180  
tatcagcaaa agccagggtca acccccaaaa ctgctcatct actgggcgag caccgcgag 240  
tcgggggtgc cagaccggtt caccggctcc gggtcaggaa ctgatttcac cctaaccatc 300  
agctcgggtc aagcggagga cctggccgtg tactactgcc aaaatgatta ctgtaccct 360  
ctgacctttg gagcgggcac caagctcgaa atcaagggcg gtggagggaag cggcggggga 420  
ggctcagggtg ggggaggatc agaagtccaa ctgctggagc agtcaggagc cgaactggtc 480  
cgccgggaa cctccgtcaa gatttcctgt aaggcttccg gctacgcttt taccaattac 540  
tggtgggct ggggtcaagca aagaccgggg catggcctgg agtggatcgg cgacatcttc 600  
ccagggagcg gcaacatcca ctacaacgag aagttcaagg ggaaagcgac tctgactgcc 660  
gacaaatcat ccagcaccgc ctacatgcag ctgtcgtcgc tcactttcga agacagcgcg 720

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gtgtactttt gtgctcggct ccggaactgg gatgaaccaa tggactactg gggacaagga      780
actaccgtga ccgtctcctc cggcggcggg ggaagcgatg tgcaactcgt gcagtccggg      840
gcggaagtga aaaagccggg cgcgagcgtc aaagtgtcat gcaaggcgtc aggatatacg      900
tttactagat acactatgca ctgggtgctc caggcacctg gtcagggcct tgaatggatc      960
ggctacatca atccgtcgag aggctacact aattacgcgg actcagtcaa agggcgcttc     1020
acgattacga ccgacaagtc cacctcgact gcatacatgg aactgtcctc gctgagaagc     1080
gaggacaccg ctacttacta ctgcgctaga tactacgatg atcactactg cctcgattac     1140
tggggccagg gaaccactgt cacggtgtca tcgggagagg gcacctcaac cggatcaggg     1200
ggatcggggag gctcgggcgg cgcagacgac atcgtcctga cccagtcgcc cgccaccttg     1260
tcgctgtccc caggagaaaag agcgaccctg tcatgccggg cgtcgcaaag cgtgagctat     1320
atgaattggg atcagcagaa gccaggaaaag gcgccgaaga gatggatcta cgacacctcc     1380
aaggtcgctt caggtgtccc ggctagattc tcaggatcgg gatcaggaac ggactactcc     1440
ctgaccatca attcactgga agcagaagat gcggccacct actactgtca gcagtgggtcc     1500
tccaacccgc tgactttcgg aggcggaact aaggtcgaga tcaagcatca ccatcaccat     1560
caccaccatc accattag                                     1578

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<210> 2

<211> 525

<212> PRT

<213> Artificial Sequence

<220>

<223> Anti-EpCAM BiTE protein sequence, with N-terminal signal sequence  
and C-terminal deca-His affinity tag

<400> 2

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Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
1           5           10          15

```

```

Val His Ser Glu Leu Val Met Thr Gln Ser Pro Ser Ser Leu Thr Val

```

20

25

30

Thr Ala Gly Glu Lys Val Thr Met Ser Cys Lys Ser Ser Gln Ser Leu  
 35 40 45

Leu Asn Ser Gly Asn Gln Lys Asn Tyr Leu Thr Trp Tyr Gln Gln Lys  
 50 55 60

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

Ser Gly Val Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe  
 85 90 95

Thr Leu Thr Ile Ser Ser Val Gln Ala Glu Asp Leu Ala Val Tyr Tyr  
 100 105 110

Cys Gln Asn Asp Tyr Ser Tyr Pro Leu Thr Phe Gly Ala Gly Thr Lys  
 115 120 125

Leu Glu Ile Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
 130 135 140

Gly Gly Ser Glu Val Gln Leu Leu Glu Gln Ser Gly Ala Glu Leu Val  
 145 150 155 160

Arg Pro Gly Thr Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala  
 165 170 175

Phe Thr Asn Tyr Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly  
 180 185 190

Leu Glu Trp Ile Gly Asp Ile Phe Pro Gly Ser Gly Asn Ile His Tyr  
 195 200 205

Asn Glu Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser

210

215

220

Ser Thr Ala Tyr Met Gln Leu Ser Ser Leu Thr Phe Glu Asp Ser Ala  
 225 230 235 240

Val Tyr Phe Cys Ala Arg Leu Arg Asn Trp Asp Glu Pro Met Asp Tyr  
 245 250 255

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 260 265 270

Asp Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 275 280 285

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Arg Tyr  
 290 295 300

Thr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile  
 305 310 315 320

Gly Tyr Ile Asn Pro Ser Arg Gly Tyr Thr Asn Tyr Ala Asp Ser Val  
 325 330 335

Lys Gly Arg Phe Thr Ile Thr Thr Asp Lys Ser Thr Ser Thr Ala Tyr  
 340 345 350

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Thr Tyr Tyr Cys  
 355 360 365

Ala Arg Tyr Tyr Asp Asp His Tyr Cys Leu Asp Tyr Trp Gly Gln Gly  
 370 375 380

Thr Thr Val Thr Val Ser Ser Gly Glu Gly Thr Ser Thr Gly Ser Gly  
 385 390 395 400

Gly Ser Gly Gly Ser Gly Gly Ala Asp Asp Ile Val Leu Thr Gln Ser

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405

410

415

Pro Ala Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys  
420 425 430

Arg Ala Ser Gln Ser Val Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro  
435 440 445

Gly Lys Ala Pro Lys Arg Trp Ile Tyr Asp Thr Ser Lys Val Ala Ser  
450 455 460

Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Ser  
465 470 475 480

Leu Thr Ile Asn Ser Leu Glu Ala Glu Asp Ala Ala Thr Tyr Tyr Cys  
485 490 495

Gln Gln Trp Ser Ser Asn Pro Leu Thr Phe Gly Gly Gly Thr Lys Val  
500 505 510

Glu Ile Lys His His His His His His His His His His  
515 520 525

<210> 3  
<211> 1590  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Anti-FAP BiTE DNA coding sequence, with N-terminal signal  
sequence and C-terminal deca-His affinity tag

<400> 3  
atgggctgga gctgcatcat cttgttcctg gtcgcaactg ctaccggagt ccattcggac 60  
atcgtcatga cccaaagccc tgactcgctc gctgtgtcac tgggagagcg ggcgactatc 120  
aactgcaa at catcccagag cctgctgtat tcacgcaatc agaaaaacta cctggcctgg 180  
tatcagcaga agccgggccca gcctcccaag ctgctgatct tctgggcctc caccgcgaa 240

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|                                                                     |      |
|---------------------------------------------------------------------|------|
| agcggcgtgc cggaccgctt cagcgggaagc ggattcggaa ctgactttac tctgaccatt  | 300  |
| agctccttgc aggcggagga cgtggccgctc tactactgcc agcagtatctt ctcctatccg | 360  |
| ctcacctttg ggcaaggcac caaggtggag attaagggag ggggcggcag cgggggaggc   | 420  |
| ggcagcggcg gcgggggatc gcaggtccag ctctccaat ccggagccga agtcaagaag    | 480  |
| ccgggagcgt cgggtcaaggt cagctgcaaa acttcgcgct acaccttcac tgagtacacg  | 540  |
| atccactggg tccgccaggc gcccggccag cggctggagt ggatcggcgg gatcaaccca   | 600  |
| aacaacggaa tcccaaatta caatcagaaa tttaaagggc gggtgactat caccgtggat   | 660  |
| acctcggcct ccacggcgta catggagctc tcactactca gatcggagga caccgcggtc   | 720  |
| tattactgcg cccgccgccc gatcgcttat ggatacgatg aaggacatgc gatggattac   | 780  |
| tggggccagg gcaccctcgt cacggtgtcg tcaggaggcg gcggttcaga tgtgcaactc   | 840  |
| gtgcagtccg gtgcggaagt gaaaaagccg ggcgcgagcg tcaaagtgtc atgcaaggcg   | 900  |
| tcaggatata cgtttactag atacactatg cactgggtgc gccaggcacc tggtcagggc   | 960  |
| cttgaatgga tcggctacat caatccgtcg agaggctaca ctaattacgc ggactcagtc   | 1020 |
| aaaggcgct tcacgattac gaccgacaag tccacctga ctgcatacat ggaactgtcc     | 1080 |
| tcgctgagaa gcgaggacac cgctacttac tactgcgcta gatactacga tgatcactac   | 1140 |
| tgccctgatt actggggcca gggaaccact gtcacggtgt catcgggaga gggcacctca   | 1200 |
| accggatcag ggggatcggg aggctcgggc ggcgagacg acatcgtcct gaccagtcg     | 1260 |
| cccgccacct tgtcgtgtc cccaggagaa agagcgaccc tgtcatgccg ggcgtcgcaa    | 1320 |
| agcgtgagct atatgaattg gtatcagcag aagccaggaa aggcgccgaa gagatggatc   | 1380 |
| tacgacacct ccaaggctgc ttcagggtgtc ccggctagat tctcaggatc gggatcagga  | 1440 |
| acggactact ccctgaccat caattcactg gaagcagaag atgcggccac ctactactgt   | 1500 |
| cagcagtggg cctccaaccc gctgactttc ggaggcggaa ctaaggctga gatcaagcat   | 1560 |
| caccatcacc atcaccacca tcaccattag                                    | 1590 |

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<210> 4

<211> 529

<212> PRT

<213> Artificial Sequence

<220>

<223> Anti-FAP BiTE amino acid sequence, with N-terminal signal sequence and C-terminal deca-His affinity tag

<400> 4

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly  
1 5 10 15

Val His Ser Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val  
20 25 30

Ser Leu Gly Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Leu  
35 40 45

Leu Tyr Ser Arg Asn Gln Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys  
50 55 60

Pro Gly Gln Pro Pro Lys Leu Leu Ile Phe Trp Ala Ser Thr Arg Glu  
65 70 75 80

Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Phe Gly Thr Asp Phe  
85 90 95

Thr Leu Thr Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr  
100 105 110

Cys Gln Gln Tyr Phe Ser Tyr Pro Leu Thr Phe Gly Gln Gly Thr Lys  
115 120 125

Val Glu Ile Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
130 135 140

Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 145 |     | 150 |     | 155 |     | 160 |     |     |     |     |     |     |     |     |     |
| Pro | Gly | Ala | Ser | Val | Lys | Val | Ser | Cys | Lys | Thr | Ser | Arg | Tyr | Thr | Phe |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Thr | Glu | Tyr | Thr | Ile | His | Trp | Val | Arg | Gln | Ala | Pro | Gly | Gln | Arg | Leu |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Glu | Trp | Ile | Gly | Gly | Ile | Asn | Pro | Asn | Asn | Gly | Ile | Pro | Asn | Tyr | Asn |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Gln | Lys | Phe | Lys | Gly | Arg | Val | Thr | Ile | Thr | Val | Asp | Thr | Ser | Ala | Ser |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Thr | Ala | Tyr | Met | Glu | Leu | Ser | Ser | Leu | Arg | Ser | Glu | Asp | Thr | Ala | Val |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Tyr | Tyr | Cys | Ala | Arg | Arg | Arg | Ile | Ala | Tyr | Gly | Tyr | Asp | Glu | Gly | His |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Ala | Met | Asp | Tyr | Trp | Gly | Gln | Gly | Thr | Leu | Val | Thr | Val | Ser | Ser | Gly |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Gly | Gly | Gly | Ser | Asp | Val | Gln | Leu | Val | Gln | Ser | Gly | Ala | Glu | Val | Lys |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Lys | Pro | Gly | Ala | Ser | Val | Lys | Val | Ser | Cys | Lys | Ala | Ser | Gly | Tyr | Thr |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Phe | Thr | Arg | Tyr | Thr | Met | His | Trp | Val | Arg | Gln | Ala | Pro | Gly | Gln | Gly |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Leu | Glu | Trp | Ile | Gly | Tyr | Ile | Asn | Pro | Ser | Arg | Gly | Tyr | Thr | Asn | Tyr |
|     |     |     | 325 |     |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Ala | Asp | Ser | Val | Lys | Gly | Arg | Phe | Thr | Ile | Thr | Thr | Asp | Lys | Ser | Thr |



340

345

350

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
 355 360 365

Thr Tyr Tyr Cys Ala Arg Tyr Tyr Asp Asp His Tyr Cys Leu Asp Tyr  
 370 375 380

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Gly Thr Ser  
 385 390 395 400

Thr Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ala Asp Asp Ile Val  
 405 410 415

Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala  
 420 425 430

Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Tyr Met Asn Trp Tyr  
 435 440 445

Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Trp Ile Tyr Asp Thr Ser  
 450 455 460

Lys Val Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly  
 465 470 475 480

Thr Asp Tyr Ser Leu Thr Ile Asn Ser Leu Glu Ala Glu Asp Ala Ala  
 485 490 495

Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Leu Thr Phe Gly Gly  
 500 505 510

Gly Thr Lys Val Glu Ile Lys His His His His His His His His His  
 515 520 525

His

<210> 5  
 <211> 1629  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Control (Anti-FHA) BiTE DNA coding sequence, with N-terminal signal sequence and C-terminal deca-His affinity tag

<400> 5  
 atgggttggg catgcatcat cctgtttctc gtcgcaactg cgaccggcgt gcatttcggaa 60  
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 accatttcat gccgggcccag caagagcgtg tcgtcatccg gatacaatta tctgcactgg 180  
 tatcagcaga aaccaggaca acctccaaag ctactcatct acctggcgtc gaacctcgaa 240  
 tcgggcgtcc cagctagatt ctcaaggagc gggttcgggaa ccgatttcac cctgaacatc 300  
 caccctgtgg aggaggaaga cgcggaacg tactattgcc agcattcccg cgagttccct 360  
 ctacttttcg gtgcgggaac taagctggag atcaagtcca gcggcggcgg aggttagcggg 420  
 ggaggtggcg gaggaagctc ccggtcgtcg ctggaggtgc agctgcaaca atccggccccg 480  
 gaactgggtca agccaggcgc atccgtcaag atttcatgca agacctcggg gtacaccttc 540  
 accgggtaca cgatgcattg ggtcaggcag agccacggca agtccctgga atggatcgga 600  
 ggaatcaacc ccaaaaacgg cggcacatc tacaaccaa agttccaggg aaaagccact 660  
 ctgaccgtgg acaagtcgtc gagcacggcc agcatggagc tgcggtcctt cacttccgac 720  
 gactcagccg tgtattactg cgcgagacgg gtctacgatg actaccata ctactacgct 780  
 atggactact ggggacaagg aaccagcgtg accgtctcat cggcgaaaac tactccgccg 840  
 tcggtgacgt cgggaggtgg tggaagcgac gtgcagctcg tccagtcggg tgccgaggtg 900  
 aagaagccag gagcctccgt gaaggtctcg tgcaaagcca gcggctacac ttttactagg 960  
 tacactatgc actgggtgcg gcaagcgccg ggacaaggtc tggagtggat cggatacatc 1020  
 aatccgtcgc ggggatacac taattacgcg gactccgtca agggacgggtt tactatcact 1080

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```

acggataagt ccactagcac cgcctacatg gaactgtcct cgctgcggtc ggaagacact      1140
gcgacctact actgcgctag atattacgat gaccactact gcctcgacta ttgggggcag      1200
ggcactacgg tcaccgtctc gtcgggagaa ggaacctcaa ctggatcggg cggatcggga      1260
ggctccggag gagccgacga catcgtgctt acccagtcgc ctgcgaccct gtccctgtcc      1320
ccaggagaga gagcgactct ttcatgcagg gcttcccaat cagtctccta catgaattgg      1380
tatcaacaaa aacccggcaa ggccccgaaa cgctggatct acgatacttc aaaggtggcc      1440
agcgggtgtgc ctgcccgtt ctccgggtcg ggggtccggca ccgattactc gttgactatc      1500
aatagcctgg aggccgagga cgctgcaact tactactgcc agcagtggtc ctccaaccct      1560
ctcaccttcg gaggcgggac caaggtggaa atcaaacatc accatcacca tcaccaccat      1620
caccattag                                          1629

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<210> 6  
 <211> 542  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Control (Anti-FHA) BiTE amino acid sequence with N-terminal  
 signal sequence and C-terminal deca-His affinity tag

<400> 6

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Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
1           5           10          15

```

```

Val His Ser Glu Leu Asp Ile Val Met Thr Gln Ala Pro Ala Ser Leu
          20           25           30

```

```

Ala Val Ser Leu Gly Gln Arg Ala Thr Ile Ser Cys Arg Ala Ser Lys
35           40           45

```

```

Ser Val Ser Ser Ser Gly Tyr Asn Tyr Leu His Trp Tyr Gln Gln Lys
50           55           60

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Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr Leu Ala Ser Asn Leu Glu  
65 70 75 80

Ser Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe  
85 90 95

Thr Leu Asn Ile His Pro Val Glu Glu Glu Asp Ala Ala Thr Tyr Tyr  
100 105 110

Cys Gln His Ser Arg Glu Phe Pro Leu Thr Phe Gly Ala Gly Thr Lys  
115 120 125

Leu Glu Ile Lys Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Gly  
130 135 140

Gly Ser Ser Arg Ser Ser Leu Glu Val Gln Leu Gln Gln Ser Gly Pro  
145 150 155 160

Glu Leu Val Lys Pro Gly Ala Ser Val Lys Ile Ser Cys Lys Thr Ser  
165 170 175

Gly Tyr Thr Phe Thr Gly Tyr Thr Met His Trp Val Arg Gln Ser His  
180 185 190

Gly Lys Ser Leu Glu Trp Ile Gly Gly Ile Asn Pro Lys Asn Gly Gly  
195 200 205

Ile Ile Tyr Asn Gln Lys Phe Gln Gly Lys Ala Thr Leu Thr Val Asp  
210 215 220

Lys Ser Ser Ser Thr Ala Ser Met Glu Leu Arg Ser Leu Thr Ser Asp  
225 230 235 240

Asp Ser Ala Val Tyr Tyr Cys Ala Arg Arg Val Tyr Asp Asp Tyr Pro  
245 250 255

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Tyr Tyr Tyr Ala Met Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val  
260 265 270

Ser Ser Ala Lys Thr Thr Pro Pro Ser Val Thr Ser Gly Gly Gly Gly  
275 280 285

Ser Asp Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly  
290 295 300

Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Arg  
305 310 315 320

Tyr Thr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp  
325 330 335

Ile Gly Tyr Ile Asn Pro Ser Arg Gly Tyr Thr Asn Tyr Ala Asp Ser  
340 345 350

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

Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Thr Tyr Tyr  
370 375 380

Cys Ala Arg Tyr Tyr Asp Asp His Tyr Cys Leu Asp Tyr Trp Gly Gln  
385 390 395 400

Gly Thr Thr Val Thr Val Ser Ser Gly Glu Gly Thr Ser Thr Gly Ser  
405 410 415

Gly Gly Ser Gly Gly Ser Gly Gly Ala Asp Asp Ile Val Leu Thr Gln  
420 425 430

Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser  
435 440 445

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Cys Arg Ala Ser Gln Ser Val Ser Tyr Met Asn Trp Tyr Gln Gln Lys  
450 455 460

Pro Gly Lys Ala Pro Lys Arg Trp Ile Tyr Asp Thr Ser Lys Val Ala  
465 470 475 480

Ser Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr  
485 490 495

Ser Leu Thr Ile Asn Ser Leu Glu Ala Glu Asp Ala Ala Thr Tyr Tyr  
500 505 510

Cys Gln Gln Trp Ser Ser Asn Pro Leu Thr Phe Gly Gly Gly Thr Lys  
515 520 525

Val Glu Ile Lys His His His His His His His His His His  
530 535 540

<210> 7  
<211> 243  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Anti-CD3 ScFv amino acid sequence

<400> 7

Asp Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Arg Tyr  
20 25 30

Thr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile  
35 40 45

Gly Tyr Ile Asn Pro Ser Arg Gly Tyr Thr Asn Tyr Ala Asp Ser Val

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50

55

60

Lys Gly Arg Phe Thr Ile Thr Thr Asp Lys Ser Thr Ser Thr Ala Tyr  
65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Thr Tyr Tyr Cys  
85 90 95

Ala Arg Tyr Tyr Asp Asp His Tyr Cys Leu Asp Tyr Trp Gly Gln Gly  
100 105 110

Thr Thr Val Thr Val Ser Ser Gly Glu Gly Thr Ser Thr Gly Ser Gly  
115 120 125

Gly Ser Gly Gly Ser Gly Gly Ala Asp Asp Ile Val Leu Thr Gln Ser  
130 135 140

Pro Ala Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys  
145 150 155 160

Arg Ala Ser Gln Ser Val Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro  
165 170 175

Gly Lys Ala Pro Lys Arg Trp Ile Tyr Asp Thr Ser Lys Val Ala Ser  
180 185 190

Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Ser  
195 200 205

Leu Thr Ile Asn Ser Leu Glu Ala Glu Asp Ala Ala Thr Tyr Tyr Cys  
210 215 220

Gln Gln Trp Ser Ser Asn Pro Leu Thr Phe Gly Gly Gly Thr Lys Val  
225 230 235 240

Glu Ile Lys

<210> 8  
 <211> 119  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Anti-CD3 VH

<400> 8

Asp Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Arg Tyr  
 20 25 30

Thr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile  
 35 40 45

Gly Tyr Ile Asn Pro Ser Arg Gly Tyr Thr Asn Tyr Ala Asp Ser Val  
 50 55 60

Lys Gly Arg Phe Thr Ile Thr Thr Asp Lys Ser Thr Ser Thr Ala Tyr  
 65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Thr Tyr Tyr Cys  
 85 90 95

Ala Arg Tyr Tyr Asp Asp His Tyr Cys Leu Asp Tyr Trp Gly Gln Gly  
 100 105 110

Thr Thr Val Thr Val Ser Ser  
 115

<210> 9  
 <211> 106  
 <212> PRT



<213> Artificial Sequence

<220>

<223> Anti-CD3 VL

<400> 9

Asp Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly  
1 5 10 15

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Tyr Met  
20 25 30

Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Trp Ile Tyr  
35 40 45

Asp Thr Ser Lys Val Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser  
50 55 60

Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Asn Ser Leu Glu Ala Glu  
65 70 75 80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Leu Thr  
85 90 95

Phe Gly Gly Gly Thr Lys Val Glu Ile Lys  
100 105

<210> 10

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> Anti-CD3 ScFv linker sequence

<400> 10

Gly Glu Gly Thr Ser Thr Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly  
1 5 10 15

Ala Asp

<210> 11  
 <211> 252  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Anti-FAP ScFv

<400> 11

Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Leu Gly  
 1 5 10 15

Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Leu Leu Tyr Ser  
 20 25 30

Arg Asn Gln Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
 35 40 45

Pro Pro Lys Leu Leu Ile Phe Trp Ala Ser Thr Arg Glu Ser Gly Val  
 50 55 60

Pro Asp Arg Phe Ser Gly Ser Gly Phe Gly Thr Asp Phe Thr Leu Thr  
 65 70 75 80

Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln  
 85 90 95

Tyr Phe Ser Tyr Pro Leu Thr Phe Gly Gln Gly Thr Lys Val Glu Ile  
 100 105 110

Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala

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130

135

140

Ser Val Lys Val Ser Cys Lys Thr Ser Arg Tyr Thr Phe Thr Glu Tyr  
145 150 155 160

Thr Ile His Trp Val Arg Gln Ala Pro Gly Gln Arg Leu Glu Trp Ile  
165 170 175

Gly Gly Ile Asn Pro Asn Asn Gly Ile Pro Asn Tyr Asn Gln Lys Phe  
180 185 190

Lys Gly Arg Val Thr Ile Thr Val Asp Thr Ser Ala Ser Thr Ala Tyr  
195 200 205

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
210 215 220

Ala Arg Arg Arg Ile Ala Tyr Gly Tyr Asp Glu Gly His Ala Met Asp  
225 230 235 240

Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
245 250

<210> 12  
<211> 113  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Anti-FAP VL domain

<400> 12

Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Leu Gly  
1 5 10 15

Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Leu Leu Tyr Ser  
20 25 30

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Arg Asn Gln Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
35 40 45

Pro Pro Lys Leu Leu Ile Phe Trp Ala Ser Thr Arg Glu Ser Gly Val  
50 55 60

Pro Asp Arg Phe Ser Gly Ser Gly Phe Gly Thr Asp Phe Thr Leu Thr  
65 70 75 80

Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln  
85 90 95

Tyr Phe Ser Tyr Pro Leu Thr Phe Gly Gln Gly Thr Lys Val Glu Ile  
100 105 110

Lys

<210> 13  
<211> 124  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Anti-FAP VH domain

<400> 13

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Thr Ser Arg Tyr Thr Phe Thr Glu Tyr  
20 25 30

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

Gly Gly Ile Asn Pro Asn Asn Gly Ile Pro Asn Tyr Asn Gln Lys Phe

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50

55

60

Lys Gly Arg Val Thr Ile Thr Val Asp Thr Ser Ala Ser Thr Ala Tyr  
65 70 75 80

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

Ala Arg Arg Arg Ile Ala Tyr Gly Tyr Asp Glu Gly His Ala Met Asp  
100 105 110

Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
115 120

<210> 14  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Anti-FAP and Anti-EpCAM linker sequence

<400> 14

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
1 5 10 15

<210> 15  
<211> 19  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> BiTe leader sequence

<400> 15

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly  
1 5 10 15

Val His Ser

<210> 16  
 <211> 248  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Anti-EpCAM ScFv

<400> 16

Glu Leu Val Met Thr Gln Ser Pro Ser Ser Leu Thr Val Thr Ala Gly  
 1 5 10 15

Glu Lys Val Thr Met Ser Cys Lys Ser Ser Gln Ser Leu Leu Asn Ser  
 20 25 30

Gly Asn Gln Lys Asn Tyr Leu Thr Trp Tyr Gln Gln Lys Pro Gly Gln  
 35 40 45

Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val  
 50 55 60

Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
 65 70 75 80

Ile Ser Ser Val Gln Ala Glu Asp Leu Ala Val Tyr Tyr Cys Gln Asn  
 85 90 95

Asp Tyr Ser Tyr Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile  
 100 105 110

Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125

Glu Val Gln Leu Leu Glu Gln Ser Gly Ala Glu Leu Val Arg Pro Gly  
 130 135 140

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Thr Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe Thr Asn  
145 150 155 160

Tyr Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp  
165 170 175

Ile Gly Asp Ile Phe Pro Gly Ser Gly Asn Ile His Tyr Asn Glu Lys  
180 185 190

Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala  
195 200 205

Tyr Met Gln Leu Ser Ser Leu Thr Phe Glu Asp Ser Ala Val Tyr Phe  
210 215 220

Cys Ala Arg Leu Arg Asn Trp Asp Glu Pro Met Asp Tyr Trp Gly Gln  
225 230 235 240

Gly Thr Thr Val Thr Val Ser Ser  
245

<210> 17  
<211> 113  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Anti-EpCAM VL

<400> 17

Glu Leu Val Met Thr Gln Ser Pro Ser Ser Leu Thr Val Thr Ala Gly  
1 5 10 15

Glu Lys Val Thr Met Ser Cys Lys Ser Ser Gln Ser Leu Leu Asn Ser  
20 25 30

Gly Asn Gln Lys Asn Tyr Leu Thr Trp Tyr Gln Gln Lys Pro Gly Gln

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35

40

45

Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val  
50 55 60

Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
65 70 75 80

Ile Ser Ser Val Gln Ala Glu Asp Leu Ala Val Tyr Tyr Cys Gln Asn  
85 90 95

Asp Tyr Ser Tyr Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile  
100 105 110

Lys

<210> 18

<211> 120

<212> PRT

<213> Artificial Sequence

<220>

<223> Anti-EpCAM VH

<400> 18

Glu Val Gln Leu Leu Glu Gln Ser Gly Ala Glu Leu Val Arg Pro Gly  
1 5 10 15

Thr Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe Thr Asn  
20 25 30

Tyr Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp  
35 40 45

Ile Gly Asp Ile Phe Pro Gly Ser Gly Asn Ile His Tyr Asn Glu Lys  
50 55 60



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Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala  
65 70 75 80

Tyr Met Gln Leu Ser Ser Leu Thr Phe Glu Asp Ser Ala Val Tyr Phe  
85 90 95

Cys Ala Arg Leu Arg Asn Trp Asp Glu Pro Met Asp Tyr Trp Gly Gln  
100 105 110

Gly Thr Thr Val Thr Val Ser Ser  
115 120

<210> 19  
<211> 542  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Control BiTe (Anti-FHA)

<400> 19

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly  
1 5 10 15

Val His Ser Glu Leu Asp Ile Val Met Thr Gln Ala Pro Ala Ser Leu  
20 25 30

Ala Val Ser Leu Gly Gln Arg Ala Thr Ile Ser Cys Arg Ala Ser Lys  
35 40 45

Ser Val Ser Ser Ser Gly Tyr Asn Tyr Leu His Trp Tyr Gln Gln Lys  
50 55 60

Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr Leu Ala Ser Asn Leu Glu  
65 70 75 80

Ser Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe

85

90

95

Thr Leu Asn Ile His Pro Val Glu Glu Glu Asp Ala Ala Thr Tyr Tyr  
 100 105 110

Cys Gln His Ser Arg Glu Phe Pro Leu Thr Phe Gly Ala Gly Thr Lys  
 115 120 125

Leu Glu Ile Lys Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Gly  
 130 135 140

Gly Ser Ser Arg Ser Ser Leu Glu Val Gln Leu Gln Gln Ser Gly Pro  
 145 150 155 160

Glu Leu Val Lys Pro Gly Ala Ser Val Lys Ile Ser Cys Lys Thr Ser  
 165 170 175

Gly Tyr Thr Phe Thr Gly Tyr Thr Met His Trp Val Arg Gln Ser His  
 180 185 190

Gly Lys Ser Leu Glu Trp Ile Gly Gly Ile Asn Pro Lys Asn Gly Gly  
 195 200 205

Ile Ile Tyr Asn Gln Lys Phe Gln Gly Lys Ala Thr Leu Thr Val Asp  
 210 215 220

Lys Ser Ser Ser Thr Ala Ser Met Glu Leu Arg Ser Leu Thr Ser Asp  
 225 230 235 240

Asp Ser Ala Val Tyr Tyr Cys Ala Arg Arg Val Tyr Asp Asp Tyr Pro  
 245 250 255

Tyr Tyr Tyr Ala Met Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val  
 260 265 270

Ser Ser Ala Lys Thr Thr Pro Pro Ser Val Thr Ser Gly Gly Gly Gly

275

280

285

Ser Asp Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly  
 290 295 300

Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Arg  
 305 310 315 320

Tyr Thr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp  
 325 330 335

Ile Gly Tyr Ile Asn Pro Ser Arg Gly Tyr Thr Asn Tyr Ala Asp Ser  
 340 345 350

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

Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Thr Tyr Tyr  
 370 375 380

Cys Ala Arg Tyr Tyr Asp Asp His Tyr Cys Leu Asp Tyr Trp Gly Gln  
 385 390 395 400

Gly Thr Thr Val Thr Val Ser Ser Gly Glu Gly Thr Ser Thr Gly Ser  
 405 410 415

Gly Gly Ser Gly Gly Ser Gly Gly Ala Asp Asp Ile Val Leu Thr Gln  
 420 425 430

Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser  
 435 440 445

Cys Arg Ala Ser Gln Ser Val Ser Tyr Met Asn Trp Tyr Gln Gln Lys  
 450 455 460

Pro Gly Lys Ala Pro Lys Arg Trp Ile Tyr Asp Thr Ser Lys Val Ala

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465                      470                      475                      480

Ser Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr  
                                 485                      490                      495

Ser Leu Thr Ile Asn Ser Leu Glu Ala Glu Asp Ala Ala Thr Tyr Tyr  
                                 500                      505                      510

Cys Gln Gln Trp Ser Ser Asn Pro Leu Thr Phe Gly Gly Gly Thr Lys  
                                 515                      520                      525

Val Glu Ile Lys His His His His His His His His His His  
                                 530                      535                      540

<210> 20  
<211> 265  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Control (Anti-FHA) ScFv

<400> 20

Glu Leu Asp Ile Val Met Thr Gln Ala Pro Ala Ser Leu Ala Val Ser  
1                      5                      10                      15

Leu Gly Gln Arg Ala Thr Ile Ser Cys Arg Ala Ser Lys Ser Val Ser  
                                 20                      25                      30

Ser Ser Gly Tyr Asn Tyr Leu His Trp Tyr Gln Gln Lys Pro Gly Gln  
                                 35                      40                      45

Pro Pro Lys Leu Leu Ile Tyr Leu Ala Ser Asn Leu Glu Ser Gly Val  
                                 50                      55                      60

Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Asn  
65                      70                      75                      80

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Ile His Pro Val Glu Glu Glu Asp Ala Ala Thr Tyr Tyr Cys Gln His  
85 90 95

Ser Arg Glu Phe Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile  
100 105 110

Lys Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Gly Gly Ser Ser  
115 120 125

Arg Ser Ser Leu Glu Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val  
130 135 140

Lys Pro Gly Ala Ser Val Lys Ile Ser Cys Lys Thr Ser Gly Tyr Thr  
145 150 155 160

Phe Thr Gly Tyr Thr Met His Trp Val Arg Gln Ser His Gly Lys Ser  
165 170 175

Leu Glu Trp Ile Gly Gly Ile Asn Pro Lys Asn Gly Gly Ile Ile Tyr  
180 185 190

Asn Gln Lys Phe Gln Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser  
195 200 205

Ser Thr Ala Ser Met Glu Leu Arg Ser Leu Thr Ser Asp Asp Ser Ala  
210 215 220

Val Tyr Tyr Cys Ala Arg Arg Val Tyr Asp Asp Tyr Pro Tyr Tyr Tyr  
225 230 235 240

Ala Met Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Ala  
245 250 255

Lys Thr Thr Pro Pro Ser Val Thr Ser  
260 265

<210> 21  
 <211> 113  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Control (Anti-FHA) VL

<400> 21

Glu Leu Asp Ile Val Met Thr Gln Ala Pro Ala Ser Leu Ala Val Ser  
 1 5 10 15

Leu Gly Gln Arg Ala Thr Ile Ser Cys Arg Ala Ser Lys Ser Val Ser  
 20 25 30

Ser Ser Gly Tyr Asn Tyr Leu His Trp Tyr Gln Gln Lys Pro Gly Gln  
 35 40 45

Pro Pro Lys Leu Leu Ile Tyr Leu Ala Ser Asn Leu Glu Ser Gly Val  
 50 55 60

Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Asn  
 65 70 75 80

Ile His Pro Val Glu Glu Glu Asp Ala Ala Thr Tyr Tyr Cys Gln His  
 85 90 95

Ser Arg Glu Phe Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile  
 100 105 110

Lys

<210> 22  
 <211> 133  
 <212> PRT  
 <213> Artificial Sequence

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<220>

<223> Control (Anti-FHA) VH

<400> 22

Glu Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Ile Ser Cys Lys Thr Ser Gly Tyr Thr Phe Thr Gly Tyr  
20 25 30

Thr Met His Trp Val Arg Gln Ser His Gly Lys Ser Leu Glu Trp Ile  
35 40 45

Gly Gly Ile Asn Pro Lys Asn Gly Gly Ile Ile Tyr Asn Gln Lys Phe  
50 55 60

Gln Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Ser  
65 70 75 80

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

Ala Arg Arg Val Tyr Asp Asp Tyr Pro Tyr Tyr Tyr Ala Met Asp Tyr  
100 105 110

Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Ala Lys Thr Thr Pro  
115 120 125

Pro Ser Val Thr Ser  
130

<210> 23

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> Control (Anti-FHA) ScFv linker sequence

<400> 23

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Gly Gly Ser Ser Arg  
1 5 10 15

Ser Ser Leu

<210> 24

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Deca-His Tag sequence

<400> 24

His His His His His His His His His His  
1 5 10

<210> 25

<211> 786

<212> PRT

<213> Artificial Sequence

<220>

<223> FAP BiTE-P2A-RFP

<400> 25

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly  
1 5 10 15

Val His Ser Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val  
20 25 30

Ser Leu Gly Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Leu  
35 40 45

Leu Tyr Ser Arg Asn Gln Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys



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50

55

60

Pro Gly Gln Pro Pro Lys Leu Leu Ile Phe Trp Ala Ser Thr Arg Glu  
65 70 75 80

Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Phe Gly Thr Asp Phe  
85 90 95

Thr Leu Thr Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr  
100 105 110

Cys Gln Gln Tyr Phe Ser Tyr Pro Leu Thr Phe Gly Gln Gly Thr Lys  
115 120 125

Val Glu Ile Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
130 135 140

Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys  
145 150 155 160

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Thr Ser Arg Tyr Thr Phe  
165 170 175

Thr Glu Tyr Thr Ile His Trp Val Arg Gln Ala Pro Gly Gln Arg Leu  
180 185 190

Glu Trp Ile Gly Gly Ile Asn Pro Asn Asn Gly Ile Pro Asn Tyr Asn  
195 200 205

Gln Lys Phe Lys Gly Arg Val Thr Ile Thr Val Asp Thr Ser Ala Ser  
210 215 220

Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val  
225 230 235 240

Tyr Tyr Cys Ala Arg Arg Arg Ile Ala Tyr Gly Tyr Asp Glu Gly His

245

250

255

Ala Met Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly  
 260 265 270

Gly Gly Gly Ser Asp Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
 275 280 285

Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr  
 290 295 300

Phe Thr Arg Tyr Thr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly  
 305 310 315 320

Leu Glu Trp Ile Gly Tyr Ile Asn Pro Ser Arg Gly Tyr Thr Asn Tyr  
 325 330 335

Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Thr Thr Asp Lys Ser Thr  
 340 345 350

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
 355 360 365

Thr Tyr Tyr Cys Ala Arg Tyr Tyr Asp Asp His Tyr Cys Leu Asp Tyr  
 370 375 380

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Gly Thr Ser  
 385 390 395 400

Thr Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ala Asp Asp Ile Val  
 405 410 415

Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala  
 420 425 430

Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Tyr Met Asn Trp Tyr

435

440

445

Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Trp Ile Tyr Asp Thr Ser  
 450 455 460

Lys Val Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly  
 465 470 475 480

Thr Asp Tyr Ser Leu Thr Ile Asn Ser Leu Glu Ala Glu Asp Ala Ala  
 485 490 495

Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Leu Thr Phe Gly Gly  
 500 505 510

Gly Thr Lys Val Glu Ile Lys His His His His His His His His His  
 515 520 525

His Arg Arg Lys Arg Gly Ser Gly Ala Thr Asn Phe Ser Leu Leu Lys  
 530 535 540

Gln Ala Gly Asp Val Glu Glu Asn Pro Gly Pro Met Ser Glu Leu Ile  
 545 550 555 560

Lys Glu Asn Met His Met Lys Leu Tyr Met Glu Gly Thr Val Asn Asn  
 565 570 575

His His Phe Lys Cys Thr Ser Glu Gly Glu Gly Lys Pro Tyr Glu Gly  
 580 585 590

Thr Gln Thr Met Lys Ile Lys Val Val Glu Gly Gly Pro Leu Pro Phe  
 595 600 605

Ala Phe Asp Ile Leu Ala Thr Ser Phe Met Tyr Gly Ser Lys Ala Phe  
 610 615 620

Ile Asn His Thr Gln Gly Ile Pro Asp Phe Phe Lys Gln Ser Phe Pro

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625                      630                      635                      640

Glu Gly Phe Thr Trp Glu Arg Ile Thr Thr Tyr Glu Asp Gly Gly Val  
645                      650                      655

Leu Thr Ala Thr Gln Asp Thr Ser Phe Gln Asn Gly Cys Ile Ile Tyr  
660                      665                      670

Asn Val Lys Ile Asn Gly Val Asn Phe Pro Ser Asn Gly Pro Val Met  
675                      680                      685

Gln Lys Lys Thr Arg Gly Trp Glu Ala Asn Thr Glu Met Leu Tyr Pro  
690                      695                      700

Ala Asp Gly Gly Leu Arg Gly His Ser Gln Met Ala Leu Lys Leu Val  
705                      710                      715                      720

Gly Gly Gly Tyr Leu His Cys Ser Phe Lys Thr Thr Tyr Arg Ser Lys  
725                      730                      735

Lys Pro Ala Lys Asn Leu Lys Met Pro Gly Phe His Phe Val Asp His  
740                      745                      750

Arg Leu Glu Arg Ile Lys Glu Ala Asp Lys Glu Thr Tyr Val Glu Gln  
755                      760                      765

His Glu Met Ala Val Ala Lys Tyr Cys Asp Leu Pro Ser Lys Leu Gly  
770                      775                      780

His Arg  
785

<210> 26  
<211> 799  
<212> PRT  
<213> Artificial Sequence

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<220>

<223> Control (Anti-FHA) BiTE-P2A-RFP

<400> 26

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly  
1 5 10 15

Val His Ser Glu Leu Asp Ile Val Met Thr Gln Ala Pro Ala Ser Leu  
20 25 30

Ala Val Ser Leu Gly Gln Arg Ala Thr Ile Ser Cys Arg Ala Ser Lys  
35 40 45

Ser Val Ser Ser Ser Gly Tyr Asn Tyr Leu His Trp Tyr Gln Gln Lys  
50 55 60

Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr Leu Ala Ser Asn Leu Glu  
65 70 75 80

Ser Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe  
85 90 95

Thr Leu Asn Ile His Pro Val Glu Glu Glu Asp Ala Ala Thr Tyr Tyr  
100 105 110

Cys Gln His Ser Arg Glu Phe Pro Leu Thr Phe Gly Ala Gly Thr Lys  
115 120 125

Leu Glu Ile Lys Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Gly  
130 135 140

Gly Ser Ser Arg Ser Ser Leu Glu Val Gln Leu Gln Gln Ser Gly Pro  
145 150 155 160

Glu Leu Val Lys Pro Gly Ala Ser Val Lys Ile Ser Cys Lys Thr Ser  
165 170 175

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Gly Tyr Thr Phe Thr Gly Tyr Thr Met His Trp Val Arg Gln Ser His  
180 185 190

Gly Lys Ser Leu Glu Trp Ile Gly Gly Ile Asn Pro Lys Asn Gly Gly  
195 200 205

Ile Ile Tyr Asn Gln Lys Phe Gln Gly Lys Ala Thr Leu Thr Val Asp  
210 215 220

Lys Ser Ser Ser Thr Ala Ser Met Glu Leu Arg Ser Leu Thr Ser Asp  
225 230 235 240

Asp Ser Ala Val Tyr Tyr Cys Ala Arg Arg Val Tyr Asp Asp Tyr Pro  
245 250 255

Tyr Tyr Tyr Ala Met Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val  
260 265 270

Ser Ser Ala Lys Thr Thr Pro Pro Ser Val Thr Ser Gly Gly Gly Gly  
275 280 285

Ser Asp Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly  
290 295 300

Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Arg  
305 310 315 320

Tyr Thr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp  
325 330 335

Ile Gly Tyr Ile Asn Pro Ser Arg Gly Tyr Thr Asn Tyr Ala Asp Ser  
340 345 350

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

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Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Thr Tyr Tyr  
370 375 380

Cys Ala Arg Tyr Tyr Asp Asp His Tyr Cys Leu Asp Tyr Trp Gly Gln  
385 390 395 400

Gly Thr Thr Val Thr Val Ser Ser Gly Glu Gly Thr Ser Thr Gly Ser  
405 410 415

Gly Gly Ser Gly Gly Ser Gly Gly Ala Asp Asp Ile Val Leu Thr Gln  
420 425 430

Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser  
435 440 445

Cys Arg Ala Ser Gln Ser Val Ser Tyr Met Asn Trp Tyr Gln Gln Lys  
450 455 460

Pro Gly Lys Ala Pro Lys Arg Trp Ile Tyr Asp Thr Ser Lys Val Ala  
465 470 475 480

Ser Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr  
485 490 495

Ser Leu Thr Ile Asn Ser Leu Glu Ala Glu Asp Ala Ala Thr Tyr Tyr  
500 505 510

Cys Gln Gln Trp Ser Ser Asn Pro Leu Thr Phe Gly Gly Gly Thr Lys  
515 520 525

Val Glu Ile Lys His His His His His His His His His Arg Arg  
530 535 540

Lys Arg Gly Ser Gly Ala Thr Asn Phe Ser Leu Leu Lys Gln Ala Gly  
545 550 555 560

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Asp Val Glu Glu Asn Pro Gly Pro Met Ser Glu Leu Ile Lys Glu Asn  
565 570 575

Met His Met Lys Leu Tyr Met Glu Gly Thr Val Asn Asn His His Phe  
580 585 590

Lys Cys Thr Ser Glu Gly Glu Gly Lys Pro Tyr Glu Gly Thr Gln Thr  
595 600 605

Met Lys Ile Lys Val Val Glu Gly Gly Pro Leu Pro Phe Ala Phe Asp  
610 615 620

Ile Leu Ala Thr Ser Phe Met Tyr Gly Ser Lys Ala Phe Ile Asn His  
625 630 635 640

Thr Gln Gly Ile Pro Asp Phe Phe Lys Gln Ser Phe Pro Glu Gly Phe  
645 650 655

Thr Trp Glu Arg Ile Thr Thr Tyr Glu Asp Gly Gly Val Leu Thr Ala  
660 665 670

Thr Gln Asp Thr Ser Phe Gln Asn Gly Cys Ile Ile Tyr Asn Val Lys  
675 680 685

Ile Asn Gly Val Asn Phe Pro Ser Asn Gly Pro Val Met Gln Lys Lys  
690 695 700

Thr Arg Gly Trp Glu Ala Asn Thr Glu Met Leu Tyr Pro Ala Asp Gly  
705 710 715 720

Gly Leu Arg Gly His Ser Gln Met Ala Leu Lys Leu Val Gly Gly Gly  
725 730 735

Tyr Leu His Cys Ser Phe Lys Thr Thr Tyr Arg Ser Lys Lys Pro Ala  
740 745 750



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Lys Asn Leu Lys Met Pro Gly Phe His Phe Val Asp His Arg Leu Glu  
755 760 765

Arg Ile Lys Glu Ala Asp Lys Glu Thr Tyr Val Glu Gln His Glu Met  
770 775 780

Ala Val Ala Lys Tyr Cys Asp Leu Pro Ser Lys Leu Gly His Arg  
785 790 795

<210> 27

<211> 945

<212> DNA

<213> Artificial Sequence

<220>

<223> Human EpCAM DNA coding sequence

<400> 27

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| atggctccgc cgcaagtgct cgcctttgga ctgctcctgg ccgctgctac tgccaccttt  | 60  |
| gctgccgctc aggaagaatg cgtgtgcgaa aactacaaac tggcagtga ctgcttcgtg   | 120 |
| aacaataacc gccaatgccg gtgcaccagc gtgggcgcgc agaacactgt catctgcagc  | 180 |
| aagctggccg caaaatgcct ggtcatgaaa gcggagatga acggatcgaa gctgggtcgg  | 240 |
| cgcgctaagc cggaaggagc gctacaaaat aacgacgggc tgtacgatcc ggattgacgac | 300 |
| gaaagcggtc tgtttaaggc aaagcagtg aatgggacca gcatgtgttg gtgcgtgaac   | 360 |
| actgccggag tgcgccgcac tgacaaggat accgaaatta cgtgctcgga gcgcgtgaga  | 420 |
| acgtattgga tcatcatcga gttgaagcat aaagctagag agaagccgta cgatagcaag  | 480 |
| tccctgcgca ccgctctcca aaaagaaaatt accactagat accaactcga cccgaaattc | 540 |
| atcacttcaa tcctgtacga aaacaacgtg attacgatcg acctgggtgca gaactccagc | 600 |
| caaaagacgc agaacgacgt ggacattgca gacgtggctt actactttga aaaggacgtg  | 660 |
| aagggggaat cactatttca ttccaagaaa atggacctga ccgtcaacgg agagcagctc  | 720 |
| gacctggacc caggtcagac tctgatctac tacgtggacg agaaggcacc ggagttttcg  | 780 |

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atgcagggcc tgaaagccgg agtcatcgcc gtgacgtgg tggtggtgat tgccgtcgtc 840

gccgggatcg tgggtgctcgt gattagccgc aaaaagagaa tggctaagta tgaaaaggca 900

gagatcaagg aaatgggaga aatgcaccgc gaactcaacg catag 945

<210> 28

<211> 314

<212> PRT

<213> Artificial Sequence

<220>

<223> Human EpCAM amino acid sequence

<400> 28

Met Ala Pro Pro Gln Val Leu Ala Phe Gly Leu Leu Leu Ala Ala Ala  
1 5 10 15

Thr Ala Thr Phe Ala Ala Ala Gln Glu Glu Cys Val Cys Glu Asn Tyr  
20 25 30

Lys Leu Ala Val Asn Cys Phe Val Asn Asn Asn Arg Gln Cys Gln Cys  
35 40 45

Thr Ser Val Gly Ala Gln Asn Thr Val Ile Cys Ser Lys Leu Ala Ala  
50 55 60

Lys Cys Leu Val Met Lys Ala Glu Met Asn Gly Ser Lys Leu Gly Arg  
65 70 75 80

Arg Ala Lys Pro Glu Gly Ala Leu Gln Asn Asn Asp Gly Leu Tyr Asp  
85 90 95

Pro Asp Cys Asp Glu Ser Gly Leu Phe Lys Ala Lys Gln Cys Asn Gly  
100 105 110

Thr Ser Met Cys Trp Cys Val Asn Thr Ala Gly Val Arg Arg Thr Asp  
115 120 125

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Lys Asp Thr Glu Ile Thr Cys Ser Glu Arg Val Arg Thr Tyr Trp Ile  
130 135 140

Ile Ile Glu Leu Lys His Lys Ala Arg Glu Lys Pro Tyr Asp Ser Lys  
145 150 155 160

Ser Leu Arg Thr Ala Leu Gln Lys Glu Ile Thr Thr Arg Tyr Gln Leu  
165 170 175

Asp Pro Lys Phe Ile Thr Ser Ile Leu Tyr Glu Asn Asn Val Ile Thr  
180 185 190

Ile Asp Leu Val Gln Asn Ser Ser Gln Lys Thr Gln Asn Asp Val Asp  
195 200 205

Ile Ala Asp Val Ala Tyr Tyr Phe Glu Lys Asp Val Lys Gly Glu Ser  
210 215 220

Leu Phe His Ser Lys Lys Met Asp Leu Thr Val Asn Gly Glu Gln Leu  
225 230 235 240

Asp Leu Asp Pro Gly Gln Thr Leu Ile Tyr Tyr Val Asp Glu Lys Ala  
245 250 255

Pro Glu Phe Ser Met Gln Gly Leu Lys Ala Gly Val Ile Ala Val Ile  
260 265 270

Val Val Val Val Ile Ala Val Val Ala Gly Ile Val Val Leu Val Ile  
275 280 285

Ser Arg Lys Lys Arg Met Ala Lys Tyr Glu Lys Ala Glu Ile Lys Glu  
290 295 300

Met Gly Glu Met His Arg Glu Leu Asn Ala  
305 310

<210> 29  
 <211> 2283  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Human FAP DNA coding sequence

<400> 29  
 atgaagacct ggggtgaaaat cgtgttttga gtcgcaacca gcgccgtgct ggccctgttg 60  
 gtgatgtgca tcgtgctgcg cccgtcacgc gtgcataaca gcgaagaaaa caccatgaga 120  
 gctctgacgc taaaggacat cctgaatggc acttttttct ataagacttt cttcccgaat 180  
 tggattagcg ggcaggagta cctgcaccaa tcggcggata acaatatcgt gctctacaac 240  
 atcgaaactg gccagagcta caccatcctg tcgaatagaa ctatgaaatc ggtgaatgcg 300  
 tcgaactacg gacttagccc ggaccgccag ttcgtgtacc tagaatcgga ctacagcaag 360  
 ctgtggcggg acagctacac tgctacgtac tacatctacg acctgtcgaa tggcgagttc 420  
 gtgagaggaa acgaactccc ccgcccgatc caatacctgt gctggagccc tgtgggaagc 480  
 aagctggcgt acgtgtatca gaacaacatc tacctcaagc agaggccggg cgacccacct 540  
 ttccagatca cttttaacgg tcgggagaac aagattttca atggaatccc ggattgggtg 600  
 tacgaagaag agatgctggc gaccaaatat gcgctctggg ggtcgccaaa cggaataatt 660  
 ctagcatacg ccgagttcaa tgacaccgac atccccgtca tcgcctacag ctactacgga 720  
 gatgagcaat acccacgcac tattaatatc ccgtaccgga aagccggcgc taaaaatccg 780  
 gtcgtgcgga tcttcatcat cgacactacc tatccagctt acgtgggacc gcaagaggtc 840  
 cctgtgccag ccatgatcgc cagcagcgat tactacttct cctggctgac ttgggtcact 900  
 gacgagaggg tgtgcctcca atggctcaag cgcgtgcaga acgtgagcgt gctgtccatc 960  
 tgcgacttca gagaagattg gcaaacgtgg gactgtccga aaactcaaga gcatatcgag 1020  
 gagagcagaa ccggatgggc agggggggtt ttcgtgtcca ccccggtgtt cagctacgat 1080  
 gcgatctcgt actacaagat tttctccgat aaggacgggt acaaacatat ccactacatc 1140

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|                                                                    |      |
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| aaggacaccg tggagaatgc gatccaaatc actagcggaa aatgggaagc gattaacatt  | 1200 |
| ttccgggtga cgcaagactc attgttctat tcatccaatg aatttgaaga gtaccctggc  | 1260 |
| cggaggaaca tctaccgcat ctccatcgga tcataccac catcaaagaa gtgcgtgacc   | 1320 |
| tgccatctcc gcaaggagcg ctgccaatac tacaccgct ctttctccga ttacgcgaag   | 1380 |
| tactacgccc tgggtgtgcta cggcccgga atcccaatct cgaccctaca tgatgggcgc  | 1440 |
| accgaccagg agatcaaaat cctggaggaa aacaaggagc tcgaaaatgc tctgaaaaat  | 1500 |
| attcaactac cgaaggagga aatcaagaag ctggagggtg atgaaattac tctgtggtac  | 1560 |
| aaaatgatcc tgccgccaca gttcgaccgc tccaagaagt acccgctgct gatccagggtg | 1620 |
| tacggaggac cctgctcaca gtcggtgcgc tcagtgtttg ctgtgaattg gatcagctac  | 1680 |
| ctcgcacaa aggaggggat ggtcatcgcg cttgtggacg gaagaggtag tgcatccag    | 1740 |
| ggggacaaac tgctctacgc ggtgtaccgc aagctgggcg tctacgaggt ggaggaccaa  | 1800 |
| atcacggcgg tcagaaagt catcgagatg ggtttcatcg acgagaagag gatcgccatc   | 1860 |
| tggggctggt cgtacggagg ttacgtgtcg tctctgctc tggcgagcgg gactggattg   | 1920 |
| ttcaaagtgc gtatcgagc cgccccgtg tcgtcatggg aatactacgc ctcggtgtat    | 1980 |
| accgaacgct ttatgggact ccctactaaa gacgataacc tagagcacta caaaaactcg  | 2040 |
| acgggtgatgg cacgcgcaga gtactttcgc aatgtggatt acctcctgat ccacggaacc | 2100 |
| gccgatgata atgtccactt ccagaactca gcccgaatcg cgaaagccct ggtgaacgct  | 2160 |
| caagtggact ttcaagcaat gtggtattca gaccagaacc acggactatc cggcctatcg  | 2220 |
| actaatcacc tgtacacca tatgacccat ttccttaaac agtgtttcag cctgtccgat   | 2280 |
| tag                                                                | 2283 |

<210> 30

<211> 760

<212> PRT

<213> Artificial Sequence

<220>

<223> Human FAP amino acid sequence

&lt;400&gt; 30

Met Lys Thr Trp Val Lys Ile Val Phe Gly Val Ala Thr Ser Ala Val  
 1 5 10 15

Leu Ala Leu Leu Val Met Cys Ile Val Leu Arg Pro Ser Arg Val His  
 20 25 30

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

Asn Gly Thr Phe Ser Tyr Lys Thr Phe Phe Pro Asn Trp Ile Ser Gly  
 50 55 60

Gln Glu Tyr Leu His Gln Ser Ala Asp Asn Asn Ile Val Leu Tyr Asn  
 65 70 75 80

Ile Glu Thr Gly Gln Ser Tyr Thr Ile Leu Ser Asn Arg Thr Met Lys  
 85 90 95

Ser Val Asn Ala Ser Asn Tyr Gly Leu Ser Pro Asp Arg Gln Phe Val  
 100 105 110

Tyr Leu Glu Ser Asp Tyr Ser Lys Leu Trp Arg Tyr Ser Tyr Thr Ala  
 115 120 125

Thr Tyr Tyr Ile Tyr Asp Leu Ser Asn Gly Glu Phe Val Arg Gly Asn  
 130 135 140

Glu Leu Pro Arg Pro Ile Gln Tyr Leu Cys Trp Ser Pro Val Gly Ser  
 145 150 155 160

Lys Leu Ala Tyr Val Tyr Gln Asn Asn Ile Tyr Leu Lys Gln Arg Pro  
 165 170 175

Gly Asp Pro Pro Phe Gln Ile Thr Phe Asn Gly Arg Glu Asn Lys Ile

180

185

190

Phe Asn Gly Ile Pro Asp Trp Val Tyr Glu Glu Glu Met Leu Ala Thr  
 195 200 205

Lys Tyr Ala Leu Trp Trp Ser Pro Asn Gly Lys Phe Leu Ala Tyr Ala  
 210 215 220

Glu Phe Asn Asp Thr Asp Ile Pro Val Ile Ala Tyr Ser Tyr Tyr Gly  
 225 230 235 240

Asp Glu Gln Tyr Pro Arg Thr Ile Asn Ile Pro Tyr Pro Lys Ala Gly  
 245 250 255

Ala Lys Asn Pro Val Val Arg Ile Phe Ile Ile Asp Thr Thr Tyr Pro  
 260 265 270

Ala Tyr Val Gly Pro Gln Glu Val Pro Val Pro Ala Met Ile Ala Ser  
 275 280 285

Ser Asp Tyr Tyr Phe Ser Trp Leu Thr Trp Val Thr Asp Glu Arg Val  
 290 295 300

Cys Leu Gln Trp Leu Lys Arg Val Gln Asn Val Ser Val Leu Ser Ile  
 305 310 315 320

Cys Asp Phe Arg Glu Asp Trp Gln Thr Trp Asp Cys Pro Lys Thr Gln  
 325 330 335

Glu His Ile Glu Glu Ser Arg Thr Gly Trp Ala Gly Gly Phe Phe Val  
 340 345 350

Ser Thr Pro Val Phe Ser Tyr Asp Ala Ile Ser Tyr Tyr Lys Ile Phe  
 355 360 365

Ser Asp Lys Asp Gly Tyr Lys His Ile His Tyr Ile Lys Asp Thr Val

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370

375

380

Glu Asn Ala Ile Gln Ile Thr Ser Gly Lys Trp Glu Ala Ile Asn Ile  
385 390 395 400

Phe Arg Val Thr Gln Asp Ser Leu Phe Tyr Ser Ser Asn Glu Phe Glu  
405 410 415

Glu Tyr Pro Gly Arg Arg Asn Ile Tyr Arg Ile Ser Ile Gly Ser Tyr  
420 425 430

Pro Pro Ser Lys Lys Cys Val Thr Cys His Leu Arg Lys Glu Arg Cys  
435 440 445

Gln Tyr Tyr Thr Ala Ser Phe Ser Asp Tyr Ala Lys Tyr Tyr Ala Leu  
450 455 460

Val Cys Tyr Gly Pro Gly Ile Pro Ile Ser Thr Leu His Asp Gly Arg  
465 470 475 480

Thr Asp Gln Glu Ile Lys Ile Leu Glu Glu Asn Lys Glu Leu Glu Asn  
485 490 495

Ala Leu Lys Asn Ile Gln Leu Pro Lys Glu Glu Ile Lys Lys Leu Glu  
500 505 510

Val Asp Glu Ile Thr Leu Trp Tyr Lys Met Ile Leu Pro Pro Gln Phe  
515 520 525

Asp Arg Ser Lys Lys Tyr Pro Leu Leu Ile Gln Val Tyr Gly Gly Pro  
530 535 540

Cys Ser Gln Ser Val Arg Ser Val Phe Ala Val Asn Trp Ile Ser Tyr  
545 550 555 560

Leu Ala Ser Lys Glu Gly Met Val Ile Ala Leu Val Asp Gly Arg Gly



565

570

575

Thr Ala Phe Gln Gly Asp Lys Leu Leu Tyr Ala Val Tyr Arg Lys Leu  
 580 585 590

Gly Val Tyr Glu Val Glu Asp Gln Ile Thr Ala Val Arg Lys Phe Ile  
 595 600 605

Glu Met Gly Phe Ile Asp Glu Lys Arg Ile Ala Ile Trp Gly Trp Ser  
 610 615 620

Tyr Gly Gly Tyr Val Ser Ser Leu Ala Leu Ala Ser Gly Thr Gly Leu  
 625 630 635 640

Phe Lys Cys Gly Ile Ala Val Ala Pro Val Ser Ser Trp Glu Tyr Tyr  
 645 650 655

Ala Ser Val Tyr Thr Glu Arg Phe Met Gly Leu Pro Thr Lys Asp Asp  
 660 665 670

Asn Leu Glu His Tyr Lys Asn Ser Thr Val Met Ala Arg Ala Glu Tyr  
 675 680 685

Phe Arg Asn Val Asp Tyr Leu Leu Ile His Gly Thr Ala Asp Asp Asn  
 690 695 700

Val His Phe Gln Asn Ser Ala Gln Ile Ala Lys Ala Leu Val Asn Ala  
 705 710 715 720

Gln Val Asp Phe Gln Ala Met Trp Tyr Ser Asp Gln Asn His Gly Leu  
 725 730 735

Ser Gly Leu Ser Thr Asn His Leu Tyr Thr His Met Thr His Phe Leu  
 740 745 750

Lys Gln Cys Phe Ser Leu Ser Asp

755

760

<210> 31  
 <211> 571  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> CMV promoter sequence

<400> 31  
 agtaatcaat tacgggggtca ttagttcata gcccatatat ggagttccgc gttacataac 60  
 ttacggtaaaa tggcccgct ggctgaccgc ccaacgaccc ccgcccattg acgtcaataa 120  
 tgacgtatgt tcccatagta acgccaatag ggactttcca ttgacgtcaa tgggtggagt 180  
 atttacggta aactgcccac ttggcagtac atcaagtgt tcatatgcc agtacgcccc 240  
 ctattgacgt caatgacggt aaatggcccc cctggcatta tgcccagtac atgaccttat 300  
 gggactttcc tacttggcag tacatctacg tattagtcac cgctattacc atgctgatgc 360  
 ggttttggca gtacatcaat gggcgtggat agcggtttga ctacgggga tttccaagtc 420  
 tccaccccat tgacgtcaat gggagtttgt tttggcacca aaatcaacgg gactttccaa 480  
 aatgtcgtaa caactccgcc ccattgacgc aaatgggcgg taggcgtgta cgggtgggagg 540  
 tctatataag cagagctggt ttagtgaacc g 571

<210> 32  
 <211> 192  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> SV40 late polyadenylation sequence

<400> 32  
 cagacatgat aagatacatt gatgagtttg gacaaaccac aactagaatg cagtgaaaaa 60  
 aatgctttat ttgtgaaatt tgtgatgcta ttgctttatt tgtaaccatt ataagctgca 120  
 ataaacaagt taacaacaac aattgcattc attttatgtt tcaggttcag ggggagggtgt 180

gggagggtttt tt

192

&lt;210&gt; 33

&lt;400&gt; 33

000

&lt;210&gt; 34

&lt;211&gt; 34883

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; NG-601 (EnAd-CMV-EpCAMBiTE)

&lt;400&gt; 34

|                                                                     |     |
|---------------------------------------------------------------------|-----|
| tctatctata taatataacct tatagatgga atggtgccaa tatgtaaatg aggtgatttt  | 60  |
| aaaaagtgtg gatcgtgtgg tgattggctg tgggggttaac ggctaaaagg ggcgggtgcga | 120 |
| ccgtgggaaa atgacgtttt gtgggggtgg agtttttttg caagttgtcg cgggaaatgt   | 180 |
| gacgcataaa aaggcttttt tctcacggaa ctacttagtt ttcccacggg atttaacagg   | 240 |
| aaatgaggta gttttgaccg gatgcaagtg aaaattgttg attttcgcgc gaaaactgaa   | 300 |
| tgaggaagtg tttttctgaa taatgtggta tttatggcag ggtggagtat ttgttcaggg   | 360 |
| ccaggtagac tttgacccat tacgtggagg tttcgattac cgtgtttttt acctgaattt   | 420 |
| ccgcgtaccg tgtcaaagtc ttctgttttt acgtagggtgt cagctgatcg ctaggggtatt | 480 |
| tatacctcag ggtttgtgtc aagaggccac tcttgagtgc cagcgagaag agttttctcc   | 540 |
| tctgcgccgg cagtttaata ataaaaaaaaat gagagatttg cgatttctgc ctcaggaaat | 600 |
| aatctctgct gagactggaa atgaaatatt ggagcttgtg gtgcacgccc tgatgggaga   | 660 |
| cgatccggag ccacctgtgc agctttttga gcctcctacg cttcaggaac tgtatgattt   | 720 |
| agaggtagag ggatcggagg attctaata ggaagctgta aatggctttt ttaccgattc    | 780 |
| tatgctttta gctgctaata aagggttaga attagatccg cttttggaca cttttgatac   | 840 |
| tccaggggta attgtggaaa gcggtacagg tgtaagaaaa ttacctgatt tgagttccgt   | 900 |
| ggactgtgat ttgcactgct atgaagacgg gtttcctccg agtgatgagg aggaccatga   | 960 |

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| aaaggagcag tccatgcaga ctgcagcggg tgaggagtg aaggctgcca atgttggttt   | 1020 |
| tcagttggat tgcccggagc ttcctggaca tggctgtaag tcttgtgaat ttcacaggaa  | 1080 |
| aaatactgga gtaaaggaac tgttatgttc gctttgttat atgagaacgc actgccactt  | 1140 |
| tatttacagt aagtgtgttt aagttaaaat ttaaaggaat atgctgtttt tcacatgtat  | 1200 |
| attgagtgtg agttttgtgc ttcttattat aggtcctgtg tctgatgctg atgaatcacc  | 1260 |
| atctcctgat tctactacct cacctcctga gattcaagca cctgttcctg tggacgtgcg  | 1320 |
| caagcccatt cctgtgaagc ttaagcctgg gaaacgtcca gcagtggaaa aacttgagga  | 1380 |
| cttgttacag ggtggggacg gacctttgga cttgagtaca cggaacgctc caagacaata  | 1440 |
| agtgttccat atccgtgttt acttaagggtg acgtcaatat ttgtgtgaca gtgcaatgta | 1500 |
| ataaaaatat gttaactgtt cactggtttt tattgctttt tgggcgggga ctcaggtata  | 1560 |
| taagtagaag cagacctgtg tggtagctc ataggagctg gctttcatcc atggagggtt   | 1620 |
| gggccatttt ggaagacctt aggaagacta ggcaactgtt agagaacgct tcggacggag  | 1680 |
| tctccggttt ttggagattc tggttcgcta gtgaattagc tagggtagtt tttaggataa  | 1740 |
| aacaggacta taaacaagaa tttgaaaagt tgttggtaga ttgccagga ctttttgaag   | 1800 |
| ctcttaattt gggccatcag gttcacttta aagaaaaagt tttatcagtt ttagactttt  | 1860 |
| caaccccagg tagaactgct gctgctgtgg cttttcttac ttttatatta gataaatgga  | 1920 |
| tcccgagac tcatttcagc aggggatacg ttttggattt catagccaca gcattgtgga   | 1980 |
| gaacatggaa ggttcgcaag atgaggacaa tcttaggtta ctggccagtg cagcctttgg  | 2040 |
| gtgtagcggg aatcctgagg catccaccgg tcatgccagc ggttctggag gaggaacagc  | 2100 |
| aagaggacaa cccgagagcc ggcctggacc ctccagtgga ggaggcggag tagctgactt  | 2160 |
| gtctcctgaa ctgcaacggg tgcttactgg atctacgtcc actggacggg ataggggcgt  | 2220 |
| taagagggag agggcatcta gtggtactga tgctagatct gagttggctt taagtttaat  | 2280 |
| gagtcgcaga cgtcctgaaa ccatttggtg gcatgagggt cagaaaaggag gaagggatga | 2340 |
| agtttctgta ttgcaggaga aatattcact ggaacagggtg aaaacatgtt ggttggagcc | 2400 |

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| tgaggatgat tgggaggtgg ccattaaaaa ttatgccaaag atagctttga ggcctgataa | 2460 |
| acagtataag attactagac ggattaatat ccggaatgct tgttacatat ctggaaatgg  | 2520 |
| ggctgaggtg gtaatagata ctcaagacaa ggcagttatt agatgctgca tgatggatat  | 2580 |
| gtggcctggg gtagtcggta tggaagcagt aacttttgta aatgttaagt ttaggggaga  | 2640 |
| tggttataat ggaatagtgt ttatggccaa taccaaactt atattgcatg gttgtagctt  | 2700 |
| ttttggtttc aacaatacct gtgtagatgc ctggggacag gttagtgtac ggggatgtag  | 2760 |
| tttctatgcg tgttggattg ccacagctgg cagaaccaag agtcaattgt ctctgaagaa  | 2820 |
| atgcatattt caaagatgta acctgggcat tctgaatgaa ggcgaagcaa ggggccgcca  | 2880 |
| ctgcgcttct acagatactg gatgttttat tttgattaag ggaaatgcca gcgtaaagca  | 2940 |
| taacatgatt tgcggtgctt ccgatgagag gccttatcaa atgctcactt gtgctggtgg  | 3000 |
| gcattgtaat atgctggcta ctgtgcatat tgtttcccat caacgcaaaa aatggcctgt  | 3060 |
| ttttgatcac aatgtgatga cgaagtgtac catgcatgca ggtgggcgta gaggaatgtt  | 3120 |
| tatgccttac cagtgtaaaca tgaatcatgt gaaagtgttg ttggaaccag atgccttttc | 3180 |
| cagaatgagc ctaacaggaa tttttgacat gaacatgcaa atctggaaga tcctgaggta  | 3240 |
| tgatgatacg agatcgaggg tacgcgcatg cgaatgcgga ggcaagcatg ccaggttcca  | 3300 |
| gccggtgtgt gtagatgtga ctgaagatct cagaccggat catttggtta ttgcccgcac  | 3360 |
| tggagcagag ttcggatcca gtggagaaga aactgactaa ggtgagtatt gggaaaactt  | 3420 |
| tgggggtggga ttttcagatg gacagattga gtaaaaaattt gttttttctg tcttgagct | 3480 |
| gtcatgagtg gaaacgcttc ttttaagggg ggagtcttca gcccttatct gacagggcgt  | 3540 |
| ctcccatcct gggcaggagt tcgtcagaat gttatgggat ctactgtgga tggaagaccc  | 3600 |
| gtccaacccg ccaattcttc aacgctgacc tatgctactt taagtcttc acctttggac   | 3660 |
| gcagctgcag ctgccgccgc cgcttctgtt gccgctaaca ctgtgcttgg aatgggttac  | 3720 |
| tatggaagca tcatggctaa ttccacttcc tctaataacc cttctaccct gactcaggac  | 3780 |
| aagttacttg tccttttggc ccagctggag gctttgaccc aacgtctggg tgaactttct  | 3840 |

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|                                                                     |      |
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| cagcaggtgg tcgagttgcg agtacaaact gagtctgctg tcggcacggc aaagtctaaa   | 3900 |
| taaaaaaatc ccagaatcaa tgaataaata aacaagcttg ttgttgattt aaaatcaagt   | 3960 |
| gtttttattt catttttcgc gcacggtatg ccctagacca ccgatctcta tcattgagaa   | 4020 |
| ctcgggtgat tttttccagg atcctataga ggtgggattg aatgtttaga tacatgggca   | 4080 |
| ttaggccgtc tttgggggtg agatagctcc attgaaggga ttcattgctcc ggggtagtgt  | 4140 |
| tgtaaatacac ccagtcataa caaggctgca gtgcatgggtg ttgcacaata tcttttagaa | 4200 |
| gtaggctgat tgccacagat aagcccttgg ttaggtgtt taaaaaccgg ttgagctggg    | 4260 |
| atgggtgcat tcggggtgaa attatgtgca ttttggattg gatttttaag ttggcaatat   | 4320 |
| tgccgccaag atcccgtctt gggttcatgt tatgaaggac caccaagacg gtgtatccgg   | 4380 |
| tacatttagg aaatttatcg tgcagcttgg atggaaaagc gtggaaaaat ttggagacac   | 4440 |
| ccttgtgtcc tccaagattt tccatgcact catccatgat aatagcaatg gggccgtggg   | 4500 |
| cagcggcgcg ggcaaacacg ttccgtgggt ctgacacatc atagttatgt tcctgagtta   | 4560 |
| aatcatcata agccatttta atgaatttgg ggcggagagt accagattgg ggtatgaatg   | 4620 |
| ttccttcggg ccccgagca tagttcccct cacagatttg catttccaa gctttcagtt     | 4680 |
| ccgaggggtg aatcatgtcc acctgggggg ctatgaaaaa caccgtttct ggggcggggg   | 4740 |
| tgattaattg tgatgatagc aaatttctga gcaattgaga tttgccacat ccggtggggc   | 4800 |
| cataaatgat tccgattacg ggttgcaggt ggtagtttag ggaacggcaa ctgccgtctt   | 4860 |
| ctcgaagcaa gggggccacc tcgttcatca tttcccttac atgcatattt tcccgcacca   | 4920 |
| aatccattag gaggcgctct cctcctagt atagaagttc ttgtagtgag gaaaagttt     | 4980 |
| tcagcggttt cagaccgtca gccatgggca ttttggagag agtttgctgc aaaagttcta   | 5040 |
| gtctgttcca cagttcagtg atgtgttcta tggcatctcg atccagcaga cctcctcgtt   | 5100 |
| tcgcgggttt ggacggctcc tggaatagg tatgagacga tggcgtcca gcgtgccag      | 5160 |
| ggttcggtcc ttccagggtc tcagtgttcg agtcagggtt gtttccgtca cagtgaagg    | 5220 |
| gtgtgcgcct gcttgggcgc ttgccagggt gcgcttcaga ctcatcctgc tggtcgaaaa   | 5280 |

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|                                                                     |      |
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| gtatgcatct gcgccgcagg aggcgcaaac agtttcacat tccaccagcc aggttaaadc   | 5520 |
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| tgggggggta taaaaggggg cggttctttg ctcttcctca ctgtcttccg gatcgtgtc    | 5940 |
| caggaacgtc agctgttggg gtaggtatct cctctcgaag gcgggcatga cctctgcact   | 6000 |
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| tttcatgagg ttttcgtcca tctggtcaga aaacacaatt tttttattgt caagtttggg   | 6120 |
| ggcaaatgat ccatacaggg cgttggataa aagtttggca atggatcgca tggtttgggt   | 6180 |
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| tcgattatgc aaggtaatta aatccacact ggtggccacc tcgcctcgaa ggggttcatt   | 6360 |
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| gctgatggga gtgggggtcat ctaaggccat ttgccattct cgagctgcca gtgcgcgctc  | 6540 |
| atatgggtta aggggactgc cccatggcat gggatgggtg agtgcagagg catacatgcc   | 6600 |
| acagatgtca tagacgtaga tgggatcctc aaagatgcct atgtaggttg gatagcatcg   | 6660 |
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|                                                                    |      |
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| tacagagtct ctgacaaagt gggcataaga ttcttgaagc ttggttacca gttcggcggc  | 6900 |
| gacaagtacg tctagggcgc agtagtcaag tgtttcttga atgatgtcat aacctggttg  | 6960 |
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|                                                                    |      |
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| cttttgagg gcgtgcggga gggtcagata gtacttgatc tcaacgggtc cgttggtgga   | 8340 |
| gatgtcgatg gcttgcaggg ttccgtgtcc cttgggcgt accaccgtgc ccttgTTTT    | 8400 |
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| gcaccgggcg gcaggggcgg ctcgggaccc ggcggcattg ctggcagtgg tacgtcggcg  | 8520 |
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| aattggcccc tagggactgc acgcagagat ctgatcgtgt caagatccac gggatctgaa  | 9540 |
| aacctttcga cgaaagcgtc taaccagtca cagtcacaag gtaggctgag tacggcttct  | 9600 |

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| caagcattat cctgacatct agcaagatct ttgtagtagt cttgcatgag ccgttctacg  | 9840  |
| ggcacttctt cctcaccctt tctgccatgc atacgtgtga gtccaaatcc gcgcattggt  | 9900  |
| tgtaccagtg ccaagtcagc tacgactctt tcggcgagga tggcttgctg tacttgggta  | 9960  |
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| gtgtatttaa ggcgcaata ggcgcggtg tcaaagatgt aatcgttgca ggtgcgcacc    | 10140 |
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| gtagctggag cgccaggggc gaggtcttcc aacataaggc ggtgatagcc gtagatgtac  | 10260 |
| ctggacatcc aggtgattcc tgcggcggtg gtagaagccc gaggaaactc gcgtacgcgg  | 10320 |
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| tccgtagcct ggaggaacgt gaacgggttg ggtcgcggtg taccgggtt cgagacttgt   | 10500 |
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| gtcctatctt ttttttttgc cgctcagatg catcccgtgc tgcgacagat gcgccccaa   | 10680 |
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| gaaggactgg cacgtctagg tgcgccttca cccgagcggc atccgcgagt tcaactgaaa  | 10860 |
| aaagattctc gcgaggcgta tgtgccccaa cagaacctat ttagagacag aagcggcgag  | 10920 |
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| gaccgaagac gagtgttgcg ggacgaggat ttcgaagttg atgaaatgac agggatcagt  | 11040 |

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| gaagagcgta  | acttccaaaa | gtcttttaaat | aatcatgtgc  | gaaccctgat  | tgcccgcgaa  | 11160 |
| gaagttaccc  | ttggtttgat | gcatttgtgg  | gatttgatgg  | aagctatcat  | tcagaaccct  | 11220 |
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| actccatacg  | ttcccataga | caaggagggtg | aagatagatg  | ggttctacat  | gcgcatgacg  | 11520 |
| ctcaaggctt  | tgaccctgag | cgatgatctt  | gggggtgtatc | gcaatgacag  | aatgcatcgc  | 11580 |
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| ggaccgtatg  | ataacagatg | tacgcgaagc  | cgtgtctcag  | cgcgaaagggt | tccagcgtga  | 12240 |
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| tgagacagtg tcgataccct tggatcatgg aaatcccacc ctagtctta aaccggtcac   | 16440 |
| tttgacgcaa gtgttaccg taactccgcg aacagggtgt aaacgcgaag gtgaagattt   | 16500 |
| gtatcccact atgcaactga tggtagccaa acgccagaag ttggaggacg ttttggagaa  | 16560 |
| agtaaaagt gatccagata ttcaacctga ggttaaagt agaccatta agcaggtagc     | 16620 |
| gcctgggtctg ggggtacaaa ctgtagacat taagattccc actgaaagta tggaagtga  | 16680 |
| aactgaaccc gcaaagccta ctgccacctc cactgaagt caaacggatc catggatgcc   | 16740 |
| catgcctatt acaactgacg ccgccggtcc cactcgaaga tcccgcgaa agtacgggtcc  | 16800 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| agcaagtctg ttgatgcca attatgttgt acacccatct attattccta ctcctggta     | 16860 |
| ccgaggcact cgctactatc gcagccgaaa cagtacctcc cgccgtcgcc gcaagacacc   | 16920 |
| tgcaaatcgc agtcgtcgcc gtagacgcac aagcaaaccg actcccggcg ccctgggtgcg  | 16980 |
| gcaagtgtac cgcaatggta gtgcggaacc tttgacactg ccgctgctgc gttaccatcc   | 17040 |
| gagtatcatc acttaatcaa tgttgccgct gcctccttgc agatatggcc ctcacttgtc   | 17100 |
| gccttcgcgt tcccatcact ggttaccgag gaagaaactc gcgccgtaga agagggatgt   | 17160 |
| tgggacgcgg aatgcgacgc tacaggcgac ggctgtctat ccgcaagcaa ttgcgggggtg  | 17220 |
| gttttttacc agccttaatt ccaattatcg ctgctgcaat tggcgcgata ccaggcatag   | 17280 |
| cttccgtggc gggttcaggcc tcgcaacgac attgacattg gaaaaaacg tataaataaa   | 17340 |
| aaaaaaaaa tacaatggac tctgacactc ctggtcctgt gactatgttt tcttagagat    | 17400 |
| ggaagacatc aatttttcat ccttggctcc gcgacacggc acgaagccgt acatgggcac   | 17460 |
| ctggagcgac atcggcacga gccaaactgaa cggggggcgcc ttcaattgga gcagtatctg | 17520 |
| gagcgggctt aaaaattttg gctcaaccat aaaaacatac gggaacaaag cttggaacag   | 17580 |
| cagtacagga caggcgctta gaaataaact taaagaccag aacttccaac aaaaagtagt   | 17640 |
| cgatgggata gcttccggca tcaatggagt ggtagatttg gctaaccagg ctgtgcagaa   | 17700 |
| aaagataaac agtcgttttg acccgccgcc agcaacccca ggtgaaatgc aagtggagga   | 17760 |
| agaaattcct ccgccagaaa aacgaggcga caagcgtccg cgtcccgatt tggaagagac   | 17820 |
| gctggtgacg cgcgtagatg aaccgccttc ttatgaggaa gcaacgaagc ttggaatgcc   | 17880 |
| caccactaga ccgatagccc caatggccac cggggtgatg aaaccttctc agttgcatcg   | 17940 |
| acccgtcacc ttggatttgc cccctcccc tgctgtctact gctgtacccg cttctaagcc   | 18000 |
| tgctgctgcc ccgaaaccag tcgccgtagc caggtcacgt cccggggggcg ctcctcgtcc  | 18060 |
| aaatgcgcac tggcaaaaata ctctgaacag catcgtgggt ctaggcgtgc aaagtgtaaa  | 18120 |
| acgccgtcgc tgcttttaat taaatatgga gtagcgctta acttgccat ctgtgtatat    | 18180 |
| gtgtcattac acgccgtcac agcagcagag gaaaaaagga agaggtcgtg cgtcgacgct   | 18240 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| gagttacttt caagatggcc accccatcga tgctgcccc atgggcatac atgcacatcg   | 18300 |
| ccggacagga tgcttcggag tacctgagtc cgggtctggt gcagttcgcc cgcgccacag  | 18360 |
| acacctactt caatctggga aataagttta gaaatccac cgtagcgccg acccacgatg   | 18420 |
| tgaccaccga ccgtagccag cggctcatgt tgcgcttcgt gcccgttgac cgggaggaca  | 18480 |
| atacatactc ttacaaagtg cggtagacccc tggccgtggg cgacaacaga gtgctggata | 18540 |
| tggccagcac gttctttgac attaggggtg tggttgacag aggtcccagt ttcaaaccct  | 18600 |
| attctggtac ggcttacaac tccctggctc ctaaaggcgc tccaaataca tctcagtgga  | 18660 |
| ttgcagaagg tgtaaaaaat acaactgggtg aggaacacgt aacagaagag gaaaccaata | 18720 |
| ctactactta cacttttggc aatgctcctg taaaagctga agctgaaatt acaaaagaag  | 18780 |
| gactcccagt aggttttgaa gtttcagatg aagaaagtaa accgatttat gctgataaaa  | 18840 |
| catatcagcc agaacctcag ctgggagatg aaacttggac tgaccttgat ggaaaaaccg  | 18900 |
| aaaagtatgg aggcagggtc ctcaaaccgc atactaagat gaaaccatgc tacgggtcct  | 18960 |
| ttgccaaacc tactaatgtg aaaggcggtc aggcaaaaca aaaaacaacg gagcagccaa  | 19020 |
| atcagaaagt cgaatatgat atcgacatgg agttttttga tgcggcatcg cagaaaacaa  | 19080 |
| acttaagtcc taaaattgtc atgtatgcag aaaatgtaaa tttggaaact ccagacactc  | 19140 |
| atgtagtgta caaacctgga acagaagaca caagttccga agctaatttg ggacaacaat  | 19200 |
| ctatgccccaa cagacccaac tacattggct tcagagataa ctttattgga cttatgtact | 19260 |
| ataacagtac tggtaacatg ggggtgctgg ctggtcaagc gtctcagtta aatgcagtgg  | 19320 |
| ttgacttgca ggacagaaac acagaacttt cttaccaact cttgcttgac tctctgggcg  | 19380 |
| acagaaccag atacttttagc atgtggaatc aggctgtgga cagttatgat cctgatgtac | 19440 |
| gtgttattga aaatcatggt gtggaagatg aacttcccaa ctactgtttt cactggacg   | 19500 |
| gcataggtgt tccaacaacc agttacaaat caatagttcc aaatggagac aatgcgccta  | 19560 |
| attggaagga acctgaagta aatggaacaa gtgagatcgg acagggtaat ttgtttgcca  | 19620 |
| tggaaattaa ccttcaagcc aatctatggc gaagtttcct ttattccaat gtggctctat  | 19680 |



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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| atctcccaga ctcgtacaaa tacaccccggt ccaatgtcac tcttccagaa aacaaaaaca | 19740 |
| cctacgacta catgaacggg cgggtgggtgc cgccatctct agtagacacc tatgtgaaca | 19800 |
| ttggtgccag gtggtctctg gatgccatgg acaatgtcaa cccattcaac caccaccgta  | 19860 |
| acgctggctt gcgttaccga tccatgcttc tgggtaacgg acgttatgtg cctttccaca  | 19920 |
| tacaagtgcc tcaaaaattc ttcgctgtta aaaacctgct gcttctccca ggctcctaca  | 19980 |
| cttatgagtg gaactttagg aaggatgtga acatggttct acagagttcc ctcggtaacg  | 20040 |
| acctgcgggt agatggcgcc agcatcagtt tcacgagcat caacctctat gctacttttt  | 20100 |
| tcccatggc tcacaacacc gcttccaccc ttgaagccat gctgcggaat gacaccaatg   | 20160 |
| atcagtcatt caacgactac ctatctgcag ctaacatgct ctacccatt cctgccaatg   | 20220 |
| caaccaatat tcccatttcc attccttctc gcaactgggc ggctttcaga ggctgggtcat | 20280 |
| ttaccagact gaaaacaaa gaaactccct ctttggggtc tggatttgac ccctactttg   | 20340 |
| tctattctgg ttctattccc tacctggatg gtaccttcta cctgaaccac acttttaaga  | 20400 |
| aggtttccat catgtttgac tcttcagtga gctggcctgg aaatgacagg ttactatctc  | 20460 |
| ctaacgaatt tgaaataaag cgcactgtgg atggcgaagg ctacaacgta gcccaatgca  | 20520 |
| acatgaccaa agactggttc ttggtacaga tgctcgccaa ctacaacatc ggctatcagg  | 20580 |
| gcttctacat tccagaagga taaaaagatc gcatgtattc atttttcaga aacttccagc  | 20640 |
| ccatgagcag gcagggtggt gatgaggtca attacaaaga cttcaaggcc gtcgccatac  | 20700 |
| cctaccaaca caacaactct ggctttgtgg gttacatggc tccgaccatg cgccaaggtc  | 20760 |
| aaccctatcc cgctaactat ccctatccac tcattggaac aactgccgta aatagtgtta  | 20820 |
| cgcagaaaaa gttcttgtgt gacagaacca tgtggcgcat accgttctcg agcaacttca  | 20880 |
| tgtctatggg ggcccttaca gacttgggac agaatatgct ctatgccaac tcagctcatg  | 20940 |
| ctctggacat gacctttgag gtggatccca tggatgagcc caccctgctt tatcttctct  | 21000 |
| tcgaagtttt cgacgtggtc agagtgcac agccacaccg cggcatcatc gaggcagtct   | 21060 |
| acctgcgtac accgttctcg gccggtaacg ctaccacgta agaagcttct tgcttcttgc  | 21120 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| aaatagcagc tgcaaccatg gcctgcggat cccaaaacgg ctccagcgag caagagctca   | 21180 |
| gagccattgt ccaagacctg gggtgcggac cctatTTTTT gggaacctac gataagcgct   | 21240 |
| tcccggggtt catggcccc gataagctcg cctgtgccat tgtaaatacg gccggacgtg    | 21300 |
| agacgggggg agagcactgg ttggctttcg gttggaaccc acgttctaac acctgctacc   | 21360 |
| TTTTgatcc ttttggattc tcggatgatc gtctcaaaca gatttaccag tttgaatatg    | 21420 |
| agggtctcct gcgccgcagc gctcttgcta ccaaggaccg ctgtattacg ctggaaaaat   | 21480 |
| ctaccagac cgtgcagggt ccccgttctg ccgcctgcgg acttttctgc tgcattgtcc    | 21540 |
| ttcacgcctt tgtgactgg cctgaccgtc ccatggacgg aaaccccacc atgaaattgc    | 21600 |
| taactggagt gccaaacaac atgcttcatt ctctaaagt ccagcccacc ctgtgtgaca    | 21660 |
| atcaaaaagc actctaccat tttcttaata cccattcgcc ttatTTTctgc tcccatcgta  | 21720 |
| cacacatcga aagggccact gcgttcgacc gtatggatgt tcaataatga ctcatgtaaa   | 21780 |
| caacgtgttc aataaacatc actttatTTT tttacatgta tcaaggctct gcattactta   | 21840 |
| tttatttaca agtcgaatgg gttctgacga gaatcagaat gacccgcagg cagtgatacg   | 21900 |
| ttgcggaact gatacttggg ttgccacttg aattcgggaa tcaccaactt gggaaccggt   | 21960 |
| atatcgggca ggatgtcact ccacagcttt ctggtcagct gcaaagctcc aagcagggtca  | 22020 |
| ggagccgaaa tcttgaaaac acaattagga ccagtgcTTT gagcgcgaga gttgcggtac   | 22080 |
| accggattgc agcactgaaa caccatcagc gacggatgtc tcacgcttgc cagcacgggtg  | 22140 |
| ggatctgcaa tcatgcccac atccagatct tcagcattgg caatgctgaa cggggtcac    | 22200 |
| ttgcaggctc gcctacccat ggcgggcacc caattaggct tgtggttgca atcgcagtc    | 22260 |
| aggggggatca gtatcatctt ggccctgatcc tgtctgattc ctggatacac ggctctcatg | 22320 |
| aaagcatcat attgcttgaa agcctgctgg gctttactac cctcggtata aaacatcccg   | 22380 |
| caggacctgc tcgaaaactg gttagctgca cagccggcat cattcacaca gcagcgggcg   | 22440 |
| tcattgttag ctatttgcac cacacttctg cccagcgggt tttgggtgat tttggttcgc   | 22500 |
| tcgggattct cctttaaggc tcgttgtccg ttctcgctgg ccacatccat ctcgataatc   | 22560 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| tgctccttct gaatcataat attgccatgc aggcacttca gcttgccctc ataatcattg  | 22620 |
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| aaagaatgta tcattccctg cagaaatctt cccatcatcg tgctcagtgt cttgtgacta  | 22740 |
| gtgaaagtta actggatgcc tcggtgctcc tcgtttacgt actggtgaca gatgcgcttg  | 22800 |
| tattgttcgt gttgctcagg cattagttta aaagagggtc taagttcgtt atccagcctg  | 22860 |
| tacttctcca tcagcagaca catcacttcc atgcctttct cccaagcaga caccaggggc  | 22920 |
| aagctaatacg gattcttaac agtgcaggca gcagctcctt tagccagagg gtcattctta | 22980 |
| gcgatcttct caatgcttct tttgccatcc ttctcaacga tgcgcacggg cgggtagctg  | 23040 |
| aaacccactg ctacaagttg cgcctcttct ctttcttctt cgctgtcttg actgatgtct  | 23100 |
| tgcatgggga tatgtttggt cttccttggc ttcttttttg ggggtatcgg aggaggagga  | 23160 |
| ctgtcgctcc gttccggaga caggaggat tgtgacgttt cgctcaccat taccaactga   | 23220 |
| ctgtcggtag aagaacctga cccacacagg cgacagggtg ttctcttcgg gggcagaggt  | 23280 |
| ggaggcgatt gcgaagggtc gcggtccgac ctggaaggcg gatgactggc agaaccctt   | 23340 |
| ccgcgttcgg ggggtgtgctc cctgtggcgg tcgcttaact gatttccttc gcggctggcc | 23400 |
| attgtgttct cctaggcaga gaaacaacag acatggaaac tcagccattg ctgtcaacat  | 23460 |
| cgccacgagt gccatcacat ctgctctca gcgacgagga aaaggagcag agcttaagca   | 23520 |
| ttccaccgcc cagtcttgcc accacctcta ccctagaaga taaggaggtc gacgcatctc  | 23580 |
| atgacatgca gaataaaaaa gcgaaagagt ctgagacaga catcgagcaa gacccgggct  | 23640 |
| atgtgacacc ggtggaacac gaggaagagt tgaaacgctt tctagagaga gaggatgaaa  | 23700 |
| actgccccaa acaacgagca gataactatc accaagatgc tggaaatagg gatcagaaca  | 23760 |
| ccgactacct catagggtt gacggggaag acgcgctcct taaacatcta gcaagacagt   | 23820 |
| cgctcatagt caaggatgca ttattggaca gaactgaagt gcccatcagt gtggaagagc  | 23880 |
| tcagccgcgc ctacgagctt aacctctttt cacctcgtac tcccccaaa cgtcagccaa   | 23940 |
| acggcacctg cgagccaaat cctcgcttaa acttttatcc agcttttgct gtgccagaag  | 24000 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| tactggctac ctatcacatc ttttttaaaa atcaaaaaat tccagtctcc tgccgcgcta  | 24060 |
| atcgcacccg cgccgatgcc ctactcaatc tgggacctgg ttcacgctta cctgatatag  | 24120 |
| cttccttgga agaggttcca aagatcttcg agggctctggg caataatgag actcgggccg | 24180 |
| caaatgctct gcaaaaggga gaaaatggca tggatgagca tcacagcggt ctggtggaat  | 24240 |
| tggaaggcga taatgccaga ctgcgagtac tcaagcgaag catcgaggtc acacacttcg  | 24300 |
| catatcccg cgtcaacctg ccccttaaag tcatgacggc ggcatgagac cagttactca   | 24360 |
| ttaagcgcgc aagtccccct tcagaagaca tgcagacccc agatgcctgt gatgagggtta | 24420 |
| aaccagtggc cagtgatgag cagctaaccg gatggctggg caccgactct cccagggtt   | 24480 |
| tggaagagcg tcgcaagctt atgatggccg tgggtgctggt taccgtagaa ctagagtgtc | 24540 |
| tccgacgttt ctttaccgat tcagaaacct tgcgcaaact cgaagagaat ctgcactaca  | 24600 |
| cttttagaca cggctttgtg cggcaggcat gcaagatatc taacgtggaa ctcaccaacc  | 24660 |
| tggtttccta catgggtatt ctgcatgaga atcgccctagg acaaagcgtg ctgcacagca | 24720 |
| ccctgaagg ggaagcccg cgtgattaca tccgcgattg tgtctatctg tacctgtgcc    | 24780 |
| acacgtggca aaccggcatg ggtgtatggc agcaatgttt agaagaacag aacttgaaag  | 24840 |
| agcttgacaa gctcttacag aaatctctta aggttctgtg gacagggttc gacgagcgca  | 24900 |
| ccgtcgcttc cgacctggca gacctcatct tcccagagcg tctcagggtt actttgcgaa  | 24960 |
| acggattgcc tgactttatg agccagagca tgcttaacaa ttttcgctct ttcaccttg   | 25020 |
| aacgtccgg tatcctgccc gccacctgct gcgcactgcc ctccgacttt gtgcctctca   | 25080 |
| cctaccgcga gtgcccccg ccgctatgga gtcactgcta cctgttccgt ctggccaact   | 25140 |
| atctctccta ccactcggat gtgatcgagg atgtgagcgg agacggcttg ctggagtgtc  | 25200 |
| actgccgctg caatctgtgc acgccccacc ggtccctagc ttgcaacccc cagttgatga  | 25260 |
| gcgaaacca gataataggc acctttgaat tgcaaggccc cagcagccaa ggcatgggt    | 25320 |
| cttctcctgg gcaaagtta aaactgaccc cgggactgtg gacctccgcc tacttgcgca   | 25380 |
| agtttgctcc ggaagattac caccctatg aaatcaagtt ctatgaggac caatcacagc   | 25440 |

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|--------------------------------------------------------------------|-------|
| ctccaaaggc cgaactttcg gcctgcgtca tcacccaggg ggcaattctg gcccatttgc  | 25500 |
| aagccatcca aaaatccccgc caagaatttc tactgaaaaa gggtaagggg gtctaccttg | 25560 |
| acccccagac cggcgaggaa ctcaacacaa ggttccctca ggatgtccca acgacgagaa  | 25620 |
| aacaagaagt tgaagggtgca gccgccgccc ccagaagata tggaggaaga ttgggacagt | 25680 |
| caggcagagg aggcggagga ggacagtctg gaggacagtc tggaggaaga cagtttggag  | 25740 |
| gaggaaaacg aggaggcaga ggaggtggaa gaagtaaccg ccgacaaaca gttatcctcg  | 25800 |
| gctgcggaga caagcaacag cgctaccatc tccgctccga gtcgaggaac ccggcggcgt  | 25860 |
| cccagcagta gatgggacga gaccggacgc ttcccgaacc caaccagcgc ttccaagacc  | 25920 |
| ggtaagaagg atcggcaggg atacaagtcc tggcgggggc ataagaatgc catcatctcc  | 25980 |
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| ggggtgaact ttccgcgcaa tgttttgcat tactaccgtc acctccacag cccctactat  | 26100 |
| agccagcaaa tcccggcagt ctcgacagat aaagacagcg gcggcgacct ccaacagaaa  | 26160 |
| accagcagcg gcagttagaa aatacacaac aagtgcagca acaggaggat taaagattac  | 26220 |
| agccaacgag ccagcgcaaa cccgagagtt aagaaatcgg atctttccaa ccctgtatgc  | 26280 |
| catcttccag cagagtcggg gtcaagagca ggaactgaaa ataaaaaacc gatctctgcg  | 26340 |
| ttcgctcacc agaagttggt tgtatcacia gagcgaagat caacttcagc gcactctcga  | 26400 |
| ggacgccgag gctctcttca acaagtactg cgcgctgact cttaaagagt aggcagcgac  | 26460 |
| cgcgcttatt caaaaaaggc gggaattaca tcatcctcga catgagtaaa gaaattccca  | 26520 |
| cgccttacat gtggagttat caaccccaaa tgggattggc ggcaggcgcc tcccaggact  | 26580 |
| actccacccg catgaattgg ctcagcgccg ggccttctat gatttctcga gttaatgata  | 26640 |
| tacgcgcta ccgaaaccaa atacttttgg aacagtcagc tcttaccacc acgccccgcc   | 26700 |
| aacaccttaa tcccagaaat tggcccgccg ccctagtgtg ccaggaaagt cccgctccca  | 26760 |
| ccactgtatt acttctcga gacgcccagg ccgaagtcca aatgactaat gcaggtgcgc   | 26820 |
| agttagctgg cggctccacc ctatgtcgtc acaggcctcg gcataatata aaacgcctga  | 26880 |

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|--------------------------------------------------------------------|-------|
| tgatcagagg ccgaggatc cagctcaacg acgagtcggt gagctctccg cttggtctac   | 26940 |
| gaccagacgg aatctttcag attgccggct gcgggagatc ttccttcacc cctcgtcagg  | 27000 |
| ctgttctgac tttggaaagt tcgtcttcgc aaccccgctc gggcggaatc gggaccgttc  | 27060 |
| aatttgtgga ggagtttact ccctctgtct acttcaaccc cttctccgga tctcctgggc  | 27120 |
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| ctttcgtgc tttgcccggg aactcattga gttcatctac ttcgaactcc ccaaggatca   | 27300 |
| ccctcaaggt ccggcccacg gagtgcggat ttctatcgaa ggcaaaaatag actctcgctt | 27360 |
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| tggaagcggg ccttgtagtg ctaggaattc ttgcgggtgg gcttggtgatt attctttgct | 27780 |
| acctatacac accttgcttc actttcttag tgggtgtgtg gtattggttt aaaaaatggg  | 27840 |
| gcccatacta gtcttgcttg ttttactttc gcttttggaa ccgggttctg ccaattacga  | 27900 |
| tccatgtcta gacttcgacc cagaaaactg cacacttact tttgcacccg acacaagccg  | 27960 |
| catctgtgga gttcatcgcc tctcttacga acttggcccc caacgacaaa aatttacctg  | 28020 |
| catggtggga atcaaccca tagttatcac ccagcaaagt ggagatacta agggttgcat   | 28080 |
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| aagagacctg ctaccaatga attaaaaaat gattaataaa aaatcactta cttgaaatca  | 28200 |
| gcaataaggt ctctgttgaa attttctccc agcagcacct cacttcctc ttcccaactc   | 28260 |
| tgggtattcta aaccccgctc agcggcatac tttctccata ctttaaaggg gatgtcaa   | 28320 |

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|                                                                     |       |
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| ccccctttata aaccaggggt ttattttcccc aaatggcttc acacaaagcc caaacggagt | 28500 |
| tcttacttta aaatgtttaa cccactaac aaccacaggc ggatctctac agctaaaagt    | 28560 |
| gggaggggga cttacagtgg atgacaccaa cggttttttg aaagaaaaca taagtgccac   | 28620 |
| cacaccactc gttaagactg gtcactctat aggtttacca ctaggagccg gattgggaac   | 28680 |
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| ttgcattgat gacaatatta acaccttatg gacaggagtc aacccaccg aagccaactg    | 28800 |
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| ctgacaaaata aagtttgca tcgccagggg ctcccgcag atctagtaat caattacggg    | 29400 |
| gtcattagtt catagcccat atatggagtt ccgcgttaca taacttacgg taaatggccc   | 29460 |
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| ccacttggca gtacatcaag tgtatcatat gccaagtacg cccctattg acgtcaatga    | 29640 |
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|                                                                    |       |
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| cgccccattg acgcaaattg gcggtaggcg tgtacgggtg gaggtctata taagcagagc  | 29940 |
| tggttttagtg aaccgtcaga tcagatcttt gtcgatccta ccatccactc gacacacccg | 30000 |
| ccagcggccg ctgccaagct tccgagctct cgaattcaaa ggaggtagcc accatgggat  | 30060 |
| ggagctgcat catcctattc ctcgtggcga cggccactgg agtgcatagc gaactgggtga | 30120 |
| tgactcagtc cccgtcatcc ctgacgggtga ccgccggcga gaaggcacc atgtcgtgca  | 30180 |
| agtcctcgca aagcctgctt aacagcggca accagaaaaa ctacctcacg tggatcagc   | 30240 |
| aaaagccagg tcaaccccca aaactgctca tctactgggc gagcaccgc gagtcggggg   | 30300 |
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|                                                                    |       |
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| cttcagggtgt cccggctaga ttctcaggat cgggatcagg aacggactac tccctgacca | 31500 |
| tcaattcact ggaagcagaa gatgcggcca cctactactg tcagcagtgg tcctccaacc  | 31560 |
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| atcaccatta ggctagcttg actgactgag atacagcgta ctttcagctc acagacatga  | 31680 |
| taagatacat tgatgagttt ggacaaacca caactagaat gcagtgaaaa aaatgcttta  | 31740 |
| tttgtgaaat ttgtgatgct attgctttat ttgtaaccat tataagctgc aataaacaag  | 31800 |
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| ataaaattaa tgacgttccc tcaaaaacac actaccacac tacatgatct cttttggcat  | 32580 |
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|                                                                    |       |
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| ctcaggattt agaaacatat cccagggaat aggaagctct tgcagaacag taaagctggc  | 32880 |
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| gagaggagag ggaagagacg gaagaaccat gttaatTTTT attccaaacg atctcgcagt  | 33360 |
| acttcaaatt gtagatcgcg cagatggcat ctctcgcccc cactgtgttg gtgaaaaagc  | 33420 |
| acagctagat caaaagaaat gcgattttca aggtgctcaa cggtagcttc cagcaaagcc  | 33480 |
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|                                             |                       |       |
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| gaccctcgta aaacctgtca tcatgattaa acaacagcac | cgaaagtcc tcgcggtgac  | 34260 |
| cagcatgaat aattcttgat gaagcataca atccagacat | gtagcatca gttaacgaga  | 34320 |
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| cccctcgagg atacaaagta aaaggcacag gagaataaaa | aatataatta tttctctgct | 34440 |
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| tggcttacca gacaaagtac agcgggcaca caaagcaca  | gctctaaagt gactctccaa | 34560 |
| cctctccaca atatatatat acacaagccc taaactgacg | taatgggagt aaagtgtaaa | 34620 |
| aaatcccgcc aaaccaaca cacaccccg aactgcgtca   | ccagggaata gtacagtttc | 34680 |
| acttccgcaa tccaacagg cgtaacttcc tctttctcac  | ggtacgtgat atcccactaa | 34740 |
| cttgcaacgt cattttccca cggtcgcacc gcccctttta | gccgttaacc ccacagccaa | 34800 |
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<211> 34204

<212> DNA

<213> Artificial Sequence

<220>

<223> NG-602 (EnAd-SA-EpCAMBiTE)

<400> 35

|                                              |                        |     |
|----------------------------------------------|------------------------|-----|
| tctatctata taatataacct tatagatgga atggcgccaa | tatgtaaatg aggtgatttt  | 60  |
| aaaaagtgtg gatcgtgtgg tgattggctg tgggggttaac | ggctaaaagg ggcgggtgcga | 120 |
| ccgtgggaaa atgacgtttt gtgggggtgg agtttttttg  | caagttgtcg cgggaaatgt  | 180 |
| gacgcataaa aaggcttttt tctcacggaa ctacttagtt  | ttcccacggg atttaacagg  | 240 |
| aaatgaggta gttttgaccg gatgcaagtg aaaattgttg  | attttcgcgc gaaaactgaa  | 300 |

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|                                                                     |      |
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| ccgcgtaccg tgtcaaagtc ttctgttttt acgtagggtgt cagctgatcg ctaggggtatt | 480  |
| tatacctcag ggtttgtgtc aagaggccac tcttgagtgc cagcgagaag agttttctcc   | 540  |
| tctgcgccgg cagtttaata ataaaaaaaaat gagagatttg cgatttctgc ctcaggaaat | 600  |
| aatctctgct gagactggaa atgaaatatt ggagcttgtg gtgcacgccc tgatgggaga   | 660  |
| cgatccggag ccacctgtgc agctttttga gcctcctacg cttcaggaac tgtatgattt   | 720  |
| agaggtagag ggatcggagg attctaataa ggaagctgta aatggctttt ttaccgattc   | 780  |
| tatgctttta gctgctaata aagggtaga attagatccg cttttggaca cttttgatac    | 840  |
| tccaggggta attgtggaaa gcggtacagg tgtaagaaaa ttacctgatt tgagttccgt   | 900  |
| ggactgtgat ttgcactgct atgaagacgg gtttcctccg agtgatgagg aggaccatga   | 960  |
| aaaggagcag tccatgcaga ctgcagcggg tgagggagtg aaggctgcca atgttggttt   | 1020 |
| tcagttggat tgccccggagc ttcctggaca tggctgtaag tcttgtgaat ttcacaggaa  | 1080 |
| aaatactgga gtaaaggaac tgttatgttc gctttgttat atgagaacgc actgccactt   | 1140 |
| tatttacagt aagtgtgttt aagttaaaat ttaaaggaat atgctgtttt tcacatgtat   | 1200 |
| attgagtgtg agttttgtgc ttcttattat aggtcctgtg tctgatgctg atgaatcacc   | 1260 |
| atctcctgat tctactacct cacctcctga gattcaagca cctgttcctg tggacgtgcg   | 1320 |
| caagcccatt cctgtgaagc ttaagcctgg gaaacgtcca gcagtggaaa aacttgagga   | 1380 |
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|                                                                   |      |
|-------------------------------------------------------------------|------|
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| caaccccagg tagaactgct gctgctgtgg cttttcttac ttttatatta gataaatgga | 1920 |
| tcccgagac tcatttcagc aggggatacg ttttgattt catagccaca gcattgtgga   | 1980 |
| gaacatggaa ggttcgcaag atgaggacaa tcttaggtta ctggccagtg cagcctttgg | 2040 |
| gtgtagcggg aatcctgagg catccaccgg tcatgccagc ggttctggag gaggaacagc | 2100 |
| aagaggacaa cccgagagcc ggcttgacc ctccagtgga ggaggcggag tagctgactt  | 2160 |
| gtctcctgaa ctgcaacggg tgcttactgg atctacgtcc actggacggg ataggggcgt | 2220 |
| taagaggggag agggcatcta gtggtactga tgctagatct gagttggctt taagttaa  | 2280 |
| gagtcgcaga cgtcctgaaa ccatttggtg gcatgagggt cagaaagagg gaagggatga | 2340 |
| agtttctgta ttgcaggaga aatattcact ggaacagggt aaaacatgtt ggttggagcc | 2400 |
| tgaggatgat tgggaggtgg ccattaataa ttatgccaa atagctttga ggcctgataa  | 2460 |
| acagtataag attactagac ggattaatat ccggaatgct tgttacatat ctggaaatgg | 2520 |
| ggctgagggt gtaatagata ctcaagacaa ggcagttatt agatgctgca tgatggatat | 2580 |
| gtggcctggg gtagtcggtg tggaagcagt aacttttgta aatgttaagt ttaggggaga | 2640 |
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|                                                                     |      |
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| gccggtgtgt gtagatgtga ctgaagatct cagaccggat catttggtta ttgcccgcac   | 3360 |
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|                                                                    |      |
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| gtctgttcca cagttcagtg atgtgttcta tggcatctcg atccagcaga cctcctcgtt  | 5100 |
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| ggttcgggtcc ttccagggtc tcagtgttcg agtcaggggt gtttccgtca cagtgaagg  | 5220 |
| gtgtgcgctt gcttgggcgc ttgccagggt gcgcttcaga ctcatcctgc tggtcgaaaa  | 5280 |
| cttctgtcgc ttggcgccct gtatgtcggc caagtagcag ttaccatga gttcgtagtt   | 5340 |
| gagcgccctcg gctgcgtggc ctttggcgcg gagcttacct ttggaagttt tcttgcatac | 5400 |
| cgggcagtat aggcatttca gcgcatacaa cttgggcgca aggaaaacgg attctgggga  | 5460 |
| gtatgcatct gcgccgagg aggcgcaaac agtttcacat tccaccagcc aggttaaadc   | 5520 |
| cggttcattg ggggtcaaaaa caagttttcc gccatatttt ttgatgcgtt tcttaccttt | 5580 |
| ggctctccatg agttcgtgtc ctggttgagt gacaaacagg ctgtccgtgt ccccgtagac | 5640 |
| tgattttaca ggcctcttct ccagtggagt gcctcggctt tcttcgtaca ggaactctga  | 5700 |
| ccactctgat acaaaggcgc gcgtccaggc cagcaciaag gaggctatgt gggaggggta  | 5760 |
| gcgatcgttg tcaaccaggg ggtccacctt ttccaaagta tgcaaacaca tgtcaccctc  | 5820 |
| ttcaacatcc aggaatgtga ttggcttgta ggtgtatttc acgtgacctg ggggtccccgc | 5880 |
| tgggggggta taaaaggggg cggttctttg ctcttcctca ctgtcttccg gatcgtgtc   | 5940 |
| caggaacgtc agctgttggg gtaggtattc cctctcgaag gcgggcatga cctctgcact  | 6000 |
| caggttgtca gtttctaaga acgaggagga tttgatattg acagtgccgg ttgagatgcc  | 6060 |

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| tttcatgagg ttttcgtcca tctggtcaga aaacacaatt tttttattgt caagtttggt  | 6120 |
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| cttttccttg tccgcgcgct ctttggcggc gatgttgagt tggacatact cgcgtgccag  | 6240 |
| gcacttccat tcggggaaga tagttgttaa ttcattctggc acgattctca cttgccaccc | 6300 |
| tcgattatgc aaggtaatta aatccacact ggtggccacc tcgcctcgaa ggggttcatt  | 6360 |
| ggtccaacag agcctacctc ctttcctaga acagaaaggg ggaagtgggt ctagcataag  | 6420 |
| ttcatcggga ggggtctgcat ccatggtaaa gattcccga agtaaattcct tatcaaaata | 6480 |
| gctgatggga gtggggcat ctaaggccat ttgccattct cgagctgcca gtgcgcgctc   | 6540 |
| atatgggtta aggggactgc cccatggcat gggatgggtg agtgcagagg catacatgcc  | 6600 |
| acagatgtca tagacgtaga tgggatcctc aaagatgcct atgtaggttg gatagcatcg  | 6660 |
| ccccctctg atacttgctc gcacatagtc atatagttca tgtgatggcg ctagcagccc   | 6720 |
| cggacccaag ttggtgcat tgggtttttc tgttctgtag acgatctggc gaaagatggc   | 6780 |
| gtgagaattg gaagagatgg tgggtctttg aaaaatgttg aaatgggcat gaggtagacc  | 6840 |
| tacagagtct ctgacaaagt gggcataaga ttcttgaagc ttggttacca gttcggcggt  | 6900 |
| gacaagtacg tctagggcgc agtagtcaag tgtttcttga atgatgtcat aacctggttg  | 6960 |
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| ttctagcgga aaccgtctt tgtctgcacg gtaagatcct agcatgtaga actgattaac   | 7080 |
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| tagcgaagcg tgagtaaggg caaagggtgc tctgaccatg actttgagga attggtattt  | 7200 |
| gaagtcgatg tcgtcacagg ctccctgttc ccagagttgg aagtctaccc gtttcttgta  | 7260 |
| ggcgggggttg ggcaaagcga aagtaacatc attgaagaga atcttgccgg ccctgggcat | 7320 |
| gaaattgcga gtgatgcgaa aaggctgtgg tacttccgct cggttattga taacctgggc  | 7380 |
| agctaggacg atctcgtcga aaccgttgat gttgtgtcct acgatgtata attctatgaa  | 7440 |
| acgcggcgtg cctctgacgt gaggtagctt actgagctca tcaaaggtta ggtctgtggg  | 7500 |



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|                                                                    |      |
|--------------------------------------------------------------------|------|
| gtcagataag gcgtagtggt cgagagccca ttcgtgcagg tgaggattcg ctttaaggaa  | 7560 |
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| ccgtccgact gccatTTTTT ctgggggtgac gcaatagaag gtttgggggt cctgccgcca | 7680 |
| gcgatccac ttgagtttta tggcgagggtc ataggcgatg ttgacgagcc gctggtctcc  | 7740 |
| agagagtttc atgaccagca tgaaggggat tagctgcttg ccaaaggacc ccatccaggt  | 7800 |
| gtaggtttcc acatcgtagg tgagaaagag cttttctgtg cgaggatgag agccaatcgg  | 7860 |
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| ctccctgcga cgcgccgagc attcatgctt gtgcttgtag agacggccgc agtagtcgca  | 7980 |
| gcgttgcacg ggttgatatc cgtgaatgag ttgtacctgg cttcccttga cgagaaattt  | 8040 |
| cagtgggaag ccgaggcctg gcgattgtat ctcgtgcttt actatgttgt ctgcatcggc  | 8100 |
| ctgttcatct tctgtctcga tgggtggtcat gctgacgagc cctcgcgga ggcaagtcca  | 8160 |
| gacctcggcg cggcaggggc ggagctcgag gacgagagcg cgcaggctgg agctgtccag  | 8220 |
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| cttttggagg gcgtgcggga ggttcagata gtacttgatc tcaacgggtc cgttggtgga  | 8340 |
| gatgtcgatg gcttgacagg ttccgtgtcc cttgggcgct accaccgtgc cttgttttt   | 8400 |
| cattttggac ggcggtggct ctgttgcttc ttgcatgttt agaagcgggtg tcgagggcgc | 8460 |
| gcaccgggcg gcaggggcgg ctcgggaccc ggcggcagtg ctggcagtggt tacgtcggcg | 8520 |
| ccgcgcgcgg gtaggttctg gtactgcgcc ctgagaagac tcgcatgcgc gacgacgcgg  | 8580 |
| cggttgacat cctggatctg acgcctctgg gtgaaagcta ccggccccgt gagcttgaac  | 8640 |
| ctgaaagaga gttcaacaga atcaatctcg gtatcgttga cggcggttg cctaaggatt   | 8700 |
| tcttgacgt caccagagtt gtcctggtag gcgatctccg ccatgaactg ctcgatctct   | 8760 |
| tcctcttgaa gatctccgcg gcccgtctc tcgacgggtg ccgcgaggtc gttggagatg   | 8820 |
| cgcccaatga gttgagagaa tgcattcatg cccgcctcgt tccagacgcg gctgtagacc  | 8880 |
| acggcccca cgggatctct cgcgcgcatg accacctggg cgaggttgag ctccacgtgg   | 8940 |

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|--------------------------------------------------------------------|-------|
| cgggtgaaga ccgcatagtt gcataggcgc tggaaaaggt agttgagtgt ggtggc gatg | 9000  |
| tgctcgggtga cgaagaaata catgatccat cgtctcagcg gcatctcgct gacatcgccc | 9060  |
| agagcttcca agcgctccat ggcctcgtag aagtccacgg caaaattaaa aaactgggag  | 9120  |
| tttcgcgcgg acacgggtcaa ctctctttcc agaagacgga taagttcggc gatggtggtg | 9180  |
| cgcacctcgc gctcgaaagc ccctgggatt tcttcctcaa tctcttcttc ttccactaac  | 9240  |
| atctcttcct cttcagggtgg ggctgcagga ggagggggaa cgcggcgacg ccggcggcgc | 9300  |
| acgggcagac ggtcgatgaa tctttcaatg acctctccgc ggccggcgacg catggtttca | 9360  |
| gtgacggcgc ggccgttctc gcgcgggtcg agagtaaaaa caccgccgcg catctcctta  | 9420  |
| aagtgggtgac tgggaggttc tccgtttggg agggagaggg cgctgattat acattttatt | 9480  |
| aattggcccc tagggactgc acgcagagat ctgatcgtgt caagatccac gggatctgaa  | 9540  |
| aacctttcga cgaaagcgtc taaccagtca cagtcacaag gtaggctgag tacggcttct  | 9600  |
| tgtgggcggg ggtggttatg tggtcggctt gggtcttctg tttcttcttc atctcgggaa  | 9660  |
| ggtgagacga tgctgctggt gatgaaatta aagtaggcag ttctaagacg gcggatggtg  | 9720  |
| gcgaggagca ccaggctctt gggtccggct tgctggatac gcaggcgatt ggccattccc  | 9780  |
| caagcattat cctgacatct agcaagatct ttgtagtagt cttgcatgag ccgttctacg  | 9840  |
| ggcacttctt cctcaccctg tctgccatgc atacgtgtga gtccaaatcc gcgcattggt  | 9900  |
| tgtaccagtg ccaagtcagc tacgactctt tcggcgagga tggcttgctg tacttgggta  | 9960  |
| agggtggctt gaaagtcac aaaatccaca aagcggtggt aagctcctgt attaatggtg   | 10020 |
| taagcacagt tggccatgac tgaccagtta actgtctggt gaccagggcg cacgagctcg  | 10080 |
| gtgtatttaa ggcggaata ggcgcggtg tcaaagatgt aatcgttgca ggtgcgcacc    | 10140 |
| agatactggt accctataag aaaatgcggc ggtggttggc ggtagagagg ccatcgttct  | 10200 |
| gtagctggag cgccaggggc gaggtcttcc aacataaggc ggtgatagcc gtagatgtac  | 10260 |
| ctggacatcc aggtgattcc tgcggcggtg gtagaagccc gaggaaaact gcgtacgcgg  | 10320 |
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|----------------------------------------------------------------------|-------|
| cgcgcgagct cattgatgct ctatagacac ggagaaaaatg aaagcggttca gcgactcgac  | 10440 |
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| actcgagccg gccggagccg cggctaacgt ggtattggca ctcccgtctc gacccagcct    | 10560 |
| acaaaaatcc aggatacggg atcgagtcgt tttgctgggt tccgaatggc agggagtgga    | 10620 |
| gtcctatttt ttttttttgc cgctcagatg catcccgtgc tgcgacagat gcgcccccaa    | 10680 |
| caacagcccc cctcgcagca gcagcagcag caatcacaaa aggctgtccc tgcaactact    | 10740 |
| gcaactgccg ccgtgagcgg tgcgggacag cccgcctatg atctggactt ggaagagggc    | 10800 |
| gaaggactgg cacgtctagg tgcgccttca cccgagcggc atccgcgagt tcaactgaaa    | 10860 |
| aaagattctc gcgaggcgta tgtgccccaa cagaacctat ttagagacag aagcggcgag    | 10920 |
| gagccggagg agatgcgagc ttcccgtttt aacgcgggtc gtgagctgcg tcacggtttg    | 10980 |
| gaccgaagac gagtgttgcg ggacgaggat ttcgaagttg atgaaatgac agggatcagt    | 11040 |
| cctgccaggg cacacgtggc tgcagccaac cttgtatcgg cttacgagca gacagtaaag    | 11100 |
| gaagagcgta acttccaaaa gtcttttaaat aatcatgtgc gaaccctgat tgcccgcgaa   | 11160 |
| gaagttaccc ttggtttgat gcatttgtgg gatttgatgg aagctatcat tcagaaccct    | 11220 |
| actagcaaac ctctgaccgc ccagctgttt ctggtgggtc aacacagcag agacaatgag    | 11280 |
| gctttcagag aggcgctgct gaacatcacc gaacccgagg ggagatgggt gtatgatctt    | 11340 |
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| gctgccatca attactcggg tttagacttg ggaaaatatt acgctcgcaa aatctacaag    | 11460 |
| actccatacg ttcccataga caaggagggtg aagatagatg ggttctacat gcgcatgacg   | 11520 |
| ctcaaggctt tgaccctgag cgatgatctt ggggtgtatc gcaatgacag aatgcatcgc    | 11580 |
| gcggttagcg ccagcaggag gcgcgagtta agcgacaggg aactgatgca cagtttgcaa    | 11640 |
| agagctctga ctggagctgg aaccgagggt gagaattact tcgacatggg agctgacttg    | 11700 |
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| atagaagagg cggatgaagg cgaggaggaa gagggcgagt acttggaaga ctgatggcac    | 11820 |

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| aacccgtgtt ttttgctaga tggaacagca agcaccggat cccgcaatgc gggcggcgct  | 11880 |
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| catggcgttg acgactcgca accccgaagc ctttagacag caaccccagg ccaaccgtct  | 12000 |
| atcggccatc atggaagctg tagtgccttc ccgctctaata cccactcatg agaaggtcct | 12060 |
| ggccatcgtg aacgcgttgg tggagaacaa agctattcgt ccagatgagg ccggactggt  | 12120 |
| atacaacgct ctcttagaac gcgtggctcg ctacaacagt agcaatgtgc aaaccaat    | 12180 |
| ggaccgtatg ataacagatg tacgcgaagc cgtgtctcag cgcgaaagg tccagcgtga   | 12240 |
| tgccaacctg ggttcgctgg tggcgtaaaa tgctttcttg agtactcagc ctgctaattg  | 12300 |
| gccgcgtggt caacaggatt atactaactt ttttaagtgc ttgagactga tggatcaga   | 12360 |
| agtacctcag agcgaagtgt atcagtcagg tcctgattac ttctttcaga ctagcagaca  | 12420 |
| gggcttgtag acggtaaaac tgagccaagc ttttaaaaac cttaaagggt tgtggggagt  | 12480 |
| gcatgccccg gtaggagaaa gagcaaccgt gtctagcttg ttaactccga actccgcct   | 12540 |
| attattactg ttggtagctc ctttcaccga cagcggtagc atcgaccgta attcctat    | 12600 |
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| ctatcaagaa attaccaag tcagtcgagc tttgggacag gaagacactg gcagtttga    | 12720 |
| agccactctg aacttcttgc ttaccaatcg gtctcaaaag atccctcctc aatatgctct  | 12780 |
| tactgcggag gaggagagga tccttagata tgtgcagcag agcgtgggat tgtttctgat  | 12840 |
| gcaagagggg gcaactccga ctgcagcact ggacatgaca gcgcgaaata tggagcccag  | 12900 |
| catgtatgcc agtaaccgac ctttcattaa caaactgctg gactacttgc acagagctgc  | 12960 |
| cgctatgaac tctgattatt tcaccaatgc catcttaaac ccgactggc tgccccacc    | 13020 |
| tggtttctac acgggcgaat atgacatgcc cgaccctaata gacggatttc tgtgggacga | 13080 |
| cgtggacagc gatgtttttt cacctctttc tgatcatcgc acgtggaaaa aggaaggcgg  | 13140 |
| cgatagaatg cattcttctg catcgctgtc cgggggtcatg ggtgctaccg cggctgagcc | 13200 |
| cgagtctgca agtccttttc ctagtctacc cttttctcta cacagtgtac gtagcagcga  | 13260 |

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| agtgggtaga ataagtcgcc cgagtttaaat gggcgaagag gagtatctaa acgattcctt  | 13320 |
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| aatgagtaga tggaagactt atgctcagga tcacagagac gagcctggga tcatggggat   | 13440 |
| tacaagtaga gcgagccgta gacgccagcg ccatgacaga cagaggggtc ttgtgtggga   | 13500 |
| cgatgaggat tcggccgatg atagcagcgt gctggacttg ggtgggagag gaaggggcaa   | 13560 |
| cccgtttgct cattttgcgcc ctcgcttggg tggatatgtt taaaaaaaaa taaaaaaaaa  | 13620 |
| actcaccaag gccatggcga cgagcgtacg ttcgttcttc tttattatct gtgtctagta   | 13680 |
| taatgaggcg agtcgtgcta ggcggagcgg tgggtgtatcc ggagggtcct cctccttcgt  | 13740 |
| acgagagcgt gatgcagcag cagcaggcga cggcgggtgat gcaatcccca ctggaggctc  | 13800 |
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| atgactttac ccctacggaa gccagcacc agaccattaa ctttgatgaa cgatcgcggt    | 14040 |
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| ttagtaacaa gttcaaagcg cgtgtgatgg tgtccagaaa acctcccgac ggtgctgcag   | 14160 |
| ttggggatac ttatgatcac aagcaggata ttttgaaata tgagtgggtc gagtttactt   | 14220 |
| tgccagaagg caacttttca gttactatga ctattgattt gatgaacaat gccatcatag   | 14280 |
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| gttttaagat tttgtatgaa gatttagaag gtggtaatat tccggccctc ttggatgtag   | 14580 |
| atgcctatga gaacagtaag aaagaacaaa aagccaaaat agaagctgct acagctgctg   | 14640 |
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| gaagctataa tgtgttgga gacaaaatca acacagccta tcgcagttgg tatctttcgt     | 14880 |
| acaattatgg cgatcccgaa aaaggagtgc gttcctggac attgctcacc acctcagatg    | 14940 |
| tcacctgcgg agcagagcag gtctactggg cgcttccaga catgatgaag gatcctgtca    | 15000 |
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| tcttctcaaa gagcttctac aacgaacaag ctgtgtactc ccagcagctc cgccagtcca    | 15120 |
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| ctttctaaaa aaaaaaaaaa tgtccattct tatctcgccc agtaataaca ccggttgggg    | 15420 |
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| tgcgcctaca tctactgtgg atgcagttat tgacagtgtg gtggctgacg ctcgcaacta    | 15660 |
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| gcgtgacgct gccaccggc aacgtgtacc cgtgcgcacc cgtccccctc gcacttagaa     | 15960 |
| gatactgagc agtctccgat gttgtgtccc agcggcgagg atgtccaagc gcaaatacaa    | 16020 |
| ggaagaaatg ctgcagggtta tcgcacctga agtctacggc caaccgttga aggatgaaaa   | 16080 |
| aaaaccccg c aaaaatcaagc ggggttaaaaa ggacaaaaaa gaagaggaag atggcgatga | 16140 |

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|---------------------------------------------------------------------|-------|
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| aagcgctact ttttaagcgtt cctatgatga ggtgtacggg gatgatgata ttcttgagca  | 16320 |
| ggcggctgac cgattaggcg agtttgctta tggcaagcgt agtagaataa cttccaagga   | 16380 |
| tgagacagtg tcgataccct tggatcatgg aaatcccacc cctagtctta aaccggtcac   | 16440 |
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| gtatcccact atgcaactga tggtaaccaa acgccagaag ttggaggacg ttttggagaa   | 16560 |
| agtaaaagtg gatccagata ttcaacctga ggtaaaagt agaccatta agcaggtagc     | 16620 |
| gcctgggtctg ggggtacaaa ctgtagacat taagattccc actgaaagta tggaagtgca  | 16680 |
| aactgaaccc gcaaagccta ctgccacctc cactgaagtg caaacggatc catggatgcc   | 16740 |
| catgcctatt acaactgacg ccgccggtcc cactgaaga tcccgacgaa agtacggtcc    | 16800 |
| agcaagtctg ttgatgcca attatgttgt acacccatct attattccta ctcttggtta    | 16860 |
| ccgaggcact cgctactatc gcagccgaaa cagtacctcc cgccgtcgcc gcaagacacc   | 16920 |
| tgcaaatcgc agtcgtcgcc gtagacgcac aagcaaaccg actcccggcg ccctgggtgcg  | 16980 |
| gcaagtgtac cgcaatggta gtgcggaacc tttgacactg ccgcgtgcgc gttaccatcc   | 17040 |
| gagtatcatc acttaatcaa tgttgccgct gcctccttgc agatatggcc ctacttgtc    | 17100 |
| gccttcgcgt tcccatcact ggttaccgag gaagaaactc gcgccgtaga agagggatgt   | 17160 |
| tgggacgcgg aatgcgacgc tacaggcgac ggcgtgctat ccgcaagcaa ttgcgggggtg  | 17220 |
| gttttttacc agccttaatt ccaattatcg ctgctgcaat tggcgcgata ccaggcatag   | 17280 |
| cttccgtggc ggttcaggcc tcgcaacgac attgacattg gaaaaaacg tataaataaa    | 17340 |
| aaaaaaaaa tacaatggac tctgacactc ctggtcctgt gactatgttt tcttagagat    | 17400 |
| ggaagacatc aatttttcat ccttggctcc gcgacacggc acgaagccgt acatgggcac   | 17460 |
| ctggagcgac atcggcacga gccaaactgaa cggggggcgcc ttcaattgga gcagtatctg | 17520 |
| gagcgggctt aaaaattttg gctcaacat aaaaacatac gggaacaaag cttggaacag    | 17580 |

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| aaagataaac agtcgtttgg acccgccgcc agcaacccca ggtgaaatgc aagtggagga  | 17760 |
| agaaattcct ccgccagaaa aacgaggcga caagcgtccg cgtcccgatt tggaagagac  | 17820 |
| gctggtgacg cgcgtagatg aaccgccttc ttatgaggaa gcaacgaagc ttggaatgcc  | 17880 |
| caccactaga ccgatagccc caatggccac cggggtgatg aaaccttctc agttgcatcg  | 17940 |
| accgctcacc ttggatttgc cccctcccc tgctgctact gctgtacccg cttctaagcc   | 18000 |
| tgctgctgcc ccgaaaccag tcgccgtagc caggtcacgt cccgggggcg ctcctcgtcc  | 18060 |
| aaatgcgcac tggcaaaaata ctctgaacag catcgtgggt ctaggcgtgc aaagtgtaaa | 18120 |
| acgccgtcgc tgcttttaat taaatatgga gtagcgctta acttgccctat ctgtgtatat | 18180 |
| gtgtcattac acgccgtcac agcagcagag gaaaaaagga agaggtcgtg cgtcgacgct  | 18240 |
| gagttacttt caagatggcc accccatcga tgctgcccc aatgggcatac atgcacatcg  | 18300 |
| ccggacagga tgcttcggag tacctgagtc cgggtctgggt gcagttcgcc cgcgccacag | 18360 |
| acacctactt caatctggga aataagttta gaaatccac cgtagcgccg acccacgatg   | 18420 |
| tgaccaccga ccgtagccag cggctcatgt tgcgcttcgt gcccgttgac cgggaggaca  | 18480 |
| atacatactc ttacaaagtg cggtagaccc tggccgtggg cgacaacaga gtgctggata  | 18540 |
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| ttgcagaagg tgtaaaaaat acaactgggtg aggaacacgt aacagaagag gaaaccaata | 18720 |
| ctactactta cacttttggc aatgctcctg taaaagctga agctgaaatt acaaaagaag  | 18780 |
| gactcccagt aggtttggaa gtttcagatg aagaaagtaa accgatttat gctgataaaa  | 18840 |
| catatcagcc agaacctcag ctgggagatg aaacttggac tgaccttgat ggaaaaaccg  | 18900 |
| aaaagtatgg aggcagggtc ctcaaaccgc atactaagat gaaaccatgc tacgggtcct  | 18960 |
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|                                                                    |       |
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| atgtagtgta caaacctgga acagaagaca caagttccga agctaatttg ggacaacaat  | 19200 |
| ctatgccccaa cagacccaac tacattggct tcagagataa ctttattgga cttatgtact | 19260 |
| ataacagtac tggtaacatg ggggtgctgg ctggtcaagc gtctcagtta aatgcagtgg  | 19320 |
| ttgacttgca ggacagaaac acagaacttt cttaccaact cttgcttgac tctctgggcg  | 19380 |
| acagaaccag atacttttagc atgtggaatc aggctgtgga cagttatgat cctgatgtac | 19440 |
| gtgttattga aaatcatggg gtggaagatg aacttcccaa ctactgtttt ccactggacg  | 19500 |
| gcataggtgt tccaacaacc agttacaaat caatagttcc aaatggagac aatgcgccta  | 19560 |
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| tggaaattaa ctttcaagcc aatctatggc gaagtttcct ttattccaat gtggctctat  | 19680 |
| atctcccaga ctcgtacaaa tacaccccggt ccaatgtcac tcttccagaa aacaaaaaca | 19740 |
| cctacgacta catgaacggg cgggtgggtgc cgccatctct agtagacacc tatgtgaaca | 19800 |
| ttggtgccag gtggtctctg gatgccatgg acaatgtcaa cccattcaac caccaccgta  | 19860 |
| acgctggctt gcgttaccga tccatgcttc tgggtaacgg acgttatgtg cttttccaca  | 19920 |
| tacaagtgcc tcaaaaattc ttcgctgtta aaaacctgct gcttctccca ggctcctaca  | 19980 |
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| acctgcgggt agatggcgcc agcatcagtt tcacgagcat caacctctat gctacttttt  | 20100 |
| tccccatggc tcacaacacc gcttccaccc ttgaagccat gctgcggaat gacaccaatg  | 20160 |
| atcagtcatt caacgactac ctatctgcag ctaacatgct ctacccatt cctgccaatg   | 20220 |
| caaccaatat tcccatttcc attccttctc gcaactgggc ggctttcaga ggctggtcac  | 20280 |
| ttaccagact gaaaacaaaa gaaactccct ctttggggtc tggatttgac ccctactttg  | 20340 |
| tctattctgg ttctattccc tacctggatg gtaccttcta cctgaaccac acttttaaga  | 20400 |
| aggtttccat catgtttgac tcttcagtga gctggcctgg aaatgacagg ttactatctc  | 20460 |

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|                                                                    |       |
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| gcttctacat tccagaagga taaaaagatc gcatgtattc atttttcaga aacttccagc  | 20640 |
| ccatgagcag gcaggtgggt gatgaggtca attacaaaga cttcaaggcc gtcgccatac  | 20700 |
| cctaccaaca caacaactct ggctttgtgg gttacatggc tccgaccatg cgccaaggtc  | 20760 |
| aaccttatcc cgctaactat ccctatccac tcattggaac aactgccgta aatagtgtta  | 20820 |
| cgcagaaaaa gttcttgtgt gacagaacca tgtggcgcat accgttctcg agcaacttca  | 20880 |
| tgtctatggg ggcccttaca gacttgggac agaatatgct ctatgccaac tcagctcatg  | 20940 |
| ctctggacat gacctttgag gtggatccca tggatgagcc caccctgctt tatcttctct  | 21000 |
| tcgaagtttt cgacgtggtc agagtgcac agccacaccg cggcatcatc gaggcagtct   | 21060 |
| acctgcgtac accgttctcg gccggtaacg ctaccacgta agaagcttct tgcttcttgc  | 21120 |
| aaatagcagc tgcaaccatg gcctgcggat cccaaaacgg ctccagcgag caagagctca  | 21180 |
| gagccattgt ccaagacctg gggtgcggac cctatTTTTT gggaacctac gataagcgct  | 21240 |
| tcccggggtt catggcccc gataagctcg cctgtgccat tgtaaatacg gccggacgtg   | 21300 |
| agacgggggg agagcactgg ttggctttcg gttggaaccc acgttctaac acctgctacc  | 21360 |
| tttttgatcc ttttggattc tcggatgatc gtctcaaaca gatttaccag tttgaatatg  | 21420 |
| agggtctcct gcgccgcagc gctcttgcta ccaaggaccg ctgtattacg ctggaaaaat  | 21480 |
| ctaccagac cgtgcagggt ccccgttctg ccgcctgcgg acttttctgc tgcatgttcc   | 21540 |
| ttcacgcctt tgtgcactgg cctgaccgtc ccatggacgg aaaccccacc atgaaattgc  | 21600 |
| taactggagt gccaaacaac atgcttcatt ctctaaagt ccagcccacc ctgtgtgaca   | 21660 |
| atcaaaaagc actctaccat tttcttaata cccattcgcc ttattttctgc tcccatcgta | 21720 |
| cacacatcga aagggccact gcgttcgacc gtatggatgt tcaataatga ctcatgtaaa  | 21780 |
| caacgtgttc aataaacatc actttatTTT ttacatgta tcaaggctct gcattactta   | 21840 |
| tttatTTTaca agtcgaatgg gttctgacga gaatcagaat gacccgcagg cagtgatacg | 21900 |

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|                                                                     |       |
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| ggagccgaaa tcttgaaatc acaattagga ccagtgcctt gagcgcgaga gttgcggtac   | 22080 |
| accggattgc agcactgaaa caccatcagc gacggatgtc tcacgcttgc cagcacgggtg  | 22140 |
| ggatctgcaa tcatgcccac atccagatct tcagcattgg caatgctgaa cggggtcac    | 22200 |
| ttgcagggtct gcctacccat ggcgggcacc caattaggct tgtggttgca atcgcaggtgc | 22260 |
| aggggggatca gtatcatctt ggcctgatcc tgtctgattc ctggatacac ggctctcatg  | 22320 |
| aaagcatcat attgcttgaa agcctgctgg gctttactac cctcgggtata aaacatcccg  | 22380 |
| caggacctgc tcgaaaactg gttagctgca cagccggcat cattcacaca gcagcgggcg   | 22440 |
| tcattgttag ctatttgcac cacacttctg cccagcgggt tttgggtgat tttggttcgc   | 22500 |
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| tgctccttct gaatcataat attgccatgc aggcacttca gcttgccctc ataatcattg   | 22620 |
| cagccatgag gccacaacgc acagcctgta cattcccaat tatggtgggc gatctgagaa   | 22680 |
| aaagaatgta tcattccctg cagaaatctt cccatcatcg tgctcagtgt cttgtgacta   | 22740 |
| gtgaaagtta actggatgcc tcggtgctcc tcgtttacgt actggtgaca gatgcgcttg   | 22800 |
| tattgttcgt gttgctcagg cattagttta aaagagggtc taagttcggt atccagcctg   | 22860 |
| tacttctcca tcagcagaca catcacttcc atgcctttct cccaagcaga caccaggggc   | 22920 |
| aagctaatacg gattcttaac agtgcaggca gcagctcctt tagccagagg gtcattctta  | 22980 |
| gcgatcttct caatgcttct tttgccatcc ttctcaacga tgcgcacggg cgggtagctg   | 23040 |
| aaaccactg ctacaagttg cgcctcttct ctttcttctt cgctgtcttg actgatgtct    | 23100 |
| tgcatgggga tatgtttggt cttccttggc ttctttttgg ggggtatcgg aggaggagga   | 23160 |
| ctgtcgctcc gttccggaga caggaggat tgtgacgttt cgctcaccat taccaactga    | 23220 |
| ctgtcggtag aagaacctga cccacacgg cgacagggtgt ttctcttcgg gggcagaggt   | 23280 |
| ggaggcgatt gcgaagggtc gcggtccgac ctggaaggcg gatgactggc agaaccctt    | 23340 |

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|                                                                    |       |
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| cgccacgagt gccatcacat ctcgctctca gcgacgagga aaaggagcag agcttaagca  | 23520 |
| ttccaccgcc cagtcctgcc accacctcta ccctagaaga taaggaggtc gacgcatctc  | 23580 |
| atgacatgca gaataaaaaa gcgaaaagagt ctgagacaga catcgagcaa gacccgggct | 23640 |
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| actgccccaa acaacgagca gataactatc accaagatgc tggaaatagg gatcagaaca  | 23760 |
| ccgactacct catagggctt gacgggggaag acgcgctcct taaacatcta gcaagacagt | 23820 |
| cgctcatagt caaggatgca ttattggaca gaactgaagt gcccacagc gtggaagagc   | 23880 |
| tcagccgcgc ctacgagctt aacctctttt cacctcgtag tccccccaaa cgtcagccaa  | 23940 |
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| tactggctac ctatcacatc ttttttaaaa atcaaaaaat tccagtctcc tgccgcgcta  | 24060 |
| atcgcacccg cgccgatgcc ctactcaatc tgggacctgg ttcacgctta cctgatatag  | 24120 |
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| catatccgc tgtcaacctg cccctaaag tcatgacggc ggtcatggac cagttactca    | 24360 |
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| aaccagtggc cagtgatgag cagctaaccg gatggctggg caccgactct cccagggtt   | 24480 |
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| cttttagaca cggctttgtg cggcaggcat gcaagatatc taacgtggaa ctcaccaacc  | 24660 |
| tggtttccta catgggtatt ctgcatgaga atcgccatagg acaaagcgtg ctgcacagca | 24720 |
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| ccgtcgcttc cgacctggca gacctcatct tcccagagcg tctcagggtt actttgcgaa | 24960 |
| acggattgcc tgactttatg agccagagca tgcttaacaa ttttcgctct ttcacctgg  | 25020 |
| aacgctccgg tatcctgccc gccacctgct gcgcactgcc ctccgacttt gtgcctctca | 25080 |
| cctaccgcga gtgcccccg ccgctatgga gtcactgcta cctgttccgt ctggccaact  | 25140 |
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| aagccatcca aaaatcccg ccaagaatttc tactgaaaaa gggtaagggg gtctaccttg | 25560 |
| acccccagac cggcgaggaa ctcaacacaa ggttcctca ggatgtcca acgacgagaa   | 25620 |
| aacaagaagt tgaagggtga gccgccgccc ccagaagata tggaggaaga ttgggacagt | 25680 |
| caggcagagg aggcggagga ggacagtctg gaggacagtc tggaggaaga cagtttgag  | 25740 |
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| acctatacac accttgcttc actttcttag tgggtgttggtg gtattggttt aaaaaatggg | 27840 |
| gcccatacta gtcttgcttg ttttactttc gcttttggaa ccgggttctg ccaattacga   | 27900 |
| tccatgtcta gacttcgacc cagaaaactg cacacttact tttgcacccg acacaagccg   | 27960 |
| catctgtgga gttcatcgcc tctcttacga acttggcccc caacgacaaa aatttacctg   | 28020 |
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| tcttacttta aaatgttta cccactaac aaccacaggc ggatctctac agctaaaagt     | 28560 |
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|                                                                     |       |
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| aacctctgct acaaccctag tcacctcccc atttaccttt tactacatca gagaagacga   | 29340 |
| ctgacaaaata aagtttgca tcgccaggcc caccatggga tggagctgca tcacccatt    | 29400 |
| cctcgtggcg acggccactg gagtgcatac cgaactgggtg atgactcagt ccccgctc    | 29460 |
| cctgacgggtg accgccggcg agaagggtcac catgtcgtgc aagtcctcgc aaagcctgct | 29520 |
| taacagcggc aaccagaaaa actacctcac gtggtatcag caaaagccag gtcaaccccc   | 29580 |
| aaaactgctc atctactggg cgagcaccgc cgagtcgggg gtgccagacc gggtcaccgg   | 29640 |
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| tcccagggaa taggaagctc ttgcagaaca gtaaagctgg cagaacaagg aagaccacga  | 32220 |
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|                                                                    |       |
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| ccccggtccc tctaaataca catacaaagc ctcatcagcc atggcttacc agacaaagta  | 33840 |
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| acggtcgcac cgcccccttt agccgttaac cccacagcca atcaccacac gatccacact  | 34140 |
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| ccgtgggaaa atgacgtttt gtgggggtgg agtttttttg caagttgtcg cgggaaatgt  | 180 |
| gacgcataaa aaggcttttt tctcacggaa ctacttagtt ttcccacggg atttaacagg  | 240 |
| aaatgaggta gttttgaccg gatgcaagtg aaaattgttg attttcgcgc gaaaactgaa  | 300 |

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| ccgcgtaccg tgtcaaagtc ttctgttttt acgtagggtgt cagctgatcg ctaggggtatt | 480  |
| tatacctcag ggtttgtgtc aagaggccac tcttgagtgc cagcgagaag agttttctcc   | 540  |
| tctgcgccgg cagtttaata ataaaaaaaaat gagagatttg cgatttctgc ctcaggaaat | 600  |
| aatctctgct gagactggaa atgaaatatt ggagcttgtg gtgcacgccc tgatgggaga   | 660  |
| cgatccggag ccacctgtgc agctttttga gcctcctacg cttcaggaac tgtatgattt   | 720  |
| agaggtagag ggatcggagg attctaataa ggaagctgta aatggctttt ttaccgattc   | 780  |
| tatgctttta gctgctaata aagggtaga attagatccg cttttggaca cttttgatac    | 840  |
| tccaggggta attgtggaaa gcggtacagg tgtaagaaaa ttacctgatt tgagtccgt    | 900  |
| ggactgtgat ttgcactgct atgaagacgg gtttcctccg agtgatgagg aggaccatga   | 960  |
| aaaggagcag tccatgcaga ctgcagcggg tgagggagtg aaggctgcca atgttggttt   | 1020 |
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| aaatactgga gtaaaggaac tgttatgttc gctttgttat atgagaacgc actgccactt   | 1140 |
| tatttacagt aagtgtgttt aagttaaaat ttaaaggaat atgctgtttt tcacatgtat   | 1200 |
| attgagtgtg agttttgtgc ttcttattat aggtcctgtg tctgatgctg atgaatcacc   | 1260 |
| atctcctgat tctactacct cacctcctga gattcaagca cctgttcctg tggacgtgcg   | 1320 |
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| ataaaaaatat gttaactgtt cactggtttt tattgctttt tgggcgggga ctcaggata   | 1560 |
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|                                                                     |      |
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| caaccccagg tagaactgct gctgctgtgg cttttcttac ttttatatta gataaatgga   | 1920 |
| tcccgcagac tcatttcagc aggggatacg ttttggtatt catagccaca gcattgtgga   | 1980 |
| gaacatggaa ggttcgcaag atgaggacaa tcttaggtta ctggccagtg cagcctttgg   | 2040 |
| gtgtagcggg aatcctgagg catccaccgg tcatgccagc ggttctggag gaggaacagc   | 2100 |
| aagaggacaa cccgagagcc ggcttgacc ctccagtgga ggaggcggag tagctgactt    | 2160 |
| gtctcctgaa ctgcaacggg tgcttactgg atctacgtcc actggacggg ataggggcgt   | 2220 |
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| gagtcgcaga cgtcctgaaa ccatttggtg gcatgagggt cagaaagagg gaagggatga   | 2340 |
| agtttctgta ttgcaggaga aatattcact ggaacagggt aaaacatgtt ggttggagcc   | 2400 |
| tgaggatgat tgggaggtgg ccattaataaa ttatgccaa agatgcttga ggctgataa    | 2460 |
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|                                                                     |      |
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|                                                                    |      |
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|                                                                    |      |
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| cttttccttg tccgcgcgct ctttggcggc gatgttgagt tggacatact cgcgtgccag  | 6240 |
| gcacttccat tcggggaaga tagttgttaa ttcattctggc acgattctca cttgccaccc | 6300 |
| tcgattatgc aaggtaatta aatccacact ggtggccacc tcgcctcgaa ggggttcatt  | 6360 |
| ggtccaacag agcctacctc ctttcctaga acagaaaggg ggaagtgggt ctagcataag  | 6420 |
| ttcatcggga ggggtctgcat ccatggtaaa gattcccga agtaaattcct tatcaaaata | 6480 |
| gctgatggga gtggggcat ctaaggccat ttgccattct cgagctgcca gtgcgcgctc   | 6540 |
| atatgggtta aggggactgc cccatggcat gggatgggtg agtgcagagg catacatgcc  | 6600 |
| acagatgtca tagacgtaga tgggatcctc aaagatgcct atgtaggttg gatagcatcg  | 6660 |
| ccccctctg atacttgctc gcacatagtc atatagttca tgtgatggcg ctagcagccc   | 6720 |
| cggacccaag ttggtgcat tgggtttttc tgttctgtag acgatctggc gaaagatggc   | 6780 |
| gtgagaattg gaagagatgg tgggtctttg aaaaatgttg aaatgggcat gaggtagacc  | 6840 |
| tacagagtct ctgacaaagt gggcataaga ttcttgaagc ttggttacca gttcggcggt  | 6900 |
| gacaagtacg tctagggcgc agtagtcaag tgtttcttga atgatgtcat aacctggttg  | 6960 |
| gtttttcttt tcccacagtt cgcggttgag aaggtattct tcgcgatcct tccagtactc  | 7020 |
| ttctagcgga aaccgtctt tgtctgcacg gtaagatcct agcatgtaga actgattaac   | 7080 |
| tgccttgtaa gggcagcagc ctttctctac gggtagagag tatgcttgag cagcttttcg  | 7140 |
| tagcgaagcg tgagtaaggg caaagggtgc tctgaccatg actttgagga attggtattt  | 7200 |
| gaagtcgatg tcgtcacagg ctccctgttc ccagagttgg aagtctaccc gtttcttgta  | 7260 |
| ggcgggggtt ggcaaagcga aagtaacatc attgaagaga atcttgccgg ccctgggcat  | 7320 |
| gaaattgcga gtgatgcgaa aaggctgtgg tacttccgct cggttattga taacctgggc  | 7380 |
| agctaggacg atctcgtcga aaccgttgat gttgtgtcct acgatgtata attctatgaa  | 7440 |
| acgcggcgtg cctctgacgt gaggtagctt actgagctca tcaaagggtta ggtctgtggg | 7500 |



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| ccgtccgact gccatTTTTT ctgggggtgac gcaatagaag gtttgggggt cctgccgcca | 7680 |
| gcgatcccac ttgagtttta tggcgaggtc ataggcgatg ttgacgagcc gctggtctcc  | 7740 |
| agagagtttc atgaccagca tgaaggggat tagctgcttg ccaaaggacc ccatccaggt  | 7800 |
| gtaggtttcc acatcgtagg tgagaaagag cttttctgtg cgaggatgag agccaatcgg  | 7860 |
| gaagaactgg atctcctgcc accagttgga ggaatggctg ttgatgtgat ggaagtagaa  | 7920 |
| ctccctgcga cgcgccgagc attcatgctt gtgcttgtag agacggccgc agtagtcgca  | 7980 |
| gcgttgccacg ggttgatatc cgtgaatgag ttgtacctgg cttcccttga cgagaaattt | 8040 |
| cagtgggaag ccgaggcctg gcgattgtat ctcgtgcttt actatgttgt ctgcatcggc  | 8100 |
| ctgttcatct tctgtctcga tgggtggtcat gctgacgagc cctcgcgga ggcaagtcca  | 8160 |
| gacctcggcg cggcaggggc ggagctcgag gacgagagcg cgcaggctgg agctgtccag  | 8220 |
| ggtcctgaga cgctgcggac tcaggttagt aggcagtgtc aggagattaa cttgcatgat  | 8280 |
| cttttggagg gcgtgcggga ggttcagata gtacttgatc tcaacgggtc cgttggtgga  | 8340 |
| gatgtcgatg gcttgccagg ttccgtgtcc cttgggcgct accaccgtgc cttgttttt   | 8400 |
| cattttggac ggcggtggct ctgttgcttc ttgcatgttt agaagcgggtg tcgaggcgcg | 8460 |
| gcaccgggcg gcaggggcgg ctcgggaccc ggccggcatgg ctggcagtgg tacgtcggcg | 8520 |
| ccgcgcgcgg gtaggttctg gtactgcgcc ctgagaagac tcgcatgcgc gacgacgcgg  | 8580 |
| cggttgacat cctggatctg acgcctctgg gtgaaagcta ccggccccgt gagcttgaac  | 8640 |
| ctgaaagaga gttcaacaga atcaatctcg gtatcgttga cggcggcttg cctaaggatt  | 8700 |
| tcttgacgt caccagagtt gtcctggtag gcgatctccg ccatgaactg ctcgatctct   | 8760 |
| tcctcttgaa gatctccgcg gcccgtctc tcgacgggtg ccgcgaggtc gttggagatg   | 8820 |
| cgcccaatga gttgagagaa tgcattcatg cccgcctcgt tccagacgcg gctgtagacc  | 8880 |
| acggcccca cgggatctct cgcgcgcatg accacctggg cgaggttgag ctccacgtgg   | 8940 |

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| agagcttcca agcgctccat ggcctcgtag aagtccacgg caaaattaaa aaactgggag  | 9120  |
| tttcgcgcgg acacgggtcaa ctctctttcc agaagacgga taagttcggc gatggtggtg | 9180  |
| cgcacctcgc gctcgaaagc ccctgggatt tcttcctcaa tctcttcttc ttccactaac  | 9240  |
| atctcttcct cttcagggtgg ggctgcagga ggagggggaa cgcggcgacg ccggcggcgc | 9300  |
| acgggcagac ggtcgatgaa tctttcaatg acctctccgc ggccggcgcg catggtttca  | 9360  |
| gtgacggcgc ggccgttctc gcgcggctgc agagtaaaaa caccgccgcg catctcctta  | 9420  |
| aagtggtgac tgggaggttc tccgtttggg agggagaggg cgctgattat acattttatt  | 9480  |
| aattggcccc tagggactgc acgcagagat ctgatcgtgt caagatccac gggatctgaa  | 9540  |
| aacctttcga cgaaagcgtc taaccagtca cagtcacaag gtaggctgag tacggcttct  | 9600  |
| tgtgggcggg ggtggttatg tggtcggctt gggtcttctg tttcttcttc atctcgggaa  | 9660  |
| ggtgagacga tgctgctggt gatgaaatta aagtaggcag ttctaagacg gcggatggtg  | 9720  |
| gcgaggagca ccaggctctt gggtccggct tgctggatac gcaggcgatt ggccattccc  | 9780  |
| caagcattat cctgacatct agcaagatct ttgtagtagt cttgcatgag ccgttctacg  | 9840  |
| ggcacttctt cctcaccctg tctgccatgc atacgtgtga gtccaaatcc gcgcattggt  | 9900  |
| tgtaccagtg ccaagtcagc tacgactctt tcggcgagga tggcttgctg tacttgggta  | 9960  |
| agggtggctt gaaagtcac aaaatccaca aagcggtggt aagctcctgt attaatggtg   | 10020 |
| taagcacagt tggccatgac tgaccagtta actgtctggt gaccagggcg cacgagctcg  | 10080 |
| gtgtatttaa ggcggaata ggcgcggggtg tcaaagatgt aatcgttgca ggtgcgcacc  | 10140 |
| agatactggt accctataag aaaatgcggc ggtggttggc ggtagagagg ccatcgttct  | 10200 |
| gtagctggag cgccaggggc gaggtcttcc aacataaggc ggtgatagcc gtagatgtac  | 10260 |
| ctggacatcc aggtgattcc tgcggcggtg gtagaagccc gaggaaaactc gcgtacgcgg | 10320 |
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|----------------------------------------------------------------------|-------|
| cgcgcgagct cattgatgct ctatagacac ggagaaaaatg aaagcggttca gcgactcgac  | 10440 |
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| actcgagccg gccggagccg cggctaacgt ggtattggca ctcccgtctc gacccagcct    | 10560 |
| acaaaaatcc aggatacggg atcgagtcgt tttgctgggt tccgaatggc aggggaagtga   | 10620 |
| gtcctatttt ttttttttgc cgctcagatg catcccgtgc tgcgacagat gcgcccccaa    | 10680 |
| caacagcccc cctcgcagca gcagcagcag caatcacaaa aggctgtccc tgcaactact    | 10740 |
| gcaactgccg ccgtgagcgg tgcgggacag cccgcctatg atctggactt ggaagagggc    | 10800 |
| gaaggactgg cacgtctagg tgcgccttca cccgagcggc atccgcgagt tcaactgaaa    | 10860 |
| aaagattctc gcgaggcgta tgtgccccaa cagaacctat ttagagacag aagcggcgag    | 10920 |
| gagccggagg agatgcgagc ttcccgtttt aacgcgggtc gtgagctgcg tcacggtttg    | 10980 |
| gaccgaagac gagtgttgcg ggacgaggat ttcgaagttg atgaaatgac agggatcagt    | 11040 |
| cctgccaggg cacacgtggc tgcagccaac cttgtatcgg cttacgagca gacagtaaag    | 11100 |
| gaagagcgta acttccaaaa gtcttttaaat aatcatgtgc gaaccctgat tgcccgcgaa   | 11160 |
| gaagttaccc ttggtttgat gcatttgtgg gatttgatgg aagctatcat tcagaaccct    | 11220 |
| actagcaaac ctctgaccgc ccagctgttt ctggtgggtc aacacagcag agacaatgag    | 11280 |
| gctttcagag aggcgctgct gaacatcacc gaacccgagg ggagatgggt gtatgatctt    | 11340 |
| atcaacattc tacagagtat catagtgcag gagcggagcc tgggcctggc cgagaaggtg    | 11400 |
| gctgccatca attactcggg tttagacttg ggaaaatatt acgctcgcaa aatctacaag    | 11460 |
| actccatacg ttcccataga caaggagggtg aagatagatg ggttctacat gcgcatgacg   | 11520 |
| ctcaaggctt tgaccctgag cgatgatctt ggggtgtatc gcaatgacag aatgcatcgc    | 11580 |
| gcggttagcg ccagcaggag gcgcgagtta agcgacaggg aactgatgca cagtttgcaa    | 11640 |
| agagctctga ctggagctgg aaccgagggt gagaattact tcgacatggg agctgacttg    | 11700 |
| cagtggcagc ctagtcgcag ggctctgagc gccgcgacgg caggatgtga gcttccttac    | 11760 |
| atagaagagg cggatgaagg cgaggaggaa gagggcgagt acttggaaga ctgatggcac    | 11820 |

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| catggcgttg acgactcgca accccgaagc ctttagacag caaccccagg ccaaccgtct  | 12000 |
| atcggccatc atggaagctg tagtgccttc ccgctctaata cccactcatg agaaggtcct | 12060 |
| ggccatcgtg aacgcgttgg tggagaacaa agctattcgt ccagatgagg ccggactggg  | 12120 |
| atacaacgct ctcttagaac gcgtggctcg ctacaacagt agcaatgtgc aaaccaat    | 12180 |
| ggaccgtatg ataacagatg tacgcgaagc cgtgtctcag cgcgaaagg tccagcgtga   | 12240 |
| tgccaacctg ggttcgctgg tggcgtaaaa tgctttcttg agtactcagc ctgcta      | 12300 |
| gccgcgtggg caacaggatt atactaactt ttttaagtgt ttgagactga tgg         | 12360 |
| agtacctcag agcgaagtgt atcagtcagg tcctgattac ttctttcaga ctagcagaca  | 12420 |
| gggcttgtag acggtaaatc tgagccaagc ttttaaaaac cttaaagggt tgtggggagt  | 12480 |
| gcatgccccg gtaggagaaa gagcaaccgt gtctagcttg ttaactccga actcccgcct  | 12540 |
| attattactg ttggtagctc ctttcaccga cagcggtagc atcgaccgta attcctat    | 12600 |
| gggttaccta ctaaacctgt atcgcaagc catagggcaa agtcagggtgg acgagcagac  | 12660 |
| ctatcaagaa attacccaag tcagtcgagc tttgggacag gaagacactg gcagttt     | 12720 |
| agccactctg aacttcttgc ttaccaatcg gtctcaaaaag atccctcctc aat        | 12780 |
| tactgcggag gaggagagga tccttagata tgtgcagcag agcgtgggat tgtttct     | 12840 |
| gcaagagggg gcaactccga ctgcagcact ggacatgaca gcgcgaaata tggagcccag  | 12900 |
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| cgctatgaac tctgattatt tcaccaatgc catcttaaac ccgactggc tgccccacc    | 13020 |
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| tacaagtaga gcgagccgta gacgccagcg ccatgacaga cagaggggtc ttgtgtggga   | 13500 |
| cgatgaggat tcggccgatg atagcagcgt gctggacttg ggtgggagag gaaggggcaa   | 13560 |
| cccgtttgct cattttgcgcc ctgccttggg tggatatgtt taaaaaaaaa taaaaaaaaa  | 13620 |
| actcaccaag gccatggcga cgagcgtacg ttcgttcttc tttattatct gtgtctagta   | 13680 |
| taatgaggcg agtcgtgcta ggcggagcgg tgggtgtatcc ggagggtcct cctccttcgt  | 13740 |
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| atgcctatga gaacagtaag aaagaacaaa aagccaaaat agaagctgct acagctgctg   | 14640 |
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| gaagctataa tgtgttgga gacaaaatca acacagccta tcgcagttgg tatctttcgt   | 14880 |
| acaattatgg cgatcccgaa aaaggagtgc gttcctggac attgctcacc acctcagatg  | 14940 |
| tcacctgcgg agcagagcag gtctactggg cgcttccaga catgatgaag gatcctgtca  | 15000 |
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| tcttctcaaa gagcttctac aacgaacaag ctgtgtactc ccagcagctc cgccagtcca  | 15120 |
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| gcgtgacgct gccaccggc aacgtgtacc cgtgcgcacc cgtccccctc gcacttagaa   | 15960 |
| gatactgagc agtctccgat gttgtgtccc agcggcgagg atgtccaagc gcaatacaaa  | 16020 |
| ggaagaaatg ctgcagggtta tcgcacctga agtctacggc caaccgttga aggatgaaaa | 16080 |
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| aagcgctact ttttaagcgtt cctatgatga ggtgtacggg gatgatgata ttcttgagca  | 16320 |
| ggcggctgac cgattaggcg agtttgctta tggcaagcgt agtagaataa cttccaagga   | 16380 |
| tgagacagtg tcgataccct tggatcatgg aaatcccacc cctagtctta aaccggtcac   | 16440 |
| tttgcagcaa gtgttaccg taactccgcg aacagggtgtt aaacgcgaag gtgaagattt   | 16500 |
| gtatcccact atgcaactga tggtaaccaa acgccagaag ttggaggacg ttttggagaa   | 16560 |
| agtaaaagtg gatccagata ttcaacctga ggtaaaagt agaccatta agcaggtagc     | 16620 |
| gcctgggtctg ggggtacaaa ctgtagacat taagattccc actgaaagta tggaagtgca  | 16680 |
| aactgaaccc gcaaagccta ctgccacctc cactgaagtg caaacggatc catggatgcc   | 16740 |
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| agcaagtctg ttgatgcca attatgttgt acacccatct attattccta ctcttggtta    | 16860 |
| ccgaggcact cgctactatc gcagccgaaa cagtacctcc cgccgtcgcc gcaagacacc   | 16920 |
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| gagtatcatc acttaatcaa tggtgccgct gcctccttgc agatatggcc ctacttgtc    | 17100 |
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| aaaaaaaaa tacaatggac tctgacactc ctggtcctgt gactatgttt tcttagagat    | 17400 |
| ggaagacatc aatttttcat ccttggctcc gcgacacggc acgaagccgt acatgggcac   | 17460 |
| ctggagcgac atcggcacga gccaaactgaa cggggggcgcc ttcaattgga gcagtatctg | 17520 |
| gagcgggctt aaaaattttg gctcaacat aaaaacatac gggaacaaag cttggaacag    | 17580 |

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| aaagataaac agtcgtttgg acccgccgcc agcaacccca ggtgaaatgc aagtggagga  | 17760 |
| agaaattcct ccgccagaaa aacgaggcga caagcgtccg cgtcccgatt tggaagagac  | 17820 |
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| caccactaga ccgatagccc caatggccac cggggtgatg aaaccttctc agttgcatcg  | 17940 |
| accgctcacc ttggatttgc cccctcccc tgctgctact gctgtacccg cttctaagcc   | 18000 |
| tgctgctgcc ccgaaaccag tcgccgtagc caggtcacgt cccgggggcg ctcctcgtcc  | 18060 |
| aaatgcgcac tggcaaaaata ctctgaacag catcgtgggt ctaggcgtgc aaagtgtaaa | 18120 |
| acgccgtcgc tgcttttaat taaatatgga gtagcgctta acttgcctat ctgtgtatat  | 18180 |
| gtgtcattac acgccgtcac agcagcagag gaaaaaagga agaggtcgtg cgtcgacgct  | 18240 |
| gagttacttt caagatggcc accccatcga tgctgcccc aatgggcatac atgcacatcg  | 18300 |
| ccggacagga tgcttcggag tacctgagtc cgggtctgggt gcagttcgcc cgcgccacag | 18360 |
| acacctactt caatctggga aataagttta gaaatccac cgtagcgccg acccacgatg   | 18420 |
| tgaccaccga ccgtagccag cggctcatgt tgcgcttcgt gcccgttgac cgggaggaca  | 18480 |
| atacatactc ttacaaagtg cggtagaccc tggccgtggg cgacaacaga gtgctggata  | 18540 |
| tggccagcac gttctttgac attaggggtg tgttggacag aggtcccagt ttcaaaccct  | 18600 |
| attctggtac ggcttacaac tccctggctc ctaaaggcgc tccaaataca tctcagtgga  | 18660 |
| ttgcagaagg tgtaaaaaat acaactgggtg aggaacacgt aacagaagag gaaaccaata | 18720 |
| ctactactta cacttttggc aatgctcctg taaaagctga agctgaaatt acaaaagaag  | 18780 |
| gactcccagt aggttttgaa gtttcagatg aagaaagtaa accgatttat gctgataaaa  | 18840 |
| catatcagcc agaacctcag ctgggagatg aaacttggac tgaccttgat ggaaaaaccg  | 18900 |
| aaaagtatgg aggcagggtc ctcaaaccgc atactaagat gaaaccatgc tacgggtcct  | 18960 |
| ttgccaaacc tactaatgtg aaaggcggtc aggcacaaaca aaaaacaacg gagcagccaa | 19020 |



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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| atcagaaaagt cgaatatgat atcgacatgg agttttttga tgcggcatcg cagaaaacaa | 19080 |
| acttaagtcc taaaattgtc atgtatgcag aaaatgtaaa tttggaaact ccagacactc  | 19140 |
| atgtagtgta caaacctgga acagaagaca caagttccga agctaatttg ggacaacaat  | 19200 |
| ctatgccccaa cagacccaac tacattggct tcagagataa ctttattgga cttatgtact | 19260 |
| ataacagtac tggtaacatg ggggtgctgg ctggtcaagc gtctcagtta aatgcagtgg  | 19320 |
| ttgacttgca ggacagaaac acagaacttt cttaccaact cttgcttgac tctctgggcg  | 19380 |
| acagaaccag atacttttagc atgtggaatc aggctgtgga cagttatgat cctgatgtac | 19440 |
| gtgttattga aaatcatggg gtggaagatg aacttcccaa ctactgtttt ccactggacg  | 19500 |
| gcataggtgt tccaacaacc agttacaaat caatagttcc aaatggagac aatgcgccta  | 19560 |
| attggaagga acctgaagta aatggaacaa gtgagatcgg acagggtaat ttgtttgcca  | 19620 |
| tggaaattaa ctttcaagcc aatctatggc gaagtttcct ttattccaat gtggctctat  | 19680 |
| atctcccaga ctcgtacaaa tacaccccggt ccaatgtcac tcttccagaa aacaaaaaca | 19740 |
| cctacgacta catgaacggg cgggtggtgc cgccatctct agtagacacc tatgtgaaca  | 19800 |
| ttggtgccag gtggtctctg gatgccatgg acaatgtcaa cccattcaac caccaccgta  | 19860 |
| acgctggctt gcgttaccga tccatgcttc tgggtaacgg acgttatgtg cttttccaca  | 19920 |
| tacaagtgcc tcaaaaattc ttcgctgtta aaaacctgct gcttctccca ggctcctaca  | 19980 |
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| acctgcgggt agatggcgcc agcatcagtt tcacgagcat caacctctat gctacttttt  | 20100 |
| tccccatggc tcacaacacc gcttccaccc ttgaagccat gctgcggaat gacaccaatg  | 20160 |
| atcagtcatt caacgactac ctatctgcag ctaacatgct ctacccatt cctgccaatg   | 20220 |
| caaccaatat tcccatttcc attccttctc gcaactgggc ggctttcaga ggctggtcac  | 20280 |
| ttaccagact gaaaacaaaa gaaactccct ctttggggtc tggatttgac ccctactttg  | 20340 |
| tctattctgg ttctattccc tacctggatg gtaccttcta cctgaaccac acttttaaga  | 20400 |
| aggtttccat catgtttgac tcttcagtga gctggcctgg aaatgacagg ttactatctc  | 20460 |

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|                                                                    |       |
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| gcttctacat tccagaagga tacaagatc gcatgtattc atttttcaga aacttccagc   | 20640 |
| ccatgagcag gcaggtgggt gatgaggtca attacaaaga cttcaaggcc gtcgccatac  | 20700 |
| cctaccaaca caacaactct ggctttgtgg gttacatggc tccgaccatg cgccaaggtc  | 20760 |
| aaccctatcc cgctaactat ccctatccac tcattggaac aactgccgta aatagtgtta  | 20820 |
| cgcagaaaaa gttcttgtgt gacagaacca tgtggcgcat accgttctcg agcaacttca  | 20880 |
| tgtctatggg ggcccttaca gacttgggac agaatatgct ctatgccaac tcagctcatg  | 20940 |
| ctctggacat gacctttgag gtggatccca tggatgagcc caccctgctt tatcttctct  | 21000 |
| tcgaagtttt cgacgtggtc agagtgcac agccacaccg cggcatcatc gaggcagtct   | 21060 |
| acctgcgtac accgttctcg gccggtaacg ctaccacgta agaagcttct tgcttcttgc  | 21120 |
| aaatagcagc tgcaaccatg gcctgcggat cccaaaacgg ctccagcgag caagagctca  | 21180 |
| gagccattgt ccaagacctg gggtgcggac cctatTTTTT gggaacctac gataagcgct  | 21240 |
| tccgggggtt catggcccc gataagctcg cctgtgccat tgtaaatacg gccggacgtg   | 21300 |
| agacgggggg agagcactgg ttggctttcg gttggaaccc acgttctaac acctgctacc  | 21360 |
| tttttgatcc ttttggattc tcggatgatc gtctcaaaca gatttaccag tttgaatatg  | 21420 |
| agggtctcct gcgccgcagc gctcttgcta ccaaggaccg ctgtattacg ctggaaaaat  | 21480 |
| ctaccagac cgtgcagggt ccccgttctg ccgcctgcgg acttttctgc tgcatgttcc   | 21540 |
| ttcacgcctt tgtgcactgg cctgaccgtc ccatggacgg aaaccccacc atgaaattgc  | 21600 |
| taactggagt gccaaacaac atgcttcatt ctctaaagt ccagcccacc ctgtgtgaca   | 21660 |
| atcaaaaagc actctaccat tttcttaata cccattcgcc ttatTTTcgc tcccatcgta  | 21720 |
| cacacatcga aagggccact gcgttcgacc gtatggatgt tcaataatga ctcatgtaaa  | 21780 |
| caacgtgttc aataaacatc actttatTTT ttacatgta tcaaggctct gcattactta   | 21840 |
| tttatTTTaca agtcgaatgg gttctgacga gaatcagaat gacccgcagg cagtgatacg | 21900 |

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|                                                                      |       |
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| ttgcggaact gatacttggg ttgccacttg aattcgggaa tcaccaactt gggaaccggt    | 21960 |
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| ggagccgaaa tcttgaaatc acaattagga ccagtgcctt gagcgcgaga gttgcggtac    | 22080 |
| accggattgc agcactgaaa caccatcagc gacggatgtc tcacgcttgc cagcacgggtg   | 22140 |
| ggatctgcaa tcatgcccac atccagatct tcagcattgg caatgctgaa cggggtcac     | 22200 |
| ttgcagggtct gcctacccat ggccgggcacc caattaggct tgtggttgca atcgcaggtgc | 22260 |
| aggggggatca gtatcatctt ggccctgatcc tgtctgattc ctggatacac ggctctcatg  | 22320 |
| aaagcatcat attgcttgaa agcctgctgg gctttactac cctcgggtata aaacatcccg   | 22380 |
| caggacctgc tcgaaaactg gttagctgca cagccggcat cattcacaca gcagcgggcg    | 22440 |
| tcattgttag ctatttgcac cacacttctg cccagcgggt tttgggtgat tttggttcgc    | 22500 |
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| tgctccttct gaatcataat attgccatgc aggcacttca gcttgccctc ataatcattg    | 22620 |
| cagccatgag gccacaacgc acagcctgta cattcccaat tatggtgggc gatctgagaa    | 22680 |
| aaagaatgta tcattccctg cagaaatctt cccatcatcg tgctcagtgt cttgtgacta    | 22740 |
| gtgaaagtta actggatgcc tcggtgctcc tcgtttacgt actggtgaca gatgcgcttg    | 22800 |
| tattgttcgt gttgctcagg cattagttta aaagagggtc taagtctgtt atccagcctg    | 22860 |
| tacttctcca tcagcagaca catcacttcc atgcctttct cccaagcaga caccaggggc    | 22920 |
| aagctaatacg gattcttaac agtgcaggca gcagctcctt tagccagagg gtcattctta   | 22980 |
| gcgatcttct caatgcttct tttgccatcc ttctcaacga tgcgcacggg cgggtagctg    | 23040 |
| aaaccactg ctacaagttg cgcctcttct ctttcttctt cgctgtcttg actgatgtct     | 23100 |
| tgcatgggga tatgtttggt cttccttggc ttctttttgg ggggtatcgg aggaggagga    | 23160 |
| ctgtcgctcc gttccggaga caggaggat tgtgacgtt cgctcaccat taccaactga      | 23220 |
| ctgtcggtag aagaacctga cccacacgg cgacagggtgt ttctcttcgg gggcagaggt    | 23280 |
| ggaggcgatt gcgaagggtc gcggtccgac ctggaaggcg gatgactggc agaaccctt     | 23340 |

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|                                                                    |       |
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| cgccacgagt gccatcacat ctcgctctca gcgacgagga aaaggagcag agcttaagca  | 23520 |
| ttccaccgcc cagtcctgcc accacctcta ccctagaaga taaggaggtc gacgcatctc  | 23580 |
| atgacatgca gaataaaaaa gcgaaaagagt ctgagacaga catcgagcaa gaccgggct  | 23640 |
| atgtgacacc ggtggaacac gaggaagagt tgaaacgctt tctagagaga gaggatgaaa  | 23700 |
| actgccccaa acaacgagca gataactatc accaagatgc tggaaatagg gatcagaaca  | 23760 |
| ccgactacct catagggctt gacgggggaag acgcgctcct taaacatcta gcaagacagt | 23820 |
| cgctcatagt caaggatgca ttattggaca gaactgaagt gcccacagc gtggaagagc   | 23880 |
| tcagccgcgc ctacgagctt aacctctttt cacctcgtag tcccccaaa cgtagccaa    | 23940 |
| acggcacctg cgagccaaat cctcgcttaa acttttatcc agcttttgct gtgccagaag  | 24000 |
| tactggctac ctatcacatc ttttttaaaa atcaaaaaat tccagtctcc tgccgcgcta  | 24060 |
| atcgcacccg cgccgatgcc ctactcaatc tgggacctgg ttcacgctta cctgatatag  | 24120 |
| cttccttga agaggttcca aagatcttcg agggctctggg caataatgag actcgggccg  | 24180 |
| caaatgctct gcaaaaaggga gaaaatggca tggatgagca tcacagcgtt ctggtggaat | 24240 |
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| catatccgc tgtcaacctg cccctaaag tcatgacggc ggtcatggac cagttactca    | 24360 |
| ttaagcgcgc aagtccccct tcagaagaca tgcagatgac agatgcctgt gatgagggt   | 24420 |
| aaccagtggc cagtgatgag cagctaaccg gatggctggg caccgactct cccagggt    | 24480 |
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| cttttagaca cggctttgtg cggcaggcat gcaagatatc taacgtggaa ctcaccaacc  | 24660 |
| tggtttccta catgggtatt ctgcatgaga atcgccatagg acaaagcgtg ctgcacagca | 24720 |
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|                                                                   |       |
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| acggattgcc tgactttatg agccagagca tgcttaacaa ttttcgctct ttcacctgg  | 25020 |
| aacgctccgg tatcctgccc gccacctgct gcgcactgcc ctccgacttt gtgcctctca | 25080 |
| cctaccgcga gtgcccccg ccgctatgga gtcactgcta cctgttccgt ctggccaact  | 25140 |
| atctctccta ccactcggat gtgatcgagg atgtgagcgg agacggcttg ctggagtgtc | 25200 |
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| gcgaaaccca gataataggc acctttgaat tgcaaggccc cagcagccaa ggcgatgggt | 25320 |
| cttctcctgg gcaaagttaa aaactgaccc cgggactgtg gacctccgcc tacttgcgca | 25380 |
| agtttgctcc ggaagattac caccctatg aaatcaagtt ctatgaggac caatcacagc  | 25440 |
| ctccaaaggc cgaactttcg gcctgcgtca tcaccaggg ggcaattctg gcccaattgc  | 25500 |
| aagccatcca aaaatcccg ccaagaatttc tactgaaaaa gggtaagggg gtctaccttg | 25560 |
| acccccagac cggcgaggaa ctcaacacaa ggttcctca ggatgtcca acgacgagaa   | 25620 |
| aacaagaagt tgaagggtga gccgccgccc ccagaagata tggaggaaga ttgggacagt | 25680 |
| caggcagagg aggcggagga ggacagtctg gaggacagtc tggaggaaga cagtttgag  | 25740 |
| gaggaaaacg aggaggcaga ggaggtggaa gaagtaaccg ccgacaaaca gttatcctcg | 25800 |
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| ggggtgaact ttccgcgcaa tgttttgcat tactaccgtc acctccacag cccctactat | 26100 |
| agccagcaaa tcccggcagt ctcgacagat aaagacagcg gcggcgacct ccaacagaaa | 26160 |
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| ttcgctcacc agaagttggt tgtatcacaa gagcgaagat caacttcagc gcactctcga  | 26400 |
| ggacgccgag gctctcttca acaagtactg cgcgctgact cttaaagagt aggcagcgac  | 26460 |
| cgcgcttatt caaaaaaggc gggaattaca tcatcctcga catgagtaaa gaaattccca  | 26520 |
| cgccttacat gtggagttat caaccccaaa tgggattggc ggcaggcgcc tcccaggact  | 26580 |
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| tacgcgccta ccgaaaccaa atacttttgg aacagtcagc tcttaccacc acgccccgcc  | 26700 |
| aacaccttaa tcccagaaat tggcccgccg ccctagtgtg ccaggaaagt cccgctccca  | 26760 |
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| gaccagacgg aatctttcag attgccggct gcgggagatc ttccttcacc cctcgtcagg  | 27000 |
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| ctttcgtgc tttgcccggg aactcattga gttcatctac ttcgaactcc ccaaggatca   | 27300 |
| ccctcaaggt ccggcccacg gagtgcggtat ttctatcgaa ggcaaaatag actctcgctt | 27360 |
| gcaacgaatt ttctcccagc ggcccgtgct gatcgagcga gaccaggga acaccacggt   | 27420 |
| ttccatctac tgcatttgta atcaccccg attgcatgaa agcctttgct gtcttatgtg   | 27480 |
| tactgagttt aataaaaaact gaattaagac tctcctacgg actgccgctt cttcaacccg | 27540 |
| gattttacaa ccagaagaac gaaacttttc ctgtcgtcca ggactctgtt aacttcacct  | 27600 |
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| acctatacac accttgcttc actttcttag tgggtgttggtg gtattggttt aaaaaatggg | 27840 |
| gcccatacta gtcttgcttg ttttactttc gcttttggaa ccgggttctg ccaattacga   | 27900 |
| tccatgtcta gacttcgacc cagaaaactg cacacttact tttgcacccg acacaagccg   | 27960 |
| catctgtgga gttcatcgcc tctcttacga acttggcccc caacgacaaa aatttacctg   | 28020 |
| catggtggga atcaaccca tagttatcac ccagcaaagt ggagatacta agggttgcat    | 28080 |
| tcactgctcc tgcgattcca tcgagtgcac ctacaccctg ctgaagaccc tatgcggcct   | 28140 |
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| gcaataaggt ctctgttgaa attttctccc agcagcacct cacttcctc ttcccaactc    | 28260 |
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| ccggctcagt gactccttca accctgtcta cccctatgaa gatgaaagca cctcccaaca   | 28440 |
| cccctttata aaccagggt ttatttcccc aaatggcttc acacaaagcc caaacggagt    | 28500 |
| tcttacttta aaatgttta cccactaac aaccacaggc ggatctctac agctaaaagt     | 28560 |
| gggaggggga cttacagtgg atgacaccaa cggttttttg aaagaaaaca taagtgccac   | 28620 |
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| ttgcattgat gacaatatta acaccttatg gacaggagtc aacccaccg aagccaactg    | 28800 |
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| tggagcacta gtcactgcat ttgtttatgt tataggagta tctaacaatt ttaatatgct   | 28920 |
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| actaactaga ctctcatccc tcaaaactcc acttaatcat aaatcaggac aaaacatggc   | 29040 |
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| aacctctgct acaaccctag tcacctcccc atttaccttt tactacatca gagaagacga  | 29340 |
| ctgacaaaata aagtttgcga tcgccagggg ctcccgccag atctagtaat caattacggg | 29400 |
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| agtaacgcca atagggactt tccattgacg tcaatgggtg gagtatttac ggtaaactgc  | 29580 |
| ccacttggca gtacatcaag tgtatcatat gccaagtacg cccctattg acgtcaatga   | 29640 |
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| ccgtgggaaa atgacgtttt gtgggggtgg agtttttttg caagttgtcg cgggaaatgt   | 180  |
| gacgcataaa aaggcttttt tctcacggaa ctacttagtt ttcccacggg atttaacagg   | 240  |
| aaatgaggta gttttgaccg gatgcaagtg aaaattgttg attttcgcgc gaaaactgaa   | 300  |
| tgaggaagtg tttttctgaa taatgtggta tttatggcag ggtggagtat ttgttcaggg   | 360  |
| ccaggtagac tttgacccat tacgtggagg tttcgattac cgtgtttttt acctgaattt   | 420  |
| ccgcgtaccg tgtcaaagtc ttctgttttt acgtagggtg cagctgatcg ctagggattt   | 480  |
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| tctgcgccgg cagtttaata ataaaaaat gagagatttg cgatttctgc ctgaggaaat    | 600  |
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| acagatgtca tagacgtaga tgggatcctc aaagatgcct atgtaggttg gatagcatcg  | 6660 |
| ccccctctg atacttgctc gcacatagtc atatagttca tgtgatggcg ctagcagccc   | 6720 |
| cggacccaag ttggtgcgat tgggtttttc tgttctgtag acgatctggc gaaagatggc  | 6780 |
| gtgagaattg gaagagatgg tgggtctttg aaaaatgttg aaatgggcat gaggtagacc  | 6840 |



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| tacagagtct ctgacaaaagt gggcataaga ttcttgaagc ttggttacca gttcggcgg  | 6900 |
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| gtttttcttt tcccacagtt cgcgggtgag aaggatttct tcgcatcct tccagtactc   | 7020 |
| ttctagcgga aacctgtctt tgtctgcacg gtaagatcct agcatgtaga actgattaac  | 7080 |
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| gaagtcgatg tcgtcacagg ctccctgttc ccagagttgg aagtctaccc gtttcttgta  | 7260 |
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| gaaattgcga gtgatgcgaa aaggctgtgg tacttccgct cggttattga taacctgggc  | 7380 |
| agctaggacg atctcgtcga aaccgttgat gttgtgtcct acgatgtata attctatgaa  | 7440 |
| acgcggcgtg cctctgacgt gaggtagctt actgagctca tcaaaggta ggtctgtggg   | 7500 |
| gtcagataag gcgtagtggt cgagagccca ttcgtgcagg tgaggattcg ctttaaggaa  | 7560 |
| ggaggaccag aggtccactg ccagtgtgtt ttgtaactgg tcccgggtact gacgaaaatg | 7620 |
| ccgtccgact gccatttttt ctgggggtgac gcaatagaag gtttgggggt cctgccgcca | 7680 |
| gcgatccac ttgagtttta tggcgaggtc ataggcgatg ttgacgagcc gctggtctcc   | 7740 |
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| gtaggtttcc acatcgtagg tgagaaagag cttttctgtg cgaggatgag agccaatcgg  | 7860 |
| gaagaactgg atctcctgcc accagttgga ggaatggctg ttgatgtgat ggaagtagaa  | 7920 |
| ctccctgcga cgcgccgagc attcatgctt gtgcttgtag agacggccgc agtagtcgca  | 7980 |
| gcgttgacac gggtgtatct cgtgaatgag ttgtacctgg cttcccttga cgagaaattt  | 8040 |
| cagtgggaag ccgaggcctg gcgattgtat ctcgtgcttt actatgttgt ctgcatcggc  | 8100 |
| ctgttcatct tctgtctcga tgggtgtcat gctgacgagc cctcgcgga ggcaagtcca   | 8160 |
| gacctcggcg cggcaggggc ggagctcgag gacgagagcg cgcaggctgg agctgtccag  | 8220 |
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|                                                                     |      |
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| gcaccgggag gcaggggagg ctcgggaccc ggcggtatgg ctggcagtgg tacgtcggcg   | 8520 |
| ccgcgcgcgg gtaggttctg gtactgcgcc ctgagaagac tcgcatgcgc gacgacgcgg   | 8580 |
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| ctgaaagaga gttcaacaga atcaatctcg gtatcgttga cggcggttg cctaaggatt    | 8700 |
| tcttgacagt caccagagtt gtcctggtag gcgatctccg ccatgaactg ctcgatctct   | 8760 |
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| cgcacctcgc gctcgaaagc ccctgggatt tcttctcaa tctcttcttc ttccactaac    | 9240 |
| atctcttctt cttcaggtgg ggctgcagga ggagggggaa cgcggcgacg ccggcggcgc   | 9300 |
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| aacctttcga cgaaagcgtc taaccagtca cagtcacaag gtaggctgag tacggcttct   | 9600 |
| tgtgggcggg ggtggttatg tggtcggtct gggtcttctg tttcttcttc atctcgggaa   | 9660 |
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| ggcacttctt cctcaccgt tctgccatgc atacgtgtga gtccaaatcc gcgcattgggt   | 9900  |
| tgtaccagt ccaagtcagc tacgactctt tcggcgagga tggcttgctg tacttgggta    | 9960  |
| agggtggctt gaaagtcatc aaaatccaca aagcgggtgt aagctcctgt attaatgggtg  | 10020 |
| taagcacagt tggccatgac tgaccagtta actgtctgggt gaccagggcg cacgagctcg  | 10080 |
| gtgtatttaa ggcgcgaata ggcgcgggtg tcaaagatgt aatcgttgca ggtgcgacc    | 10140 |
| agatactgggt accctataag aaaatgcggc ggtggttggc ggtagagagg ccatcgttct  | 10200 |
| gtagctggag cgccaggggc gaggtcttcc aacataaggc ggtgatagcc gtagatgtac   | 10260 |
| ctggacatcc aggtgattcc tgcggcggtg gtagaagccc gaggaaactc gcgtacgcgg   | 10320 |
| ttccaaatgt tgcgtagcgg catgaagtag ttcattgtag gcacggtttg accagtgagg   | 10380 |
| cgcgcgagc cattgatgct ctatagacac ggagaaaatg aaagcgttca gcgactcgac    | 10440 |
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| actcgagccg gccggagccg cggctaactg ggtattggca ctcccgtctc gaccagcct    | 10560 |
| acaaaaatcc aggatacggg atcgagtcgt tttgctgggt tccgaatggc agggagtgga   | 10620 |
| gtcctatattt ttttttttgc cgctcagatg catcccgtgc tgcgacagat gcgcccccaa  | 10680 |
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| gcaactgccg ccgtgagcgg tgcgggacag cccgcctatg atctggactt ggaagagggc   | 10800 |
| gaaggactgg cacgtctagg tgcgccttca cccgagcggc atccgcgagt tcaactgaaa   | 10860 |
| aaagattctc gcgaggcgta tgtgccccaa cagaacctat ttagagacag aagcggcgag   | 10920 |
| gagccggagg agatgcgagc ttcccgtttt aacgcgggtc gtgagctgcg tcacggtttg   | 10980 |
| gaccgaagac gagtgttgcg ggacgaggat ttcgaagttg atgaaatgac agggatcagt   | 11040 |
| cctgccaggg cacacgtggc tgcagccaac cttgtatcgg cttacgagca gacagtaaag   | 11100 |
| gaagagcgta acttccaaaa gtcttttaaat aatcatgtgc gaaccctgat tgcccgcgaa  | 11160 |

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|                                                                     |       |
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| gctttcagag aggcgctgct gaacatcacc gaacccgagg ggagatgggt gtatgatctt   | 11340 |
| atcaacattc tacagagtat catagtgcag gagcggagcc tgggcctggc cgagaagggtg  | 11400 |
| gctgccatca attactcgggt tttgagcttg ggaaaatatt acgctcgcaa aatctacaag  | 11460 |
| actccatacg ttcccataga caaggagggtg aagatagatg ggttctacat gcgcatgacg  | 11520 |
| ctcaaggctt tgacctgag cgatgatctt ggggtgtatc gcaatgacag aatgcatcgc    | 11580 |
| gcggttagcg ccagcaggag gcgcgagtta agcgacaggg aactgatgca cagtttgcaa   | 11640 |
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| ggaccgtatg ataacagatg tacgcgaagc cgtgtctcag cgcgaaagg tccagcgtga    | 12240 |
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| gccgcgtgggt caacaggatt atactaactt ttttaagtgt ttgagactga tggatcaga   | 12360 |
| agtacctcag agcgaagtgt atcagtccgg tcctgattac ttctttcaga ctagcagaca   | 12420 |
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| gcatgccccg gtaggagaaaa gagcaaccgt gtctagcttg ttaactccga actccgcct   | 12540 |
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| agccactctg aacttcttgc ttaccaatcg gtctcaaaag atccctcctc aatatgctct  | 12780 |
| tactgcggag gaggagagga tccttagata tgtgcagcag agcgtgggat tgtttctgat  | 12840 |
| gcaagagggg gcaactccga ctgcagcact ggacatgaca gcgcgaaata tggagcccag  | 12900 |
| catgtatgcc agtaaccgac ctttcattaa caaactgctg gactacttgc acagagctgc  | 12960 |
| cgctatgaac tctgattatt tcaccaatgc catcttaaac ccgcactggc tgccccacc   | 13020 |
| tggtttctac acgggcgaat atgacatgcc cgaccctaata gacggatttc tgtgggacga | 13080 |
| cgtggacagc gatgtttttt cacctctttc tgatcatcgc acgtggaaaa aggaaggcgg  | 13140 |
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| cgagtctgca agtccttttc ctagtctacc cttttctcta cacagtgtac gtagcagcga  | 13260 |
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| gctcagaccg gcaagagaaa aaaatttccc aaacaatgga atagaaagt tgggtggataa  | 13380 |
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| tacaagtaga gcgagccgta gacgccagcg ccatgacaga cagaggggtc ttgtgtggga  | 13500 |
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| ttggggatac ttatgatcac aagcaggata ttttgaaata tgagtggttc gagtttactt  | 14220 |
| tgccagaagg caacttttca gttactatga ctattgattt gatgaacaat gccatcatag  | 14280 |
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| cctgtcccta cgtgtacaag gactgggca tagtcgcacc gcgcgtcctt tcaagccgca   | 15360 |
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| gtatcccact atgcaactga tggtaaccaa acgccagaag ttggaggacg ttttgagaa   | 16560 |
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| aaaaaaaaaa tacaatggac tctgacactc ctggtcctgt gactatgttt tcttagagat   | 17400 |
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| ctggagcgac atcggcacga gccaaactgaa cggggggcgcc ttcaattgga gcagtatctg | 17520 |
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| gtgtcattac acgccgtcac agcagcagag gaaaaaagga agaggtcgtg cgtcgacgct   | 18240 |
| gagttacttt caagatggcc accccatcga tgctgcccc atgggcatac atgcacatcg    | 18300 |
| ccggacagga tgcttcggag tacctgagtc cgggtctggt gcagttcgcc cgcgccacag   | 18360 |



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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| acacctactt caatctggga aataagttta gaaatcccac cgtagcgccg acccacgatg  | 18420 |
| tgaccaccga ccgtagccag cggctcatgt tgcgcttcgt gcccgttgac cgggaggaca  | 18480 |
| atacatactc ttacaaagtg cggtagaccc tggccgtggg cgacaacaga gtgctggata  | 18540 |
| tggccagcac gttctttgac attaggggtg tgttggacag aggtcccagt ttcaaaccct  | 18600 |
| attctggtag ggcttacaac tccctggctc cttaaaggcg tccaaataca tctcagtgga  | 18660 |
| ttgcagaagg tgtaaaaaat acaactgggtg aggaacacgt aacagaagag gaaaccaata | 18720 |
| ctactactta cacttttggc aatgctcctg taaaagctga agctgaaatt acaaaagaag  | 18780 |
| gactcccagt aggtttggaa gtttcagatg aagaaaagtaa accgatttat gctgataaaa | 18840 |
| catatcagcc agaacctcag ctgggagatg aaacttggac tgaccttgat ggaaaaaccg  | 18900 |
| aaaagtatgg aggcagggct ctcaaaccgc atactaagat gaaacccatgc tacgggtcct | 18960 |
| ttgccaaacc tactaatgtg aaaggcggtc aggcaaaaca aaaaacaacg gagcagccaa  | 19020 |
| atcagaaaagt cgaatatgat atcgacatgg agttttttga tgcggcatcg cagaaaacaa | 19080 |
| acttaagtcc taaaattgtc atgtatgcag aaaatgtaaa tttggaaact ccagacactc  | 19140 |
| atgtagtgtg caaacctgga acagaagaca caagttccga agctaatttg ggacaacaat  | 19200 |
| ctatgcccac cagacccaac tacattggct tcagagataa ctttattgga cttatgtact  | 19260 |
| ataacagtac tggtaacatg ggggtgctgg ctggtcaagc gtctcagtta aatgcagtgg  | 19320 |
| ttgacttgca ggacagaaac acagaacttt cttaccaact cttgcttgac tctctgggcg  | 19380 |
| acagaaccag atacttttagc atgtggaatc aggctgtgga cagttatgat cctgatgtac | 19440 |
| gtgttattga aaatcatggt gtggaagatg aacttcccaa ctactgtttt ccactggacg  | 19500 |
| gcataggtgt tccaacaacc agttacaaat caatagttcc aaatggagac aatgcgccta  | 19560 |
| attggaagga acctgaagta aatggaacaa gtgagatcgg acagggtaat ttgtttgcca  | 19620 |
| tggaaattaa ccttcaagcc aatctatggc gaagtttcct ttattccaat gtggctctat  | 19680 |
| atctcccaga ctcgtacaaa tacaccccg ccaatgtcac tcttccagaa aacaaaaaca   | 19740 |
| cctacgacta catgaacggg cgggtggtgc cgccatctct agtagacacc tatgtgaaca  | 19800 |

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|                                                                    |       |
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| ttggtgccag gtggtctctg gatgccatgg acaatgtcaa cccattcaac caccaccgta  | 19860 |
| acgctggcctt gcgttaccga tccatgcttc tgggtaacgg acgttatgtg cttttccaca | 19920 |
| tacaagtgcc tcaaaaattc ttcgctgtta aaaacctgct gcttctccca ggctcctaca  | 19980 |
| cttatgagtg gaactttagg aaggatgtga acatggttct acagagttcc ctcggtaacg  | 20040 |
| acctgcgggt agatggcgcc agcatcagtt tcacgagcat caacctctat gctacttttt  | 20100 |
| tcccatggc tcacaacacc gcttccaccc ttgaagccat gctgcggaat gacaccaatg   | 20160 |
| atcagtcatt caacgactac ctatctgcag ctaacatgct ctacccatt cctgccaatg   | 20220 |
| caaccaatat tcccatttcc attccttctc gcaactgggc ggctttcaga ggctggcat   | 20280 |
| ttaccagact gaaaaccaa gaaactccct ctttggggtc tggatttgac ccctactttg   | 20340 |
| tctattctgg ttctattccc tacctggatg gtaccttcta cctgaaccac acttttaaga  | 20400 |
| aggtttccat catgtttgac tcttcagtga gctggcctgg aaatgacagg ttactatctc  | 20460 |
| ctaacgaatt tgaaataaag cgcactgtgg atggcgaagg ctacaacgta gcccaatgca  | 20520 |
| acatgaccaa agactgggtc ttggtacaga tgctcgccaa ctacaacatc ggctatcagg  | 20580 |
| gcttctacat tccagaagga tacaagatc gcatgtattc atttttcaga aacttccagc   | 20640 |
| ccatgagcag gcaggtggtt gatgaggtca attacaaaga cttcaaggcc gtcgccatac  | 20700 |
| cctaccaaca caacaactct ggctttgtgg gttacatggc tccgaccatg cgccaaggtc  | 20760 |
| aaccttatcc cgctaactat ccctatccac tcattggaac aactgccgta aatagtgtta  | 20820 |
| cgcagaaaaa gttcttgtgt gacagaacca tgtggcgcat accgttctcg agcaacttca  | 20880 |
| tgtctatggg ggcccttaca gacttgggac agaatatgct ctatgccaac tcagctcatg  | 20940 |
| ctctggacat gacctttgag gtggatccca tggatgagcc caccctgctt tatcttctct  | 21000 |
| tcgaagtttt cgacgtggtc agagtgcac agccacaccg cggcatcatc gaggcagtct   | 21060 |
| acctgcgtac accgttctcg gccggtaacg ctaccacgta agaagcttct tgcttcttgc  | 21120 |
| aaatagcagc tgcaaccatg gcctgcggat cccaaaacgg ctccagcgag caagagctca  | 21180 |
| gagccattgt ccaagacctg ggttgcggac cctatTTTTT gggaacctac gataagcgct  | 21240 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| tccccggggtt catggccccc gataagctcg cctgtgccat tgtaaatacg gccggacgtg  | 21300 |
| agacggggggg agagcactgg ttggcttttcg gttggaaccc acgttctaac acctgctacc | 21360 |
| tttttgatcc ttttggattc tcggatgatc gtctcaaaca gatttaccag tttgaatatg   | 21420 |
| agggtctcct gcgccgcagc gctcttgcta ccaaggaccg ctgtattacg ctggaaaaat   | 21480 |
| ctaccagac cgtgcagggt ccccgttctg ccgcctgcgg acttttctgc tgcatgttcc    | 21540 |
| ttcacgcctt tgtgcactgg cctgaccgtc ccatggacgg aaaccccacc atgaaattgc   | 21600 |
| taactggagt gccaaacaac atgcttcatt ctctaaagt ccagcccacc ctgtgtgaca    | 21660 |
| atcaaaaagc actctaccat tttcttaata cccattcgcc ttattttctgc tcccacgta   | 21720 |
| cacacatcga aagggccact gcgttcgacc gtatggatgt tcaataatga ctcatgtaaa   | 21780 |
| caacgtgttc aataaacatc actttatttt ttacatgta tcaaggctct gcattactta    | 21840 |
| tttatttaca agtcgaatgg gttctgacga gaatcagaat gaccgcagg cagtgatacg    | 21900 |
| ttgcggaact gatacttggg ttgccacttg aattcgggaa tcaccaactt gggaaccggt   | 21960 |
| atatcgggca ggatgtcact ccacagcttt ctggtcagct gcaaagctcc aagcagggtca  | 22020 |
| ggagccgaaa tcttgaaatc acaattagga ccagtgcctt gagcgcgaga gttgcggtac   | 22080 |
| accggattgc agcactgaaa caccatcagc gacggatgtc tcacgcttgc cagcacggtg   | 22140 |
| ggatctgcaa tcatgcccac atccagatct tcagcattgg caatgctgaa cgggggtcatc  | 22200 |
| ttgcaggctc gcctacccat ggccgggcacc caattaggct tgtggttgca atcgcagtgc  | 22260 |
| agggggatca gtatcatctt ggccctgatcc tgtctgattc ctggatacac ggctctcatg  | 22320 |
| aaagcatcat attgcttgaa agcctgctgg gctttactac cctcggtata aaacatcccg   | 22380 |
| caggacctgc tcgaaaactg gttagctgca cagccggcat cattcacaca gcagcgggcg   | 22440 |
| tcattgttag ctatttgcac cacacttctg cccagcgggt tttgggtgat tttggttcgc   | 22500 |
| tcgggattct cctttaaggc tcgttgtccg ttctcgctgg ccacatccat ctcgataatc   | 22560 |
| tgctccttct gaatcataat attgccatgc aggcaattca gcttgccctc ataattattg   | 22620 |
| cagccatgag gccacaacgc acagcctgta cattcccaat tatggtgggc gatctgagaa   | 22680 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| aaagaatgta tcattccctg cagaaatctt cccatcatcg tgctcagtgt cttgtgacta  | 22740 |
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| tattgttcgt gttgctcagg cattagttta aaagagggtt taagttcgtt atccagcctg  | 22860 |
| tacttctcca tcagcagaca catcacttcc atgcctttct cccaagcaga caccaggggc  | 22920 |
| aagctaatacg gattcttaac agtgcaggca gcagctcctt tagccagagg gtcactttta | 22980 |
| gcgatcttct caatgcttct tttgccatcc ttctcaacga tgcgcacggg cgggtagctg  | 23040 |
| aaaccactg ctacaagttg cgcctcttct ctttcttctt cgctgtcttg actgatgtct   | 23100 |
| tgcatgggga tatgtttggg cttccttggc ttctttttgg ggggtatcgg aggaggagga  | 23160 |
| ctgtcgctcc gttccggaga caggaggat tgtgacgttt cgctcaccat taccaactga   | 23220 |
| ctgtcggtag aagaacctga cccacacgg cgacagggtg ttctcttcgg gggcagaggt   | 23280 |
| ggaggcgatt gcgaagggt gcggtccgac ctggaaggcg gatgactggc agaaccctt    | 23340 |
| ccgcgttcgg ggggtgtgct cctgtggcgg tcgcttaact gatttccttc gcggctggcc  | 23400 |
| attgtgttct cctaggcaga gaaacaacag acatggaaac tcagccattg ctgtcaacat  | 23460 |
| cgccacgagt gccatcacat ctgctcctca gcgacgagga aaaggagcag agcttaagca  | 23520 |
| ttccaccgcc cagtcctgcc accacctcta ccctagaaga taaggaggtc gacgcatctc  | 23580 |
| atgacatgca gaataaaaaa gcgaaagagt ctgagacaga catcgagcaa gaccgggct   | 23640 |
| atgtgacacc ggtggaacac gaggaagagt tgaaacgctt tctagagaga gaggatgaaa  | 23700 |
| actgccccaa acaacgagca gataactatc accaagatgc tggaaatagg gatcagaaca  | 23760 |
| ccgactacct catagggtt gacggggaag acgcgtcct taaacatcta gcaagacagt    | 23820 |
| cgctcatagt caaggatgca ttattggaca gaactgaagt gcccacatcgt gtggaagagc | 23880 |
| tcagccgcgc ctacgagctt aacctctttt cacctcgtac tcccccaaa cgtcagccaa   | 23940 |
| acggcacctg cgagccaaat cctcgcttaa acttttatcc agcttttgct gtgccagaag  | 24000 |
| tactggctac ctatcacatc ttttttaaaa atcaaaaaat tccagtctcc tgccgcgcta  | 24060 |
| atcgcacccg cgccgatgcc ctactcaatc tgggacctgg ttcacgctta cctgatatag  | 24120 |

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|---------------------------------------------------------------------|-------|
| cttccttgga agaggttcca aagatcttcg agggctctggg caataatgag actcgggccg  | 24180 |
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| tggaaggcga taatgccaga ctgcagtagc tcaagcgaag catcgagggt acacacttcg   | 24300 |
| catatcccg cgtcaacctg cccctaaag tcatgacggc ggtcatggac cagttactca     | 24360 |
| ttaagcgcgc aagtccccct tcagaagaca tgcattgaccc agatgcctgt gatgagggtg  | 24420 |
| aaccagtggg cagtgatgag cagctaaccg gatggctggg caccgactct cccagggtat   | 24480 |
| tggaagagcg tcgcaagctt atgatggccg tgggtgctggg taccgtagaa ctagagtgtc  | 24540 |
| tccgacgttt ctttaccgat tcagaaacct tgcgcaaacg cgaagagaat ctgcactaca   | 24600 |
| cttttagaca cggctttgtg cggcaggcat gcaagatata taactgtgaa ctcaccaacc   | 24660 |
| tggtttccta catgggtatt ctgcattgaga atcgccatagg acaaagcgtg ctgcacagca | 24720 |
| ccctgaaggg ggaagcccg cgtgattaca tccgcgattg tgtctatctg tacctgtgcc    | 24780 |
| acacgtggca aaccggcatg ggtgtatggc agcaatgttt agaagaacag aacttgaaag   | 24840 |
| agcttgacaa gctcttacag aaatctctta aggttctgtg gacagggttc gacgagcgca   | 24900 |
| ccgtcgcttc cgacctggca gacctcatct tcccagagcg tctcagggtt actttgcgaa   | 24960 |
| acggattgcc tgactttatg agccagagca tgcttaacaa ttttcgctct ttcattctgg   | 25020 |
| aacgctccgg tatcctgccc gccacctgct gcgcactgcc ctccgacttt gtgcctctca   | 25080 |
| cctaccgcga gtgccccccg ccgctatgga gtcactgcta cctgttccgt ctggccaact   | 25140 |
| atctctccta ccactcggat gtgatcgagg atgtgagcgg agacggcttg ctggagtgtc   | 25200 |
| actgccgctg caatctgtgc acgccccacc ggtccctagc ttgcaacccc cagttgatga   | 25260 |
| gcgaaaccca gataataggc acctttgaat tgcaaggccc cagcagccaa ggcatgggt    | 25320 |
| cttctcctgg gcaaagttaa aaactgaccc cgggactgtg gacctccgcc tacttgcgca   | 25380 |
| agtttgctcc ggaagattac caccctatg aaatcaagtt ctatgaggac caatcacagc    | 25440 |
| ctccaaaggc cgaactttcg gcctgcgtca tcaccagggt ggcaattctg gcccaattgc   | 25500 |
| aagccatcca aaaatcccg caagaatttc tactgaaaaa gggtaagggg gtctaccttg    | 25560 |

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|             |             |            |            |            |            |       |
|-------------|-------------|------------|------------|------------|------------|-------|
| acccccagac  | cggcgaggaa  | ctcaacacaa | ggttccctca | ggatgtccca | acgacgagaa | 25620 |
| aacaagaagt  | tgaagggtgca | gccgccgccc | ccagaagata | tggaggaaga | ttgggacagt | 25680 |
| caggcagagg  | aggcggagga  | ggacagtctg | gaggacagtc | tggaggaaga | cagtttggag | 25740 |
| gaggaaaacg  | aggaggcaga  | ggaggtggaa | gaagtaaccg | ccgacaaaca | gttatcctcg | 25800 |
| gctgcggaga  | caagcaacag  | cgctaccatc | tccgctccga | gtcgaggaac | ccggcggcgt | 25860 |
| cccagcagta  | gatgggacga  | gaccggacgc | ttcccgaacc | caaccagcgc | ttccaagacc | 25920 |
| ggtaagaagg  | atcggcaggg  | atacaagtcc | tggcgggggc | ataagaatgc | catcatctcc | 25980 |
| tgcttgcag   | agtgcggggg  | caacatatcc | ttcacgcggc | gctacttgct | attccaccat | 26040 |
| gggggtgaact | ttccgcgcaa  | tgttttgcat | tactaccgtc | acctccacag | cccctactat | 26100 |
| agccagcaaa  | tcccggcagt  | ctcgacagat | aaagacagcg | gcggcgacct | ccaacagaaa | 26160 |
| accagcagcg  | gcagttagaa  | aatacacaac | aagtgcagca | acaggaggat | taaagattac | 26220 |
| agccaacgag  | ccagcgcaaa  | cccgagagtt | aagaaatcgg | atctttccaa | ccctgtatgc | 26280 |
| catcttccag  | cagagtcggg  | gtcaagagca | ggaactgaaa | ataaaaaacc | gatctctgcg | 26340 |
| ttcgctcacc  | agaagttggt  | tgtatcacia | gagcgaagat | caacttcagc | gcactctcga | 26400 |
| ggacgccgag  | gctctcttca  | acaagtactg | cgcgctgact | cttaaagagt | aggcagcgac | 26460 |
| cgcgcttatt  | caaaaaaggc  | gggaattaca | tcacctcga  | catgagtaaa | gaaattccca | 26520 |
| cgccttacat  | gtggagttat  | caaccccaaa | tgggattggc | ggcaggcgcc | tcccaggact | 26580 |
| actccacccg  | catgaattgg  | ctcagcgccg | ggccttctat | gatttctcga | gttaatgata | 26640 |
| tacgcgccta  | ccgaaaccaa  | atacttttgg | aacagtcagc | tcttaccacc | acgccccgcc | 26700 |
| aacaccttaa  | tcccagaaat  | tggcccgccg | ccctagtgtg | ccaggaaagt | cccgtccca  | 26760 |
| ccactgtatt  | acttcctcga  | gacgcccagg | ccgaagtcca | aatgactaat | gcaggtgcgc | 26820 |
| agttagctgg  | cggctccacc  | ctatgtcgtc | acaggcctcg | gcataatata | aaacgcctga | 26880 |
| tgatcagagg  | ccgaggtatc  | cagctcaacg | acgagtcggt | gagctctccg | cttggtctac | 26940 |
| gaccagacgg  | aatctttcag  | attgccggct | gcgggagatc | ttccttcacc | cctcgtcagg | 27000 |

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|---------------------------------------------------------------------|-------|
| ctgttctgac tttggaaaagt tcgtcttcgc aacccccgctc gggcggaatc gggaccgttc | 27060 |
| aatttgtgga ggagtttact ccctctgtct acttcaaccc cttctccgga tctcctgggc   | 27120 |
| attacccgga cgagttcata ccgaacttcg acgcgattag cgagtcagtg gacggctacg   | 27180 |
| attgatgtct ggtgacgcgg ctgagctatc tcggctgcga catctagacc actgccgccg   | 27240 |
| ctttcgctgc tttgcccggg aactcattga gttcatctac ttcgaactcc ccaaggatca   | 27300 |
| ccctcaaggt ccggcccacg gagtgcggat ttctatcgaa ggcaaaatag actctcgcct   | 27360 |
| gcaacgaatt ttctcccagc ggcccgtgct gatcgagcga gaccagggaa acaccacggt   | 27420 |
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| tactgagttt aataaaaaact gaattaagac tctcctacgg actgccgctt cttcaacccg  | 27540 |
| gattttacaa ccagaagaac gaaacttttc ctgtcgtcca ggactctgtt aacttcacct   | 27600 |
| ttcctactca caaactagaa gctcaacgac tacaccgctt ttccagaagc attttcccta   | 27660 |
| ctaatactac tttcaaaacc ggaggtgagc tccaaggtct tcctacagaa aacccttggg   | 27720 |
| tggaagcggg ccttgtagtg ctaggaattc ttgcgggtgg gcttgtgatt attctttgct   | 27780 |
| acctatacac accttgcttc actttcttag tgggtgttggt gtattggttt aaaaaatggg  | 27840 |
| gcccatacta gtcttgcttg ttttactttc gcttttggaa ccgggttctg ccaattacga   | 27900 |
| tccatgtcta gacttcgacc cagaaaactg cacacttact tttgcacccg acacaagccg   | 27960 |
| catctgtgga gttcatcgcc tctcttacga acttggcccc caacgacaaa aatttacctg   | 28020 |
| catggtggga atcaaccca tagttatcac ccagcaaagt ggagatacta agggttgcat    | 28080 |
| tcactgctcc tgcgattcca tcgagtgcac ctacaccctg ctgaagaccc tatgcggcct   | 28140 |
| aagagacctg ctaccaatga attaaaaaat gattaataaa aaatcactta cttgaaatca   | 28200 |
| gcaataaggt ctctgttgaa attttctccc agcagcacct cacttcctc ttcccaactc    | 28260 |
| tggatttcta aaccccggtc agcggcatac tttctccata ctttaaaggg gatgtcaa     | 28320 |
| tttagctcct ctctgtacc cacaatcttc atgtctttct tcccagatga ccaagagagt    | 28380 |
| ccggctcagt gactccttca accctgtcta cccctatgaa gatgaaagca cctcccaaca   | 28440 |

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|--------------------------------------------------------------------|-------|
| cccctttata aacccagggt ttattttcccc aaatggcttc acacaaagcc caaacggagt | 28500 |
| tcttacttta aaatgtttta cccactaac aaccacaggc ggatctctac agctaaaagt   | 28560 |
| gggaggggga cttacagtgg atgacaccaa cggttttttg aaagaaaaca taagtgccac  | 28620 |
| cacaccactc gttaagactg gtcactctat aggtttacca ctaggagccg gattgggaac  | 28680 |
| gaatgaaaaat aaactttgta tcaaattagg acaaggactt acattcaatt caaacaacat | 28740 |
| ttgcattgat gacaatatta acaccttatg gacaggagtc aaccccaccg aagccaactg  | 28800 |
| tcaaatcatg aactccagt aatctaataa ttgcaaatta attctaacac tagttaaaac   | 28860 |
| tggagcacta gtcactgcat ttgtttatgt tataggagta tctaacaatt ttaatatgct  | 28920 |
| aactacacac agaaatataa attttactgc agagctgttt ttcgattcta ctggtaattt  | 28980 |
| actaactaga ctctcatccc tcaaaactcc acttaatcat aaatcaggac aaaacatggc  | 29040 |
| tactggtgcc attactaatg ctaaaggttt catgcccagc acgactgcct atcctttcaa  | 29100 |
| tgataattct agagaaaaag aaaactacat ttacggaact tgttactaca cagctagtga  | 29160 |
| tcgcactgct tttcccattg acatatctgt catgcttaac cgaagagcaa taaatgacga  | 29220 |
| gacatcatat tgtattcgta taacttggtc ctggaacaca ggagatgccc cagaggtgca  | 29280 |
| aacctctgct acaaccctag tcacctcccc atttaccttt tactacatca gagaagacga  | 29340 |
| ctgacaaata aagtttgcga tcgccaggcc caccatgggc tggagctgca tcactttggt  | 29400 |
| cctggtcgca actgctaccg gagtccattc ggacatcgtc atgacccaaa gccctgactc  | 29460 |
| gctcgctgtg tcaactgggag agcgggcgac tatcaactgc aaatcatccc agagcctgct | 29520 |
| gtattcacgc aatcagaaaa actacctggc ctggtatcag cagaagccgg gccagcctcc  | 29580 |
| caagctgctg atcttctggg cctccacccg cgaaagcggc gtgccggacc gcttcagcgg  | 29640 |
| aagcggattc ggaactgact ttactctgac cattagctcc ttgcaggcgg aggacgtggc  | 29700 |
| cgtctactac tgccagcagt atttctccta tccgctcacc tttgggcaag gcaccaaggt  | 29760 |
| ggagattaag ggagggggcg gcagcggggg aggcggcagc ggcggcgggg gatcgcaggt  | 29820 |
| ccagctcgtc caatccggag ccgaagtcaa gaagccggga gcgtcgggtca aggtcagctg | 29880 |



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|                                                                    |       |
|--------------------------------------------------------------------|-------|
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| gaaatttaaa gggcgggtga ctatcacctg ggatacctcg gcctccacgg cgtacatgga  | 30060 |
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| cactgtcacg gtgtcatcgg gagagggcac ctcaaccgga tcagggggat cgggaggctc  | 30600 |
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| gcagaagcca ggaaaggcgc cgaagagatg gatctacgac acctccaagg tcgcttcagg  | 30780 |
| tgtcccggt agattctcag gatcgggatc aggaacggac tactccctga ccatcaattc   | 30840 |
| actggaagca gaagatgcgg ccacctacta ctgtcagcag tggtcctcca acccgctgac  | 30900 |
| tttcggaggc ggaactaagg tcgagatcaa gcatcaccat caccatcacc accatcacca  | 30960 |
| ttaggctagc ttgactgact gagatacagc gtaccttcag ctcacagaca tgataagata  | 31020 |
| cattgatgag tttggacaaa ccacaactag aatgcagtga aaaaaatgct ttatttgtga  | 31080 |
| aatttgtgat gctattgctt tatttgtaac cattataagc tgcaataaac aagttaacaa  | 31140 |
| caacaattgc attcatTTta tgtttcaggt tcagggggag gtgtgggagg ttttttaaag  | 31200 |
| caagtaaaac ctctacaaat gtggtagtcg tcagctatcc tgcagggaact tgtttatttg | 31260 |
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|                                                                    |       |
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| aaatccatcg ggatagtctt ttaaagcgct ttcacagtcc aactgctgcg gatgcgactc  | 31500 |
| cggagtctgg atcacggtca tctggaagaa gaacgatggg aatcataatc cgaaaacggt  | 31560 |
| atcggacgat tgtgtctcat caaaccaca agcagccgct gtctgcgtcg ctccgtgcga   | 31620 |
| ctgctgttta tgggatcagg gtccacagtg tcctgaagca tgattttaat agcccttaac  | 31680 |
| atcaactttc tgggtgcgatg cgcgcagcaa cgcattctga tttcactcaa atctttgcag | 31740 |
| taggtacaac acattattac aatattgttt aataaaccat aattaaaagc gctccagcca  | 31800 |
| aaactcatat ctgatataat cgcccctgca tgaccatcat accaaaagttt aatataaatt | 31860 |
| aaatgacgtt ccctcaaaaa cacactaccc acatacatga tctcttttgg catgtgcata  | 31920 |
| ttaacaatct gtctgtacca tggacaacgt tggttaatca tgcaacccaa tataaccttc  | 31980 |
| cggaaccaca ctgccaacac cgctccccc gccatgcatt gaagtgaacc ctgctgatta   | 32040 |
| caatgacaat gaagaacca attctctcga cagtgaatca cttgagaatg aaaaatatct   | 32100 |
| atagtggcac aacatagaca taaatgcatg catcttctca taatttttaa ctctcagga   | 32160 |
| tttagaaaca tatcccaggg aataggaagc tcttgagaa cagtaaagct ggagaacaa    | 32220 |
| ggaagaccac gaacacaact tacactatgc atagtcatag tatcacaatc tggcaacagc  | 32280 |
| gggtgggtctt cagtcataga agctcgggtt tcatttttct cacaacgtgg taactgggct | 32340 |
| ctggtgtaag ggtgatgtct ggcgcatgat gtcgagcgtg cgcgcaacct tgtcataatg  | 32400 |
| gagttgcttc ctgacattct cgtattttgt atagcaaaac gcggccctgg cagaacacac  | 32460 |
| tcttcttcgc cttctatcct gccgcttagc gtgttccgtg tgatagttca agtacaacca  | 32520 |
| cactcttaag ttggtcaaaa gaatgctggc ttcagttgta atcaaaaactc catcgcatct | 32580 |
| aatcgttctg aggaaatcat ccaagcaatg caactggatt gtgtttcaag caggagagga  | 32640 |
| gaggggaagag acggaagaac catgttaatt ttattccaa acgatctcgc agtacttcaa  | 32700 |
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|                                                                     |       |
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| tattacattc ctgcaccatt cccagataat tttcagcttt ccagccttga attattcgtg   | 32940 |
| tcagttcttg tggtaaattcc aatccacaca ttacaaacag gtcccggagg gcgccctcca  | 33000 |
| ccaccattct taaacacacc ctcataatga caaaatatct tgctcctgtg tcacctgtag   | 33060 |
| cgaattgaga atggcaacat caattgacat gcccttggct ctaagttctt ctttaagttc   | 33120 |
| tagttgtaaa aactctctca tattatcacc aaactgctta gccagaagcc ccccggaac    | 33180 |
| aagagcaggg gacgctacag tgcagtacaa gcgcagacct cccaattgg ctccagcaaa    | 33240 |
| aacaagattg gaataagcat attgggaacc gccagtaata tcatcgaagt tgctggaaat   | 33300 |
| ataatcaggc agagtttctt gtaaaaattg aataaaagaa aaatttgcca aaaaaacatt   | 33360 |
| caaaacctct gggatgcaaa tgcaataggt taccgcgtg cgctccaaca ttgttagttt    | 33420 |
| tgaattagtc tgcaaaaata aaaaaaaaaa caagcgctcat atcatagtag cctgacgaac  | 33480 |
| agatggataa atcagtcttt ccatcacaag acaagccaca gggctctccag ctcgaccctc  | 33540 |
| gtaaaacctg tcatcatgat taaacaacag caccgaaagt tcctcgcggt gaccagcatg   | 33600 |
| aataattctt gatgaagcat acaatccaga catgttagca tcagttaacg agaaaaaaca   | 33660 |
| gccaacatag cctttgggta taattatgct taatcgtaag tatagcaaag ccacccctcg   | 33720 |
| cggatacaaa gtaaaaggca caggagaata aaaaatataa ttatttctct gctgctgttc   | 33780 |
| aggcaacgtc gcccccggtc cctctaaata cacatacaaa gcctcatcag ccatggctta   | 33840 |
| ccagacaaaag tacagcgggc acacaaagca caagctctaa agtgactctc caacctctcc  | 33900 |
| acaatatata tatacacaag ccctaaactg acgtaatggg agtaaagtgt aaaaaatccc   | 33960 |
| gccaaacca acacacaccc cgaaactgcg tcaccaggga aaagtacagt ttcacttccg    | 34020 |
| caatcccaac aggcgtaact tcctctttct cacggtacgt gatatccac taacttgcaa    | 34080 |
| cgatcatthc ccacggtcgc accgcccctt ttagccgtta accccacagc caatcaccac   | 34140 |
| acgatccaca ctttttaaaa tcacctcatt tacatattgg caccattcca tctataaggt   | 34200 |

atattatata gataga

34216

&lt;210&gt; 38

&lt;211&gt; 32326

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; EnAd genome

&lt;400&gt; 38

|                                                                    |      |
|--------------------------------------------------------------------|------|
| tctatctata taatataacct tatagatgga atgggtgcaa tatgtaaatg aggtgatttt | 60   |
| aaaaagtgtg gatcgtgtgg tgattggctg tgggggttaac ggctaaaagg ggcggtgcga | 120  |
| ccgtgggaaa atgacgtttt gtgggggtgg agtttttttg caagttgtcg cgggaaatgt  | 180  |
| gacgcataaa aaggcttttt tctcacggaa ctacttagtt ttcccacggg atttaacagg  | 240  |
| aaatgaggta gttttgaccg gatgcaagtg aaaattgttg attttcgcgc gaaaactgaa  | 300  |
| tgaggaagtg tttttctgaa taatgtggta tttatggcag ggtggagtat ttgttcaggg  | 360  |
| ccaggtagac tttgacccat tacgtggagg tttcgattac cgtgtttttt acctgaattt  | 420  |
| ccgcgtaccg tgtcaaagtc ttctgttttt acgtagggtg cagctgatcg ctagggattt  | 480  |
| tatacctcag ggtttgtgtc aagaggccac tcttgagtgc cagcgagaag agttttctcc  | 540  |
| tctgcgccgg cagtttaata ataaaaaat gagagatttg cgatttctgc ctgaggaaat   | 600  |
| aatctctgct gagactggaa atgaaatatt ggagcttgtg gtgcacgccc tgatgggaga  | 660  |
| cgatccggag ccacctgtgc agctttttga gcctcctacg cttcaggaac tgtatgattt  | 720  |
| agaggtagag ggatcggagg attctaata ggaagctgta aatggctttt ttaccgattc   | 780  |
| tatgctttta gctgctaata aagggttaga attagatccg cctttggaca cttttgatac  | 840  |
| tccaggggta attgtggaaa gcggtacagg tgtaagaaaa ttacctgatt tgagttccgt  | 900  |
| ggactgtgat ttgcactgct atgaagacgg gtttcctccg agtgatgagg aggaccatga  | 960  |
| aaaggagcag tccatgcaga ctgcagcggg tgagggagtg aaggctgcca atgttggttt  | 1020 |
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|                                                                     |      |
|---------------------------------------------------------------------|------|
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| attgagtgtg agttttgtgc ttcttattat aggtcctgtg tctgatgctg atgaatcacc   | 1260 |
| atctcctgat tctactacct cacctcctga gattcaagca cctgttcctg tggacgtgcg   | 1320 |
| caagccccatt cctgtgaagc ttaagcctgg gaaacgtcca gcagtggaaa aacttgagga  | 1380 |
| cttgttacag ggtggggacg gacctttgga cttgagtaca cggaaacgtc caagacaata   | 1440 |
| agtgttccat atccgtgttt acttaagggtg acgtcaatat ttgtgtgaca gtgcaatgta  | 1500 |
| ataaaaaatat gttaactgtt cactgggtttt tattgctttt tgggcgggga ctcaggtata | 1560 |
| taagtagaag cagacctgtg tggttagctc ataggagctg gctttcatcc atggagggtt   | 1620 |
| gggccattttt ggaagacctt aggaagacta ggcaactgtt agagaacgct tcggacggag  | 1680 |
| tctccggttt ttggagattc tggttcgcta gtgaattagc tagggtagtt tttaggataa   | 1740 |
| aacaggacta taaacaagaa tttgaaaagt tgttggtaga ttgccagga ctttttgaag    | 1800 |
| ctcttaattt ggcccatcag gttcacttta aagaaaaagt tttatcagtt ttagactttt   | 1860 |
| caaccccagg tagaactgct gctgctgtgg cttttcttac ttttatatta gataaatgga   | 1920 |
| tcccgcagac tcatttcagc aggggatacg ttttggtttt catagccaca gcattgtgga   | 1980 |
| gaacatggaa ggttcgcaag atgaggacaa tcttaggtta ctggccagtg cagcctttgg   | 2040 |
| gtgtagcggg aatcctgagg catccaccgg tcatgccagc ggttctggag gaggaacagc   | 2100 |
| aagaggacaa cccgagagcc ggcctggacc ctccagtgga ggaggcggag tagctgactt   | 2160 |
| gtctcctgaa ctgcaacggg tgcttactgg atctacgtcc actggacggg ataggggcgt   | 2220 |
| taagagggag agggcatcta gtggtactga tgctagatct gagttggctt taagtttaat   | 2280 |
| gagtcgcaga cgtcctgaaa ccatttggtg gcatgagggt cagaaagagg gaagggatga   | 2340 |
| agtttctgta ttgcaggaga aatattcact ggaacagggt aaaacatgtt ggttgagacc   | 2400 |
| tgaggatgat tgggaggtgg ccattaaaaa ttatgccaag atagctttga ggcctgataa   | 2460 |
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|                                                                    |      |
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| tggttataat ggaatagtgt ttatggccaa taccaaactt atattgcatg gttgtagctt  | 2700 |
| ttttggtttc aacaatacct gtgtagatgc ctggggacag gttagtgtac ggggatgtag  | 2760 |
| tttctatgcg tgttggattg ccacagctgg cagaaccaag agtcaattgt ctctgaagaa  | 2820 |
| atgcatattt caaagatgta acctgggcat tctgaatgaa ggcgaagcaa ggggtccgcca | 2880 |
| ctgcgcttct acagatactg gatgttttat ttgattaag ggaaatgcca gcgtaaagca   | 2940 |
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| gcattgtaat atgctggcta ctgtgcatat tgtttcccat caacgcaaaa aatggcctgt  | 3060 |
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|             |             |             |             |             |            |      |
|-------------|-------------|-------------|-------------|-------------|------------|------|
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| ctcgggtggat | tttttccagg  | atcctataga  | ggtagggattg | aatgttttaga | tacatgggca | 4080 |
| ttaggccgtc  | tttgggggtgg | agatagctcc  | attgaaggga  | ttcatgctcc  | ggggtagtgt | 4140 |
| tgtaaatacac | ccagtcataa  | caaggtcgca  | gtgcatgggtg | ttgcacaata  | tcttttagaa | 4200 |
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| ccgagggtgg  | aatcatgtcc  | acctgggggg  | ctatgaaaaa  | caccgtttct  | ggggcggggg | 4740 |
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| gtctgttcca  | cagttcagtg  | atgtgttcta  | tggcatctcg  | atccagcaga  | cctcctcgtt | 5100 |
| tcgcgggttt  | ggacggctcc  | tggaaatagg  | tatgagacga  | tgggcgtcca  | gcgctgccag | 5160 |
| ggttcgggtcc | ttccagggtc  | tcagtgttcg  | agtcagggtt  | gtttccgtca  | cagtgaagg  | 5220 |
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|                                                                    |      |
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|--------------------------------------------------------------------|------|
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| gtttttcttt tcccacagtt cgcgggtgag aaggatttct tcgcatcct tccagtactc   | 7020 |
| ttctagcgga aacctgtctt tgtctgcacg gtaagatcct agcatgtaga actgattaac  | 7080 |
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| gaaattgcga gtgatgcgaa aaggctgtgg tacttccgct cggttattga taacctgggc  | 7380 |
| agctaggacg atctcgtcga aaccgttgat gttgtgtcct acgatgtata attctatgaa  | 7440 |
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| gtcagataag gcgtagtggt cgagagccca ttcgtgcagg tgaggattcg ctttaaggaa  | 7560 |
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| ccgtccgact gccatttttt ctgggggtgac gcaatagaag gtttgggggt cctgccgcca | 7680 |
| gcgatccac ttgagtttta tggcgaggtc ataggcgatg ttgacgagcc gctggtctcc   | 7740 |
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| ctccctgcga cgcgccgagc attcatgctt gtgcttgtag agacggccgc agtagtcgca  | 7980 |
| gcgttgacac ggttgatatc cgtgaatgag ttgtacctgg cttcccttga cgagaaattt  | 8040 |
| cagtgggaag ccgaggcctg gcgattgtat ctcgtgcttt actatgttgt ctgcatcggc  | 8100 |
| ctgttcatct tctgtctcga tgggtggtcat gctgacgagc cctcgcggga ggcaagtcca | 8160 |
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| tgtgggcggg ggtggttatg tggtcgtct gggtcttctg tttcttcttc atctcgggaa     | 9660 |
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|                                                                    |       |
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|                                                                     |       |
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| tactgcggag gaggagagga tccttagata tgtgcagcag agcgtgggat tgtttctgat  | 12840 |
| gcaagagggg gcaactccga ctgcagcact ggacatgaca gcgcgaaata tggagcccag  | 12900 |
| catgtatgcc agtaaccgac ctttcattaa caaactgctg gactacttgc acagagctgc  | 12960 |
| cgctatgaac tctgattatt tcaccaatgc catcttaaac ccgcactggc tgccccacc   | 13020 |
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| tgccagaagg caacttttca gttactatga ctattgattt gatgaacaat gccatcatag  | 14280 |
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| gaagctataa tgtgttgga gacaaaatca acacagccta tcgcagttgg tatctttcgt   | 14880 |
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| tgctcgacgt aagagccggc gaaggcgc atgccagacgc caccgagcta ccactgccat   | 15720 |
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| ctactactta cacttttggc aatgctcctg taaaagctga agctgaaatt acaaaagaag  | 18780 |
| gactcccagt aggtttggaa gtttcagatg aagaaagtaa accgatttat gctgataaaa  | 18840 |
| catatcagcc agaacctcag ctgggagatg aaacttggac tgaccttgat ggaaaaaccg  | 18900 |
| aaaagtatgg aggcagggct ctcaaaccg atactaagat gaaacatgc tacgggtcct    | 18960 |
| ttgccaacc tactaatgtg aaaggcggc aggcaaaaca aaaaacaacg gagcagccaa    | 19020 |
| atcagaaaagt cgaatatgat atcgacatgg agttttttga tgcggcatcg cagaaaacaa | 19080 |
| acttaagtcc taaaattgtc atgtatgcag aaaatgtaaa tttggaaact ccagacactc  | 19140 |
| atgtagtgtg caaacctgga acagaagaca caagttccga agctaatttg ggacaacaat  | 19200 |
| ctatgccccaa cagacccaac tacattggct tcagagataa ctttattgga cttatgtact | 19260 |
| ataacagtac tggtaacatg ggggtgctgg ctggtcaagc gtctcagtta aatgcagtgg  | 19320 |
| ttgacttgca ggacagaaac acagaacttt cttaccaact cttgcttgac tctctgggcg  | 19380 |
| acagaaccag atacttttagc atgtggaatc aggctgtgga cagttatgat cctgatgtac | 19440 |
| gtgttattga aaatcatggt gtggaagatg aacttcccaa ctactgtttt ccactggacg  | 19500 |
| gcataggtgt tccaacaacc agttacaaat caatagttcc aaatggagac aatgcgccta  | 19560 |
| attggaagga acctgaagta aatggaacaa gtgagatcgg acagggtaat ttgtttgcca  | 19620 |
| tggaaattaa ccttcaagcc aatctatggc gaagtttcct ttattccaat gtggctctat  | 19680 |
| atctcccaga ctcgtacaaa tacaccccg ccaatgtcac tcttcagaa aacaaaaaca    | 19740 |
| cctacgacta catgaacggg cgggtggtgc cgccatctct agtagacacc tatgtgaaca  | 19800 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| ttggtgccag gtggtctctg gatgccatgg acaatgtcaa cccattcaac caccaccgta  | 19860 |
| acgctggcctt gcgttaccga tccatgcttc tgggtaacgg acgttatgtg cttttccaca | 19920 |
| tacaagtgcc tcaaaaattc ttcgctgtta aaaacctgct gcttctccca ggctcctaca  | 19980 |
| cttatgagtg gaactttagg aaggatgtga acatggttct acagagttcc ctcggtaacg  | 20040 |
| acctgcgggt agatggcgcc agcatcagtt tcacgagcat caacctctat gctacttttt  | 20100 |
| tcccatggc tcacaacacc gcttccaccc ttgaagccat gctgcggaat gacaccaatg   | 20160 |
| atcagtcatt caacgactac ctatctgcag ctaacatgct ctacccatt cctgccaatg   | 20220 |
| caaccaatat tcccatttcc attccttctc gcaactgggc ggctttcaga ggctggcat   | 20280 |
| ttaccagact gaaaaccaa gaaactccct ctttggggtc tggatttgac ccctactttg   | 20340 |
| tctattctgg ttctattccc tacctggatg gtaccttcta cctgaaccac acttttaaga  | 20400 |
| aggtttccat catgtttgac tcttcagtga gctggcctgg aaatgacagg ttactatctc  | 20460 |
| ctaacgaatt tgaaataaag cgcactgtgg atggcgaagg ctacaacgta gcccaatgca  | 20520 |
| acatgaccaa agactggttc ttggtacaga tgctcgccaa ctacaacatc ggctatcagg  | 20580 |
| gcttctacat tccagaagga tacaagatc gcatgtattc atttttcaga aacttccagc   | 20640 |
| ccatgagcag gcaggtggtt gatgaggtca attacaaaga cttcaaggcc gtcgccatac  | 20700 |
| cctaccaaca caacaactct ggctttgtgg gttacatggc tccgaccatg cgccaaggtc  | 20760 |
| aaccttatcc cgctaactat ccctatccac tcattggaac aactgccgta aatagtgtta  | 20820 |
| cgcagaaaaa gttcttgtgt gacagaacca tgtggcgcac accgttctcg agcaacttca  | 20880 |
| tgtctatggg ggcccttaca gacttgggac agaatatgct ctatgccaac tcagctcatg  | 20940 |
| ctctggacat gacctttgag gtggatccca tggatgagcc caccctgctt tatcttctct  | 21000 |
| tcgaagtttt cgacgtggtc agagtgcac agccacaccg cggcatcatc gaggcagtct   | 21060 |
| acctgcgtac accgttctcg gccggtaacg ctaccacgta agaagcttct tgcttcttgc  | 21120 |
| aaatagcagc tgcaaccatg gcctgcggat cccaaaacgg ctccagcgag caagagctca  | 21180 |
| gagccattgt ccaagacctg ggttgcggac cctatTTTTT gggaacctac gataagcgct  | 21240 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| tccccggggtt catggccccc gataagctcg cctgtgccat tgtaaatacg gccggacgtg  | 21300 |
| agacggggggg agagcactgg ttggcttttcg gttggaaccc acgttctaac acctgctacc | 21360 |
| tttttgatcc ttttggattc tcggatgatc gtctcaaaca gatttaccag tttgaatatg   | 21420 |
| agggtctcct gcgccgcagc gctcttgcta ccaaggaccg ctgtattacg ctggaaaaat   | 21480 |
| ctaccagac cgtgcagggt ccccgttctg ccgcctgcgg acttttctgc tgcatgttcc    | 21540 |
| ttcacgcctt tgtgcactgg cctgaccgtc ccatggacgg aaaccccacc atgaaattgc   | 21600 |
| taactggagt gccaaacaac atgcttcatt ctctaaagt ccagcccacc ctgtgtgaca    | 21660 |
| atcaaaaagc actctaccat tttcttaata cccattcgcc ttattttctgc tcccacgta   | 21720 |
| cacacatcga aagggccact gcgttcgacc gtatggatgt tcaataatga ctcatgtaaa   | 21780 |
| caacgtgttc aataaacatc actttatttt ttacatgta tcaaggctct gcattactta    | 21840 |
| tttatttaca agtcgaatgg gttctgacga gaatcagaat gaccgcagg cagtgatacg    | 21900 |
| ttgcggaact gatacttggg ttgccacttg aattcgggaa tcaccaactt gggaaccggt   | 21960 |
| atatcgggca ggatgtcact ccacagcttt ctggtcagct gcaaagctcc aagcagggtca  | 22020 |
| ggagccgaaa tcttgaaatc acaattagga ccagtgcttt gagcgcgaga gttgcggtac   | 22080 |
| accggattgc agcactgaaa caccatcagc gacggatgtc tcacgcttgc cagcacggtg   | 22140 |
| ggatctgcaa tcatgcccac atccagatct tcagcattgg caatgctgaa cgggggtcatc  | 22200 |
| ttgcagggtc gcctacccat ggccgggcacc caattaggct tgtggttgca atcgcagtc   | 22260 |
| agggggatca gtatcatctt ggccctgatcc tgtctgattc ctggatacac ggctctcatg  | 22320 |
| aaagcatcat attgcttgaa agcctgctgg gctttactac cctcggtata aaacatcccg   | 22380 |
| caggacctgc tcgaaaactg gttagctgca cagccggcat cattcacaca gcagcgggcg   | 22440 |
| tcattgttag ctatttgcac cacacttctg cccagcgggt tttgggtgat tttggttcgc   | 22500 |
| tcgggattct cctttaaggc tcgttgtccg ttctcgctgg ccacatccat ctcgataatc   | 22560 |
| tgctccttct gaatcataat attgccatgc aggcacttca gcttgccctc ataattattg   | 22620 |
| cagccatgag gccacaacgc acagcctgta cattcccaat tatggtgggc gatctgagaa   | 22680 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| aaagaatgta tcattccctg cagaaatctt cccatcatcg tgctcagtgt cttgtgacta   | 22740 |
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| tattgttcgt gttgctcagg cattagttta aaagaggttc taagttcgtt atccagcctg   | 22860 |
| tacttctcca tcagcagaca catcacttcc atgcctttct cccaagcaga caccaggggc   | 22920 |
| aagctaatacg gattcttaac agtgcaggca gcagctcctt tagccagagg gtcactttta  | 22980 |
| gcgatcttct caatgcttct tttgccatcc ttctcaacga tgcgcacggg cgggtagctg   | 23040 |
| aaaccactg ctacaagttg cgcctcttct ctttcttctt cgctgtcttg actgatgtct    | 23100 |
| tgcatgggga tatgtttggg cttccttggc ttctttttgg ggggtatcgg aggaggagga   | 23160 |
| ctgtcgctcc gttccggaga caggaggagat tgtgacgttt cgctcaccat taccaactga  | 23220 |
| ctgtcggtag aagaacctga cccacacagg cgacagggtg ttctcttcgg gggcagaggt   | 23280 |
| ggaggcgatt gcgaagggtc gcggtccgac ctggaaggcg gatgactggc agaaccctt    | 23340 |
| ccgcgttcgg ggggtgtgctc cctgtggcgg tcgcttaact gatttccttc gcggctggcc  | 23400 |
| attgtgttct cctaggcaga gaaacaacag acatggaaac tcagccattg ctgtcaacat   | 23460 |
| cgccacgagt gccatcacat ctgctcctca gcgacgagga aaaggagcag agcttaagca   | 23520 |
| ttccaccgcc cagtcctgcc accacctcta ccctagaaga taaggaggtc gacgcatctc   | 23580 |
| atgacatgca gaataaaaaa gcgaaagagt ctgagacaga catcgagcaa gaccgggct    | 23640 |
| atgtgacacc ggtggaacac gaggaagagt tgaaacgctt tctagagaga gaggatgaaa   | 23700 |
| actgccccaa acaacgagca gataactatc accaagatgc tggaaatagg gatcagaaca   | 23760 |
| ccgactacct catagggtt gacggggaag acgcgctcct taaacatcta gcaagacagt    | 23820 |
| cgctcatagt caaggatgca ttattggaca gaactgaagt gcccacatcagt gtggaagagc | 23880 |
| tcagccgcgc ctacgagctt aacctctttt cacctcgtac tcccccaaa cgtcagccaa    | 23940 |
| acggcacctg cgagccaaat cctcgcttaa acttttatcc agcttttgct gtgccagaag   | 24000 |
| tactggctac ctatcacatc ttttttaaaa atcaaaaaat tccagtctcc tgccgcgcta   | 24060 |
| atcgcacccg cgccgatgcc ctactcaatc tgggacctgg ttcacgctta cctgatatag   | 24120 |

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|                                                                    |       |
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| cttccttgga agaggttcca aagatcttcg agggctctggg caataatgag actcgggccg | 24180 |
| caaatgctct gcaaaaaggga gaaaatggca tggatgagca tcacagcggt ctggtggaat | 24240 |
| tggaaggcga taatgccaga ctgcagtagc tcaagcgaag catcgagggt acacacttcg  | 24300 |
| catatcccg cgtcaacctg cccctaaag tcatgacggc ggtcatggac cagttactca    | 24360 |
| ttaagcgcgc aagtccccct tcagaagaca tgcattgaccc agatgcctgt gatgagggtg | 24420 |
| aaccagtggc cagtgatgag cagctaaccg gatggctggg caccgactct cccagggtat  | 24480 |
| tggaagagcg tcgcaagctt atgatggccg tgggtgctggc taccgtagaa ctagagtgtc | 24540 |
| tccgacgttt ctttaccgat tcagaaacct tgcgcaaacg cgaagagaat ctgcactaca  | 24600 |
| cttttagaca cggctttgtg cggcaggcat gcaagatata taactgtgaa ctcaccaacc  | 24660 |
| tggtttccta catgggtatt ctgcattgaa atcgccatgg acaaagcgtg ctgcacagca  | 24720 |
| ccctgaaggg ggaagcccg cgtgattaca tccgcgattg tgtctatctg tacctgtgcc   | 24780 |
| acacgtggca aaccggcatg ggtgtatggc agcaatgttt agaagaacag aacttgaaag  | 24840 |
| agcttgacaa gctcttacag aaatctctta aggttctgtg gacagggttc gacgagcgca  | 24900 |
| ccgtcgcttc cgacctggca gacctcatct tcccagagcg tctcagggtt actttgcgaa  | 24960 |
| acggattgcc tgactttatg agccagagca tgcttaacaa ttttcgctct ttcattctgg  | 25020 |
| aacgctccgg tatcctgccc gccacctgct gcgcactgcc ctccgacttt gtgcctctca  | 25080 |
| cctaccgcga gtgccccccg ccgctatgga gtcactgcta cctgttccgt ctggccaact  | 25140 |
| atctctccta ccactcggat gtgatcgagg atgtgagcgg agacggcttg ctggagtgtc  | 25200 |
| actgccgctg caatctgtgc acgccccacc ggtccctagc ttgcaacccc cagttgatga  | 25260 |
| gcgaaaccca gataataggc acctttgaat tgcaaggccc cagcagccaa ggcatgggt   | 25320 |
| cttctcctgg gcaaagttaa aaactgaccc cgggactgtg gacctccgcc tacttgcgca  | 25380 |
| agtttgctcc ggaagattac caccctatg aaatcaagtt ctatgaggac caatcacagc   | 25440 |
| ctccaaaggc cgaactttcg gcctgcgtca tcaccagggt ggcaattctg gcccaattgc  | 25500 |
| aagccatcca aaaatcccg caagaatttc tactgaaaaa gggtaagggg gtctaccttg   | 25560 |

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|             |             |            |            |            |            |       |
|-------------|-------------|------------|------------|------------|------------|-------|
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| aacaagaagt  | tgaagggtgca | gccgccgccc | ccagaagata | tggaggaaga | ttgggacagt | 25680 |
| caggcagagg  | aggcggagga  | ggacagtctg | gaggacagtc | tggaggaaga | cagtttggag | 25740 |
| gaggaaaaacg | aggaggcaga  | ggaggtggaa | gaagtaaccg | ccgacaaaca | gttatcctcg | 25800 |
| gctgcggaga  | caagcaacag  | cgctaccatc | tccgctccga | gtcgaggaac | ccggcggcgt | 25860 |
| cccagcagta  | gatgggacga  | gaccggacgc | ttcccgaacc | caaccagcgc | ttccaagacc | 25920 |
| ggtaagaagg  | atcggcaggg  | atacaagtcc | tggcgggggc | ataagaatgc | catcatctcc | 25980 |
| tgcttgcagt  | agtgcggggg  | caacatatcc | ttcacgcggc | gctacttgct | attccaccat | 26040 |
| ggggtgaact  | ttccgcgcaa  | tgttttgcat | tactaccgtc | acctccacag | cccctactat | 26100 |
| agccagcaaa  | tcccggcagt  | ctcgacagat | aaagacagcg | gcggcgacct | ccaacagaaa | 26160 |
| accagcagcg  | gcagttagaa  | aatacacaac | aagtgcagca | acaggaggat | taaagattac | 26220 |
| agccaacgag  | ccagcgcaaa  | cccagagagt | aagaaatcgg | atctttccaa | ccctgtatgc | 26280 |
| catcttccag  | cagagtcggg  | gtcaagagca | ggaactgaaa | ataaaaaacc | gatctctgcg | 26340 |
| ttcgctcacc  | agaagttggt  | tgtatcacia | gagcgaagat | caacttcagc | gcactctcga | 26400 |
| ggacgccgag  | gctctcttca  | acaagtactg | cgcgctgact | cttaaagagt | aggcagcgac | 26460 |
| cgcgcttatt  | caaaaaaggc  | gggaattaca | tcacctctga | catgagtaaa | gaaattccca | 26520 |
| cgccttacat  | gtggagttat  | caacccccaa | tgggattggc | ggcaggcgcc | tcccaggact | 26580 |
| actccacccg  | catgaattgg  | ctcagcgccg | ggccttctat | gatttctcga | gttaatgata | 26640 |
| tacgcgccta  | ccgaaaccaa  | atacttttgg | aacagtcagc | tcttaccacc | acgccccgcc | 26700 |
| aacaccttaa  | tcccagaaat  | tggcccgccg | ccctagtgtg | ccaggaaagt | cccgtccca  | 26760 |
| ccactgtatt  | acttcctcga  | gacgcccagg | ccgaagtcca | aatgactaat | gcaggtgcgc | 26820 |
| agttagctgg  | cggctccacc  | ctatgtcgtc | acaggcctcg | gcataatata | aaacgcctga | 26880 |
| tgatcagagg  | ccgaggtatc  | cagctcaacg | acgagtcggt | gagctctccg | cttggtctac | 26940 |
| gaccagacgg  | aatctttcag  | attgccggct | gcgggagatc | ttccttcacc | cctcgtcagg | 27000 |

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|                                                                     |       |
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| ctgttctgac tttggaaaagt tcgtcttcgc aacccccgctc gggcggaatc gggaccgttc | 27060 |
| aatttgtgga ggagtttact ccctctgtct acttcaaccc cttctccgga tctcctgggc   | 27120 |
| attacccgga cgagttcata ccgaacttcg acgcgattag cgagtcagtg gacggctacg   | 27180 |
| attgatgtct ggtgacgcgg ctgagctatc tcggctgcga catctagacc actgccgccg   | 27240 |
| ctttcgctgc tttgcccggg aactcattga gttcatctac ttcgaactcc ccaaggatca   | 27300 |
| ccctcaaggt ccggcccacg gagtgcggat ttctatcgaa ggcaaaatag actctcgcct   | 27360 |
| gcaacgaatt ttctcccagc ggcccgtgct gatcgagcga gaccagggaa acaccacggt   | 27420 |
| ttccatctac tgcatttgta atcaccccg attgcatgaa agcctttgct gtcttatgtg    | 27480 |
| tactgagttt aataaaaaact gaattaagac tctcctacgg actgccgctt cttcaacccg  | 27540 |
| gattttacaa ccagaagaac gaaacttttc ctgtcgtcca ggactctgtt aacttcacct   | 27600 |
| ttcctactca caaactagaa gctcaacgac tacaccgctt ttccagaagc attttcccta   | 27660 |
| ctaatactac tttcaaaacc ggaggtgagc tccaaggtct tcctacagaa aacccttggg   | 27720 |
| tggaagcggg ccttgtagtg ctaggaattc ttgcgggtgg gcttgtgatt attctttgct   | 27780 |
| acctatacac accttgcttc actttcttag tgggtgttggt gtattggttt aaaaaatggg  | 27840 |
| gcccatacta gtcttgcttg ttttactttc gcttttggaa ccgggttctg ccaattacga   | 27900 |
| tccatgtcta gacttcgacc cagaaaactg cacacttact tttgcacccg acacaagccg   | 27960 |
| catctgtgga gttcatcgcc tctcttacga acttggcccc caacgacaaa aatttacctg   | 28020 |
| catggtggga atcaaccca tagttatcac ccagcaaagt ggagatacta agggttgcat    | 28080 |
| tcactgctcc tgcgattcca tcgagtgcac ctacaccctg ctgaagaccc tatgcggcct   | 28140 |
| aagagacctg ctaccaatga attaaaaaat gattaataaa aaatcactta cttgaaatca   | 28200 |
| gcaataaggt ctctgttgaa attttctccc agcagcacct cacttccctc ttcccaactc   | 28260 |
| tggatttcta aaccccggtc agcggcatac tttctccata ctttaaaggg gatgtcaa     | 28320 |
| tttagctcct ctctgtacc cacaatcttc atgtctttct tcccagatga ccaagagagt    | 28380 |
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| gggaggggga cttacagtgg atgacaccaa cggttttttg aaagaaaaca taagtgccac   | 28620 |
| cacaccactc gttaagactg gtcactctat aggtttacca ctaggagccg gattgggaac   | 28680 |
| gaatgaaaat aaactttgta tcaaattagg acaaggactt acattcaatt caaacaacat   | 28740 |
| ttgcattgat gacaatatta acaccttatg gacaggagtc aacccaccg aagccaactg    | 28800 |
| tcaaatcatg aactccagt aatctaata ttgcaaatta attctaacac tagttaaac      | 28860 |
| tggagcacta gtcactgcat ttgtttatgt tataggagta tctaacaatt ttaatatgct   | 28920 |
| aactacacac agaaatataa attttactgc agagctgttt ttcgattcta ctggtaattt   | 28980 |
| actaactaga ctctcatccc tcaaaactcc acttaatcat aaatcaggac aaaacatggc   | 29040 |
| tactggtgcc attactaatg ctaaaggttt catgcccagc acgactgcct atcctttcaa   | 29100 |
| tgataattct agagaaaaag aaaactacat ttacggaact tgttactaca cagctagtga   | 29160 |
| tcgcactgct tttcccattg acatatctgt catgcttaac cgaagagcaa taaatgacga   | 29220 |
| gacatcatat tgtattcgta taacttggtc ctggaacaca ggagatgccc cagaggtgca   | 29280 |
| aacctctgct acaaccctag tcacctcccc atttaccttt tactacatca gagaagacga   | 29340 |
| ctgacaaata aagtttaact tgttttatttg aaaaatcaatt cacaaaatcc gagtagttat | 29400 |
| tttgctccc ccttcccatt taacagaata caccaatctc tccccacgca cagctttaaa    | 29460 |
| catttgata ccattagata tagacatggt tttagattcc acattccaaa cagtttcaga    | 29520 |
| gcgagccaat ctggggtcag tgatagataa aaatccatcg ggatagtctt ttaaagcgct   | 29580 |
| ttcacagtcc aactgctgcg gatgcgactc cggagtctgg atcacggtca tctggaagaa   | 29640 |
| gaacgatggg aatcataatc cgaaaacggc atcggacgat tgtgtctcat caaaccaca    | 29700 |
| agcagccgct gtctgcgtcg ctccgtcgga ctgctgttta tgggatcagg gtccacagtg   | 29760 |
| tcctgaagca tgattttaat agcccttaac atcaactttc tgggtcgatg cgcgacgaa    | 29820 |
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|                                                                    |       |
|--------------------------------------------------------------------|-------|
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| acatacatga tctcttttgg catgtgcata ttaacaatct gtctgtacca tggacaacgt  | 30060 |
| tggttaatca tgcaacccaa tataaccttc cggaaccaca ctgccaacac cgctcccca   | 30120 |
| gccatgcatt gaagtgaacc ctgctgatta caatgacaat gaagaaccca attctctcga  | 30180 |
| ccgtgaatca cttgagaatg aaaaatatct atagtggcac aacatagaca taaatgcatg  | 30240 |
| catcttctca taatttttaa ctctcagga tttagaaaca tatcccaggg aataggaagc   | 30300 |
| tcttgagaa cagtaaagct ggcaagaa ggaagaccac gaacacaact tacactatgc     | 30360 |
| atagtcatag tatcacaatc tggcaacagc ggggtggtctt cagtcataga agctcgggtt | 30420 |
| tcattttcct cacaacgtgg taactgggct ctggtgtaag ggtgatgtct ggcgcatgat  | 30480 |
| gtcgagcgtg gcgcgaacct tgtcataatg gagttgcttc ctgacattct cgtattttgt  | 30540 |
| atagcaaaac gcggccctgg cagaacacac tcttcttcgc cttctatcct gccgcttagc  | 30600 |
| gtgttccgtg tgatagttca agtacaacca cactcttaag ttggtcaaaa gaatgctggc  | 30660 |
| ttcagttgta atcaaaactc catcgcatct aatcgttctg aggaaatcat ccaagcaatg  | 30720 |
| caactggatt gtgtttcaag caggagagga gaggggaagag acggaagaac catgttaatt | 30780 |
| tttattccaa acgatctcg agtacttcaa attgtagatc gcgcagatgg catctctcg    | 30840 |
| ccccactgtg ttggtgaaaa agcacagcta gatcaaaaga aatgcgattt tcaaggtgct  | 30900 |
| caacgggtggc ttccagcaaa gcctccacgc gcacatccaa gaacaaaaga ataccaaaag | 30960 |
| aaggagcatt ttctaactcc tcaatcatca tattacattc ctgcaccatt cccagataat  | 31020 |
| tttcagcttt ccagccttga attattcgtg tcagttcttg tggtaaattcc aatccacaca | 31080 |
| ttacaaacag gtcccgagg gcgccctcca ccaccattct taaacacacc ctcataatga   | 31140 |
| caaaaatatct tgctcctgtg tcacctgtag cgaattgaga atggcaacat caattgacat | 31200 |
| gcccttggct ctaagttctt ctttaagttc tagttgtaaa aactctctca tattatcacc  | 31260 |
| aaactgctta gccagaagcc ccccggaac aagagcaggg gacgctacag tgcagtacaa   | 31320 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| gcgcagacct ccccaattgg ctccagcaaa aacaagattg gaataagcat attgggaacc  | 31380 |
| gccagtaata tcatcgaagt tgctggaaat ataatcaggc agagtttctt gtaaaaattg  | 31440 |
| aataaaagaa aaatttgcca aaaaaacatt caaaacctct gggatgcaaa tgcaataggt  | 31500 |
| taccgcgctg cgctccaaca ttgttagttt tgaattagtc tgcaaaaata aaaaaaaaaa  | 31560 |
| caagcgtcat atcatagtag cctgacgaac agatggataa atcagtcttt ccatcacaag  | 31620 |
| acaagccaca gggctctccag ctcgaccctc gtaaaacctg tcatcatgat taaacaacag | 31680 |
| caccgaaagt tcctcgcggt gaccagcatg aataattctt gatgaagcat acaatccaga  | 31740 |
| catgttagca tcagttaacg agaaaaaaca gccaacatag cttttgggta taattatgct  | 31800 |
| taatcgtaag tatagcaaag ccacccctcg cggatacaaa gtaaaaggca caggagaata  | 31860 |
| aaaaatataa ttatttctct gctgctgttc aggcaacgtc gcccccggtc cctctaaata  | 31920 |
| cacatacaaa gcctcatcag ccatggctta ccagacaaag tacagcgggc acacaaagca  | 31980 |
| caagctctaa agtgactctc caacctctcc acaatatata tatacacaag ccctaaactg  | 32040 |
| acgtaatggg agtaaagtgt aaaaaatccc gccaaaccca acacacaccc cgaaactgcg  | 32100 |
| tcaccaggga aaagtacagt ttcacttccg caatcccaac aggcgtaact tcctctttct  | 32160 |
| cacggtacgt gatatccac taacttgcaa cgtcattttc ccacggtcgc accgcccctt   | 32220 |
| ttagccgtta accccacagc caatcaccac acgatccaca ctttttaaaa tcacctcatt  | 32280 |
| tacatattgg caccattcca tctataaggt atattatata gataga                 | 32326 |

<210> 39

<211> 201

<212> DNA

<213> Artificial Sequence

<220>

<223> Bx DNA sequence corresponding to and including bp 28166-28366 of the EnAd genome

<400> 39

|                                                                    |    |
|--------------------------------------------------------------------|----|
| aaaatgatta ataaaaaatc acttacttga aatcagcaat aaggctctctg ttgaaatttt | 60 |
|--------------------------------------------------------------------|----|

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ctcccagcag cacctcactt ccctcttccc aactctggta ttctaaaccc cgttcagcgg 120

catactttct ccatacttta aaggggatgt caaatTTtag ctctctctct gtacccacaa 180

tcttcatgtc tttcttccca g 201

<210> 40

<211> 35

<212> DNA

<213> Artificial Sequence

<220>

<223> By DNA sequence corresponding to and including bp 29345-29379 of the EnAd genome

<400> 40

caaataaagt ttaacttggt tatttgaaaa tcaat 35

<210> 41

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> His Tag

<400> 41

His His His His His His

1 5

<210> 42

<211> 14

<212> DNA

<213> Artificial Sequence

<220>

<223> Splice acceptor

<400> 42

tttctctctt cagg 14

<210> 43

<211> 192

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; SV40 poly Adenylation sequence

&lt;400&gt; 43

cagacatgat aagatacatt gatgagtttg gacaaaccac aactagaatg cagtgaaaaa 60

aatgctttat ttgtgaaatt tgtgatgcta ttgctttatt tgtaaccatt ataagctgca 120

ataaacaagt taacaacaac aattgcattc attttatggt tcaggttcag ggggaggtgt 180

gggaggtttt tt 192

&lt;210&gt; 44

&lt;211&gt; 1539

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; EpCam BiTE nucleic acid sequence (OKT3)

&lt;400&gt; 44

atgggatgga gctgcatcat cctattcctc gtggcgacgg ccactggagt gcatagcgaa 60

ctggtgatga ctcagtcccc gtcattccctg acggtgaccg ccggcgagaa ggtcaccatg 120

tcgtgcaagt cctcgcaaag cctgcttaac agcggcaacc agaaaaacta cctcacgtgg 180

tatcagcaaa agccagggtca acccccaaaa ctgctcatct actgggagcg caccgcgag 240

tcgggggtgc cagaccggtt caccggctcc gggtcaggaa ctgatttcac cctaaccatc 300

agctcgggtc aagcggagga cctggccgtg tactactgcc aaaatgatta ctgtaccct 360

ctgacctttg gagcgggcac caagctcgaa atcaagggcg gtggagggaag cggcggggga 420

ggctcagggtg ggggaggatc agaagtccaa ctgctggagc agtcaggagc cgaactggtc 480

cgccgggaa cctccgtcaa gatttcctgt aaggcttccg gctacgcttt taccaattac 540

tggctgggct ggggtcaagca aagaccgggg catggcctgg agtggatcgg cgacatcttc 600

ccaggagcgc gcaacatcca ctacaacgag aagttcaagg ggaaagcgac tctgactgcc 660

gacaaatcat ccagcaccgc ctacatgcag ctgtcgtcgc tcactttcga agacagcgcg 720

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|                                                                     |      |
|---------------------------------------------------------------------|------|
| gtgtactttt gtgctcggct ccggaactgg gatgaaccaa tggactactg gggacaagga   | 780  |
| actaccgtga ccgtctcctc cggcggcggg ggaagccagg tgcagctgca gcagtctggg   | 840  |
| gctgaactgg caagacctgg ggcctcagtg aagatgtcct gcaaggcttc tggctacacc   | 900  |
| tttactaggt acacgatgca ctgggtaaaa cagaggcctg gacagggtct ggaatggatt   | 960  |
| ggatacatta atcctagccg tgggtataact aattacaatc agaagttcaa ggacaaggcc  | 1020 |
| acattgacta cagacaaatc ctccagcaca gcctacatgc aactgagcag cctgacatct   | 1080 |
| gaggactctg cagtctatta ctgtgcaaga tattatgatg atcattactg ccttgactac   | 1140 |
| tggggccaag gcaccactct cacagtctcc tcagggtggcg gtggctcggg cgggtgggtga | 1200 |
| tctgggtggcg gcggatctga tatcgtgctc actcagtctc cagcaatcat gtctgcatct  | 1260 |
| ccaggggaga aggtcaccat gacctgcagt gccagctcaa gtgtaagtta catgaactgg   | 1320 |
| taccagcaga agtcaggcac ctccccaaa agatggattt atgacacatc caaactggct    | 1380 |
| tctggagtcc ctgctcactt caggggcagt gggctctggga cctcttactc tctcacaatc  | 1440 |
| agcggcatgg aggctgaaga tgctgccact tattactgcc agcagtggag tagtaaccca   | 1500 |
| ttcacgttcg gctcggggac aaagttggaa ataaaccgg                          | 1539 |

<210> 45

<211> 1551

<212> DNA

<213> Artificial Sequence

<220>

<223> FAP BiTE nucleic acid sequence (OKT3)

<400> 45

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| atgggctgga gctgcatcat cttgttcctg gtcgcaactg ctaccggagt ccattcggac  | 60  |
| atcgtcatga cccaaagccc tgactcgctc gctgtgtcac tgggagagcg ggcgactatc  | 120 |
| aactgcaaat catcccagag cctgctgtat tcacgcaatc agaaaaacta cctggcctgg  | 180 |
| tatcagcaga agccgggcca gcctcccaag ctgctgatct tctgggcctc caccgcgaa   | 240 |
| agcggcgtgc cggaccgctt cagcgggaagc ggattcggaa ctgactttac tctgaccatt | 300 |

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| agctccttgc aggcggagga cgtggccgtc tactactgcc agcagtatth ctcctatccg  | 360  |
| ctcacctttg ggcaaggcac caaggtggag attaagggag ggggcggcag cgggggaggc  | 420  |
| ggcagcggcg gcgggggatc gcaggtccag ctcgtccaat ccggagccga agtcaagaag  | 480  |
| ccgggagcgt cgggtcaaggt cagctgcaaa acttcgcgct acaccttcac tgagtacacg | 540  |
| atccactggg tccgccaggc gcccggccag cggctggagt ggatcggcgg gatcaaccca  | 600  |
| aacaacggaa tcccaaatta caatcagaaa tttaaagggc gggtgactat caccgtggat  | 660  |
| acctcggcct ccacggcgta catggagctc tcatcactca gatcggagga caccgcggtc  | 720  |
| tattactgcg cccgccgccg gatcgcttat ggatacgatg aaggacatgc gatggattac  | 780  |
| tggggccagg gcacccctgt cacggtgtcg tcaggaggcg gcggttcaca ggtgcagctg  | 840  |
| cagcagtctg gggctgaact ggcaagacct ggggcctcag tgaagatgtc ctgcaaggct  | 900  |
| tctggctaca cttttactag gtacacgatg cactgggtaa aacagaggcc tggacagggt  | 960  |
| ctggaatgga ttggatacat taatcctagc cgtgggtata ctaattacaa tcagaagttc  | 1020 |
| aaggacaagg ccacattgac tacagacaaa tcctccagca cagcctacat gcaactgagc  | 1080 |
| agcctgacat ctgaggactc tgcagtctat tactgtgcaa gatattatga tgatcattac  | 1140 |
| tgcccttgact actggggcca aggcaccact ctcacagtct cctcaggtag cggtagctcg | 1200 |
| ggcggtagtg gatctggtag cggcggatct gatatcgtgc tcaactcagtc tccagcaatc | 1260 |
| atgtctgcat ctccagggga gaaggtcacc atgacctgca gtgccagctc aagtgtgaag  | 1320 |
| tacatgaact ggtaccagca gaagtcaggc acctcccca aaagatggat ttatgacaca   | 1380 |
| tccaaactgg cttctggagt ccctgctcac ttcaggggca gtgggtctgg gacctttac   | 1440 |
| tctctcacia tcagcggcat ggaggctgaa gatgctgcca cttattactg ccagcagtgg  | 1500 |
| agtagtaacc cattcacgtt cggctcgggg acaaagttgg aaataaaccg g           | 1551 |

<210> 46

<211> 1557

<212> DNA

<213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; FAP BiTE nucleic acid sequence (aCD3)

&lt;400&gt; 46

|                                                                    |      |
|--------------------------------------------------------------------|------|
| atgggctgga gctgcatcat cttgttcctg gtcgcaactg ctaccggagt ccattcggac  | 60   |
| atcgtcatga cccaaagccc tgactcgctc gctgtgtcac tgggagagcg ggcgactatc  | 120  |
| aactgcaa at catcccagag cctgctgtat tcacgcaatc agaaaaacta cctggcctgg | 180  |
| tatcagcaga agccggggcca gcctcccaag ctgctgatct tctgggcctc caccgcgaa  | 240  |
| agcggcgtgc cggaccgctt cagcgggaagc ggattcggaa ctgactttac tctgaccatt | 300  |
| agctccttgc aggcggagga cgtggccgct tactactgcc agcagtattt ctcctatccg  | 360  |
| ctcacctttg ggcaaggcac caaggtggag attaagggag ggggcggcag cgggggaggc  | 420  |
| ggcagcggcg gcgggggatc gcaggtccag ctcgtccaat ccggagccga agtcaagaag  | 480  |
| ccgggagcgt cgggtcaaggt cagctgcaaa acttcgcgct acaccttcac tgagtacacg | 540  |
| atccactggg tccgccaggc gcccggccag cggctggagt ggatcggcgg gatcaaccca  | 600  |
| aacaacggaa tcccaaatta caatcagaaa tttaaagggc ggggtgactat caccgtggat | 660  |
| acctcggcct ccacggcgta catggagctc tcactactca gatcggagga caccgcggtc  | 720  |
| tattactgcg cccgccgccg gatcgcttat ggatacgatg aaggacatgc gatggattac  | 780  |
| tggggccagg gcacccctgt cacggtgtcg tcaggaggcg gcggttcaga tgtgcaactc  | 840  |
| gtgcagtccg gtgcggaagt gaaaaagccg ggcgcgagcg tcaaagtgtc atgcaaggcg  | 900  |
| tcaggatata cgtttactag atacactatg cactgggtgc gccaggcacc tggtcagggc  | 960  |
| cttgaatgga tcggctacat caatccgtcg agaggctaca ctaattacgc ggactcagtc  | 1020 |
| aaaggcgct tcacgattac gaccgacaag tccacctcga ctgcatacat ggaactgtcc   | 1080 |
| tcgctgagaa gcgaggacac cgctacttac tactgcgcta gatactacga tgatcactac  | 1140 |
| tgctcgtgatt actggggcca gggaaccact gtcacggtgt catcgggaga gggcacctca | 1200 |
| accggatcag ggggatcggg aggctcgggc ggcgagacg acatcgtcct gaccagtcg    | 1260 |
| cccgccacct tgtcgtgtc cccaggagaa agagcgaccc tgtcatgccg ggcgtcgcaa   | 1320 |

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| agcgtgagct atatgaattg gtatcagcag aagccaggaa aggcgccgaa gagatggatc  | 1380 |
| tacgacacct ccaaggctgc ttcagggtgtc ccggctagat tctcaggatc gggatcagga | 1440 |
| acggactact ccctgaccat caattcactg gaagcagaag atgcggccac ctactactgt  | 1500 |
| cagcagtggc cctccaaccc gctgactttc ggaggcggaa ctaaggctga gatcaag     | 1557 |

<210> 47  
 <211> 1856  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> NG-611 Transgene cassette

|                                                                               |     |
|-------------------------------------------------------------------------------|-----|
| <400> 47<br>caggcccacc atgggatgga gctgcatcat cctattcctc gtggcgacgg ccactggagt | 60  |
| gcatagcgaa ctggatgatga ctcagtcctc gtcacccctg acggatgaccg ccggcgagaa           | 120 |
| ggtcaccatg tcgtgcaagt cctcgcaaag cctgcttaac agcggcaacc agaaaaacta             | 180 |
| cctcacgtgg tatcagcaaa agccagggtca acccccaaaa ctgctcatct actgggcgag            | 240 |
| caccgcgag tcgggggtgc cagaccggtt caccggctcc gggtcaggaa ctgatttcac              | 300 |
| cctaaccatc agctcgggtg aagcggagga cctggccgtg tactactgcc aaaatgatta             | 360 |
| ctcgtaccct ctgacctttg gagcgggcac caagctcgaa atcaagggcg gtggagggaag            | 420 |
| cggcggggga ggctcagggtg ggggaggatc agaagtcaa ctgctggagc agtcaggagc             | 480 |
| cgaactggtc cgcccgggaa cctccgtcaa gatttcctgt aaggcttccg gctacgcttt             | 540 |
| taccaattac tggctgggct ggggtcaagca aagaccgggg catggcctgg agtggatcgg            | 600 |
| cgacatcttc ccaggagcgc gcaacatcca ctacaacgag aagttcaagg ggaaagcgac             | 660 |
| tctgactgcc gacaaatcat ccagcaccgc ctacatgcag ctgtcgtcgc tcactttcga             | 720 |
| agacagcgcg gtgtactttt gtgctcggct ccggaactgg gatgaaccaa tggactactg             | 780 |
| gggacaagga actaccgtga ccgtctcctc cggcggcggg ggaagccagg tgcagctgca             | 840 |
| gcagtctggg gctgaactgg caagacctgg ggcctcagtg aagatgtcct gcaaggcttc             | 900 |



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|                                                                    |      |
|--------------------------------------------------------------------|------|
| tggctacacc tttactaggt acacgatgca ctgggtaaaa cagaggcctg gacagggctct | 960  |
| ggaatggatt ggatacatta atcctagccg tggttatact aattacaatc agaagttcaa  | 1020 |
| ggacaaggcc acattgacta cagacaaatc ctccagcaca gcctacatgc aactgagcag  | 1080 |
| cctgacatct gaggactctg cagtctatta ctgtgcaaga tattatgatg atcattactg  | 1140 |
| ccttgactac tggggccaag gcaccactct cacagtctcc tcagggtggcg gtggctcggg | 1200 |
| cgggtggtgga tctggtggcg gcggatctga tatcgtgctc actcagtctc cagcaatcat | 1260 |
| gtctgcatct ccaggggaga aggtcaccat gacctgcagt gccagctcaa gtgtaagtta  | 1320 |
| catgaactgg taccagcaga agtcaggcac ctccccaaa agatggattt atgacacatc   | 1380 |
| caaactggct tctggagtcc ctgctcactt caggggcagt gggctctggga cctcttactc | 1440 |
| tctcacaatc agcggcatgg aggctgaaga tgctgccact tattactgcc agcagtggag  | 1500 |
| tagtaacca ttcacgttcg gctcggggac aaagttggaa ataaaccggc atcaccatca   | 1560 |
| ccatcaccac catcaccatt aggctagctt gactgactga gatacagcgt accttcagct  | 1620 |
| cacagacatg ataagataca ttgatgagtt tggacaaacc acaactagaa tgcagtgaaa  | 1680 |
| aaaatgcttt atttgtgaaa tttgtgatgc tattgcttta tttgtaacca ttataagctg  | 1740 |
| caataaaca gttaacaaca acaattgcat tcattttatg ttccaggttc agggggaggt   | 1800 |
| gtgggaggtt ttttaaagca agtaaaacct ctacaaatgt ggtagtcgtc agctat      | 1856 |

<210> 48  
 <211> 1868  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> NG-612 Transgene cassette

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| <400> 48                                                           |     |
| cagggcccacc atgggctgga gctgcatcat cttgttcctg gtcgcaactg ctaccggagt | 60  |
| ccattcggac atcgtcatga cccaaagccc tgactcgtc gctgtgtcac tgggagagcg   | 120 |
| ggcgactatc aactgcaaat catcccagag cctgctgtat tcacgcaatc agaaaaacta  | 180 |

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|                                                                     |      |
|---------------------------------------------------------------------|------|
| cctggcctgg tatcagcaga agccggggcca gcctcccaag ctgctgatct tctgggcctc  | 240  |
| cacccgcgaa agcggcggtgc cggaccgctt cagcgggaagc ggattcggaa ctgactttac | 300  |
| tctgaccatt agctccttgc aggcgggagga cgtggccgtc tactactgcc agcagtat    | 360  |
| ctcctatccg ctcacctttg ggcaaggcac caaggtggag attaaggag ggggcggcag    | 420  |
| cgggggaggc ggagcggcg gcgggggatc gcaggtccag ctggtccaat ccggagccga    | 480  |
| agtcaagaag ccgggagcgt cgggtcaaggt cagctgcaaa acttcgcgct acaccttcac  | 540  |
| tgagtacacg atccactggg tccgccaggc gcccgccag cggctggagt ggatcggcgg    | 600  |
| gatcaaccca aacaacggaa tcccaaatta caatcagaaa tttaaagggc ggggtgactat  | 660  |
| caccgtggat acctcggcct ccacggcgta catggagctc tcatcactca gatcggagga   | 720  |
| caccgcggtc tattactgcg cccgccgccg gatcgcttat ggatacgatg aaggacatgc   | 780  |
| gatggattac tggggccagg gcaccctcgt cacggtgtcg tcaggaggcg gcggttcaca   | 840  |
| ggtgcagctg cagcagtctg gggctgaact ggcaagacct ggggcctcag tgaagatgtc   | 900  |
| ctgcaaggct tctggctaca cttttactag gtacacgatg cactgggtaa aacagaggcc   | 960  |
| tggacagggt ctggaatgga ttggatacat taatcctagc cgtgggtata ctaattacaa   | 1020 |
| tcagaagttc aaggacaagg ccacattgac tacagacaaa tcctccagca cagcctacat   | 1080 |
| gcaactgagc agcctgacat ctgaggactc tgcagtctat tactgtgcaa gatattatga   | 1140 |
| tgatcattac tgccttgact actggggcca aggcaccact ctcacagtct cctcagggtg   | 1200 |
| cgggtggctcg ggcgggtggtg gatctgggtg cggcggatct gatatcgtgc tcactcagtc | 1260 |
| tccagcaatc atgtctgcat ctccagggga gaaggtcacc atgacctgca gtgccagctc   | 1320 |
| aagtgtaagt tacatgaact ggtaccagca gaagtcaggc acctcccca aaagatggat    | 1380 |
| ttatgacaca tccaaactgg cttctggagt ccctgctcac ttcaggggca gtgggtctgg   | 1440 |
| gacctcttac tctctcacia tcagcggcat ggaggctgaa gatgctgcca cttattactg   | 1500 |
| ccagcagtgg agtagtaacc cattcacgtt cggctcgggg acaaagttgg aaataaaccg   | 1560 |
| gcatcaccat caccatcacc accatcacca ttaggctagc ttgactgact gagatacagc   | 1620 |

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|                                                                      |      |
|----------------------------------------------------------------------|------|
| gtaccttcag ctcacagaca tgataagata cattgatgag tttggacaaa ccacaactag    | 1680 |
| aatgcagtga aaaaaatgct ttattttgtga aattttgtgat gctattgctt tattttgtaac | 1740 |
| cattataagc tgcaataaac aagttaacaa caacaattgc attcatttta tgtttcaggt    | 1800 |
| tcagggggag gtgtgggagg ttttttaaag caagtaaaac ctctacaaat gtggtagtcg    | 1860 |
| tcagctat                                                             | 1868 |

<210> 49  
 <211> 1878  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> NG-613 Transgene cassette

|                                                                               |     |
|-------------------------------------------------------------------------------|-----|
| <400> 49<br>tttctctctt caggcccacc atgggctgga gctgcatcat cttgttcctg gtcgcaactg | 60  |
| ctaccggagt ccattcggac atcgtcatga cccaaagccc tgactcgctc gctgtgtcac             | 120 |
| tgggagagcg ggcgactatc aactgcaaat catcccagag cctgctgtat tcacgcaatc             | 180 |
| agaaaaacta cctggcctgg tatcagcaga agccgggcca gcctcccaag ctgctgatct             | 240 |
| tctgggcctc caccgcgaa agcggcgtgc cggaccgctt cagcgggaagc ggattcggaa             | 300 |
| ctgactttac tctgaccatt agctccttgc aggcggagga cgtggccgct tactactgcc             | 360 |
| agcagtatct ctcctatccg ctcacctttg ggcaaggcac caaggtggag attaagggag             | 420 |
| ggggcggcag cgggggaggc ggcagcggcg gcgggggatc gcaggtccag ctcgtccaat             | 480 |
| ccggagccga agtcaagaag ccgggagcgt cgggtcaaggt cagctgcaaa acttcgcgct            | 540 |
| acaccttcac tgagtacacg atccactggg tccgccaggc gcccggccag cggctggagt             | 600 |
| ggatcggcgg gatcaacca aacaacggaa tcccaaatta caatcagaaa tttaaagggc              | 660 |
| gggtgactat caccgtggat acctcggcct ccacggcgta catggagctc tcatcactca             | 720 |
| gatcggagga caccgcggtc tattactgcg cccgccgccg gatcgcttat ggatacgatg             | 780 |
| aaggacatgc gatggattac tggggccagg gcaccctcgt cacggtgtcg tcaggaggcg             | 840 |

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gcggttcaca ggtgcagctg cagcagtctg gggctgaact ggcaagacct ggggcctcag 900  
tgaagatgtc ctgcaaggct tctggctaca cctttactag gtacacgatg cactgggtaa 960  
aacagaggcc tggacagggt ctggaatgga ttggatacat taatcctagc cgtgggttata 1020  
ctaattacaa tcagaagttc aaggacaagg ccacattgac tacagacaaa tcctccagca 1080  
cagcctacat gcaactgagc agcctgacat ctgaggactc tgcagtctat tactgtgcaa 1140  
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gtgggtctgg gacctcttac tctctcacia tcagcggcat ggaggctgaa gatgctgcca 1500  
cttattactg ccagcagtgg agtagtaacc cattcacgtt cggctcgggg acaaagtgg 1560  
aaataaaccg gcatcaccat caccatcacc accatcacca ttaggctagc ttgactgact 1620  
gagatacagc gtaccttcag ctcacagaca tgataagata cattgatgag tttggacaaa 1680  
ccacaactag aatgcagtga aaaaaatgct ttatttgtga aatttgtgat gctattgctt 1740  
tatttgaac cattataagc tgcaataaac aagttaacaa caacaattgc attcatttta 1800  
tgtttcaggt tcagggggag gtgtgggagg ttttttaaag caagtaaac ctctacaaat 1860  
gtggtagtcg tcagctat 1878

<210> 50  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Restriction site insert (Bx)

<400> 50  
gcggccgcta tggccggcc

19

<210> 51  
 <211> 19  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Restriction site insert (By)

<400> 51  
 gcgatcgcta ccctgcagg 19

<210> 52  
 <211> 572  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> CMV promoter sequence

<400> 52  
 agtaatcaat tacgggggtca ttagttcata gcccatatat ggagttccgc gttacataac 60  
 ttacggtaaa tggcccgccct ggctgaccgc ccaacgaccc ccgcccattg acgtcaataa 120  
 tgacgtatgt tcccatagta acgccaatag ggactttcca ttgacgtcaa tgggtggagt 180  
 atttacggta aactgcccac ttggcagtac atcaagtgt tcatatgcca agtacgcccc 240  
 ctattgacgt caatgacggg aaatggcccg cctggcatta tgcccagtac atgaccttat 300  
 gggactttcc tacttggcag tacatctacg tattagtcac cgctattacc atgctgatgc 360  
 ggTTTTggca gtacatcaat gggcgtggat agcggtttga ctacgggga tttccaagtc 420  
 tccaccccat tgacgtcaat gggagtttgt tttggcacca aaatcaacgg gactttccaa 480  
 aatgtcgtaa caactccgcc ccattgacgc aaatgggcgg taggcgtgta cgggtgggagg 540  
 tctatataag cagagctggg ttagtgaacc gt 572

<210> 53  
 <211> 505  
 <212> DNA  
 <213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; PGK promoter sequence

&lt;400&gt; 53

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| ctaccgggta ggggaggcgc ttttccaag gcagtctgga gcatgcgctt tagcagcccc  | 60  |
| gctgggcact tggcgctaca caagtggcct ctggcctcgc acacattcca catccaccgg | 120 |
| taggcgccaa ccggctccgt tctttggtgg ccccttcgcg ccaccttcta cccctcccct | 180 |
| agtcaggaag ttcccccccg ccccgagct cgcgtcatgc aggacgtgac aaatggaagt  | 240 |
| agcacgtctc actagtctcg tgcaaatgga cagcaccgct gagcaatgga agcgggtagg | 300 |
| cccttggggc agcggccaat agcagctttg ctccttcgct ttctgggctc agaggctggg | 360 |
| aaggggtggg tccgggggcg ggctcagggg cgggctcagg ggcggggcgg gcgcccgaag | 420 |
| gtcctccgga ggcccggcat tccgcacgct tcaaaagcgc acgtctgccg cgctgttctc | 480 |
| ttcttcctca tctccgggcc tttcg                                       | 505 |

&lt;210&gt; 54

&lt;211&gt; 367

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; CBA promoter sequence

&lt;400&gt; 54

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| gtcgaggtag gccccacgtt ctgcttact ctccccatct cccccccctc cccacccccca | 60  |
| attttgtatt tatattttt ttaattattt tatgcagcga tgggggcggg gggggggggg  | 120 |
| gcgcgcgcca ggcggggcgg ggcggggcga ggggcggggc ggggcgaggc ggagaggtgc | 180 |
| ggcggcagcc aatcagagcg gcgcgctccg aaagtttcct tttatggcga ggcggcggcg | 240 |
| gcggcggccc tataaaaagc gaagcgcgcg gcgggcggga gtcgctgcgt tgccttcgcc | 300 |
| ccgtgccccg ctccgcgccg cctcgcgccg cccgccccgg ctctgactga ccgcgttact | 360 |
| cccacag                                                           | 367 |

<210> 55

<400> 55  
000

<210> 56

<211> 16

<212> DNA

<213> Artificial Sequence

<220>

<223> splice acceptor (SA) DNA sequence

<400> 56

cctttctctc ttcagg

16

<210> 57

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> branched splice acceptor (bSA) DNA sequence

<400> 57

tgctaatcct ttctctcttc agg

23

<210> 58

<400> 58

000

<210> 59

<211> 13

<212> RNA

<213> Artificial Sequence

<220>

<223> Example of start codon

<220>

<221> misc\_feature

<222> (11)..(11)

<223> R is adenine or guanine

<400> 59  
gccgccrcca ugg 13

<210> 60  
<211> 551  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Internal Ribosome Entry Sequence (IRES)

<400> 60  
cgttactggc cgaagccgct tggaataagg ccggtgtgcg tttgtctata tgttattttc 60  
caccatattg ccgtcttttg gcaatgtgag ggcccggaaa cctggccctg tcttcttgac 120  
gagcattcct aggggtcttt cccctctcgc caaaggaatg caaggctctgt tgaatgtcgt 180  
gaaggaagca gttcctctgg aagcttcttg aagacaaaca acgtctgtag cgaccctttg 240  
caggcagcgg aacccccac ctggcgacag gtgcctctgc ggccaaaagc cacgtgtata 300  
agatacacct gcaaaggcgg cacaacccca gtgccacgtt gtgagttgga tagttgtgga 360  
aagagtcaaa tggctcccct caagcgtatt caacaagggg ctgaaggatg cccagaaggt 420  
acccattgt atgggatctg atctggggcc tcggtgcaca tgcttttcat gtgttttagtc 480  
gaggttaaaa aacgtctagg ccccccgaac cacggggacg tggttttcct ttgaaaaaca 540  
cgatgataat a 551

<210> 61  
<211> 22  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> P2A peptide

<400> 61

Gly Ser Gly Ala Thr Asn Phe Ser Leu Leu Lys Gln Ala Gly Asp Val  
1 5 10 15



Glu Glu Asn Pro Gly Pro  
20

<210> 62  
<211> 21  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> F2A peptide

<400> 62

Gly Ser Gly Glu Gly Arg Gly Ser Leu Leu Thr Cys Gly Asp Val Glu  
1 5 10 15

Glu Asn Pro Gly Pro  
20

<210> 63  
<211> 23  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> E2A peptide

<400> 63

Gly Ser Gly Gln Cys Thr Asn Tyr Ala Leu Leu Lys Leu Ala Gly Asp  
1 5 10 15

Val Glu Ser Asn Pro Gly Pro  
20

<210> 64  
<211> 25  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> T2A peptide

&lt;400&gt; 64

Gly Ser Gly Val Lys Gln Thr Leu Asn Phe Asp Leu Leu Lys Leu Ala  
 1 5 10 15

Gly Asp Val Glu Ser Asn Pro Gly Pro  
 20 25

&lt;210&gt; 65

&lt;211&gt; 192

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; polyadenylation (polyA) sequence

&lt;400&gt; 65

cagacatgat aagatacatt gatgagtttg gacaaaccac aactagaatg cagtgaaaaa 60

aatgctttat ttgtgaaatt tgtgatgcta ttgctttatt tgtaaccatt ataagctgca 120

ataaacaagt taacaacaac aattgcattc attttatggt tcaggttcag ggggaggtgt 180

gggaggtttt tt 192

&lt;210&gt; 66

&lt;211&gt; 19

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Leader sequence

&lt;400&gt; 66

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly  
 1 5 10 15

Val His Ser

&lt;210&gt; 67

&lt;211&gt; 19

<212> PRT  
<213> Artificial Sequence

<220>  
<223> Leader sequence

<400> 67

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asp | Trp | Thr | Trp | Arg | Val | Phe | Cys | Leu | Leu | Ala | Val | Ala | Pro | Gly |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

Ala His Ser

<210> 68  
<211> 166  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> IFN gamma amino acid sequence

<400> 68

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Tyr | Thr | Ser | Tyr | Ile | Leu | Ala | Phe | Gln | Leu | Cys | Ile | Val | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ser | Leu | Gly | Cys | Tyr | Cys | Gln | Asp | Pro | Tyr | Val | Lys | Glu | Ala | Glu |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     |     | 30  |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Leu | Lys | Lys | Tyr | Phe | Asn | Ala | Gly | His | Ser | Asp | Val | Ala | Asp | Asn |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Thr | Leu | Phe | Leu | Gly | Ile | Leu | Lys | Asn | Trp | Lys | Glu | Glu | Ser | Asp |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Lys | Ile | Met | Gln | Ser | Gln | Ile | Val | Ser | Phe | Tyr | Phe | Lys | Leu | Phe |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Asn | Phe | Lys | Asp | Asp | Gln | Ser | Ile | Gln | Lys | Ser | Val | Glu | Thr | Ile |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |

Lys Glu Asp Met Asn Val Lys Phe Phe Asn Ser Asn Lys Lys Lys Arg  
100 105 110

Asp Asp Phe Glu Lys Leu Thr Asn Tyr Ser Val Thr Asp Leu Asn Val  
115 120 125

Gln Arg Lys Ala Ile His Glu Leu Ile Gln Val Met Ala Glu Leu Ser  
130 135 140

Pro Ala Ala Lys Thr Gly Lys Arg Lys Arg Ser Gln Met Leu Phe Arg  
145 150 155 160

Gly Arg Arg Ala Ser Gln  
165

<210> 69  
<211> 188  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> IFN alpha amino acid sequence

<400> 69

Met Ala Leu Thr Phe Ala Leu Leu Val Ala Leu Leu Val Leu Ser Cys  
1 5 10 15

Lys Ser Ser Cys Ser Val Gly Cys Asp Leu Pro Gln Thr His Ser Leu  
20 25 30

Gly Ser Arg Arg Thr Leu Met Leu Leu Ala Gln Met Arg Arg Ile Ser  
35 40 45

Leu Phe Ser Cys Leu Lys Asp Arg His Asp Phe Gly Phe Pro Gln Glu  
50 55 60

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Glu Phe Gly Asn Gln Phe Gln Lys Ala Glu Thr Ile Pro Val Leu His  
65 70 75 80

Glu Met Ile Gln Gln Ile Phe Asn Leu Phe Ser Thr Lys Asp Ser Ser  
85 90 95

Ala Ala Trp Asp Glu Thr Leu Leu Asp Lys Phe Tyr Thr Glu Leu Tyr  
100 105 110

Gln Gln Leu Asn Asp Leu Glu Ala Cys Val Ile Gln Gly Val Gly Val  
115 120 125

Thr Glu Thr Pro Leu Met Lys Glu Asp Ser Ile Leu Ala Val Arg Lys  
130 135 140

Tyr Phe Gln Arg Ile Thr Leu Tyr Leu Lys Glu Lys Lys Tyr Ser Pro  
145 150 155 160

Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Phe Ser Leu  
165 170 175

Ser Thr Asn Leu Gln Glu Ser Leu Arg Ser Lys Glu  
180 185

<210> 70

<211> 233

<212> PRT

<213> Artificial Sequence

<220>

<223> TNF alpha amino acid sequence

<400> 70

Met Ser Thr Glu Ser Met Ile Arg Asp Val Glu Leu Ala Glu Glu Ala  
1 5 10 15

Leu Pro Lys Lys Thr Gly Gly Pro Gln Gly Ser Arg Arg Cys Leu Phe  
20 25 30

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Leu Ser Leu Phe Ser Phe Leu Ile Val Ala Gly Ala Thr Thr Leu Phe  
35 40 45

Cys Leu Leu His Phe Gly Val Ile Gly Pro Gln Arg Glu Glu Phe Pro  
50 55 60

Arg Asp Leu Ser Leu Ile Ser Pro Leu Ala Gln Ala Val Arg Ser Ser  
65 70 75 80

Ser Arg Thr Pro Ser Asp Lys Pro Val Ala His Val Val Ala Asn Pro  
85 90 95

Gln Ala Glu Gly Gln Leu Gln Trp Leu Asn Arg Arg Ala Asn Ala Leu  
100 105 110

Leu Ala Asn Gly Val Glu Leu Arg Asp Asn Gln Leu Val Val Pro Ser  
115 120 125

Glu Gly Leu Tyr Leu Ile Tyr Ser Gln Val Leu Phe Lys Gly Gln Gly  
130 135 140

Cys Pro Ser Thr His Val Leu Leu Thr His Thr Ile Ser Arg Ile Ala  
145 150 155 160

Val Ser Tyr Gln Thr Lys Val Asn Leu Leu Ser Ala Ile Lys Ser Pro  
165 170 175

Cys Gln Arg Glu Thr Pro Glu Gly Ala Glu Ala Lys Pro Trp Tyr Glu  
180 185 190

Pro Ile Tyr Leu Gly Gly Val Phe Gln Leu Glu Lys Gly Asp Arg Leu  
195 200 205

Ser Ala Glu Ile Asn Arg Pro Asp Tyr Leu Asp Phe Ala Glu Ser Gly  
210 215 220

Gln Val Tyr Phe Gly Ile Ile Ala Leu  
 225 230

<210> 71  
 <211> 5288  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> DNA sequence corresponding to E2B region of the EnAd genome (bp  
 10355-5068)

<400> 71  
 ctatggcatc tcgatccagc agacctcctc gtttcgcggg tttggacggc tcctggaata 60  
 gggatatgaga cgatgggcgt ccagcgctgc cagggttcgg tccttccagg gtctcagtgt 120  
 tcgagtcagg gttgtttccg tcacagtga ggggtgtgcg cctgcttggg cgcttgccag 180  
 ggtgcgcttc agactcatcc tgctggtcga aaacttctgt cgcttggcgc cctgtatgtc 240  
 ggccaagtag cagtttacca tgagtctgta gttgagcgcc tcggctgcgt ggcctttggc 300  
 gcggagctta cctttggaag ttttcttgca taccgggcag tataggcatt tcagcgcata 360  
 caacttgggc gcaaggaaaa cggattctgg ggagtatgca tctgcgccgc aggaggcgca 420  
 aacagtttca cattccacca gccagggttaa atccgggttca ttgggggtcaa aaacaagttt 480  
 tccgccatat tttttgatgc gtttcttacc tttgggtctcc atgagttcgt gtcctcgttg 540  
 agtgacaaac aggctgtccg tgtccccgta gactgatttt acaggcctct tctccagtgg 600  
 agtgcctcgg tcttcttcgt acaggaactc tgaccactct gatacaaagg cgcgcgtcca 660  
 ggccagcaca aaggaggcta tgtgggaggg gtagcgatcg ttgtcaacca ggggggtccac 720  
 cttttccaaa gtatgcaaac acatgtcacc ctcttcaaca tccaggaatg tgattggctt 780  
 gtaggtgtat ttcacgtgac ctgggggtccc cgctgggggg gtataaaagg gggcggttct 840  
 ttgctcttcc tctactgtctt ccggatcgct gtccaggaac gtcagctgtt ggggtaggta 900  
 ttccctctcg aaggcgggca tgacctctgc actcagggtt tcagtttcta agaacgagga 960

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| ggatttgata ttgacagtgc cggttgagat gcctttcatg aggttttcgt ccatctggtc  | 1020 |
| agaaaacaca atttttttat tgtcaagttt ggtggcaa at gatccataca gggcgttgga | 1080 |
| taaaagtttg gcaatggatc gcatggtttg gttcttttcc ttgtccgcgc gctctttggc  | 1140 |
| ggcgatgttg agttggacat actcgcgtgc caggcacttc cattcgggga agatagtgt   | 1200 |
| taattcatct ggcacgattc tcacttgcca ccctcgatta tgcaaggtaa ttaa atccac | 1260 |
| actggtggcc acctcgctc gaaggggttc attggtccaa cagagcctac ctcttttcct   | 1320 |
| agaacagaaa gggggaagtg ggtctagcat aagttcatcg ggagggtctg catccatggt  | 1380 |
| aaagattccc ggaagtaaat cttatcaaaa atagctgatg ggagtgggt catctaaggc   | 1440 |
| catttgccat tctcgagctg ccagtgcgcg ctcatatggg ttaaggggac tgcccatgg   | 1500 |
| catgggatgg gtgagtgcag aggcatacat gccacagatg tcatagacgt agatgggatc  | 1560 |
| ctcaaagatg cctatgtagg ttggatagca tcgccccct ctgatacttg ctcgcacata   | 1620 |
| gtcatatagt tcatgtgatg gcgctagcag ccccgaccc aagttggtgc gattgggttt   | 1680 |
| ttctgttctg tagacgatct ggcgaaagat ggcgtgagaa ttggaagaga tgggtgggtct | 1740 |
| ttgaaaaatg ttgaaatggg catgaggtag acctacagag tctctgacaa agtgggcata  | 1800 |
| agattcttga agcttggtta ccagttcggc ggtgacaagt acgtctaggg cgagtagtc   | 1860 |
| aagtgtttct tgaatgatgt cataacctgg ttggtttttc ttttcccaca gttcgcggtt  | 1920 |
| gagaaggat tcttcgcgat cttccagta ctcttctagc ggaaacccgt ctttgtctgc    | 1980 |
| acggtaatg cctagcatgt agaactgatt aactgccttg taagggcagc agcccttctc   | 2040 |
| tacgggtaga gagtatgctt gagcagcttt tcgtagcgaa gcgtgagtaa gggcaaagg   | 2100 |
| gtctctgacc atgactttga ggaattggta tttgaagtcg atgtcgtcac aggctccctg  | 2160 |
| ttcccagagt tggaagtcta cccgtttctt gtaggcgggg ttgggcaaag cgaaagtaac  | 2220 |
| atcattgaag agaactctgc cggccctggg catgaaattg cgagtgatgc gaaaaggctg  | 2280 |
| tggtacttcc gctcgggtat tgataacctg ggcagctagg acgatctcgt cgaaaccgtt  | 2340 |
| gatgttgtgt cctacgatgt ataattctat gaaacgcggc gtgcctctga cgtgaggtag  | 2400 |



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|                                                                    |      |
|--------------------------------------------------------------------|------|
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| ccattcgtgc aggtgaggat tcgctttaag gaaggaggac cagaggtcca ctgccagtgc  | 2520 |
| tgtttgtaac tgggtcccgt actgacgaaa atgccgtccg actgccattt tttctgggggt | 2580 |
| gacgcaatag aaggtttggg ggtcctgccg ccagcgatcc cacttgagtt ttatggcgag  | 2640 |
| gtcataggcg atgttgacga gccgctggtc tccagagagt ttcatgacca gcatgaaggg  | 2700 |
| gattagctgc ttgccaaagg accccatcca ggtgtaggtt tccacatcgt aggtgagaaa  | 2760 |
| gagcctttct gtgcgaggat gagagccaat cgggaagaac tggatctcct gccaccagtt  | 2820 |
| ggaggaatgg ctgttgatgt gatggaagta gaactccctg cgacgcgccg agcattcatg  | 2880 |
| cttgtgcttg tacagacggc cgcagtagtc gcagcgttgc acgggttgta tctcgtgaat  | 2940 |
| gagttgtacc tggcttcctt tgacgagaaa tttcagtggg aagccgaggc ctggcgattg  | 3000 |
| tatctcgtgc tttactatgt tgtctgcac gccctgttca tcttctgtct cgatggtggt   | 3060 |
| catgctgacg agccctcgcg ggaggcaagt ccagacctg gcgcggcagg ggcgagctc    | 3120 |
| gaggacgaga gcgcgcaggc tggagctgtc cagggtcctg agacgctgcg gactcaggtt  | 3180 |
| agtaggcagt gtcaggagat taacttgcac gatcttttgg agggcgtgcg ggaggttcag  | 3240 |
| atagtacttg atctcaacgg gtccgttggt ggagatgtcg atggcttgca gggttccgtg  | 3300 |
| tcccttgggc gctaccaccg tgcccttggt tttcattttg gacggcgggtg gctctgttgc | 3360 |
| ttcttgcatg tttagaagcg gtgtcgaggg cgcgaccgg gcggcagggg cggtcggga    | 3420 |
| cccggcggca tggctggcag tggtagctcg gcgccgcgcg cgggtaggtt ctggtactgc  | 3480 |
| gccctgagaa gactcgcacg cgcgacgac cggcggttga catcctggat ctgacgcctc   | 3540 |
| tgggtgaaaag ctaccggccc cgtgagcttg aacctgaaaag agagttcaac agaataatc | 3600 |
| tcggtatcgt tgacggcggc ttgcctaagg atttcttgca cgtcaccaga gttgtcctgg  | 3660 |
| taggcgatct ccgccatgaa ctgctcgatc tcttcctctt gaagatctcc gcggcccgt   | 3720 |
| ctctcgacgg tggccgcgag gtcgttgag atgcgccccaa tgagttgaga gaatgcattc  | 3780 |
| atgcccgcct cgttccagac gcggctgtag accacggccc ccacgggatc tctcgcgcgc  | 3840 |

## eolf-othd-000005

|             |            |             |             |             |             |      |
|-------------|------------|-------------|-------------|-------------|-------------|------|
| atgaccacct  | gggcgagggt | gagctccacg  | tggcgggtga  | agaccgcata  | gttgcataagg | 3900 |
| cgctggaaaa  | ggtagttgag | tgtggtggcg  | atgtgctcgg  | tgacgaagaa  | atacatgatc  | 3960 |
| catcgtctca  | gcggcatctc | gctgacatcg  | cccagagctt  | ccaagcgctc  | catggcctcg  | 4020 |
| tagaagtcca  | cggcaaaatt | aaaaaactgg  | gagtttcgcg  | cggacacggt  | caactcctct  | 4080 |
| tccagaagac  | ggataagttc | ggcgatgggtg | gtgcgcacct  | cgcgctcgaa  | agccccctggg | 4140 |
| atttcttcct  | caatctcttc | ttcttccact  | aacatctctt  | cctcttcagg  | tggggctgca  | 4200 |
| ggaggagggg  | gaacgcggcg | acgccggcgg  | cgcacgggca  | gacggtcgat  | gaatctttca  | 4260 |
| atgacctctc  | cgcggcggcg | gcgcatgggt  | tcagtgcagg  | cgcggccgtt  | ctcgcgcggt  | 4320 |
| cgcagagtaa  | aaacaccgcc | gcgcatctcc  | ttaaagtgggt | gactgggagg  | ttctccgttt  | 4380 |
| gggagggaga  | gggcgctgat | tatacatttt  | attaattggc  | ccgtagggac  | tgacgcaga   | 4440 |
| gatctgatcg  | tgtcaagatc | cacgggatct  | gaaaaccttt  | cgacgaaagc  | gtctaaccag  | 4500 |
| tcacagtcac  | aaggtaggct | gagtacggct  | tcttggtggc  | gggggtgggt  | atgtgttcgg  | 4560 |
| tctgggtctt  | ctgtttcttc | ttcatctcgg  | gaagggtgaga | cgatgctgct  | ggtgatgaaa  | 4620 |
| ttaaagtagg  | cagttctaag | acggcggatg  | gtggcgagga  | gcaccagggtc | tttgggtccg  | 4680 |
| gcttgctgga  | tacgcaggcg | attggccatt  | ccccaaagcat | tatcctgaca  | tctagcaaga  | 4740 |
| tctttgtagt  | agtcttgcat | gagccgttct  | acgggcactt  | cttcctcacc  | cgttctgcca  | 4800 |
| tgcatacgtg  | tgagtccaaa | tccgcgcatt  | ggttgtagca  | gtgccaagtc  | agctacgact  | 4860 |
| ctttcggcga  | ggatggcttg | ctgtacttgg  | gtaagggtgg  | cttgaaagtc  | atcaaaatcc  | 4920 |
| acaaagcggg  | ggtaagctcc | tgtattaatg  | gtgtaagcac  | agttggccat  | gactgaccag  | 4980 |
| ttaactgtct  | ggtgaccagg | gcgcacgagc  | tcggtgtatt  | taaggcgaga  | ataggcgagg  | 5040 |
| gtgtcaaaga  | tgtaatcggt | gcagggtgcg  | accagatact  | ggtaccctat  | aagaaaatgc  | 5100 |
| ggcgggtgggt | ggcggtagag | aggccatcgt  | tctgtagctg  | gagcgccagg  | ggcgagggtct | 5160 |
| tccaacataa  | ggcggtgata | gccgtagatg  | tacctggaca  | tccagggtgat | tcctgcggcg  | 5220 |
| gtagtagaag  | cccaggaaaa | ctcgcgtacg  | cggttccaaa  | tggtgcgtag  | cggcatgaag  | 5280 |

tagttcat

5288

&lt;210&gt; 72

&lt;211&gt; 1548

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Anti-EpCAM BiTE DNA coding sequence, with N-terminal signal sequence and C-terminal deca-His affinity tag

&lt;400&gt; 72

```

atgggatgga gctgcatcat cctattcctc gtggcgacgg ccactggagt gcatagcgaa      60
ctggatgatga ctgagtcctc gtcacccctg acggtagaccg ccggcgagaa ggtagccatg      120
tcgtgcaagt cctcgcaaag cctgcttaac agcggcaacc agaaaaacta cctcacgtgg      180
tatcagcaaa agccagggtca acccccaaaa ctgctcatct actgggagag caccgcgag      240
tcgggggtgc cagaccggtt caccggctcc gggtaggaa ctgatttcac cctaaccatc      300
agctcgggtgc aagcggagga cctggccgtg tactactgcc aaaatgatta ctgtaccct      360
ctgacctttg gagcgggcac caagctcgaa atcaaggcg gtggaggaag cggcggggga      420
ggctcagggtg ggggaggatc agaagtcaa ctgctggagc agtcaggagc cgaactggtc      480
cgccgggaa cctccgtcaa gatttcctgt aaggcttcg gctacgcttt taccaattac      540
tggctgggct ggggtcaagca aagaccgggg catggcctgg agtggatcgg cgacatcttc      600
ccaggagcgc gcaacatcca ctacaacgag aagttcaagg ggaaagcgac tctgactgcc      660
gacaaatcat ccagcaccgc ctacatgcag ctgtcgtcgc tcactttcga agacagcgcg      720
gtgtactttt gtgctcggct ccggaactgg gatgaaccaa tggactactg gggacaagga      780
actaccgtga ccgtctcctc cggcggcggt ggaagcgatg tgcaactcgt gcagtccggt      840
gcggaagtga aaaagccggg cgcgagcgtc aaagtgtcat gcaaggcgtc aggatatacg      900
tttactagat acactatgca ctgggtgcgc caggcacctg gtcagggcct tgaatggatc      960
ggctacatca atccgtcgag aggctacact aattacgcgg actcagtcaa agggcgcttc     1020
acgattacga ccgacaagtc cacctcgact gcatacatgg aactgtcctc gctgagaagc     1080

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gaggacaccg ctacttacta ctgcgctaga tactacgatg atcactactg cctcgattac 1140  
tggggccagg gaaccactgt cacggtgtca tcgggagagg gcacctcaac cggatcaggg 1200  
ggatcgggag gctcgggagg cgcagacgac atcgtcctga cccagtcgcc cgccaccttg 1260  
tcgctgtccc caggagaaaag agcgaccctg tcatgccggg cgtcgcaaag cgtgagctat 1320  
atgaattggg atcagcagaa gccaggaaaag gcgccgaaga gatggatcta cgacacctcc 1380  
aaggctgctt caggtgtccc ggctagattc tcaggatcgg gatcaggaac ggactactcc 1440  
ctgaccatca attcactgga agcagaagat gcggccacct actactgtca gcagtgggtcc 1500  
tccaacccgc tgactttcgg aggcggaact aaggtcgaga tcaagtag 1548

<210> 73

<211> 515

<212> PRT

<213> Artificial Sequence

<220>

<223> Anti-EpCAM BiTE protein sequence, with N-terminal signal sequence  
without C-terminal deca-His affinity tag

<400> 73

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly  
1 5 10 15

Val His Ser Glu Leu Val Met Thr Gln Ser Pro Ser Ser Leu Thr Val  
20 25 30

Thr Ala Gly Glu Lys Val Thr Met Ser Cys Lys Ser Ser Gln Ser Leu  
35 40 45

Leu Asn Ser Gly Asn Gln Lys Asn Tyr Leu Thr Trp Tyr Gln Gln Lys  
50 55 60

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

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Ser Gly Val Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe  
85 90 95

Thr Leu Thr Ile Ser Ser Val Gln Ala Glu Asp Leu Ala Val Tyr Tyr  
100 105 110

Cys Gln Asn Asp Tyr Ser Tyr Pro Leu Thr Phe Gly Ala Gly Thr Lys  
115 120 125

Leu Glu Ile Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
130 135 140

Gly Gly Ser Glu Val Gln Leu Leu Glu Gln Ser Gly Ala Glu Leu Val  
145 150 155 160

Arg Pro Gly Thr Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala  
165 170 175

Phe Thr Asn Tyr Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly  
180 185 190

Leu Glu Trp Ile Gly Asp Ile Phe Pro Gly Ser Gly Asn Ile His Tyr  
195 200 205

Asn Glu Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser  
210 215 220

Ser Thr Ala Tyr Met Gln Leu Ser Ser Leu Thr Phe Glu Asp Ser Ala  
225 230 235 240

Val Tyr Phe Cys Ala Arg Leu Arg Asn Trp Asp Glu Pro Met Asp Tyr  
245 250 255

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
260 265 270

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Asp Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
275 280 285

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Arg Tyr  
290 295 300

Thr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile  
305 310 315 320

Gly Tyr Ile Asn Pro Ser Arg Gly Tyr Thr Asn Tyr Ala Asp Ser Val  
325 330 335

Lys Gly Arg Phe Thr Ile Thr Thr Asp Lys Ser Thr Ser Thr Ala Tyr  
340 345 350

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Thr Tyr Tyr Cys  
355 360 365

Ala Arg Tyr Tyr Asp Asp His Tyr Cys Leu Asp Tyr Trp Gly Gln Gly  
370 375 380

Thr Thr Val Thr Val Ser Ser Gly Glu Gly Thr Ser Thr Gly Ser Gly  
385 390 395 400

Gly Ser Gly Gly Ser Gly Gly Ala Asp Asp Ile Val Leu Thr Gln Ser  
405 410 415

Pro Ala Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys  
420 425 430

Arg Ala Ser Gln Ser Val Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro  
435 440 445

Gly Lys Ala Pro Lys Arg Trp Ile Tyr Asp Thr Ser Lys Val Ala Ser  
450 455 460

Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Ser  
465 470 475 480

Leu Thr Ile Asn Ser Leu Glu Ala Glu Asp Ala Ala Thr Tyr Tyr Cys  
485 490 495

Gln Gln Trp Ser Ser Asn Pro Leu Thr Phe Gly Gly Gly Thr Lys Val  
500 505 510

Glu Ile Lys  
515

<210> 74  
<211> 1560  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Anti-FAP BiTE DNA coding sequence, with N-terminal signal  
sequence without C-terminal deca-His affinity tag

<400> 74  
atgggctgga gctgcatcat cttgttcctg gtcgcaactg ctaccggagt ccattcggac 60  
atcgtcatga cccaaagccc tgactcgctc gctgtgtcac tgggagagcg ggcgactatc 120  
aactgcaa at catcccagag cctgctgtat tcacgcaatc agaaaaacta cctggcctgg 180  
tatcagcaga agccggggcca gcctcccaag ctgctgatct tctgggcctc caccgcgaa 240  
agcggcgtgc cggaccgctt cagcgggaagc ggattcggaa ctgactttac tctgaccatt 300  
agctccttgc aggcggagga cgtggccgctc tactactgcc agcagtatct ctcctatccg 360  
ctcacctttg ggcaaggcac caaggtggag attaagggag ggggcggcag cgggggaggc 420  
ggcagcggcg gcgggggatc gcaggtccag ctcgtccaat ccggagccga agtcaagaag 480  
ccgggagcgt cgggtcaaggt cagctgcaaa acttcgcgct acaccttcac tgagtacacg 540  
atccactggg tccgccaggc gcccgccag cggctggagt ggatcggcgg gatcaaccca 600  
aacaacggaa tcccaaatta caatcagaaa tttaaagggc gggtgactat caccgtggat 660

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acctcggcct ccacggcgta catggagctc tcactactca gatcggagga caccgcggtc      720
tattactgcg cccgccgccg gatcgcttat ggatacgatg aaggacatgc gatggattac      780
tggggccagg gcaccctcgt cacggtgtcg tcaggaggcg gcggttcaga tgtgcaactc      840
gtgcagtccg gtgcggaagt gaaaaagccg ggcgcgagcg tcaaagtgtc atgcaaggcg      900
tcaggatata cgtttactag atacactatg cactgggtgc gccaggcacc tggtcagggc      960
cttgaatgga tcggctacat caatccgtcg agaggctaca ctaattacgc ggactcagtc     1020
aaagggcgct tcacgattac gaccgacaag tccacctcga ctgcatacat ggaactgtcc     1080
tcgctgagaa gcgaggacac cgctacttac tactgcgcta gatactacga tgatcactac     1140
tgcctcgatt actggggcca gggaaccact gtcacgggtgt catcgggaga gggcacctca     1200
accggatcag ggggatcggg aggctcgggc ggcgcgagcg acatcgtcct gaccagtcg      1260
cccgccacct tgtcgctgtc cccaggagaa agagcgaccc tgtcatgccg ggcgtcgcaa     1320
agcgtgagct atatgaattg gtatcagcag aagccaggaa aggcgccgaa gagatggatc     1380
tacgacacct ccaaggtcgc ttcagggtgtc ccggctagat tctcaggatc gggatcagga     1440
acggactact ccctgaccat caattcactg gaagcagaag atgcggccac ctactactgt     1500
cagcagtggg cctccaaccc gctgactttc ggaggcggaa ctaaggtcga gatcaagtag     1560

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<210> 75

<211> 519

<212> PRT

<213> Artificial Sequence

<220>

<223> Anti-FAP BiTE amino acid sequence, with N-terminal signal  
sequence without C-terminal deca-His affinity tag

<400> 75

```

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
1           5           10          15

```

```

Val His Ser Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val

```



20

25

30

Ser Leu Gly Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Leu  
 35 40 45

Leu Tyr Ser Arg Asn Gln Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys  
 50 55 60

Pro Gly Gln Pro Pro Lys Leu Leu Ile Phe Trp Ala Ser Thr Arg Glu  
 65 70 75 80

Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Phe Gly Thr Asp Phe  
 85 90 95

Thr Leu Thr Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr  
 100 105 110

Cys Gln Gln Tyr Phe Ser Tyr Pro Leu Thr Phe Gly Gln Gly Thr Lys  
 115 120 125

Val Glu Ile Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
 130 135 140

Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys  
 145 150 155 160

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Thr Ser Arg Tyr Thr Phe  
 165 170 175

Thr Glu Tyr Thr Ile His Trp Val Arg Gln Ala Pro Gly Gln Arg Leu  
 180 185 190

Glu Trp Ile Gly Gly Ile Asn Pro Asn Asn Gly Ile Pro Asn Tyr Asn  
 195 200 205

Gln Lys Phe Lys Gly Arg Val Thr Ile Thr Val Asp Thr Ser Ala Ser

210

215

220

Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val  
 225 230 235 240

Tyr Tyr Cys Ala Arg Arg Arg Ile Ala Tyr Gly Tyr Asp Glu Gly His  
 245 250 255

Ala Met Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly  
 260 265 270

Gly Gly Gly Ser Asp Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
 275 280 285

Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr  
 290 295 300

Phe Thr Arg Tyr Thr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly  
 305 310 315 320

Leu Glu Trp Ile Gly Tyr Ile Asn Pro Ser Arg Gly Tyr Thr Asn Tyr  
 325 330 335

Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Thr Thr Asp Lys Ser Thr  
 340 345 350

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
 355 360 365

Thr Tyr Tyr Cys Ala Arg Tyr Tyr Asp Asp His Tyr Cys Leu Asp Tyr  
 370 375 380

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Gly Thr Ser  
 385 390 395 400

Thr Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ala Asp Asp Ile Val

405

410

415

Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala  
 420 425 430

Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Tyr Met Asn Trp Tyr  
 435 440 445

Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Trp Ile Tyr Asp Thr Ser  
 450 455 460

Lys Val Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly  
 465 470 475 480

Thr Asp Tyr Ser Leu Thr Ile Asn Ser Leu Glu Ala Glu Asp Ala Ala  
 485 490 495

Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Leu Thr Phe Gly Gly  
 500 505 510

Gly Thr Lys Val Glu Ile Lys  
 515

<210> 76

<211> 1599

<212> DNA

<213> Artificial Sequence

<220>

<223> Control (Anti-FHA) BiTE DNA coding sequence, with N-terminal  
 signal sequence without C-terminal deca-His affinity tag

<400> 76

atgggttggt catgcatcat cctgtttctc gtcgcaactg cgaccggcgt gcattcggaa 60

ctggacatcg tgatgacca ggcacctgca tcttggcag tgagcctggg acagagagcc 120

accatttcat gccgggccag caagagcgtg tcgtcatccg gatacaatta tctgcactgg 180

tatcagcaga aaccaggaca acctccaaag ctactcatct acctggcgtc gaacctcgaa 240

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| tcgggcggtcc cagctagatt ctcagggagc gggtcgggaa ccgatttcac cctgaacatc | 300  |
| caccctgtgg aggaggaaga cgcggaacg tactattgcc agcattcccc cgagttccct   | 360  |
| ctcacttttcg gtgcgggaac taagctggag atcaagtcca gcggcggcgg aggtagcggg | 420  |
| ggaggtggcg gaggaagctc ccggctgctc ctggaggtgc agctgcaaca atccggcccc  | 480  |
| gaactggtca agccaggcgc atccgtcaag atttcatgca agacctcggg gtacaccttc  | 540  |
| accgggtaca cgatgcattg ggtcaggcag agccacggca agtccctgga atggatcggg  | 600  |
| ggaatcaacc ccaaaaacgg cgcatcatc tacaaccaa agttccaggg aaaagccact    | 660  |
| ctgaccgtgg acaagtcgtc gagcacggcc agcatggagc tgcggtccct cacttccgac  | 720  |
| gactcagccg tgtattactg cgcgagacgg gtctacgatg actaccata ctactacgct   | 780  |
| atggactact ggggacaagg aaccagcgtg accgtctcat cggcgaaaac tactccgccg  | 840  |
| tcggtgacgt cgggaggtgg tggaagcgac gtgcagctcg tccagtcggg tgccgaggtg  | 900  |
| aagaagccag gagcctccgt gaaggtctcg tgcaaagcca gcggctacac ttttactagg  | 960  |
| tacactatgc actgggtgcg gcaagcgccg ggacaaggtc tggagtggat cggatacatc  | 1020 |
| aatccgtcgc ggggatacac taattacgag gactccgtca agggacgggt tactatcact  | 1080 |
| acggataagt ccactagcac cgctacatg gaactgtcct cgctgcggtc ggaagacact   | 1140 |
| gcgacctact actgcgctag atattacgat gaccactact gcctcgacta ttgggggcag  | 1200 |
| ggcactacgg tcaccgtctc gtcgggagaa ggaacctcaa ctggatcggg cggatcggga  | 1260 |
| ggctccggag gagccgacga catcgtgctt acccagtcgc ctgcgaccct gtccctgtcc  | 1320 |
| ccaggagaga gagcgactct ttcattgcagg gcttcccaat cagtctccta catgaattgg | 1380 |
| tatcaacaaa aacccggcaa ggccccgaaa cgctggatct acgatacttc aaaggtggcc  | 1440 |
| agcgggtgtc ctgcccgtt ctccgggtcg ggggtccggca ccgattactc gttgactatc  | 1500 |
| aatagcctgg aggccgagga cgctgcaact tactactgcc agcagtggtc ctccaaccct  | 1560 |
| ctcaccttcg gaggcgggac caaggtggaa atcaaatag                         | 1599 |

&lt;210&gt; 77

&lt;211&gt; 532

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Control (Anti-FHA) BiTE amino acid sequence with N-terminal signal sequence without C-terminal deca-His tag

&lt;400&gt; 77

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly  
 1 5 10 15

Val His Ser Glu Leu Asp Ile Val Met Thr Gln Ala Pro Ala Ser Leu  
 20 25 30

Ala Val Ser Leu Gly Gln Arg Ala Thr Ile Ser Cys Arg Ala Ser Lys  
 35 40 45

Ser Val Ser Ser Ser Gly Tyr Asn Tyr Leu His Trp Tyr Gln Gln Lys  
 50 55 60

Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr Leu Ala Ser Asn Leu Glu  
 65 70 75 80

Ser Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe  
 85 90 95

Thr Leu Asn Ile His Pro Val Glu Glu Glu Asp Ala Ala Thr Tyr Tyr  
 100 105 110

Cys Gln His Ser Arg Glu Phe Pro Leu Thr Phe Gly Ala Gly Thr Lys  
 115 120 125

Leu Glu Ile Lys Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Gly  
 130 135 140

Gly Ser Ser Arg Ser Ser Leu Glu Val Gln Leu Gln Gln Ser Gly Pro

145                                      150                                      155                                      160

Glu Leu Val Lys Pro Gly Ala Ser Val Lys Ile Ser Cys Lys Thr Ser  
165                                      170                                      175

Gly Tyr Thr Phe Thr Gly Tyr Thr Met His Trp Val Arg Gln Ser His  
180                                      185                                      190

Gly Lys Ser Leu Glu Trp Ile Gly Gly Ile Asn Pro Lys Asn Gly Gly  
195                                      200                                      205

Ile Ile Tyr Asn Gln Lys Phe Gln Gly Lys Ala Thr Leu Thr Val Asp  
210                                      215                                      220

Lys Ser Ser Ser Thr Ala Ser Met Glu Leu Arg Ser Leu Thr Ser Asp  
225                                      230                                      235                                      240

Asp Ser Ala Val Tyr Tyr Cys Ala Arg Arg Val Tyr Asp Asp Tyr Pro  
245                                      250                                      255

Tyr Tyr Tyr Ala Met Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val  
260                                      265                                      270

Ser Ser Ala Lys Thr Thr Pro Pro Ser Val Thr Ser Gly Gly Gly Gly  
275                                      280                                      285

Ser Asp Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly  
290                                      295                                      300

Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Arg  
305                                      310                                      315                                      320

Tyr Thr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp  
325                                      330                                      335

Ile Gly Tyr Ile Asn Pro Ser Arg Gly Tyr Thr Asn Tyr Ala Asp Ser

340

345

350

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

Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Thr Tyr Tyr  
 370 375 380

Cys Ala Arg Tyr Tyr Asp Asp His Tyr Cys Leu Asp Tyr Trp Gly Gln  
 385 390 395 400

Gly Thr Thr Val Thr Val Ser Ser Gly Glu Gly Thr Ser Thr Gly Ser  
 405 410 415

Gly Gly Ser Gly Gly Ser Gly Gly Ala Asp Asp Ile Val Leu Thr Gln  
 420 425 430

Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser  
 435 440 445

Cys Arg Ala Ser Gln Ser Val Ser Tyr Met Asn Trp Tyr Gln Gln Lys  
 450 455 460

Pro Gly Lys Ala Pro Lys Arg Trp Ile Tyr Asp Thr Ser Lys Val Ala  
 465 470 475 480

Ser Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr  
 485 490 495

Ser Leu Thr Ile Asn Ser Leu Glu Ala Glu Asp Ala Ala Thr Tyr Tyr  
 500 505 510

Cys Gln Gln Trp Ser Ser Asn Pro Leu Thr Phe Gly Gly Gly Thr Lys  
 515 520 525

Val Glu Ile Lys

530

<210> 78  
 <211> 532  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Control BiTe (Anti-FHA) without C-terminal deca-His tag

<400> 78

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Val His Ser Glu Leu Asp Ile Val Met Thr Gln Ala Pro Ala Ser Leu  
 20 25 30

Ala Val Ser Leu Gly Gln Arg Ala Thr Ile Ser Cys Arg Ala Ser Lys  
 35 40 45

Ser Val Ser Ser Ser Gly Tyr Asn Tyr Leu His Trp Tyr Gln Gln Lys  
 50 55 60

Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr Leu Ala Ser Asn Leu Glu  
 65 70 75 80

Ser Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe  
 85 90 95

Thr Leu Asn Ile His Pro Val Glu Glu Glu Asp Ala Ala Thr Tyr Tyr  
 100 105 110

Cys Gln His Ser Arg Glu Phe Pro Leu Thr Phe Gly Ala Gly Thr Lys  
 115 120 125

Leu Glu Ile Lys Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Gly  
 130 135 140



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Gly Ser Ser Arg Ser Ser Leu Glu Val Gln Leu Gln Gln Ser Gly Pro  
145 150 155 160

Glu Leu Val Lys Pro Gly Ala Ser Val Lys Ile Ser Cys Lys Thr Ser  
165 170 175

Gly Tyr Thr Phe Thr Gly Tyr Thr Met His Trp Val Arg Gln Ser His  
180 185 190

Gly Lys Ser Leu Glu Trp Ile Gly Gly Ile Asn Pro Lys Asn Gly Gly  
195 200 205

Ile Ile Tyr Asn Gln Lys Phe Gln Gly Lys Ala Thr Leu Thr Val Asp  
210 215 220

Lys Ser Ser Ser Thr Ala Ser Met Glu Leu Arg Ser Leu Thr Ser Asp  
225 230 235 240

Asp Ser Ala Val Tyr Tyr Cys Ala Arg Arg Val Tyr Asp Asp Tyr Pro  
245 250 255

Tyr Tyr Tyr Ala Met Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val  
260 265 270

Ser Ser Ala Lys Thr Thr Pro Pro Ser Val Thr Ser Gly Gly Gly Gly  
275 280 285

Ser Asp Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly  
290 295 300

Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Arg  
305 310 315 320

Tyr Thr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp  
325 330 335

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Ile Gly Tyr Ile Asn Pro Ser Arg Gly Tyr Thr Asn Tyr Ala Asp Ser  
340 345 350

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

Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Thr Tyr Tyr  
370 375 380

Cys Ala Arg Tyr Tyr Asp Asp His Tyr Cys Leu Asp Tyr Trp Gly Gln  
385 390 395 400

Gly Thr Thr Val Thr Val Ser Ser Gly Glu Gly Thr Ser Thr Gly Ser  
405 410 415

Gly Gly Ser Gly Gly Ser Gly Gly Ala Asp Asp Ile Val Leu Thr Gln  
420 425 430

Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser  
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Cys Arg Ala Ser Gln Ser Val Ser Tyr Met Asn Trp Tyr Gln Gln Lys  
450 455 460

Pro Gly Lys Ala Pro Lys Arg Trp Ile Tyr Asp Thr Ser Lys Val Ala  
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Ser Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr  
485 490 495

Ser Leu Thr Ile Asn Ser Leu Glu Ala Glu Asp Ala Ala Thr Tyr Tyr  
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Cys Gln Gln Trp Ser Ser Asn Pro Leu Thr Phe Gly Gly Gly Thr Lys  
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Val Glu Ile Lys  
530

<210> 79  
<211> 34853  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> NG-601 (EnAd-CMV-EpCAMBiTE) without deca-His affinity tag

<400> 79  
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tgaggaagtg tttttctgaa taatgtggta tttatggcag ggtggagtat ttgttcaggg 360  
ccaggtagac tttgacccat tacgtggagg tttcgattac cgtgtttttt acctgaattt 420  
ccgcgtaccg tgtcaaagtc ttctgttttt acgtagggtg cagctgatcg ctagggattt 480  
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| tatttacagt aagtgtgttt aagttaaaat ttaaaggaat atgctgtttt tcacatgtat   | 1200 |
| attgagtgtg agttttgtgc ttcttattat aggtcctgtg tctgatgctg atgaatcacc   | 1260 |
| atctcctgat tctactacct cacctcctga gattcaagca cctgttcctg tggacgtgcg   | 1320 |
| caagccccatt cctgtgaagc ttaagcctgg gaaacgtcca gcagtggaaa aacttgagga  | 1380 |
| cttgttacag ggtggggacg gacctttgga cttgagtaca cggaaacgtc caagacaata   | 1440 |
| agtgttccat atccgtgttt acttaagggtg acgtcaatat ttgtgtgaca gtgcaatgta  | 1500 |
| ataaaaaatat gttaactgtt cactgggtttt tattgctttt tgggcgggga ctcaggtata | 1560 |
| taagtagaag cagacctgtg tggttagctc ataggagctg gctttcatcc atggagggtt   | 1620 |
| gggccatttt ggaagacctt aggaagacta ggcaactgtt agagaacgct tcggacggag   | 1680 |
| tctccggttt ttggagattc tggttcgcta gtgaattagc tagggtagtt tttaggataa   | 1740 |
| aacaggacta taaacaagaa tttgaaaagt tgttggtaga ttgccaggga ctttttgaag   | 1800 |
| ctcttaattt gggccatcag gttcacttta aagaaaaagt tttatcagtt ttagactttt   | 1860 |
| caaccccagg tagaactgct gctgctgtgg cttttcttac ttttatatta gataaatgga   | 1920 |
| tcccgagac tcatttcagc aggggatacg ttttggattt catagccaca gcattgtgga    | 1980 |
| gaacatggaa ggttcgcaag atgaggacaa tcttaggtta ctggccagtg cagcctttgg   | 2040 |
| gtgtagcggg aatcctgagg catccaccgg tcatgccagc ggttctggag gaggaacagc   | 2100 |
| aagaggacaa cccgagagcc ggcctggacc ctccagtgga ggaggcggag tagctgactt   | 2160 |
| gtctcctgaa ctgcaacggg tgcttactgg atctacgtcc actggacggg ataggggcgt   | 2220 |
| taagagggag agggcatcta gtggtactga tgctagatct gagttggctt taagtttaat   | 2280 |
| gagtcgcaga cgtcctgaaa ccatttggtg gcatgagggt cagaaagagg gaagggatga   | 2340 |
| agtttctgta ttgcaggaga aatattcact ggaacagggtg aaaacatgtt gggttgagcc  | 2400 |
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| gtggcctggg gtagtcggta tggaagcagt aacttttgta aatgttaagt ttaggggaga   | 2640 |
| tggttataat ggaatagtgt ttatggccaa taccaaactt atattgcatg gttgtagctt   | 2700 |
| ttttggtttc aacaatacct gtgtagatgc ctggggacag gttagtgtac ggggatgtag   | 2760 |
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| atgcatattt caaagatgta acctgggcat tctgaatgaa ggcgaagcaa ggggtccgcca  | 2880 |
| ctgcgcttct acagatactg gatgttttat tttgattaag ggaaatgcca gcgtaaagca   | 2940 |
| taacatgatt tgcggtgctt ccgatgagag gccttatcaa atgctcactt gtgctgggtg   | 3000 |
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| gcagctgcag ctgccgccgc cgcttctgtt gccgctaaca ctgtgcttgg aatgggttac   | 3720 |
| tatggaagca tcatggctaa ttccacttcc tctaataacc cttctaccct gactcaggac   | 3780 |
| aagttacttg tccttttggc ccagctggag gctttgaccc aacgtctggg tgaactttct   | 3840 |
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| tacatttagg aaatttatcg tgcagcttgg atggaaaagc gtggaaaaat ttggagacac   | 4440 |
| ccttgtgtcc tccaagattt tccatgcact catccatgat aatagcaatg gggccgtggg   | 4500 |
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| aatcatcata agccatttta atgaatttgg ggcggagagt accagattgg ggtatgaatg   | 4620 |
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| ccgagggtgg aatcatgtcc acctgggggg ctatgaaaaa caccgtttct ggggcggggg   | 4740 |
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| ctgttcatct tctgtctcga tgggtggcat gctgacgagc cctcgcgga ggcaagtcca   | 8160 |
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|                                                                    |      |
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| gcaccgggcg gcaggggagg ctcgggaccc ggcgcatgg ctggcagtgg tacgtcggcg   | 8520 |
| ccgcgcgcgg gtaggttctg gtactgcgcc ctgagaagac tcgcatgcgc gacgacgcgg  | 8580 |
| cggttgacat cctggatctg acgcctctgg gtgaaagcta ccggccccgt gagcttgaac  | 8640 |
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| tcttgcacgt caccagagtt gtcctggtag gcgatctccg ccatgaactg ctcgatctct  | 8760 |
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| acggcccca cgggatctct cgcgcgcatg accacctggg cgaggttgag ctccacgtgg   | 8940 |
| cgggtgaaga ccgcatagtt gcataggcgc tggaaaaggt agttgagtgt ggtggcgatg  | 9000 |
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| agagcttcca agcgctccat ggccctgtag aagtccacgg caaaattaaa aaactgggag  | 9120 |
| tttcgcgcgg acacggtcaa ctctcttcc agaagacgga taagttcggc gatggtggtg   | 9180 |
| cgcacctcgc gctcgaaagc ccctgggatt tcttctcaa tctcttcttc ttccactaac   | 9240 |
| atctcttctt cttcaggtgg ggctgcagga ggagggggaa cgcggcgacg ccggcggcgc  | 9300 |
| acgggcagac ggtcgatgaa tctttcaatg acctctccgc ggcggcggcg catggtttca  | 9360 |
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| aagtggatgac tgggaggttc tccgtttggg agggagaggg cgctgattat acattttatt | 9480 |
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| aacctttcga cgaaagcgtc taaccagtca cagtcacaag gtaggctgag tacggcttct  | 9600 |
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|                                                                    |       |
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| ggcacttctt cctcaccctt tctgccatgc atacgtgtga gtccaaatcc gcgcattggt  | 9900  |
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| agggtggctt gaaagtcacg aaaatccaca aagcgggtgt aagctcctgt attaatggtg  | 10020 |
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| ttccaaatgt tgcgtagcgg catgaagtag ttcatgtag gcacggttg accagtgagg    | 10380 |
| cgcgcgagc cattgatgct ctatagacac ggagaaaatg aaagcgttca gcgactcgac   | 10440 |
| tccgtagcct ggaggaacgt gaacgggttg ggtcgcggtg taccggtt cgagacttgt    | 10500 |
| actcgagccg gccggagccg cggctaactg ggtattggca ctccgtctc gaccagcct    | 10560 |
| acaaaaatcc aggatacggg atcgagtcgt tttgctggtt tccgaatggc aggggaagtga | 10620 |
| gtcctatttt ttttttttgc cgctcagatg catcccgtgc tgcgacagat gcgcccccaa  | 10680 |
| caacagcccc cctcgcagca gcagcagcag caatcacaaa aggctgtccc tgcaactact  | 10740 |
| gcaactgccg ccgtgagcgg tgcgggacag cccgcctatg atctggactt ggaagagggc  | 10800 |
| gaaggactgg cacgtctagg tgcgccttca cccgagcggc atccgagagt tcaactgaaa  | 10860 |
| aaagattctc gcgaggcgta tgtgccccaa cagaacctat ttagagacag aagcggcgag  | 10920 |
| gagccggagg agatgcgagc ttcccgcttt aacgcgggtc gtgagctgcg tcacggtttg  | 10980 |
| gaccgaagac gagtgttgcg ggacgaggat ttcgaagtgt atgaaatgac agggatcagt  | 11040 |
| cctgccaggg cacacgtggc tgcagccaac cttgtatcgg cttacgagca gacagtaaag  | 11100 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| gaagagcgta acttccaaaa gtctttttaat aatcatgtgc gaaccctgat tgcccgcgaa  | 11160 |
| gaagttaccc ttggtttgat gcatttgtgg gatttgatgg aagctatcat tcagaaccct   | 11220 |
| actagcaaac ctctgaccgc ccagctgttt ctggtgggtgc aacacagcag agacaatgag  | 11280 |
| gctttcagag aggcgctgct gaacatcacc gaacccgagg ggagatgggt gtatgatctt   | 11340 |
| atcaacattc tacagagtat catagtgcag gagcggagcc tgggcctggc cgagaagggtg  | 11400 |
| gctgccatca attactcgggt tttagacttg ggaaaatatt acgctcgcaa aatctacaag  | 11460 |
| actccatacg ttcccataga caaggagggtg aagatagatg gggttctacat gcgcatgacg | 11520 |
| ctcaaggctt tgaccctgag cgatgatctt ggggtgtatc gcaatgacag aatgcatcgc   | 11580 |
| gcggttagcg ccagcaggag gcgcgagtta agcgacaggg aactgatgca cagtttgcaa   | 11640 |
| agagctctga ctggagctgg aaccgagggt gagaattact tcgacatggg agctgacttg   | 11700 |
| cagtggcagc ctagtcgcag ggctctgagc gccgcgacgg caggatgtga gcttccttac   | 11760 |
| atagaagagg cggatgaagg cgaggaggaa gagggcgagt acttggaaga ctgatggcac   | 11820 |
| aacccgtgtt ttttgctaga tggaacagca agcaccggat cccgcaatgc gggcggcgct   | 11880 |
| gcagagccag ccgctccggca ttaactcctc ggacgattgg acccaggcca tgcaacgtat  | 11940 |
| catggcgttg acgactcgca accccgaagc ctttagacag caaccccagg ccaaccgtct   | 12000 |
| atcggccatc atggaagctg tagtgccttc ccgctctaata cccactcatg agaaggctct  | 12060 |
| ggccatcgtg aacgcgttgg tggagaacaa agctattcgt ccagatgagg ccggactgggt  | 12120 |
| atacaacgct ctcttagaac gcgtggctcg ctacaacagt agcaatgtgc aaaccaatct   | 12180 |
| ggaccgtatg ataacagatg tacgcgaagc cgtgtctcag cgcgaaagg tccagcgtga    | 12240 |
| tgccaacctg gggtcgctgg tggcggttaa tgctttcttg agtactcagc ctgctaattg   | 12300 |
| gccgcgtgggt caacaggatt atactaactt tttaagtgtt ttgagactga tggatcaga   | 12360 |
| agtacctcag agcgaagtgt atcagtccgg tcctgattac ttctttcaga ctagcagaca   | 12420 |
| gggcttgagc acggtaaatc tgagccaagc ttttaaaaaa cttaaagggt tgtggggagt   | 12480 |
| gcatgccccg gtaggagaaa gagcaaccgt gtctagcttg ttaactccga actccgcct    | 12540 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| attattactg ttggtagctc ctttcaccga cagcggtagc atcgaccgta attcctat    | 12600 |
| gggttaccta ctaaacctgt atcgcgaaagc catagggcaa agtcaggtgg acgagcagac | 12660 |
| ctatcaagaa attacccaag tcagtcgcgc tttgggacag gaagacactg gcagtttgga  | 12720 |
| agccactctg aacttcttgc ttaccaatcg gtctcaaaag atccctcctc aatatgctct  | 12780 |
| tactgcggag gaggagagga tccttagata tgtgcagcag agcgtgggat tgtttctgat  | 12840 |
| gcaagagggg gcaactccga ctgcagcact ggacatgaca gcgcgaaata tggagcccag  | 12900 |
| catgtatgcc agtaaccgac ctttcattaa caaactgctg gactacttgc acagagctgc  | 12960 |
| cgctatgaac tctgattatt tcaccaatgc catcttaaac ccgactggc tgccccacc    | 13020 |
| tggtttctac acgggcgaat atgacatgcc cgaccctaata gacggatttc tgtgggacga | 13080 |
| cgtggacagc gatgtttttt cacctctttc tgatcatcgc acgtggaaaa aggaaggcgg  | 13140 |
| cgatagaatg cattcttctg catcgctgtc cgggggtcatg ggtgctaccg cggctgagcc | 13200 |
| cgagtctgca agtccttttc ctagtctacc cttttctcta cacagtgtac gtagcagcga  | 13260 |
| agtgggtaga ataagtcgcc cgagtttaata gggcgaagag gagtatctaa acgattcctt | 13320 |
| gctcagaccg gcaagagaaa aaaatttccc aaacaatgga atagaaagt tgggtggataa  | 13380 |
| aatgagtaga tggaagactt atgctcagga tcacagagac gagcctggga tcatggggat  | 13440 |
| tacaagtaga gcgagccgta gacgccagcg ccatgacaga cagaggggtc ttgtgtggga  | 13500 |
| cgatgaggat tcggccgatg atagcagcgt gctggacttg ggtgggagag gaaggggcaa  | 13560 |
| cccgtttgct catttgcgcc ctcgcttggg tggatatgtt taaaaaaaaa taaaaaaaaa  | 13620 |
| actcaccaag gccatggcga cgagcgtagc ttcgttcttc tttattatct gtgtctagta  | 13680 |
| taatgaggcg agtcgtgcta ggcggagcgg tgggtgatcc ggagggtcct cctccttcgt  | 13740 |
| acgagagcgt gatgcagcag cagcaggcga cggcggtgat gcaatcccca ctggaggctc  | 13800 |
| cctttgtgcc tccgcgatac ctggcaccta cggagggcag aaacagcatt cgttattcgg  | 13860 |
| aactggcacc tcagtacgat accaccaggt tgtatctggt ggacaacaag tcggcggaca  | 13920 |
| ttgcttctct gaactatcag aatgaccaca gcaacttctt gaccacggtg gtgcaaaaca  | 13980 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| atgactttac ccctacggaa gccagcaccc agaccattaa ctttgatgaa cgatcgcggt  | 14040 |
| ggggcgggtca gctaaagacc atcatgcata ctaacatgcc aaacgtgaac gagtatatgt | 14100 |
| ttagtaacaa gttcaaagcg cgtgtgatgg tgtccagaaa acctcccgac ggtgctgcag  | 14160 |
| ttggggatac ttatgatcac aagcaggata ttttgaaata tgagtgggtc gagtttactt  | 14220 |
| tgccagaagg caacttttca gttactatga ctattgattt gatgaacaat gccatcatag  | 14280 |
| ataattactt gaaagtgggt agacagaatg gagtgcttga aagtgacatt ggtgttaagt  | 14340 |
| tcgacaccag gaacttcaag ctgggatggg atcccgaaac caagttgatc atgcctggag  | 14400 |
| tgtatacgta tgaagccttc catcctgaca ttgtcttact gcctggctgc ggagtggatt  | 14460 |
| ttaccgagag tcgtttgagc aaccttcttg gtatcagaaa aaaacagcca tttcaagagg  | 14520 |
| gttttaagat tttgtatgaa gatttagaag gtggtaatat tccggccctc ttggatgtag  | 14580 |
| atgcctatga gaacagtaag aaagaacaaa aagccaaaat agaagctgct acagctgctg  | 14640 |
| cagaagctaa ggcaaacata gttgccagcg actctacaag ggttgctaac gctggagagg  | 14700 |
| tcagaggaga caattttgcg ccaacacctg ttccgactgc agaatacatta ttggccgatg | 14760 |
| tgtctgaagg aacggacgtg aaactcacta ttcaacctgt agaaaaagat agtaagaata  | 14820 |
| gaagctataa tgtgttgga gacaaaatca acacagccta tcgcagttgg tatctttcgt   | 14880 |
| acaattatgg cgatcccgaa aaaggagtg gttcctggac attgctcacc acctcagatg   | 14940 |
| tcacctgcgg agcagagcag gtctactggg cgcttccaga catgatgaag gatcctgtca  | 15000 |
| ctttccgctc cactagacaa gtcagtaact acctgtggg ggggtgcagag cttatgcccg  | 15060 |
| tcttctcaaa gagcttctac aacgaacaag ctgtgtactc ccagcagctc cgccagtcca  | 15120 |
| cctcgcttac gcacgtcttc aaccgctttc ctgagaacca gattttaatc cgtccgccgg  | 15180 |
| cgcccaccat taccaccgtc agtgaaaacg ttctgtctct cacagatcac gggaccctgc  | 15240 |
| cgttgcgcag cagtatccgg ggagtccaac gtgtgaccgt tactgacgcc agacgccga   | 15300 |
| cctgtcccta cgtgtacaag gactgggca tagtcgcacc gcgcgtcctt tcaagccgca   | 15360 |
| ctttctaaaa aaaaaaaaaa tgtccattct tatctcgccc agtaataaca ccggttgggg  | 15420 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| tctgcgcgct ccaagcaaga tgtacggagg cgcacgcaaa cgttctaccc aacatcctgt   | 15480 |
| ccgtgttcgc ggacattttc gcgctccatg gggcgccctc aagggccgca ctcgcgttcg   | 15540 |
| aaccaccgtc gatgatgtaa tcgatcaggt ggttgccgac gcccgttaatt atactcctac  | 15600 |
| tgcgcttaca tctactgtgg atgcagttat tgacagtgtg gtggctgacg ctcgcaacta   | 15660 |
| tgctcgacgt aagagccggc gaaggcgc attgccagacgc caccgagcta ccactgccat   | 15720 |
| gcgagccgca agagctctgc tacgaagagc tagacgcgtg gggcgaagag ccatgcttag   | 15780 |
| ggcggccaga cgtgcagctt cgggcgccag cgccggcagg tcccgcaggc aagcagccgc   | 15840 |
| tgctgcagcg gcgactattg ccgacatggc ccaatcgcga agaggcaatg tatactgggt   | 15900 |
| gcgtgacgct gccaccggtc aacgtgtacc cgtgcgcacc cgtccccctc gcacttagaa   | 15960 |
| gatactgagc agtctccgat gttgtgtccc agcggcgagg atgtccaagc gcaaatacaa   | 16020 |
| ggaagaaatg ctgcaggtta tcgcacctga agtctacggc caaccgttga aggatgaaaa   | 16080 |
| aaaaccccg c aaaatcaagc ggggttaaaaa ggacaaaaaa gaagaggaag atggcgatga | 16140 |
| tgggctggcg gagtttgtgc gcgagtttgc cccacggcga cgcgtgcaat ggcggtggcg   | 16200 |
| caaagttcga catgtgttga gacctggaac ttcgggtggc tttacacccg gcgagcggtc   | 16260 |
| aagcgctact ttttaagcgtt cctatgatga ggtgtacggg gatgatgata ttcttgagca  | 16320 |
| ggcggctgac cgattaggcg agtttgctta tggcaagcgt agtagaataa cttccaagga   | 16380 |
| tgagacagtg tcgataccct tggatcatgg aaatcccacc cctagtctta aaccggtcac   | 16440 |
| tttgacgcaa gtgttacccg taactccgcg aacagggtgt aaacgcgaag gtgaagattt   | 16500 |
| gtatcccact atgcaactga tggtaaccaa acgccagaag ttggaggacg ttttgagaa    | 16560 |
| agtaaaaagt gatccagata ttcaacctga ggttaaaagt agaccatta agcaggtagc    | 16620 |
| gcctgggtctg ggggtacaaa ctgtagacat taagattccc actgaaagta tggaagtgc   | 16680 |
| aactgaaccc gcaaagccta ctgccacct cactgaagt caaacggatc catggatgcc     | 16740 |
| catgcctatt acaactgacg ccgccggtcc cactcgaaga tcccgcgaa agtacgggtcc   | 16800 |
| agcaagtctg ttgatgcca attatgttgt acacccatct attattccta ctcctgggtta   | 16860 |

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|             |             |             |             |             |             |       |
|-------------|-------------|-------------|-------------|-------------|-------------|-------|
| ccgaggcact  | cgctactatc  | gcagccgaaa  | cagtacctcc  | cgccgtcgcc  | gcaagacacc  | 16920 |
| tgcaaatcgc  | agtcgtcgcc  | gtagacgcac  | aagcaaaccg  | actcccggcg  | ccctggtgcg  | 16980 |
| gcaagtgtac  | cgcaatggta  | gtgcggaacc  | tttgacactg  | ccgctgctgc  | gttaccatcc  | 17040 |
| gagtatcatc  | acttaatcaa  | tgttgccgct  | gcctccttgc  | agatatggcc  | ctcacttgtc  | 17100 |
| gccttcgcgt  | tcccatcact  | ggttaccgag  | gaagaaaactc | gcgccgtaga  | agagggatgt  | 17160 |
| tgggacgcgg  | aatgcgacgc  | tacaggcgac  | ggcgtgctat  | ccgcaagcaa  | ttgcgggggtg | 17220 |
| gttttttacc  | agccttaatt  | ccaattatcg  | ctgctgcaat  | tggcgcgata  | ccaggcatag  | 17280 |
| cttccgtggc  | ggttcaggcc  | tcgcaacgac  | attgacattg  | gaaaaaaacg  | tataaataaa  | 17340 |
| aaaaaaaaaa  | tacaatggac  | tctgacactc  | ctggtcctgt  | gactatgttt  | tcttagagat  | 17400 |
| ggaagacatc  | aattttttcat | ccttggctcc  | gcgacacggc  | acgaagccgt  | acatgggcac  | 17460 |
| ctggagcgac  | atcggcacga  | gccaactgaa  | cggggggcgcc | ttcaattgga  | gcagtatctg  | 17520 |
| gagcgggctt  | aaaaattttg  | gctcaaccat  | aaaaacatac  | gggaacaaag  | cttggaacag  | 17580 |
| cagtacagga  | caggcgctta  | gaaataaaact | taaagaccag  | aacttccaac  | aaaaagtagt  | 17640 |
| cgatgggata  | gcttccggca  | tcaatggagt  | ggtagatttg  | gctaaccagg  | ctgtgcagaa  | 17700 |
| aaagataaac  | agtcgttttg  | acccgccgcc  | agcaacccca  | ggtgaaatgc  | aagtggagga  | 17760 |
| agaaaattcct | ccgccagaaa  | aacgaggcga  | caagcgtccg  | cgtcccgatt  | tggaagagac  | 17820 |
| gctggtgacg  | cgcgtagatg  | aaccgccttc  | ttatgaggaa  | gcaacgaagc  | ttggaatgcc  | 17880 |
| caccactaga  | ccgatagccc  | caatggccac  | cgggggtgatg | aaaccttctc  | agttgcatcg  | 17940 |
| acccgtcacc  | ttggatttgc  | cccctcccc   | tgctgtact   | gctgtacccg  | cttctaagcc  | 18000 |
| tgctgctgcc  | ccgaaaccag  | tcgccgtagc  | caggtcacgt  | cccggggggcg | ctcctcgtcc  | 18060 |
| aaatgcgcac  | tggcaaaaata | ctctgaacag  | catcgtgggt  | ctaggcgtgc  | aaagtgtaaa  | 18120 |
| acgccgtcgc  | tgcttttaat  | taaatatgga  | gtagcgctta  | acttgcttat  | ctgtgtatat  | 18180 |
| gtgtcattac  | acgccgtcac  | agcagcagag  | gaaaaaaagga | agaggtcgtg  | cgtcgacgct  | 18240 |
| gagttacttt  | caagatggcc  | accccatcga  | tgctgcccc   | atgggcatac  | atgcacatcg  | 18300 |

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|             |             |             |             |            |            |       |
|-------------|-------------|-------------|-------------|------------|------------|-------|
| ccggacagga  | tgcttcggag  | tacctgagtc  | cgggtctggt  | gcagttcgcc | cgcgccacag | 18360 |
| acacctactt  | caatctggga  | aataagttta  | gaaatcccac  | cgtagcgccg | acccacgatg | 18420 |
| tgaccaccga  | ccgtagccag  | cggctcatgt  | tgcgcttcgt  | gcccgttgac | cgggaggaca | 18480 |
| atacatactc  | ttacaaagt   | cggtagacccc | tggccgtggg  | cgacaacaga | gtgctggata | 18540 |
| tggccagcac  | gttctttgac  | attaggggtg  | tgttggacag  | aggtcccagt | ttcaaaccct | 18600 |
| attctggtac  | ggcttacaac  | tccctggctc  | ctaaaggcgc  | tccaaatata | tctcagtggg | 18660 |
| ttgcagaagg  | tgtaaaaaat  | acaactggtg  | aggaacacgt  | aacagaagag | gaaaccaata | 18720 |
| ctactactta  | cacttttggc  | aatgctcctg  | taaaagctga  | agctgaaatt | acaaaagaag | 18780 |
| gactcccagt  | aggtttggaa  | gtttcagatg  | aagaaaagtaa | accgatttat | gctgataaaa | 18840 |
| catatcagcc  | agaacctcag  | ctgggagatg  | aaacttggac  | tgaccttgat | ggaaaaaccg | 18900 |
| aaaagtatgg  | aggcagggtc  | ctcaaaccgc  | atactaagat  | gaaaccatgc | tacgggtcct | 18960 |
| ttgccaaacc  | tactaatgtg  | aaaggcggtc  | aggcaaaaaca | aaaaacaacg | gagcagccaa | 19020 |
| atcagaaaagt | cgaatatgat  | atcgacatgg  | agttttttga  | tgcggcacgc | cagaaaacaa | 19080 |
| acttaagtcc  | taaaattgtc  | atgtatgcag  | aaaatgtaaa  | tttggaaact | ccagacactc | 19140 |
| atgtagtgta  | caaacctgga  | acagaagaca  | caagttccga  | agctaatttg | ggacaacaat | 19200 |
| ctatgccccaa | cagacccaac  | tacattggct  | tcagagataa  | ctttattgga | cttatgtact | 19260 |
| ataacagtac  | tggtaacatg  | ggggtgctgg  | ctggtcaagc  | gtctcagtta | aatgcagtgg | 19320 |
| ttgacttgca  | ggacagaaac  | acagaacttt  | cttaccaact  | cttgcttgac | tctctgggcg | 19380 |
| acagaaccag  | atacttttagc | atgtggaatc  | aggctgtgga  | cagttatgat | cctgatgtac | 19440 |
| gtgttattga  | aaatcatggt  | gtggaagatg  | aacttcccaa  | ctactgtttt | ccactggacg | 19500 |
| gcataggtgt  | tccaacaacc  | agttacaaat  | caatagttcc  | aaatggagac | aatgcgctta | 19560 |
| attggaagga  | acctgaagta  | aatggaacaa  | gtgagatcgg  | acagggtaat | ttgtttgcca | 19620 |
| tggaatttaa  | ccttcaagcc  | aatctatggc  | gaagtttcct  | ttattccaat | gtggctctat | 19680 |
| atctcccaga  | ctcgtaaaaa  | tacaccccg   | ccaatgtcac  | tcttccagaa | aacaaaaaca | 19740 |



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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| cctacgacta catgaacggg cgggtggtgc cgccatctct agtagacacc tatgtgaaca  | 19800 |
| ttggtgccag gtggtctctg gatgccatgg acaatgtcaa cccattcaac caccaccgta  | 19860 |
| acgctggcctt gcgttaccga tccatgcttc tgggtaacgg acgttatgtg cctttccaca | 19920 |
| tacaagtgcc tcaaaaattc ttcgctgtta aaaacctgct gcttctccca ggctcctaca  | 19980 |
| cttatgagtg gaactttagg aaggatgtga acatggttct acagagttcc ctcggtaacg  | 20040 |
| acctgcgggt agatggcgcc agcatcagtt tcacgagcat caacctctat gctacttttt  | 20100 |
| tcccatggc tcacaacacc gcttccacc ttgaagccat gctgcggaat gacaccaatg    | 20160 |
| atcagtcatt caacgactac ctatctgcag ctaacatgct ctacccatt cctgccaatg   | 20220 |
| caaccaatat tcccatttcc attccttctc gcaactgggc ggctttcaga ggctgggtcat | 20280 |
| ttaccagact gaaaaccaa gaaactccct ctttggggtc tggatttgac ccctactttg   | 20340 |
| tctattctgg ttctattccc tacctggatg gtaccttcta cctgaaccac acttttaaga  | 20400 |
| aggtttccat catgtttgac tcttcagtga gctggcctgg aaatgacagg ttactatctc  | 20460 |
| ctaacgaatt tgaaataaag cgcactgtgg atggcgaagg ctacaacgta gcccaatgca  | 20520 |
| acatgaccaa agactgggtc ttggtacaga tgctcgccaa ctacaacatc ggctatcagg  | 20580 |
| gcttctacat tccagaagga tacaagatc gcatgtattc atttttcaga aacttccagc   | 20640 |
| ccatgagcag gcaggtggtt gatgaggtca attacaaaga cttcaaggcc gtcgccatac  | 20700 |
| cctaccaaca caacaactct ggctttgtgg gttacatggc tccgaccatg cgccaaggtc  | 20760 |
| aaccctatcc cgctaactat ccctatccac tcattggaac aactgccgta aatagtgtta  | 20820 |
| cgcagaaaaa gttcttgtgt gacagaacca tgtggcgcat accgttctcg agcaacttca  | 20880 |
| tgtctatggg ggcccttaca gacttgggac agaatatgct ctatgccaac tcagctcatg  | 20940 |
| ctctggacat gacctttgag gtggatccca tggatgagcc caccctgctt tatcttctct  | 21000 |
| tcgaagtttt cgacgtggtc agagtgcac agccacaccg cggcatcatc gaggcagtct   | 21060 |
| acctgcgtac accgttctcg gccggtaacg ctaccacgta agaagcttct tgcttcttgc  | 21120 |
| aaatagcagc tgcaaccatg gcctgcggat cccaaaacgg ctccagcgag caagagctca  | 21180 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| gagccattgt ccaagacctg ggttgcggac cctatTTTTT gggaacctac gataagcgct  | 21240 |
| tcccgggggtt catggccccc gataagctcg cctgtgccat tgtaaatacg gccggacgtg | 21300 |
| agacggggggg agagcactgg ttggctttcg gttggaaccc acgttctaac acctgctacc | 21360 |
| TTTTgatcc ttttggattc tcggatgatc gtctcaaaca gatttaccag tttgaatatg   | 21420 |
| agggtctcct gcgccgcagc gctcttgcta ccaaggaccg ctgtattacg ctggaaaaat  | 21480 |
| ctaccagac cgtgcagggt ccccgttctg ccgcctgcgg acttttctgc tgcattgttcc  | 21540 |
| ttcacgcctt tgtgcactgg cctgaccgtc ccatggacgg aaaccccacc atgaaattgc  | 21600 |
| taactggagt gccaaacaac atgcttcatt ctctaaagt ccagcccacc ctgtgtgaca   | 21660 |
| atcaaaaagc actctaccat tttcttaata cccattcgcc ttattttctgc tcccatcgta | 21720 |
| cacacatcga aagggccact gcgttcgacc gtatggatgt tcaataatga ctcatgtaaa  | 21780 |
| caacgtgttc aataaacatc actttatTTT tttacatgta tcaaggctct gcattactta  | 21840 |
| tttatTTTaca agtcgaatgg gttctgacga gaatcagaat gacccgcagg cagtgatacg | 21900 |
| ttgcggaact gatacttggg ttgccacttg aattcgggaa tcaccaactt gggaaccggt  | 21960 |
| atatcgggca ggatgtcact ccacagcttt ctggtcagct gcaaagctcc aagcagggtca | 22020 |
| ggagccgaaa tcttgaaatc acaattagga ccagtgcTTT gagcgcgaga gttgcggtac  | 22080 |
| accggattgc agcactgaaa caccatcagc gacggatgtc tcacgcttgc cagcacgggtg | 22140 |
| ggatctgcaa tcatgcccac atccagatct tcagcattgg caatgctgaa cggggtcac   | 22200 |
| ttgcaggctc gcctacccat ggcgggcacc caattaggct tgtggttgca atcgcagtc   | 22260 |
| agggggatca gtatcatctt ggcctgatcc tgtctgattc ctggatacac ggctctcatg  | 22320 |
| aaagcatcat attgcttgaa agcctgctgg gctttactac cctcggtata aaacatcccg  | 22380 |
| caggacctgc tcgaaaactg gttagctgca cagccggcat cattcacaca gcagcgggcg  | 22440 |
| tcattgttag ctatttgcac cacacttctg cccagcgggt tttgggtgat tttggttcgc  | 22500 |
| tcgggattct cctttaaggc tcgttgtccg ttctcgctgg ccacatccat ctcgataatc  | 22560 |
| tgctccttct gaatcataat attgccatgc aggcacttca gcttgccctc ataattattg  | 22620 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| cagccatgag gccacaacgc acagcctgta cattcccaat tatggtgggc gatctgagaa  | 22680 |
| aaagaatgta tcattccctg cagaaatctt cccatcatcg tgctcagtgt cttgtgacta  | 22740 |
| gtgaaagtta actggatgcc tcggtgctcc tcgtttacgt actggtgaca gatgcgcttg  | 22800 |
| tattgttcgt gttgctcagg cattagttta aaagagggtc taagttcgtt atccagcctg  | 22860 |
| tacttctcca tcagcagaca catcacttcc atgcctttct cccaagcaga caccaggggc  | 22920 |
| aagctaatacg gattcttaac agtgcaggca gcagctcctt tagccagagg gtcattctta | 22980 |
| gcgatcttct caatgcttct tttgccatcc ttctcaacga tgcgcacggg cgggtagctg  | 23040 |
| aaaccactg ctacaagttg cgcctcttct ctttcttctt cgctgtcttg actgatgtct   | 23100 |
| tgcatgggga tatgtttggt cttccttggc ttctttttgg ggggtatcgg aggaggagga  | 23160 |
| ctgtcgctcc gttccggaga caggaggat tgtgacgttt cgctcaccat taccaactga   | 23220 |
| ctgtcggtag aagaacctga cccacacagg cgacagggtg ttctcttcgg gggcagaggt  | 23280 |
| ggaggcgatt gcgaagggt cgggtccgac ctggaaggcg gatgactggc agaaccctt    | 23340 |
| ccgcgttcgg ggggtgtgctc cctgtggcgg tcgcttaact gatttccttc gcggctggcc | 23400 |
| attgtgttct cctaggcaga gaaacaacag acatggaaac tcagccattg ctgtcaacat  | 23460 |
| cgccacgagt gccatcacat ctgctctca gcgacgagga aaaggagcag agcttaagca   | 23520 |
| ttccaccgcc cagtccctgcc accacctcta ccctagaaga taaggaggtc gacgcatctc | 23580 |
| atgacatgca gaataaaaaa gcgaaagagt ctgagacaga catcgagcaa gaccgggct   | 23640 |
| atgtgacacc ggtggaacac gaggaagagt tgaaacgctt tctagagaga gaggatgaaa  | 23700 |
| actgccccaa acaacgagca gataactatc accaagatgc tggaaatagg gatcagaaca  | 23760 |
| ccgactacct catagggtt gacggggaag acgcgctcct taaacatcta gcaagacagt   | 23820 |
| cgctcatagt caaggatgca ttattggaca gaactgaagt gcccacatcgt gtggaagagc | 23880 |
| tcagccgcgc ctacgagctt aacctctttt cacctcgtac tcccccaaa cgtcagccaa   | 23940 |
| acggcacctg cgagccaaat cctcgcttaa acttttatcc agcttttgct gtgccagaag  | 24000 |
| tactggctac ctatcacatc ttttttaaaa atcaaaaaat tccagtctcc tgccgcgcta  | 24060 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| atcgcacccg cgccgatgcc ctactcaatc tgggacctgg ttcacgctta cctgatatag  | 24120 |
| cttccttgga agaggttcca aagatcttcg agggctctggg caataatgag actcgggccg | 24180 |
| caaatgctct gcaaaaggga gaaaatggca tggatgagca tcacagcggt ctggtggaat  | 24240 |
| tggaaggcga taatgccaga ctgcagtagc tcaagcgaag catcgagggt acacacttcg  | 24300 |
| catatcccg cgtcaacctg cccctaaag tcatgacggc ggtcatggac cagttactca    | 24360 |
| ttaagcgcgc aagtccccct tcagaagaca tgcatgaccc agatgcctgt gatgagggtg  | 24420 |
| aaccagtggg cagtgatgag cagctaacc gatggctggg caccgactct cccagggtt    | 24480 |
| tggaagagcg tcgcaagctt atgatggccg tgggtctggt taccgtagaa ctagagtgtc  | 24540 |
| tccgacgttt ctttaccgat tcagaaacct tgcgcaaact cgaagagaat ctgcactaca  | 24600 |
| cttttagaca cggctttgtg cggcaggcat gcaagatata taactggaa ctcaccaacc   | 24660 |
| tggtttccta catgggtatt ctgcatgaga atcgctagg acaaagcgtg ctgcacagca   | 24720 |
| ccctgaagg ggaagccgc cgtgattaca tccgcgattg tgtctatctg tacctgtgcc    | 24780 |
| acacgtggca aaccggcatg ggtgtatggc agcaatgttt agaagaacag aacttgaaag  | 24840 |
| agcttgacaa gctcttacag aaatctctta aggttctgtg gacagggttc gacgagcgca  | 24900 |
| ccgtcgcttc cgacctggca gacctcatct tcccagagcg tctcagggtt actttgcgaa  | 24960 |
| acggattgcc tgactttatg agccagagca tgcttaacaa ttttcgctct ttcattctgg  | 25020 |
| aacgctccgg tatcctgccc gccacctgct gcgcactgcc ctccgacttt gtgcctctca  | 25080 |
| cctaccgcga gtgcccccg ccgctatgga gtcactgcta cctgttccgt ctggccaact   | 25140 |
| atctctccta ccactcggat gtgatcgagg atgtgagcgg agacggcttg ctggagtgtc  | 25200 |
| actgccgctg caatctgtgc acgccccacc ggtccctagc ttgcaacccc cagttgatga  | 25260 |
| gcgaaaccca gataataggc acctttgaat tgcaaggccc cagcagccaa ggcatgggt   | 25320 |
| cttctcctgg gcaaagtta aaactgaccc cgggactgtg gacctccgcc tacttgcgca   | 25380 |
| agtttgctcc ggaagattac caccctatg aaatcaagtt ctatgaggac caatcacagc   | 25440 |
| ctccaaaggc cgaactttcg gcctgcgtca tcaccagggt ggcaattctg gcccaattgc  | 25500 |

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|             |            |            |            |            |             |       |
|-------------|------------|------------|------------|------------|-------------|-------|
| aagccatcca  | aaaatcccg  | caagaatttc | tactgaaaaa | gggtaagggg | gtctaccttg  | 25560 |
| acccccagac  | cggcgaggaa | ctcaacacaa | ggttcctca  | ggatgtccca | acgacgagaa  | 25620 |
| aacaagaagt  | tgaaggtgca | gccgccgccc | ccagaagata | tggaggaaga | ttgggacagt  | 25680 |
| caggcagagg  | aggcggagga | ggacagtctg | gaggacagtc | tggaggaaga | cagtttggag  | 25740 |
| gaggaaaaacg | aggaggcaga | ggaggtggaa | gaagtaaccg | ccgacaaaca | gttatcctcg  | 25800 |
| gctgcggaga  | caagcaacag | cgctaccatc | tccgctccga | gtcgaggaac | ccggcggcgt  | 25860 |
| cccagcagta  | gatgggacga | gaccggacgc | ttcccgaacc | caaccagcgc | ttccaagacc  | 25920 |
| ggtaagaagg  | atcggcaggg | atacaagtcc | tggcgggggc | ataagaatgc | catcatctcc  | 25980 |
| tgcttgcatg  | agtgcggggg | caacatatcc | ttcacgcggc | gctacttgct | attccaccat  | 26040 |
| ggggtgaact  | ttccgcgcaa | tgttttgcat | tactaccgtc | acctccacag | cccctactat  | 26100 |
| agccagcaaa  | tcccggcagt | ctcgacagat | aaagacagcg | gcggcgacct | ccaacagaaa  | 26160 |
| accagcagcg  | gcagttagaa | aatacacaac | aagtgcagca | acaggaggat | taaagattac  | 26220 |
| agccaacgag  | ccagcgcaaa | cccgagagtt | aagaaatcgg | atctttccaa | ccctgtatgc  | 26280 |
| catcttccag  | cagagtcggg | gtcaagagca | ggaactgaaa | ataaaaaacc | gatctctgcg  | 26340 |
| ttcgctcacc  | agaagttgtt | tgtatcacia | gagcgaagat | caacttcagc | gcactctcga  | 26400 |
| ggacgccgag  | gctctcttca | acaagtactg | cgcgctgact | cttaaagagt | aggcagcgac  | 26460 |
| cgcgcttatt  | caaaaaaggc | gggaattaca | tcacctctga | catgagtaaa | gaaattccca  | 26520 |
| cgcttacat   | gtggagttat | caaccccaaa | tgggattggc | ggcaggcgcc | tcccaggact  | 26580 |
| actccacccg  | catgaattgg | ctcagcgccg | ggccttctat | gatttctcga | gttaatgata  | 26640 |
| tacgcgccta  | ccgaaaccaa | atacttttgg | aacagtcagc | tcttaccacc | acgccccgcc  | 26700 |
| aacaccttaa  | tcccagaaat | tggcccgccg | ccctagtgtg | ccaggaaagt | cccgtccca   | 26760 |
| ccactgtatt  | acttcctcga | gacgcccagg | ccgaagtcca | aatgactaat | gcagggtgcgc | 26820 |
| agttagctgg  | cggctccacc | ctatgtcgtc | acaggcctcg | gcataatata | aaacgcctga  | 26880 |
| tgatcagagg  | ccgaggatat | cagctcaacg | acgagtcggt | gagctctccg | cttgggtctac | 26940 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| gaccagacgg aatctttcag attgccggct gcgggagatc ttccttcacc cctcgtcagg  | 27000 |
| ctgttctgac tttggaaaagt tcgtcttcgc aaccccgcgc gggcggaatc gggaccgttc | 27060 |
| aatttgtgga ggagtttact ccctctgtct acttcaaccc cttctccgga tctcctgggc  | 27120 |
| attacccgga cgagttcata ccgaacttcg acgcgattag cgagtcagtg gacggctacg  | 27180 |
| attgatgtct ggtgacgcgg ctgagctatc tcggctgcga catctagacc actgccgccg  | 27240 |
| ctttcgctgc tttgcccggg aactcattga gttcatctac ttcgaactcc ccaaggatca  | 27300 |
| ccctcaaggt ccggcccacg gagtgcggat ttctatcgaa ggcaaaatag actctcgcct  | 27360 |
| gcaacgaatt ttctcccagc ggcccgtgct gatcgagcga gaccaggga acaccacggt   | 27420 |
| ttccatctac tgcatttgta atcaccccg attgcatgaa agcctttgct gtcttatgtg   | 27480 |
| tactgagttt aataaaaact gaattaagac tctcctacgg actgccgctt cttcaacccg  | 27540 |
| gattttacaa ccagaagaac gaaacttttc ctgtcgtcca ggactctgtt aacttcacct  | 27600 |
| ttcctactca caaactagaa gctcaacgac tacaccgctt ttccagaagc attttccta   | 27660 |
| ctaatactac tttcaaaacc ggaggtgagc tccaaggctt tcctacagaa aacccttggg  | 27720 |
| tggaagcggg ccttgtagtg ctaggaattc ttgcgggtgg gcttgtgatt attctttgct  | 27780 |
| acctatacac accttgcttc actttcttag tgggtgtgtg gtattggttt aaaaaatggg  | 27840 |
| gcccatacta gtcttgcttg ttttactttc gcttttggaa ccgggttctg ccaattacga  | 27900 |
| tccatgtcta gacttcgacc cagaaaactg cacacttact tttgcacccg acacaagccg  | 27960 |
| catctgtgga gttcatcgcc tctcttacga acttggcccc caacgacaaa aatttacctg  | 28020 |
| catggtggga atcaacccca tagttatcac ccagcaaagt ggagatacta agggttgcat  | 28080 |
| tcactgctcc tgcgattcca tcgagtgcac ctacaccctg ctgaagaccc tatgcggcct  | 28140 |
| aagagacctg ctaccaatga attaaaaaat gattaataaa aaatcactta cttgaaatca  | 28200 |
| gcaataaggt ctctgttgaa attttctccc agcagcacct cacttcctc ttcccaactc   | 28260 |
| tggtattcta aaccccgttc agcggcatac tttctccata ctttaaaggg gatgtcaa    | 28320 |
| tttagctcct ctcctgtacc cacaatcttc atgtctttct tcccagatga ccaagagagt  | 28380 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| ccggctcagt gactccttca accctgtcta cccctatgaa gatgaaagca cctcccaaca  | 28440 |
| cccctttata aaccagggt ttatttcccc aaatggcttc acacaaagcc caaacggagt   | 28500 |
| tcttacttta aaatgtttta cccactaac aaccacaggc ggatctctac agctaaaagt   | 28560 |
| gggaggggga cttacagtgg atgacaccaa cggttttttg aaagaaaaca taagtgccac  | 28620 |
| cacaccactc gttaagactg gtcactctat aggtttacca ctaggagccg gattgggaac  | 28680 |
| gaatgaaaat aaactttgta tcaaattagg acaaggactt acattcaatt caaacaacat  | 28740 |
| ttgcattgat gacaatatta acaccttatg gacaggagtc aacccaccg aagccaactg   | 28800 |
| tcaaatacatg aactccagt aatctaataa ttgcaaatta attctaacac tagttaaaac  | 28860 |
| tggagcacta gtcactgcat ttgtttatgt tataggagta tctaacaatt ttaatatgct  | 28920 |
| aactacacac agaaatataa attttactgc agagctgttt ttcgattcta ctggtaattt  | 28980 |
| actaactaga ctctcatccc taaaaactcc acttaatcat aaatcaggac aaaacatggc  | 29040 |
| tactggtgcc attactaatg ctaaagggtt catgcccagc acgactgcct atcctttcaa  | 29100 |
| tgataattct agagaaaaag aaaactacat ttacggaact tgttactaca cagctagtga  | 29160 |
| tcgcactgct tttcccattg acatatctgt catgcttaac cgaagagcaa taaatgacga  | 29220 |
| gacatcatat tgtattcgta taacttggtc ctggaacaca ggagatgccc cagagggtga  | 29280 |
| aacctctgct acaaccctag tcacctcccc atttaccttt tactacatca gagaagacga  | 29340 |
| ctgacaaata aagtttgcga tcgccagggg ctcccgccag atctagtaat caattacggg  | 29400 |
| gtcattagtt catagcccat atatggagtt ccgcgttaca taacttacgg taaatggccc  | 29460 |
| gcctggctga ccgccaacg acccccgccc attgacgtca ataatgacgt atgttcccat   | 29520 |
| agtaacgcca atagggactt tccattgacg tcaatgggtg gagtatttac ggtaaaactgc | 29580 |
| ccacttgga gtacatcaag tgtatcatat gccaagtacg cccctattg acgtcaatga    | 29640 |
| cggtaaatgg cccgcctggc attatgcca gtacatgacc ttatgggact ttcctacttg   | 29700 |
| gcagtacatc tacgtattag tcatcgctat taccatgctg atgcgggttt ggagtagcat  | 29760 |
| caatgggcgt ggatagcggg ttgactcacg gggatttcca agtctccacc ccattgacgt  | 29820 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| caatgggagt ttgttttggc accaaaaatca acgggacttt ccaaaatgtc gtaacaactc | 29880 |
| cgccccattg acgcaaattg gcggtaggcg tgtacgggtg gaggtctata taagcagagc  | 29940 |
| tggtttagtg aaccgtcaga tcagatcttt gtcgatccta ccatccactc gacacacccg  | 30000 |
| ccagcggccg ctgccaagct tccgagctct cgaattcaaa ggaggtaccc accatgggat  | 30060 |
| ggagctgcat catcctattc ctcgtggcga cggccactgg agtgcatagc gaactgggtga | 30120 |
| tgactcagtc cccgtcatcc ctgacgggtga ccgccggcga gaaggtcacc atgtcgtgca | 30180 |
| agtcctcgca aagcctgctt aacagcggca accagaaaaa ctacctcacg tggatatcagc | 30240 |
| aaaagccagg tcaaccccc aactgctca tctactgggc gagcaccgc gagtcggggg     | 30300 |
| tgccagaccg gttcaccggc tccgggtcag gaactgattt caccctaacc atcagctcgg  | 30360 |
| tgcaagcggg ggacctggcc gtgtactact gccaaaatga ttactcgta cctctgacct   | 30420 |
| ttggagcggg caccaagctc gaaatcaagg gcgggtggagg aagcggcggg ggaggctcag | 30480 |
| gtgggggagg atcagaagtc caactgctgg agcagtcagg agccgaactg gtccgcccgg  | 30540 |
| gaacctccgt caagatttcc tgtaaggctt ccggctacgc ttttaccat tactggctgg   | 30600 |
| gctgggtcaa gcaaagaccg gggcatggcc tggagtggat cggcgacatc ttcccaggga  | 30660 |
| gcggcaacat ccactacaac gagaagtca aggggaaagc gactctgact gccgacaaat   | 30720 |
| catccagcac cgctacatg cagctgtcgt cgctcacttt cgaagacagc gcggtgtact   | 30780 |
| tttgtgctcg gctccggaac tgggatgaac caatggacta ctggggacaa ggaactaccg  | 30840 |
| tgaccgtctc ctccggcggc ggtggaagcg atgtgcaact cgtgcagtcc ggtgcggaag  | 30900 |
| tgaaaaagcc gggcgcgagc gtcaaagtgt catgcaaggc gtcaggatat acgtttacta  | 30960 |
| gatacactat gcactgggtg cgccaggcac ctggtcaggg ccttgaatgg atcggctaca  | 31020 |
| tcaatccgtc gagaggctac actaattacg cggactcagt caaaggcgc ttcacgatta   | 31080 |
| cgaccgacaa gtccacctcg actgcataca tggaactgtc ctcgctgaga agcgaggaca  | 31140 |
| ccgctactta ctactgcgct agatactacg atgatcacta ctgcctcgat tactggggcc  | 31200 |
| agggaaccac tgtcacggtg tcatcgggag agggcacctc aaccggatca gggggatcgg  | 31260 |



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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| gaggctcggg cggcgagac gacatcgccc tgacccagtc gcccgccacc ttgtcgctgt    | 31320 |
| ccccaggaga aagagcgacc ctgtcatgcc gggcgctcgca aagcgtgagc tatatgaatt  | 31380 |
| ggtatcagca gaagccagga aaggcgccga agagatggat ctacgacacc tccaaggctc   | 31440 |
| cttcagggtgt cccggctaga ttctcaggat cgggatcagg aacggactac tccctgacca  | 31500 |
| tcaattcact ggaagcagaa gatgcggcca cctactactg tcagcagtgg tcctccaacc   | 31560 |
| cgctgacttt cggaggcgga actaaggctc agatcaagta ggctagcttg actgactgag   | 31620 |
| atacagcgta ctttcagctc acagacatga taagatacat tgatgagttt ggacaaacca   | 31680 |
| caactagaat gcagtgaata aaatgcttta tttgtgaaat ttgtgatgct attgctttat   | 31740 |
| ttgtaaccat tataagctgc aataaacaag ttaacaacaa caattgcatt cattttatgt   | 31800 |
| ttcagggttca gggggagggtg tggggagggtt tttaaagcaa gtaaacctc tacaaatgtg | 31860 |
| gtagtcgtca gctatcctgc aggaacttgt ttatttgaaa atcaattcac aaaatccgag   | 31920 |
| tagttatttt gcctccccct tcccatttaa cagaatacac caatctctcc ccacgcacag   | 31980 |
| ctttaaacat ttggatacca ttagatatag acatggtttt agattccaca ttccaaacag   | 32040 |
| tttcagagcg agccaatctg gggtcagtga tagataaaaa tccatcggga tagtctttta   | 32100 |
| aagcgctttc acagtccaac tgctgcggat gcgactccgg agtctggatc acggtcattc   | 32160 |
| ggaagaagaa cgatgggaat cataatccga aaacggatc ggacgattgt gtctcatcaa    | 32220 |
| accacaagc agccgctgtc tgcgtcgctc cgtgcgactg ctgtttatgg gatcagggtc    | 32280 |
| cacagtgtcc tgaagcatga ttttaatagc ccttaacatc aactttctgg tgcgatgcgc   | 32340 |
| gcagcaacgc attctgattt cactcaaatc tttgcagtag gtacaacaca ttattacaat   | 32400 |
| attgtttaat aaaccataat taaaagcgct ccagccaaaa ctcatatctg atataatcgc   | 32460 |
| ccctgcatga ccatcatacc aaagttaaat ataaattaaa tgacgttccc tcaaaaacac   | 32520 |
| actaccaca tacatgatct cttttggcat gtgcatatta acaatctgtc tgtaccatgg    | 32580 |
| acaacgttgg ttaatcatgc aacccaatat aaccttccgg aaccacactg ccaacaccgc   | 32640 |
| tccccagcc atgcattgaa gtgaaccctg ctgattacaa tgacaatgaa gaacccaatt    | 32700 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| ctctcgaccg tgaatcactt gagaatgaaa aatatctata gtggcacaac atagacataa  | 32760 |
| atgcatgcat cttctcataa tttttaactc ctcaggattt agaaacatat cccagggaat  | 32820 |
| aggaagctct tgcagaacag taaagctggc agaacaagga agaccacgaa cacaacttac  | 32880 |
| actatgcata gtcatagtat cacaatctgg caacagcggg tggctttcag tcatagaagc  | 32940 |
| tcgggtttca ttttcctcac aacgtggtaa ctgggctctg gtgtaagggt gatgtctggc  | 33000 |
| gcatgatgtc gagcgtgcgc gcaaccttgt cataatggag ttgcttcctg acattctcgt  | 33060 |
| attttgtata gcaaaacgcg gccctggcag aacacactct tcttcgcctt ctatcctgcc  | 33120 |
| gcttagcgtg ttccgtgtga tagttcaagt acaaccacac tcttaagttg gtcaaaagaa  | 33180 |
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| agcaatgcaa ctggattgtg tttcaagcag gagaggagag ggaagagacg gaagaacat   | 33300 |
| gttaattttt attccaaacg atctcgcagt acttcaaatt gtagatcgcg cagatggcat  | 33360 |
| ctctcgcccc cactgtgttg gtgaaaaagc acagctagat caaaagaaat gcgattttca  | 33420 |
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| tatcaccaaa ctgcttagcc agaagcccc cggaacaag agcaggggac gctacagtgc    | 33840 |
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|                                                                   |       |
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| atccagacat gttagcatca gttaacgaga aaaaacagcc aacatagcct ttgggtataa | 34320 |
| ttatgcttaa tcgtaagtat agcaaagcca cccctcgcgg atacaaagta aaaggcacag | 34380 |
| gagaataaaa aatataatta tttctctgct gctgttcagg caacgtcgcc cccggtccct | 34440 |
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| caaagcacia gctctaaagt gactctccaa cctctccaca atatatatat acacaagccc | 34560 |
| taaactgacg taatgggagt aaagtgtaaa aaatcccgcc aaaccaaca cacaccccga  | 34620 |
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| gcccctttta gccgttaacc ccacagccaa tcaccacacg atccacactt tttaaaatca | 34800 |
| cctcatttac atattggcac cattccatct ataaggtata ttatatagat aga        | 34853 |

<210> 80  
 <211> 34174  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> NG-602 (EnAd-SA-EpCAMBiTE) without deca-His affinity tag

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| <400> 80                                                           |     |
| tctatctata taatataacct tatagatgga atggtgccaa tatgtaaatg aggtgatttt | 60  |
| aaaaagtgtg gatcgtgtgg tgattggctg tgggggttaac ggctaaaagg ggcggtgcga | 120 |
| ccgtgggaaa atgacgtttt gtgggggtgg agtttttttg caagttgtcg cgggaaatgt  | 180 |
| gacgcataaa aaggcttttt tctcacggaa ctacttagtt ttcccacggg atttaacagg  | 240 |
| aaatgaggta gttttgaccg gatgcaagtg aaaattgttg attttcgcgc gaaaactgaa  | 300 |
| tgagggaagtg tttttctgaa taatgtggta tttatggcag ggtggagtat ttgttcaggg | 360 |
| ccaggtagac tttgacccat tacgtggagg tttcgattac cgtgtttttt acctgaattt  | 420 |

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| tctgcgccgg cagtttaata ataaaaaat gagagatttg cgatttctgc ctcaggaaat   | 600  |
| aatctctgct gagactggaa atgaaatatt ggagcttgtg gtgcacgccc tgatgggaga  | 660  |
| cgatccggag ccacctgtgc agctttttga gcctcctacg cttcaggaac tgtatgattt  | 720  |
| agaggtagag ggatcggagg attctaataa ggaagctgta aatggctttt ttaccgattc  | 780  |
| tatgctttta gctgctaata aagggttaga attagatccg cttttggaca cttttgatac  | 840  |
| tccaggggta attgtggaaa gcggtacagg tgtaagaaaa ttacctgatt tgagttccgt  | 900  |
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| tcagttggat tgcccgagc ttcctggaca tggctgtaag tcttgatgaat ttcacaggaa  | 1080 |
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| agtgttccat atccgtgttt acttaagggtg acgtcaatat ttgtgtgaca gtgcaatgta | 1500 |
| ataaaaaatat gttaactgtt cactggtttt tattgctttt tgggcgggga ctcaggata  | 1560 |
| taagtagaag cagacctgtg tggtagctc ataggagctg gctttcatcc atggaggttt   | 1620 |
| gggccatttt ggaagacctt aggaagacta ggcaactgtt agagaacgct tcggacggag  | 1680 |
| tctccggttt ttggagattc tggttcgcta gtgaattagc tagggtagtt tttaggataa  | 1740 |
| aacaggacta taaacaagaa tttgaaaagt tgttggtaga ttgccaggga ctttttgaag  | 1800 |
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|                                                                    |      |
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| gaacatggaa ggttcgcaag atgaggacaa tcttaggtta ctggccagtg cagcctttgg  | 2040 |
| gtgtagcggg aatcctgagg catccaccgg tcatgccagc ggttctggag gaggaacagc  | 2100 |
| aagaggacaa cccgagagcc ggcctggacc ctccagtgga ggaggcggag tagctgactt  | 2160 |
| gtctcctgaa ctgcaacggg tgcttactgg atctacgtcc actggacggg ataggggcgt  | 2220 |
| taagaggagg agggcatcta gtggtactga tgctagatct gagttggctt taagttta    | 2280 |
| gagtcgcaga cgtcctgaaa ccatttggtg gcatgagggt cagaaaggagg gaagggatga | 2340 |
| agtttctgta ttgcaggaga aatattcact ggaacagggtg aaaacatgtt gggtggagcc | 2400 |
| tgaggatgat tgggagggtg ccattaaaaa ttatgccaag atagctttga ggcctgataa  | 2460 |
| acagtataag attactagac ggattaatat ccggaatgct tgttacatat ctggaaatgg  | 2520 |
| ggctgagggtg gtaatagata ctcaagacaa ggcagttatt agatgctgca tgatggatat | 2580 |
| gtggcctggg gtagtcggta tggaagcagt aacttttgta aatgttaagt ttaggggaga  | 2640 |
| tggttataat ggaatagtgt ttatggccaa taccaaactt atattgcatg gttgtagctt  | 2700 |
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| atgcatattt caaagatgta acctgggcat tctgaatgaa ggcgaagcaa ggggtccgcca | 2880 |
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|                                                                    |      |
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| tcgcgggttt ggacggctcc tggaataggg tatgagacga tgggcgtcca gcgctgccag  | 5160 |
| ggttcggtcc ttccagggtc tcagtgttcg agtcagggtt gtttccgtca cagtgaaggg  | 5220 |
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| ggcgggggtg ggcaaagcga aagtaacatc attgaagaga atcttgccgg ccctgggcat  | 7320 |
| gaaattgcga gtgatgcgaa aaggctgtgg tacttccgct cggttattga taacctgggc  | 7380 |
| agctaggacg atctcgtcga aaccgttgat gttgtgtcct acgatgtata attctatgaa  | 7440 |
| acgcggcgtg cctctgacgt gaggtagctt actgagctca tcaaagggtta ggtctgtggg | 7500 |
| gtcagataag gcgtagtggt cgagagccca ttcgtgcagg tgaggattcg ctttaaggaa  | 7560 |
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|                                                                    |      |
|--------------------------------------------------------------------|------|
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| cgggtgaaga ccgcatagtt gcataggcg tggaagggt agttgagtgt ggtggcgatg    | 9000 |
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|                                                                      |       |
|----------------------------------------------------------------------|-------|
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| cgcacctcgc gctcgaaagc ccctgggatt tcttcctcaa tctcttcttc ttccactaac    | 9240  |
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| tgtaccagtg ccaagtcagc tacgactctt tcggcgagga tggcttgctg tacttgggta    | 9960  |
| agggtggctt gaaagtcac aaaatccaca aagcggtggt aagctcctgt attaatgggtg    | 10020 |
| taagcacagt tggccatgac tgaccagtta actgtctggt gaccagggcg cacgagctcg    | 10080 |
| gtgtatttaa ggcggaata ggcgcggggtg tcaaagatgt aatcgttgca ggtgcgcacc    | 10140 |
| agatactggt accctataag aaaatgcggc ggtggttggc ggtagagagg ccatcgttct    | 10200 |
| gtagctggag cgccaggggc gaggtcttcc aacataaggc ggtgatagcc gtagatgtac    | 10260 |
| ctggacatcc aggtgattcc tgcggcggtg gtagaagccc gaggaaactc gcgtacgcgg    | 10320 |
| ttccaaatgt tgcgtagcgg catgaagtag ttcattgtag gcacggtttg accagtgagg    | 10380 |
| cgcgcgcagt cattgatgct ctatagacac ggagaaaaatg aaagcgttca gcgactcgac   | 10440 |
| tccgtagcct ggaggaacgt gaacgggttg ggtcgcgggtg taccgccggtt cgagacttgt  | 10500 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| actcgagccg gccggagccg cggctaacgt ggtattggca ctcccgtctc gaccagcct    | 10560 |
| acaaaaatcc aggatacggga atcgagtcgt tttgctgggt tccgaatggc aggggaagtga | 10620 |
| gtcctatttt ttttttttgc cgctcagatg catcccgtgc tgcgacagat gcgcccccaa   | 10680 |
| caacagcccc cctcgcagca gcagcagcag caatcacaaa aggctgtccc tgcaactact   | 10740 |
| gcaactgccg ccgtgagcgg tgcgggacag cccgcctatg atctggactt ggaagagggc   | 10800 |
| gaaggactgg cacgtctagg tgcgccttca cccgagcggc atccgcgagt tcaactgaaa   | 10860 |
| aaagattctc gcgaggcgta tgtgccccaa cagaacctat ttagagacag aagcggcgag   | 10920 |
| gagccggagg agatgcgagc ttcccgtttt aacgcgggtc gtgagctgcg tcacggtttg   | 10980 |
| gaccgaagac gagtgttgcg ggacgaggat ttcgaagttg atgaaatgac agggatcagt   | 11040 |
| cctgccaggg cacacgtggc tgcagccaac cttgtatcgg cttacgagca gacagtaaag   | 11100 |
| gaagagcgta acttcaaaaa gtcttttaaat aatcatgtgc gaaccctgat tgcccgcgaa  | 11160 |
| gaagttaccc ttggtttgat gcatttgtgg gatttgatgg aagctatcat tcagaacctt   | 11220 |
| actagcaaac ctctgaccgc ccagctgttt ctggtgggtgc aacacagcag agacaatgag  | 11280 |
| gctttcagag aggcgctgct gaacatcacc gaacccgagg ggagatgggt gtatgatctt   | 11340 |
| atcaacattc tacagagtat catagtgcag gagcggagcc tgggcctggc cgagaagggtg  | 11400 |
| gctgccatca attactcggg tttgagcttg ggaaaaatatt acgctcgcaa aatctacaag  | 11460 |
| actccatacg ttcccataga caaggagggtg aagatagatg ggttctacat gcgcatgacg  | 11520 |
| ctcaaggctt tgaccctgag cgatgatctt ggggtgtatc gcaatgacag aatgcatcgc   | 11580 |
| gcggttagcg ccagcaggag gcgcgagtta agcgacaggg aactgatgca cagtttgcaa   | 11640 |
| agagctctga ctggagctgg aaccgagggt gagaattact tcgacatggg agctgacttg   | 11700 |
| cagtggcagc ctagtcgcag ggctctgagc gccgcgacgg caggatgtga gcttccttac   | 11760 |
| atagaagagg cggatgaagg cgaggaggaa gagggcgagt acttggaaga ctgatggcac   | 11820 |
| aacccgtgtt ttttgctaga tggaacagca agcaccggat cccgcaatgc gggcggcgct   | 11880 |
| gcagagccag ccgtccggca ttaactcctc ggacgattgg acccaggcca tgcaacgtat   | 11940 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| catggcggtg acgactcgca accccgaagc ctttagacag caaccccagg ccaaccgtct   | 12000 |
| atcggccatc atggaagctg tagtgccttc ccgctctaata cccactcatg agaaggtcct  | 12060 |
| ggccatcgtg aacgcgttgg tggagaacaa agctatttcgt ccagatgagg ccggactggt  | 12120 |
| atacaacgct ctcttagaac gcgtggctcg ctacaacagt agcaatgtgc aaaccaatct   | 12180 |
| ggaccgtatg ataacagatg tacgcgaagc cgtgtctcag cgcgaaagg tccagcgtga    | 12240 |
| tgccaacctg ggttcgctgg tggcgttaaa tgctttcttg agtactcagc ctgctaattg   | 12300 |
| gccgcgtggt caacaggatt atactaactt ttttaagtgt ttgagactga tggatatcaga  | 12360 |
| agtacctcag agcgaagtgt atcagtccgg tcctgattac ttctttcaga ctagcagaca   | 12420 |
| gggcttgtag acggtaaatc tgagccaagc ttttaaaaaac cttaaagggt tgtggggagt  | 12480 |
| gcatgccccg gtaggagaaa gagcaaccgt gtctagcttg ttaactccga actcccgct    | 12540 |
| attattactg ttggtagctc ctttcaccga cagcggtagc atcgaccgta attcctatct   | 12600 |
| gggttaccta ctaaacctgt atcgcggaagc catagggcaa agtcagggtg acgagcagac  | 12660 |
| ctatcaagaa attaccaag tcagtcgagc tttgggacag gaagacactg gcagtttgga    | 12720 |
| agccactctg aacttcttgc ttaccaatcg gtctcaaaaag atccctcctc aatatgctct  | 12780 |
| tactgcggag gaggagagga tccttagata tgtgcagcag agcgtgggat tgtttctgat   | 12840 |
| gcaagagggg gcaactccga ctgcagcact ggacatgaca gcgcgaaata tggagcccag   | 12900 |
| catgtatgcc agtaaccgac ctttcattaa caaactgctg gactacttgc acagagctgc   | 12960 |
| cgctatgaac tctgattatt tcaccaatgc catcttaaac ccgcactggc tgccccacc    | 13020 |
| tggtttctac acgggcgaat atgacatgcc cgaccctaata gacggatttc tgtgggacga  | 13080 |
| cgtggacagc gatgtttttt cacctctttc tgatcatcgc acgtggaaaa aggaaggcgg   | 13140 |
| cgatagaatg cattcttctg catcgctgtc cgggggtcatg ggtgctaccg cggctgagcc  | 13200 |
| cgagtctgca agtccttttc ctagtctacc cttttctcta cacagtgtac gtagcagcga   | 13260 |
| agtgggtaga ataagtcgcc cgagtttaata gggcggaagag gaggatctaa acgattcctt | 13320 |
| gctcagaccg gcaagagaaa aaaatttccc aaacaatgga atagaaaagt tgggtggataa  | 13380 |

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|             |            |            |            |             |            |       |
|-------------|------------|------------|------------|-------------|------------|-------|
| aatgagtaga  | tggaagactt | atgctcagga | tcacagagac | gagcctggga  | tcatggggat | 13440 |
| tacaagtaga  | gcgagccgta | gacgccagcg | ccatgacaga | cagaggggtc  | ttgtgtggga | 13500 |
| cgatgaggat  | tcggccgatg | atagcagcgt | gctggacttg | ggtgggagag  | gaaggggcaa | 13560 |
| cccgtttgct  | catttgcgcc | ctcgcttggg | tggtatgttg | taaaaaaaaa  | taaaaaaaaa | 13620 |
| actcaccaag  | gccatggcga | cgagcgtacg | ttcgttcttc | tttattatct  | gtgtctagta | 13680 |
| taatgaggcg  | agtcgtgcta | ggcggagcgg | tggtgtatcc | ggagggtcct  | cctccttcgt | 13740 |
| acgagagcgt  | gatgcagcag | cagcaggcga | cggcggtgat | gcaatcccca  | ctggaggctc | 13800 |
| ccttttgccc  | tccgcgatac | ctggcaccta | cggagggcag | aaacagcatt  | cgttattcgg | 13860 |
| aactggcacc  | tcagtacgat | accaccaggt | tgtatctggg | ggacaacaag  | tcggcggaca | 13920 |
| ttgcttctct  | gaactatcag | aatgaccaca | gcaacttctt | gaccacgggtg | gtgcaaaaca | 13980 |
| atgactttac  | ccctacggaa | gccagcacc  | agaccattaa | ctttgatgaa  | cgatcgcggt | 14040 |
| ggggcgggtca | gctaaagacc | atcatgcata | ctaacatgcc | aaacgtgaac  | gagtatatgt | 14100 |
| ttagtaacaa  | gttcaaagcg | cgtgtgatgg | tgtccagaaa | acctcccgac  | ggtgctgcag | 14160 |
| ttggggatac  | ttatgatcac | aagcaggata | ttttgaaata | tgagtgggtc  | gagtttactt | 14220 |
| tgccagaagg  | caacttttca | gttactatga | ctattgattt | gatgaacaat  | gccatcatag | 14280 |
| ataattactt  | gaaagtgggt | agacagaatg | gagtgcctga | aagtgcatt   | ggtgttaagt | 14340 |
| tcgacaccag  | gaacttcaag | ctgggatggg | atcccgaac  | caagttgatc  | atgcctggag | 14400 |
| tgtatacgta  | tgaagccttc | catcctgaca | ttgtcttact | gcctggctgc  | ggagtggatt | 14460 |
| ttaccgagag  | tcgtttgagc | aaccttcttg | gtatcagaaa | aaaacagcca  | tttcaagagg | 14520 |
| gttttaagat  | tttgtatgaa | gatttagaag | gtggtaatat | tccggccctc  | ttggatgtag | 14580 |
| atgcctatga  | gaacagtaag | aaagaacaaa | aagccaaaat | agaagctgct  | acagctgctg | 14640 |
| cagaagctaa  | ggcaaacata | gttgccagcg | actctacaag | ggttgctaac  | gctggagagg | 14700 |
| tcagaggaga  | caattttgcg | ccaacacctg | ttccgactgc | agaatcatta  | ttggccgatg | 14760 |
| tgtctgaagg  | aacggacgtg | aaactcacta | ttcaacctgt | agaaaaagat  | agtaagaata | 14820 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| gaagctataa tgtgttgga gacaaaatca acacagccta tcgcagttgg tatctttcgt    | 14880 |
| acaattatgg cgatcccga aaaggagtg gttcctggac attgctcacc acctcagatg     | 14940 |
| tcacctgcgg agcagagcag gtctactggg cgcttccaga catgatgaag gatcctgtca   | 15000 |
| ctttccgctc cactagacaa gtcagtaact accctgtggg ggggtgcagag cttatgccccg | 15060 |
| tcttctcaaa gagcttctac aacgaacaag ctgtgtactc ccagcagctc cgccagtcca   | 15120 |
| cctcgcttac gcacgtcttc aaccgctttc ctgagaacca gatttttaatc cgtccgccgg  | 15180 |
| cgcccacat taccaccgtc agtgaaaacg ttcctgctct cacagatcac gggaccctgc    | 15240 |
| cgttgcgag cagtatccgg ggagtccaac gtgtgaccgt tactgacgcc agacgccga     | 15300 |
| cctgtcccta cgtgtacaag gactgggca tagtcgcacc gcgcgtcctt tcaagccgca    | 15360 |
| ctttctaaaa aaaaaaaaaa tgtccattct tatctcgccc agtaataaca ccggttgggg   | 15420 |
| tctgcgcgt ccaagcaaga tgtacggagg cgacgcaaa cgttctaccc aacatcctgt     | 15480 |
| ccgtgttcgc ggacattttc gcgctccatg gggcgccctc aagggccgca ctcgcgttcg   | 15540 |
| aaccaccgtc gatgatgtaa tcgatcagggt ggttgccgac gcccgtaatt atactcctac  | 15600 |
| tgcgctaca tctactgtgg atgcagttat tgacagtgtg gtggctgacg ctcgcaacta    | 15660 |
| tgctcgacgt aagagccggc gaaggcgcgt tgccagacgc caccgagcta cactgccat    | 15720 |
| gcgagccgca agagctctgc tacgaagagc tagacgcgtg gggcgaagag ccatgcttag   | 15780 |
| ggcggccaga cgtgcagctt cgggcgccag cgccggcagg tcccgcaggc aagcagccgc   | 15840 |
| tgctgcagcg gcgactattg ccgacatggc ccaatcgca agaggcaatg tatactgggt    | 15900 |
| gcgtgacgt gccaccggc aacgtgtacc cgtgcgcacc cgtccccctc gcacttagaa     | 15960 |
| gatactgagc agtctccgat gttgtgtccc agcggcgagg atgtccaagc gcaaatacaa   | 16020 |
| ggaagaaatg ctgcaggtta tcgcacctga agtctacggc caaccgttga aggatgaaaa   | 16080 |
| aaaacccgc aaaatcaagc ggggttaaaaa ggacaaaaaa gaagaggaag atggcgatga   | 16140 |
| tgggctggcg gagtttgtgc gcgagtttgc cccacggcga cgcggtgcaat ggcggtggcg  | 16200 |
| caaagttcga catgtgttga gacctggaac ttcgggtggtc ttacacccg gcgagcggtc   | 16260 |

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|             |            |             |             |             |             |       |
|-------------|------------|-------------|-------------|-------------|-------------|-------|
| aagcgctact  | tttaagcggt | cctatgatga  | gggtgacggg  | gatgatgata  | ttcttgagca  | 16320 |
| ggcggctgac  | cgattaggcg | agtttgctta  | tggcaagcgt  | agtagaataa  | cttccaagga  | 16380 |
| tgagacagtg  | tcgataccct | tggatcatgg  | aaatcccacc  | cctagtctta  | aaccgggtcac | 16440 |
| tttgacgcaa  | gtgttaccgg | taactccgcg  | aacaggtggt  | aaacgcgaag  | gtgaagattt  | 16500 |
| gtatcccact  | atgcaactga | tggtagccaa  | acgccagaag  | ttggaggacg  | ttttggagaa  | 16560 |
| agtaaaagt   | gatccagata | ttcaacctga  | ggttaaagt   | agacccatta  | agcaggtagc  | 16620 |
| gcctgggtctg | ggggtacaaa | ctgtagacat  | taagattccc  | actgaaagta  | tgggaagtgc  | 16680 |
| aactgaaccc  | gcaaagccta | ctgccacctc  | cactgaagt   | caaacggatc  | catggatgcc  | 16740 |
| catgcctatt  | acaactgacg | ccgccgggtcc | cactcgaaga  | tcccgcacgaa | agtacgggtcc | 16800 |
| agcaagtctg  | ttgatgcca  | attatgttgt  | acacccatct  | attattccta  | ctcctgggtta | 16860 |
| ccgaggcact  | cgctactatc | gcagccgaaa  | cagtacctcc  | cgccgtcgcc  | gcaagacacc  | 16920 |
| tgcaaatcgc  | agtcgtcgcc | gtagacgcac  | aagcaaaccg  | actcccggcg  | ccctgggtgcg | 16980 |
| gcaagtgtac  | cgcaatggta | gtgcggaacc  | tttgacactg  | ccgcgtcgcg  | gttaccatcc  | 17040 |
| gagtatcatc  | acttaatcaa | tgttgccgct  | gcctccttgc  | agatatggcc  | ctcacttgtc  | 17100 |
| gccttcgcgt  | tcccatcact | ggttaccgag  | gaagaaactc  | gcgccgtaga  | agagggatgt  | 17160 |
| tgggacgcgg  | aatgacgacg | tacaggcgac  | ggcgtgctat  | ccgcaagcaa  | ttgcgggggtg | 17220 |
| gttttttacc  | agccttaatt | ccaattatcg  | ctgctgcaat  | tggcgcgata  | ccaggcatag  | 17280 |
| cttccgtggc  | ggttcaggcc | tcgcaacgac  | attgacattg  | gaaaaaaacg  | tataaataaa  | 17340 |
| aaaaaaaaaa  | tacaatggac | tctgacactc  | ctggtcctgt  | gactatgttt  | tcttagagat  | 17400 |
| ggaagacatc  | aatttttcat | ccttgggtcc  | gcgacacggc  | acgaagccgt  | acatgggcac  | 17460 |
| ctggagcgac  | atcggcacga | gccaactgaa  | cggggggcgcc | ttcaattgga  | gcagtatctg  | 17520 |
| gagcgggctt  | aaaaattttg | gctcaaccat  | aaaaacatac  | gggaacaaag  | cttggaacag  | 17580 |
| cagtacagga  | caggcgctta | gaaataaaact | taaagaccag  | aacttccaac  | aaaaagtagt  | 17640 |
| cgatgggata  | gcttccggca | tcaatggagt  | ggtagatttg  | gctaaccagg  | ctgtgcagaa  | 17700 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| aaagataaac agtcgtttgg acccgccgcc agcaaccca ggtgaaatgc aagtggagga    | 17760 |
| agaaaattcct ccgccagaaa aacgaggcga caagcgtccg cgtcccgatt tggaaagagac | 17820 |
| gctggtgacg cgcgtagatg aaccgccttc ttatgaggaa gcaacgaagc ttggaatgcc   | 17880 |
| caccactaga ccgatagccc caatggccac cggggtgatg aaaccttctc agttgcatcg   | 17940 |
| acccgtcacc ttggatttgc cccctcccc tgctgctact gctgtacccg cttctaagcc    | 18000 |
| tgctgctgcc ccgaaaccag tcgccgtagc caggtcacgt cccgggggcg ctccctcgtcc  | 18060 |
| aaatgcgcac tggcaaaata ctctgaacag catcgtgggt ctaggcgtgc aaagtgtaaa   | 18120 |
| acgccgtcgc tgcttttaat taaatatgga gtagcgctta acttgcttat ctgtgtatat   | 18180 |
| gtgtcattac acgccgtcac agcagcagag gaaaaaagga agaggtcgtg cgtcgacgct   | 18240 |
| gagttacttt caagatggcc accccatcga tgctgcccc atgggcatac atgcacatcg    | 18300 |
| ccggacagga tgcttcggag tacctgagtc cgggtctggt gcagttcgcc cgcgccacag   | 18360 |
| acacctactt caatctggga aataagtta gaaatccac cgtagcgccg acccacgatg     | 18420 |
| tgaccaccga ccgtagccag cggctcatgt tgcgcttcgt gcccgttgac cgggaggaca   | 18480 |
| atacatactt ttacaaagtg cggtagaccc tggccgtggg cgacaacaga gtgctggata   | 18540 |
| tggccagcac gttctttgac attaggggtg tgttggacag aggtcccagt ttcaaaccct   | 18600 |
| attctggtac ggcttacaac tccctggctc cttaaaggcg tccaaataca tctcagtgga   | 18660 |
| ttgcagaagg tgtaaaaaat acaactgggtg aggaacacgt aacagaagag gaaaccaata  | 18720 |
| ctactactta cacttttggc aatgctcctg taaaagctga agctgaaatt acaaaagaag   | 18780 |
| gactcccagt aggtttggaa gtttcagatg aagaaaagta accgatttat gctgataaaa   | 18840 |
| catatcagcc agaacctcag ctgggagatg aaacttggac tgaccttgat ggaaaaaccg   | 18900 |
| aaaagtatgg aggcagggtc ctcaaaccgc atactaagat gaaacatgc tacgggtcct    | 18960 |
| ttgccaaacc tactaatgtg aaaggcggtc aggcaaaaca aaaaacaacg gagcagccaa   | 19020 |
| atcagaaaagt cgaatatgat atcgacatgg agttttttga tgcggcatcg cagaaaacaa  | 19080 |
| acttaagtcc taaaattgtc atgtatgcag aaaatgtaaa tttggaaact ccagacactc   | 19140 |



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|             |             |             |             |            |            |       |
|-------------|-------------|-------------|-------------|------------|------------|-------|
| atgtagtgta  | caaacctgga  | acagaagaca  | caagttccga  | agctaatttg | ggacaacaat | 19200 |
| ctatgccccaa | cagacccaac  | tacattggct  | tcagagataa  | ctttattgga | cttatgtact | 19260 |
| ataacagtac  | tggtaacatg  | ggggtgctgg  | ctgggtcaagc | gtctcagtta | aatgcagtgg | 19320 |
| ttgacttgca  | ggacagaaac  | acagaacttt  | cttaccaact  | cttgcttgac | tctctgggcg | 19380 |
| acagaaccag  | atacttttagc | atgtggaatc  | aggctgtgga  | cagttatgat | cctgatgtac | 19440 |
| gtgttattga  | aaatcatggt  | gtggaagatg  | aacttcccaa  | ctactgtttt | ccactggacg | 19500 |
| gcataggtgt  | tccaacaacc  | agttacaaat  | caatagttcc  | aaatggagac | aatgcgcta  | 19560 |
| attggaagga  | acctgaagta  | aatggaacaa  | gtgagatcgg  | acagggtaat | ttgtttgcca | 19620 |
| tggaaattaa  | ccttcaagcc  | aatctatggc  | gaagtttcct  | ttattccaat | gtggctctat | 19680 |
| atctcccaga  | ctcgtacaaa  | tacaccccg   | ccaatgtcac  | tcttccagaa | aacaaaaaca | 19740 |
| cctacgacta  | catgaacggg  | cgggtgggtgc | cgccatctct  | agtagacacc | tatgtgaaca | 19800 |
| ttggtgccag  | gtggtctctg  | gatgccatgg  | acaatgtcaa  | cccattcaac | caccaccgta | 19860 |
| acgctggctt  | gcgttaccga  | tccatgcttc  | tgggtaacgg  | acgttatgtg | cctttccaca | 19920 |
| tacaagtgcc  | tcaaaaattc  | ttcgtgttta  | aaaacctgct  | gcttctccca | ggctcctaca | 19980 |
| cttatgagtg  | gaacttttagg | aaggatgtga  | acatggttct  | acagagttcc | ctcggtaacg | 20040 |
| acctgcgggt  | agatggcgcc  | agcatcagtt  | tcacgagcat  | caacctctat | gctacttttt | 20100 |
| tccccatggc  | tcacaacacc  | gcttccaccc  | ttgaagccat  | gctgcggaat | gacaccaatg | 20160 |
| atcagtcatt  | caacgactac  | ctatctgcag  | ctaacatgct  | ctacccatt  | cctgccaatg | 20220 |
| caaccaatat  | tcccatttcc  | attccttctc  | gcaactgggc  | ggctttcaga | ggctggcat  | 20280 |
| ttaccagact  | gaaaacaaaa  | gaaactccct  | ctttggggtc  | tggatttgac | ccctactttg | 20340 |
| tctattctgg  | ttctattccc  | tacctggatg  | gtaccttcta  | cctgaaccac | acttttaaga | 20400 |
| aggtttccat  | catgtttgac  | tcttcagtga  | gctggcctgg  | aaatgacagg | ttactatctc | 20460 |
| ctaacgaatt  | tgaaataaag  | cgcactgtgg  | atggcgaagg  | ctacaacgta | gccaatgca  | 20520 |
| acatgaccaa  | agactgggttc | ttggtacaga  | tgctcgccaa  | ctacaacatc | ggctatcagg | 20580 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| gcttctacat tccagaagga tacaaagatc gcatgtattc atttttcaga aacttccagc  | 20640 |
| ccatgagcag gcaggtgggt gatgaggtca attacaaaga cttcaaggcc gtcgccatac  | 20700 |
| cctaccaaca caacaactct ggctttgtgg gttacatggc tccgaccatg cgccaaggtc  | 20760 |
| aaccctatcc cgctaactat ccctatccac tcattggaac aactgccgta aatagtgtta  | 20820 |
| cgcagaaaaa gttcttgtgt gacagaacca tgtggcgcat accgttctcg agcaacttca  | 20880 |
| tgtctatggg ggcccttaca gacttgggac agaatatgct ctatgccaac tcagctcatg  | 20940 |
| ctctggacat gacctttgag gtggatccca tggatgagcc caccctgctt tatcttctct  | 21000 |
| tcgaagtttt cgacgtggtc agagtgcac agccacaccg cggcatcatc gaggcagtct   | 21060 |
| acctgcgtac accgttctcg gccggtaacg ctaccacgta agaagcttct tgcttcttgc  | 21120 |
| aaatagcagc tgcaaccatg gcctgcggat cccaaaacgg ctccagcgag caagagctca  | 21180 |
| gagccattgt ccaagacctg ggttgccgac cctatTTTTT gggaacctac gataagcgct  | 21240 |
| tcccgggggt catggcccc gataagctcg cctgtgccat tgtaaatacg gccggacgtg   | 21300 |
| agacgggggg agagcactgg ttggctttcg gttggaaccc acgttctaac acctgctacc  | 21360 |
| TTTTTgatcc TTTTggattc tcggatgatc gtctcaaaca gatttaccag tttgaatatg  | 21420 |
| agggtctcct gcgccgcagc gctcttgcta ccaaggaccg ctgtattacg ctggaaaaat  | 21480 |
| ctacccagac cgtgcagggt ccccgttctg ccgcctgcgg acttttctgc tgcattgtcc  | 21540 |
| ttcacgcctt tgtgcactgg cctgaccgtc ccatggacgg aaacccacc atgaaattgc   | 21600 |
| taactggagt gccaaacaac atgcttcatt ctctaaagt ccagcccacc ctgtgtgaca   | 21660 |
| atcaaaaaagc actctaccat tttcttaata cccattcgcc ttatTTTcgc tcccatcgta | 21720 |
| cacacatcga aagggccact gcgttcgacc gtatggatgt tcaataatga ctcatgtaaa  | 21780 |
| caacgtgttc aataaacatc actttatTTT tttacatgta tcaaggctct gcattactta  | 21840 |
| tttatTTTaca agtcgaatgg gttctgacga gaatcagaat gacccgcagg cagtgatacg | 21900 |
| ttgcggaact gatacttggg ttgccacttg aattcgggaa tcaccaactt gggaaccggt  | 21960 |
| atatcgggca ggatgtcact ccacagcttt ctggtcagct gcaaagctcc aagcagggtca | 22020 |

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|                                                                    |       |
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| ggagccgaaa tcttgaaatc acaattagga ccagtgcttt gagcgcgaga gttgcggtac  | 22080 |
| accggattgc agcactgaaa caccatcagc gacggatgtc tcacgcttgc cagcacggtg  | 22140 |
| ggatctgcaa tcatgcccac atccagatct tcagcattgg caatgctgaa cgggggtcatc | 22200 |
| ttgcaggtct gcctacccat ggcgggcacc caattaggct tgtggttgca atcgcagtgc  | 22260 |
| agggggatca gtatcatctt ggctgatcc tgtctgattc ctggatacac ggctctcatg   | 22320 |
| aaagcatcat attgcttgaa agcctgctgg gctttactac cctcggtata aaacatcccg  | 22380 |
| caggacctgc tcgaaaactg gttagctgca cagccggcat cattcacaca gcagcgggcg  | 22440 |
| tcattgttag ctatttgcac cacacttctg cccagcgggt tttgggtgat tttggttcgc  | 22500 |
| tcgggattct cctttaaggc tcgttgtccg ttctcgctgg ccacatccat ctcgataatc  | 22560 |
| tgctccttct gaatcataat attgccatgc aggcacttca gcttgccctc ataatcattg  | 22620 |
| cagccatgag gccacaacgc acagcctgta cattccaat tatggtgggc gatctgagaa   | 22680 |
| aaagaatgta tcattccctg cagaaatctt cccatcatcg tgctcagtgt cttgtgacta  | 22740 |
| gtgaaagtta actggatgcc tcggtgctcc tcgtttacgt actggtgaca gatgcgcttg  | 22800 |
| tattgttcgt gttgctcagg cattagttaa aaagagggtc taagtctggt atccagcctg  | 22860 |
| tacttctcca tcagcagaca catcacttcc atgcctttct cccaagcaga caccaggggc  | 22920 |
| aagctaatacg gattcttaac agtgcaggca gcagctcctt tagccagagg gtcattctta | 22980 |
| gcgatcttct caatgcttct tttgccatcc ttctcaacga tgcgcacggg cgggtagctg  | 23040 |
| aaaccactg ctacaagttg cgcctcttct ctttcttctt cgctgtcttg actgatgtct   | 23100 |
| tgcatgggga tatgtttggt cttccttggc ttcttttttg ggggtatcgg aggaggagga  | 23160 |
| ctgtcgctcc gttccggaga caggaggat tgtgacgttt cgctcaccat taccaactga   | 23220 |
| ctgtcggtag aagaacctga cccacacagg cgacagggtgt ttctcttcgg gggcagaggt | 23280 |
| ggaggcgatt gcgaagggtc gcggtccgac ctggaaggcg gatgactggc agaaccctt   | 23340 |
| ccgcgttcgg ggggtgtgctc cctgtggcgg tcgcttaact gatttccttc gcggctggcc | 23400 |
| attgtgttct cctaggcaga gaaacaacag acatggaaac tcagccattg ctgtcaacat  | 23460 |

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|                                                                     |       |
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| atgacatgca gaataaaaaa gcgaaagagt ctgagacaga catcgagcaa gacccgggct   | 23640 |
| atgtgacacc ggtggaacac gaggaagagt tgaaacgctt tctagagaga gaggatgaaa   | 23700 |
| actgccccaa acaacgagca gataactatc accaagatgc tggaaatagg gatcagaaca   | 23760 |
| ccgactacct catagggctt gacggggaag acgcgctcct taaacatcta gcaagacagt   | 23820 |
| cgctcatagt caaggatgca ttattggaca gaactgaagt gcccacatcagt gtggaagagc | 23880 |
| tcagccgcgc ctacgagctt aacctctttt cacctcgtac tccccccaaa cgtcagccaa   | 23940 |
| acggcacctg cgagccaaat cctcgcttaa acttttatcc agcttttgct gtgccagaag   | 24000 |
| tactggctac ctatcacatc ttttttaaaa atcaaaaaat tccagtctcc tgccgcgcta   | 24060 |
| atcgcacccg cgccgatgcc ctactcaatc tgggacctgg ttcacgctta cctgatatag   | 24120 |
| cttccttgga agaggttcca aagatcttcg agggctctggg caataatgag actcgggccg  | 24180 |
| caaatgctct gcaaaaggga gaaaatggca tggatgagca tcacagcggt ctggtggaat   | 24240 |
| tggaaggcga taatgccaga ctgcgagtac tcaagcgaag catcgagggtc acacacttcg  | 24300 |
| catatccgc tgtcaacctg ccccttaaag tcatgacggc ggtcatggac cagttactca    | 24360 |
| ttaagcgcg aagtccccct tcagaagaca tgcatgaccc agatgcctgt gatgagggtg    | 24420 |
| aaccagtggc cagtgatgag cagctaaccg gatggctggg caccgactct cccagggtt    | 24480 |
| tggaagagcg tcgcaagctt atgatggccg tgggtgctggt taccgtagaa ctagagtgtc  | 24540 |
| tccgacgttt ctttaccgat tcagaaacct tgcgcaaact cgaagagaat ctgcactaca   | 24600 |
| cttttagaca cggctttgtg cggcaggcat gcaagatatc taacgtggaa ctcaccaacc   | 24660 |
| tggtttccta catgggtatt ctgcatgaga atcgccatagg acaaagcgtg ctgcacagca  | 24720 |
| ccctgaaggg ggaagccgc cgtgattaca tccgcgattg tgtctatctg tacctgtgcc    | 24780 |
| acacgtggca aaccggcatg ggtgtatggc agcaatgttt agaagaacag aacttgaaag   | 24840 |
| agcttgacaa gctcttacag aaatctctta aggttctgtg gacagggttc gacgagcgca   | 24900 |

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|                                                                    |       |
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| ccgtcgcttc cgacctggca gacctcatct tcccagagcg tctcagggtt actttgcgaa  | 24960 |
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| aacgctccgg tatcctgccc gccacctgct gcgcactgcc ctccgacttt gtgcctctca  | 25080 |
| cctaccgca gtgcccccg ccgctatgga gtcactgcta cctgttccgt ctggccaact    | 25140 |
| atctctccta ccactcggat gtgatcgagg atgtgagcgg agacggcttg ctggagtgtc  | 25200 |
| actgccgctg caatctgtgc acgccccacc ggtccctagc ttgcaacccc cagttgatga  | 25260 |
| gcgaaaccca gataataggc acctttgaat tgcaaggccc cagcagccaa ggcgatgggt  | 25320 |
| cttctcctgg gcaaagtta aaactgaccc cgggactgtg gacctccgcc tacttgcgca   | 25380 |
| agtttgctcc ggaagattac caccctatg aaatcaagtt ctatgaggac caatcacagc   | 25440 |
| ctccaaaggc cgaactttcg gcctgcgtca tcaccagggg ggcaattctg gcccaattgc  | 25500 |
| aagccatcca aaaatcccg caagaatttc tactgaaaaa gggtaagggg gtctaccttg   | 25560 |
| acccccagac cggcgaggaa ctcaacacaa ggttccctca ggatgtccca acgacgagaa  | 25620 |
| aacaagaagt tgaagggtgca gccgccgccc ccagaagata tggaggaaga ttgggacagt | 25680 |
| caggcagagg aggcggagga ggacagtctg gaggacagtc tggaggaaga cagtttgag   | 25740 |
| gaggaaaacg aggaggcaga ggagggtggaa gaagtaaccg ccgacaaaca gttatcctcg | 25800 |
| gctgcggaga caagcaacag cgctaccatc tccgctccga gtcgaggaac ccggcggcgt  | 25860 |
| cccagcagta gatgggacga gaccggacgc ttcccgaacc caaccagcgc ttccaagacc  | 25920 |
| ggtaagaagg atcggcaggg atacaagtcc tggcgggggc ataagaatgc catcatctcc  | 25980 |
| tgcttgcatt agtcggggg caacatatcc ttcacgcggc gctacttgct attccaccat   | 26040 |
| ggggtgaact ttccgcgcaa tgttttgcat tactaccgtc acctccacag cccctactat  | 26100 |
| agccagcaaa tcccggcagt ctcgacagat aaagacagcg gcggcgacct ccaacagaaa  | 26160 |
| accagcagcg gcagttagaa aatacacaac aagtgcagca acaggaggat taaagattac  | 26220 |
| agccaacgag ccagcgcaaa cccgagagtt aagaaatcgg atctttccaa ccctgtatgc  | 26280 |
| catcttccag cagagtcggg gtcaagagca ggaactgaaa ataaaaaacc gatctctgcg  | 26340 |

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|                                                                    |       |
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| cgcgcttatt caaaaaaggc gggaattaca tcacctctga catgagtaaa gaaattccca  | 26520 |
| cgccttacat gtggagttat caaccccaaa tgggattggc ggaggcgcc tcccaggact   | 26580 |
| actccacccg catgaattgg ctacgagccg ggcttctat gatttctcga gttaatgata   | 26640 |
| tacgcgccta ccgaaacca atacttttgg aacagtcagc tcttaccacc acgccccgcc   | 26700 |
| aacaccttaa tcccagaaat tggcccgccg ccctagtgtg ccaggaaagt cccgctccca  | 26760 |
| ccactgtatt acttctcga gacgcccagg ccgaagtcca aatgactaat gcaggtgcgc   | 26820 |
| agttagctgg cggctccacc ctatgtcgtc acaggcctcg gcataatata aaacgcctga  | 26880 |
| tgatcagagg ccgaggtatc cagctcaacg acgagtcggt gagctctccg cttggtctac  | 26940 |
| gaccagacgg aatctttcag attgccggct gcgggagatc ttccttcacc cctcgtcagg  | 27000 |
| ctgttctgac tttggaaaagt tcgtcttcgc aaccccgctc gggcggaatc gggaccgttc | 27060 |
| aatttgtgga ggagtttact ccctctgtct acttcaaccc cttctccgga tctcctgggc  | 27120 |
| attacccgga cgagttcata ccgaacttcg acgcgattag cgagtcagtg gacggctacg  | 27180 |
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| ctttcgtgc tttgcccggg aactcattga gttcatctac ttcgaactcc ccaaggatca   | 27300 |
| ccctcaaggt ccggcccacg gaggcgcatc ttctatcgaa ggcaaaatag actctcgcct  | 27360 |
| gcaacgaatt ttctcccagc ggcccgtgct gatcgagcga gaccaggga acaccacggt   | 27420 |
| ttccatctac tgcatttgta atcaccgagg attgcatgaa agcctttgct gtcttatgtg  | 27480 |
| tactgagttt aataaaaaact gaattaagac tctcctacgg actgccgctt cttcaacccg | 27540 |
| gattttacaa ccagaagaac gaaacttttc ctgtcgtcca ggactctgtt aacttcacct  | 27600 |
| ttcctactca caaactagaa gctcaacgac tacaccgctt ttccagaagc attttccta   | 27660 |
| ctaatactac tttcaaaacc ggaggtagc tccaaggctt tcctacagaa aacccttggg   | 27720 |
| tggaagcggg ccttgtagtg ctaggaattc ttgcgggtgg gcttgtgatt attctttgct  | 27780 |

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| acctatacac  | accttgcttc | acttttcttag | tggtgttg    | gtattggttt | aaaaaatggg  | 27840 |
| gcccatacta  | gtcttgcttg | ttttactttc  | gcttttggaa  | ccgggttctg | ccaattacga  | 27900 |
| tccatgtcta  | gacttcgacc | cagaaaactg  | cacacttact  | tttgcacccg | acacaagccg  | 27960 |
| catctgtgga  | gttcatcgcc | tctcttacga  | acttggcccc  | caacgacaaa | aattttacctg | 28020 |
| catggtggga  | atcaacccca | tagttatcac  | ccagcaaagt  | ggagatacta | agggttgc    | 28080 |
| tcactgctcc  | tgcgattcca | tcgagtgcac  | ctacaccctg  | ctgaagaccc | tatgcggcct  | 28140 |
| aagagacctg  | ctaccaatga | attaaaaaat  | gattaataaa  | aaatcactta | cttgaaatca  | 28200 |
| gcaataaggt  | ctctgttgaa | attttctccc  | agcagcacct  | cacttccctc | ttcccaactc  | 28260 |
| tggtattcta  | aaccccgttc | agcggcatac  | tttctccata  | ctttaaagg  | gatgtcaa    | 28320 |
| tttagctcct  | ctcctgtacc | cacaatcttc  | atgtctttct  | tcccagatga | ccaagagagt  | 28380 |
| ccggctcagt  | gactccttca | accctgtcta  | cccctatgaa  | gatgaaagca | cctcccaaca  | 28440 |
| cccctttata  | aacccagggt | ttatttcccc  | aaatggcttc  | acacaaagcc | caaacggagt  | 28500 |
| tcttacttta  | aaatgtttta | ccccactaac  | aaccacaggc  | ggatctctac | agctaaaagt  | 28560 |
| gggaggggga  | cttacagtgg | atgacaccaa  | cggttttttg  | aaagaaaaca | taagtgccac  | 28620 |
| cacaccactc  | gttaagactg | gtcactctat  | aggttttacca | ctaggagccg | gattgggaac  | 28680 |
| gaatgaaaaat | aaactttgta | tcaaattagg  | acaaggactt  | acattcaatt | caaacaacat  | 28740 |
| ttgcattgat  | gacaatatta | acaccttatg  | gacaggagtc  | aacccaccg  | aagccaactg  | 28800 |
| tcaaatacatg | aactccagtg | aatctaata   | ttgcaaatta  | attctaacac | tagttaaaac  | 28860 |
| tggagcacta  | gtcactgcat | ttgtttatgt  | tataggagta  | tctaacaatt | ttaatatgct  | 28920 |
| aactacacac  | agaaaataaa | attttactgc  | agagctgttt  | ttcgattcta | ctggtaattt  | 28980 |
| actaactaga  | ctctcatccc | tcaaaactcc  | acttaatcat  | aaatcaggac | aaaacatggc  | 29040 |
| tactggtgcc  | attactaatg | ctaaaggttt  | catgcccagc  | acgactgcct | atcctttcaa  | 29100 |
| tgataattct  | agagaaaaag | aaaactacat  | ttacggaact  | tgttactaca | cagctagtga  | 29160 |
| tcgcactgct  | tttcccattg | acatatctgt  | catgcttaac  | cgaagagcaa | taaatgacga  | 29220 |

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|                                                                     |       |
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| aacctctgct acaaccctag tcacctcccc atttaccttt tactacatca gagaagacga   | 29340 |
| ctgacaaata aagtttgcga tcgccaggcc caccatggga tggagctgca tcatcctatt   | 29400 |
| cctcgtggcg acggccactg gagtgcatac cgaactgggtg atgactcagt ccccgatc    | 29460 |
| cctgacgggtg accgccggcg agaagggtcac catgtcgtgc aagtcctcgc aaagcctgct | 29520 |
| taacagcggc aaccagaaaa actacctcac gtggtatcag caaaagccag gtcaaccccc   | 29580 |
| aaaactgctc atctactggg cgagcaccgc cgagtcgggg gtgccagacc gggttcaccgg  | 29640 |
| ctccgggtca ggaactgatt tcaccctaac catcagctcg gtgcaagcgg aggacctggc   | 29700 |
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| ggggcatggc ctggagtgga tcggcgacat cttcccaggg agcggcaaca tccactacaa   | 30000 |
| cgagaagtgc aaggggaaag cgactctgac tgccgacaaa tcatccagca ccgcctacat   | 30060 |
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| gactgcatac atggaactgt cctcgctgag aagcgaggac accgctactt actactgcgc   | 30480 |
| tagatactac gatgatcact actgcctcga ttactggggc cagggaacca ctgtcacggt   | 30540 |
| gtcatcggga gagggcacct caaccgatc agggggatcg ggaggctcgg gcggcgcaga    | 30600 |
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| agatgcggcc acctactact gtcagcagtg gtcctccaac ccgctgactt tcggaggcgg  | 30900 |
| aactaaggtc gagatcaagt aggctagctt gactgactga gatacagcgt accttcagct  | 30960 |
| cacagacatg ataagataca ttgatgagtt tggacaaacc acaactagaa tgcagtgaaa  | 31020 |
| aaaatgcttt atttgtgaaa tttgtgatgc tattgcttta tttgtaacca ttataagctg  | 31080 |
| caataaacia gttaacaaca acaattgcat tcattttatg tttcaggttc agggggaggt  | 31140 |
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| ttaaaagcgc tccagccaaa actcatatct gatataatcg cccctgcatg accatcatac  | 31800 |
| caaagtttaa tataaattaa atgacgttcc ctcaaaaaca cactaccac atacatgatc   | 31860 |
| tcttttggca tgtgcatatt aacaatctgt ctgtacatg gacaacgttg gttaatcatg   | 31920 |
| caaccaata taaccttccg gaaccacact gccaacaccg ctccccagc catgcattga    | 31980 |
| agtgaaccct gctgattaca atgacaatga agaaccat tctctcgacc gtgaatcact    | 32040 |
| tgagaatgaa aaatatctat agtggcacia catagacata aatgcatgca tcttctcata  | 32100 |

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|--------------------------------------------------------------------|-------|
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| tcacaatctg gcaacagcgg gtggtcttca gtcatagaag ctcgggtttc attttcctca  | 32280 |
| caacgtggta actgggctct ggtgtaaggg tgatgtctgg cgcatgatgt cgagcgtgcg  | 32340 |
| cgcaaccttg tcataatgga gttgcttcct gacattctcg tattttgtat agcaaaacgc  | 32400 |
| ggccctggca gaacacactc ttcttcgcct tctatcctgc cgcttagcgt gttccgtgtg  | 32460 |
| atagttcaag tacaaccaca ctcttaagtt ggtcaaaaga atgctggctt cagttgtaat  | 32520 |
| caaaactcca tcgcatctaa tcgttctgag gaaatcatcc aagcaatgca actggattgt  | 32580 |
| gtttcaagca ggagaggaga gggaagagac ggaagaacca tgttaatttt tattccaaac  | 32640 |
| gatctcgag tacttcaa at ttagatcgc gcagatggca tctctcgccc ccactgtgtt   | 32700 |
| ggtgaaaaag cacagctaga tcaaaagaaa tgcgattttc aagggtgctca acggtggctt | 32760 |
| ccagcaaagc ctccacgcgc acatccaaga acaaaagaat accaaaagaa ggagcatttt  | 32820 |
| ctaactcctc aatcatcata ttacattcct gcaccattcc cagataattt tcagctttcc  | 32880 |
| agccttgaat tattcgtgtc agttcttgtg gtaaattcaa tccacacatt acaaacaggt  | 32940 |
| cccggagggc gccctccacc accattctta aacacaccct cataatgaca aaatatcttg  | 33000 |
| ctcctgtgtc acctgtagcg aattgagaat ggcaacatca attgacatgc cttggctct   | 33060 |
| aagttcttct ttaagttcta gttgtaaaaa ctctctcata ttatcaccaa actgcttagc  | 33120 |
| cagaagcccc ccgggaacaa gagcagggga cgctacagtg cagtacaagc gcagacctcc  | 33180 |
| ccaattggct ccagcaaaaa caagattgga ataagcatat tgggaaccgc cagtaatatc  | 33240 |
| atcgaagttg ctggaaatat aatcaggcag agtttcttgt aaaaattgaa taaaagaaaa  | 33300 |
| atttgccaaa aaaacattca aaacctctgg gatgcaaatg caataggtta ccgcgctgcg  | 33360 |
| ctccaacatt gttagttttg aattagtctg caaaaataaa aaaaaaaca agcgtcatat   | 33420 |
| catagtagcc tgacgaacag atggataaat cagtctttcc atcacaagac aagccacagg  | 33480 |
| gtctccagct cgacctcgt aaaacctgtc atcatgatta aacaacagca ccgaaagttc   | 33540 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| ctcgcggtga ccagcatgaa taattcttga tgaagcatac aatccagaca tgtagcatc   | 33600 |
| agttaacgag aaaaaacagc caacatagcc tttgggtata attatgctta atcgtaagta  | 33660 |
| tagcaaagcc acccctcgcg gatacaaagt aaaaggcaca ggagaataaa aaatataatt  | 33720 |
| atttctctgc tgctgttcag gcaacgtcgc ccccggtccc tctaaataca catacaaagc  | 33780 |
| ctcatcagcc atggcttacc agacaaagta cagcgggcac acaaagcaca agctctaaag  | 33840 |
| tgactctcca acctctccac aatatatata tacacaagcc ctaaactgac gtaatgggag  | 33900 |
| taaagtgtaa aaaatccgcg caaacccaac acacaccccg aaactgcgtc accagggaaa  | 33960 |
| agtacagttt cacttccgca atcccaacag gcgtaacttc ctcttttctca cggtagctga | 34020 |
| tatcccacta acttgcaacg tcattttccc acggtcgcac cgcccccttt agccgttaac  | 34080 |
| cccacagcca atcaccacac gatccacact ttttaaaatc acctcattta catattggca  | 34140 |
| ccattccatc tataaggtat attatataga taga                              | 34174 |

<210> 81  
 <211> 34865  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> NG-605 (EnAd-CMV-FAPBiTE) without deca-His tag

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| <400> 81                                                           |     |
| tctatctata taatatacct tatagatgga atggtgccaa tatgtaaatg aggtgatttt  | 60  |
| aaaaagtgtg gatcgtgtgg tgattggctg tgggggttaac ggctaaaagg ggcggtgcga | 120 |
| ccgtgggaaa atgacgtttt gtgggggtgg agtttttttg caagttgtcg cgggaaatgt  | 180 |
| gacgcataaa aaggcttttt tctcacggaa ctacttagtt ttcccacggg atttaacagg  | 240 |
| aaatgaggta gttttgaccg gatgcaagtg aaaattgttg attttcgcgc gaaaactgaa  | 300 |
| tgaggaagtg tttttctgaa taatgtggta tttatggcag ggtggagtat ttgttcaggg  | 360 |
| ccaggtagac tttgacccat tacgtggagg tttcgattac cgtgtttttt acctgaattt  | 420 |
| ccgcgtaccg tgtcaaagtc ttctgttttt acgtaggtgt cagctgatcg ctagggattt  | 480 |

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|                                                                     |      |
|---------------------------------------------------------------------|------|
| tataacctcag ggtttgtgtc aagaggccac tcttgagtgc cagcgagaag agttttctcc  | 540  |
| tctgcgccgg cagtttaata ataaaaaaaaat gagagatttg cgatttctgc ctcaggaaat | 600  |
| aatctctgct gagactggaa atgaaatatt ggagcttgtg gtgcacgccc tgatgggaga   | 660  |
| cgatccggag ccacctgtgc agctttttga gcctcctacg cttcaggaac tgtatgattt   | 720  |
| agaggtagag ggatcggagg attctaataa ggaagctgta aatggctttt ttaccgattc   | 780  |
| tatgctttta gctgctaata aagggttaga attagatccg cctttggaca cttttgatac   | 840  |
| tccaggggta attgtggaaa gcggtacagg tgtaagaaaa ttacctgatt tgagttccgt   | 900  |
| ggactgtgat ttgcactgct atgaagacgg gtttcctccg agtgatgagg aggaccatga   | 960  |
| aaaggagcag tccatgcaga ctgcagcggg tgaggggagtg aaggctgcca atgttggttt  | 1020 |
| tcagttggat tgccccggagc ttcctggaca tggctgtaag tcttgtgaat ttcacaggaa  | 1080 |
| aaatactgga gtaaaggaac tgttatgttc gctttgttat atgagaacgc actgccactt   | 1140 |
| tatttacagt aagtgtgttt aagttaaaat ttaaaggaat atgctgtttt tcacatgtat   | 1200 |
| attgagtgtg agttttgtgc ttcttattat aggtcctgtg tctgatgctg atgaatcacc   | 1260 |
| atctcctgat tctactacct cacctcctga gattcaagca cctgttcctg tggacgtgcg   | 1320 |
| caagcccatt cctgtgaagc ttaagcctgg gaaacgtcca gcagtggaaa aacttgagga   | 1380 |
| cttgttacag ggtggggacg gacctttgga cttgagtaca cggaacgctc caagacaata   | 1440 |
| agtgttccat atccgtgttt acttaagggtg acgtcaatat ttgtgtgaca gtgcaatgta  | 1500 |
| ataaaaaatat gttaactgtt cactggtttt tattgctttt tgggcgggga ctcaggtata  | 1560 |
| taagtagaag cagacctgtg tggtagctc ataggagctg gctttcatcc atggaggttt    | 1620 |
| gggccatttt ggaagacctt aggaagacta ggcaactgtt agagaacgct tcggacggag   | 1680 |
| tctccggttt ttggagattc tggttcgcta gtgaattagc tagggtagtt tttaggataa   | 1740 |
| aacaggacta taaacaagaa tttgaaaagt tgttggtaga ttgccagga ctttttgaag    | 1800 |
| ctcttaattt gggccatcag gttcacttta aagaaaaagt tttatcagtt ttagactttt   | 1860 |
| caaccccagg tagaactgct gctgctgtgg cttttcttac ttttatatta gataaatgga   | 1920 |

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|                                                                     |      |
|---------------------------------------------------------------------|------|
| tccccgagac tcatttcagc aggggatacg ttttggattt catagccaca gcattgtgga   | 1980 |
| gaacatggaa ggttcgcaag atgaggacaa tcttaggtta ctggccagtg cagcctttgg   | 2040 |
| gtgtagcggg aatcctgagg catccaccgg tcatgccagc ggttctggag gaggaacagc   | 2100 |
| aagaggacaa cccgagagcc ggccctggacc ctccagtgga ggaggcggag tagctgactt  | 2160 |
| gtctcctgaa ctgcaacggg tgcttactgg atctacgtcc actggacggg ataggggcgt   | 2220 |
| taagaggggag agggcatcta gtggtactga tgctagatct gagttggctt taagtttaat  | 2280 |
| gagtcgcaga cgtcctgaaa ccatttgggtg gcatgagggtt cagaaagagg gaagggatga | 2340 |
| agtttctgta ttgcaggaga aatattcact ggaacagggtg aaaacatgtt ggttggagcc  | 2400 |
| tgaggatgat tgggagggtg ccattaaaaa ttatgccaaag atagctttga ggcctgataa  | 2460 |
| acagtataag attactagac ggattaatat ccggaatgct tgttacatat ctggaaatgg   | 2520 |
| ggctgagggtg gtaatagata ctcaagacaa ggcagttatt agatgctgca tgatggatat  | 2580 |
| gtggcctggg gtagtcggta tggaagcagt aacttttgta aatgttaagt ttaggggaga   | 2640 |
| tggttataat ggaatagtgt ttatggccaa taccaaactt atattgcatg gttgtagctt   | 2700 |
| ttttggtttc aacaatacct gtgtagatgc ctggggacag gttagtgtac ggggatgtag   | 2760 |
| tttctatgcg tgttggattg ccacagctgg cagaaccaag agtcaattgt ctctgaagaa   | 2820 |
| atgcatatth caaagatgta acctgggcat tctgaatgaa ggcgaagcaa ggggtccgca   | 2880 |
| ctgcgcttct acagatactg gatgttttat tttgattaag ggaaatgcca gcgtaaagca   | 2940 |
| taacatgatt tgcggtgctt ccgatgagag gccttatcaa atgctcactt gtgctgggtg   | 3000 |
| gcattgtaat atgctggcta ctgtgcatat tgtttcccat caacgcaaaa aatggcctgt   | 3060 |
| ttttgatcac aatgtgatga cgaagtgtac catgcatgca ggtgggcgta gaggaatgtt   | 3120 |
| tatgccttac cagtgtaca tgaatcatgt gaaagtgttg ttggaaccag atgccttttc    | 3180 |
| cagaatgagc ctaacaggaa tttttgacat gaacatgcaa atctggaaga tcctgaggta   | 3240 |
| tgatgatacg agatcgaggg tacgcgcatg cgaatgcgga ggcaagcatg ccaggttcca   | 3300 |
| gccggtgtgt gtagatgtga ctgaagatct cagaccggat catttggtta ttgcccgcac   | 3360 |

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|                                                                     |      |
|---------------------------------------------------------------------|------|
| tggagcagag ttcggatcca gtggagaaga aactgactaa ggtgagtatt gggaaaactt   | 3420 |
| tgggggtggga ttttcagatg gacagattga gtaaaaaattt gttttttctg tcttgagct  | 3480 |
| gtcatgagtg gaaacgcttc ttttaagggg ggagtccttca gcccttatct gacagggcgt  | 3540 |
| ctcccatcct gggcaggagt tcgtcagaat gttatgggat ctactgtgga tggaagaccc   | 3600 |
| gtccaacccg ccaattcttc aacgctgacc tatgctactt taagttcttc acctttggac   | 3660 |
| gcagctgcag ctgccgccgc cgcttctgtt gccgctaaca ctgtgcttgg aatgggttac   | 3720 |
| tatggaagca tcatggctaa ttccacttcc tctaataacc cttctaccct gactcaggac   | 3780 |
| aagttacttg tccttttggc ccagctggag gctttgaccc aacgtctggg tgaactttct   | 3840 |
| cagcaggtgg tcgagttgcg agtacaaact gagtctgctg tcggcacggc aaagtctaaa   | 3900 |
| taaaaaaatc ccagaatcaa tgaataaata aacaagcttg ttgttgattt aaaatcaagt   | 3960 |
| gtttttattt catttttcgc gcacggtatg ccctagacca ccgatctcta tcattgagaa   | 4020 |
| ctcgggtgat tttttccagg atcctataga ggtgggattg aatgtttaga tacatgggca   | 4080 |
| ttaggccgtc tttgggggtgg agatagctcc attgaaggga ttcattgctcc ggggtagtgt | 4140 |
| tgtaaatacac ccagtcataa caaggctgca gtgcatgggtg ttgcacaata tcttttagaa | 4200 |
| gtaggctgat tgccacagat aagcccttgg ttaggtgtt tacaacccgg ttgagctggg    | 4260 |
| atgggtgcat tcggggtgaa attatgtgca ttttggattg gatTTTTaag ttggcaatat   | 4320 |
| tgccgccaag atcccgctctt gggttcatgt tatgaaggac caccaagacg gtgtatccgg  | 4380 |
| tacatttagg aaatttatcg tgcagcttgg atggaaaagc gtggaaaaat ttggagacac   | 4440 |
| ccttgtgtcc tccaagattt tccatgcact catccatgat aatagcaatg gggccgtggg   | 4500 |
| cagcggcgcg ggcaaacacg ttccgtgggt ctgacacatc atagttatgt tcctgagtta   | 4560 |
| aatcatcata agccatttta atgaatttgg ggcggagagt accagattgg ggtatgaatg   | 4620 |
| ttccttcggg ccccgagca tagttcccct cacagatttg catttcccaa gctttcagtt    | 4680 |
| ccgagggtgg aatcatgtcc acctgggggg ctatgaaaaa caccgtttct ggggcggggg   | 4740 |
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|                                                                     |      |
|---------------------------------------------------------------------|------|
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| aatccattag gaggcgctct cctcctagtg atagaagttc ttgtagtgag gaaaagtttt   | 4980 |
| tcagcggttt cagaccgtca gccatgggca ttttggagag agtttgctgc aaaagttcta   | 5040 |
| gtctgttcca cagttcagtg atgtgttcta tggcatctcg atccagcaga cctcctcggt   | 5100 |
| tcgcggggtt ggacggctcc tggaataggg tatgagacga tgggcgtcca gcgctgccag   | 5160 |
| ggttcgggcc ttccagggtc tcagtgttcg agtcagggtt gtttccgtca cagtgaaggg   | 5220 |
| gtgtgcgctt gcttgggcgc ttgccagggt gcgcttcaga ctcatcctgc tggtcgaaaa   | 5280 |
| cttctgtcgc ttggcgccct gtatgtcggc caagtagcag ttaccatga gttcgtagtt    | 5340 |
| gagcgccctg gctgcgtggc ctttggcgcg gagcttacct ttggaagttt tcttgcatac   | 5400 |
| cgggcagtat aggcatattca gcgcatacaa cttgggcgca aggaaaacgg attctggggga | 5460 |
| gtatgcatct gcgccgcagg aggcgcaaac agtttcacat tccaccagcc aggttaaadc   | 5520 |
| cggttcattg ggggtcaaaaa caagttttcc gccatatttt ttgatgcgtt tcttaccttt  | 5580 |
| ggctctccatg agttcgtgtc ctggttgagt gacaaacagg ctgtccgtgt ccccgtagac  | 5640 |
| tgattttaca ggctctttct ccagtggagt gcctcggctt tcttcgtaca ggaactctga   | 5700 |
| ccactctgat acaaaggcgc gcgtccaggc cagcacaaag gaggctatgt gggaggggta   | 5760 |
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| ttcaacatcc aggaatgtga ttggcttgta ggtgtatttc acgtgacctg ggggtccccgc  | 5880 |
| tgggggggta taaaaggggg cggttctttg ctcttcctca ctgtcttccg gatcgtgtc    | 5940 |
| caggaacgtc agctgttggg gtaggtattc cctctcgaag gcgggcatga cctctgcact   | 6000 |
| caggttgtca gtttctaaga acgaggagga tttgatattg acagtgccgg ttgagatgcc   | 6060 |
| tttcatgagg ttttcgtcca tctggtcaga aaacacaatt tttttattgt caagtttgg    | 6120 |
| ggcaaatgat ccatacaggg cgttggataa aagtttggca atggatcgca tggtttgggt   | 6180 |
| cttttccttg tccgcgcgct ctttggcggc gatgttgagt tggacatact cgcgtgccag   | 6240 |

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| tcgattatgc | aaggtaatta | aatccacact  | ggtggccacc | tcgcctcgaa  | ggggttcatt  | 6360 |
| ggtccaacag | agcctacctc | ctttcctaga  | acagaaaggg | ggaagtgggt  | ctagcataag  | 6420 |
| ttcatcggga | gggtctgcat | ccatggtaaa  | gattcccgga | agtaaattcct | tatcaaaata  | 6480 |
| gctgatggga | gtggggtcat | ctaaggccat  | ttgccattct | cgagctgcca  | gtgcgcgctc  | 6540 |
| atatgggtta | aggggactgc | cccatggcat  | gggatgggtg | agtgcagagg  | catacatgcc  | 6600 |
| acagatgtca | tagacgtaga | tgggatcctc  | aaagatgcct | atgtaggttg  | gatagcatcg  | 6660 |
| ccccctctg  | atacttgctc | gcacatagtc  | atatagttca | tgtgatggcg  | ctagcagccc  | 6720 |
| cggacccaag | ttggtgcgat | tgggtttttc  | tgttctgtag | acgatctggc  | gaaagatggc  | 6780 |
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| tacagagtct | ctgacaaagt | gggcataaga  | ttcttgaagc | ttggttacca  | gttcggcggt  | 6900 |
| gacaagtacg | tctagggcgc | agtagtcaag  | tgtttcttga | atgatgtcat  | aacctggttg  | 6960 |
| gtttttcttt | tcccacagtt | cgcggttgag  | aaggatttct | tcgcgatcct  | tccagtactc  | 7020 |
| ttctagcgga | aaccctgtct | tgtctgcacg  | gtaagatcct | agcatgtaga  | actgattaac  | 7080 |
| tgctttgtaa | gggcagcagc | ccttctctac  | gggtagagag | tatgcttgag  | cagcttttcg  | 7140 |
| tagcgaagcg | tgagtaaggg | caaagggtgc  | tctgaccatg | actttgagga  | attgggtattt | 7200 |
| gaagtcgatg | tcgtcacagg | ctccctgttc  | ccagagttgg | aagtctaccc  | gtttcttgta  | 7260 |
| ggcgggggtg | ggcaaagcga | aagtaacatc  | attgaagaga | atcttgccgg  | ccctgggcat  | 7320 |
| gaaattgcga | gtgatgcgaa | aaggctgtgg  | tacttccgct | cggttattga  | taacctgggc  | 7380 |
| agctaggacg | atctcgtcga | aaccgttgat  | gttgtgtcct | acgatgtata  | attctatgaa  | 7440 |
| acgcggcgtg | cctctgacgt | gaggtagctt  | actgagctca | tcaaaggtta  | ggtctgtggg  | 7500 |
| gtcagataag | gcgtagtggt | cgagagccca  | ttcgtgcagg | tgaggattcg  | ctttaaggaa  | 7560 |
| ggaggaccag | aggtccactg | ccagtgtgtg  | ttgtaactgg | tcccgggtact | gacgaaaatg  | 7620 |
| ccgtccgact | gccatttttt | ctgggggtgac | gcaatagaag | gtttgggggt  | cctgccgcca  | 7680 |



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|                                                                    |      |
|--------------------------------------------------------------------|------|
| gcgatccac ttgagtttta tggcgaggct ataggcgatg ttgacgagcc gctgggtctcc  | 7740 |
| agagagtttc atgaccagca tgaaggggat tagctgcttg ccaaaggacc ccatccaggt  | 7800 |
| gtaggtttcc acatcgtagg tgagaaagag cctttctgtg cgaggatgag agccaatcgg  | 7860 |
| gaagaactgg atctcctgcc accagttgga ggaatggctg ttgatgtgat ggaagtagaa  | 7920 |
| ctccctgcga cgcgccgagc attcatgctt gtgcttgtag agacggccgc agtagtcgca  | 7980 |
| gcgttgccacg gggtgtatct cgtgaatgag ttgtacctgg cttcccttga cgagaaatth | 8040 |
| cagtgggaag ccgaggcctg gcgattgtat ctcgtgctth actatgttgt ctgcatcggc  | 8100 |
| ctgttcatct tctgtctcga tgggtgtcat gctgacgagc cctcgcgga ggcaagtcca   | 8160 |
| gacctcggcg cggcaggggc ggagctcgag gacgagagcg cgcaggctgg agctgtccag  | 8220 |
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| cttttgagg gcgtcgggga gggtcagata gtacttgatc tcaacgggtc cgttggtgga   | 8340 |
| gatgtcgatg gcttgcaggg ttccgtgtcc cttggcgct accaccgtgc cttgtttth    | 8400 |
| cattttggac ggcggtggct ctgttgcttc ttgcatgtth agaagcgggtg tcgagggcg  | 8460 |
| gcaccgggcg gcaggggcgg ctcgggaccc ggcgcatgg ctggcagtggt tacgtcggcg  | 8520 |
| ccgcgcgcgg gtaggttctg gtactgcgcc ctgagaagac tcgcatgcgc gacgacgcgg  | 8580 |
| cggttgacat cctggatctg acgcctctgg gtgaaagcta ccggccccgt gagcttgaac  | 8640 |
| ctgaaagaga gttcaacaga atcaatctcg gtatcgttga cggcggcttg cctaaggatt  | 8700 |
| tcttgacgt caccagagtt gtcctggtag gcgatctccg ccatgaactg ctcgatctct   | 8760 |
| tcctcttgaa gatctccgcg gcccgctctc tcgacgggtg ccgcgaggtc gttggagatg  | 8820 |
| cgcccaatga gttgagagaa tgcattcatg cccgcctcgt tccagacgcg gctgtagacc  | 8880 |
| acggcccca cgggatctct cgcgcgcatg accacctggg cgaggttgag ctccacgtgg   | 8940 |
| cgggtgaaga ccgcatagtt gcataggcg tggaagaggt agttgagtgt ggtggcgatg   | 9000 |
| tgctcgggtga cgaagaaata catgatccat cgtctcagcg gcatctcgct gacatcgccc | 9060 |
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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| tttcgcgcgg acacggtcaa ctctctttcc agaagacgga taagttcggc gatggtggtg  | 9180  |
| cgcacctcgc gctcgaaaagc ccctgggatt tcttcctcaa tctcttcttc ttccactaac | 9240  |
| atctcttcct cttcaggtgg ggctgcagga ggagggggaa cgcggcgacg ccggcggcgc  | 9300  |
| acgggcagac ggtcgatgaa tctttcaatg acctctccgc ggaggcgggc catggtttca  | 9360  |
| gtgacggcgc ggccgttctc gcgcggctgc agagtaaaaa caccgccgcg catctcctta  | 9420  |
| aagtggtgac tgggaggttc tccgtttggg agggagaggg cgctgattat acattttatt  | 9480  |
| aattggcccc tagggactgc acgcagagat ctgatcgtgt caagatccac gggatctgaa  | 9540  |
| aacctttcga cgaaagcgtc taaccagtca cagtcacaag gtaggctgag tacggcttct  | 9600  |
| tgtgggcggg ggtggttatg tggtcggctt gggtcttctg tttcttcttc atctcgggaa  | 9660  |
| ggtgagacga tgctgctggt gatgaaatta aagtaggcag ttctaagacg gcggatggtg  | 9720  |
| gcgaggagca ccaggtcttt gggtccggct tgctggatac gcaggcgatt ggccattccc  | 9780  |
| caagcattat cctgacatct agcaagatct ttgtagtagt cttgcatgag ccgttctacg  | 9840  |
| ggcacttctt cctcaccctg tctgccatgc atacgtgtga gtccaaatcc gcgcattggt  | 9900  |
| tgtaccagtg ccaagtcagc tacgactctt tcggcgagga tggcttgctg tacttgggta  | 9960  |
| agggtggctt gaaagtcatc aaaatccaca aagcggtggt aagctcctgt attaatggtg  | 10020 |
| taagcacagt tggccatgac tgaccagtta actgtctggt gaccagggcg cacgagctcg  | 10080 |
| gtgtatttaa ggcgcaata ggcgcggggtg tcaaagatgt aatcgttgca ggtgcgcacc  | 10140 |
| agatactggt accctataag aaaatgcggc ggtggttggc ggtagagagg ccatcgttct  | 10200 |
| gtagctggag cgccaggggc gaggtcttcc aacataaggc ggtgatagcc gtagatgtac  | 10260 |
| ctggacatcc aggtgattcc tgcggcggtg gtagaagccc gaggaaactc gcgtacgcgg  | 10320 |
| ttccaaatgt tgcgtagcgg catgaagtag ttcatgtag gcacggtttg accagtgagg   | 10380 |
| cgcgcgcagt cattgatgct ctatagacac ggagaaaatg aaagcgttca gcgactcgac  | 10440 |
| tccgtagcct ggaggaacgt gaacgggttg ggtcgcggtg taccgccggt cgagacttgt  | 10500 |
| actcgagccg gccggagccg cggctaacgt ggtattggca ctcccgtctc gaccagcct   | 10560 |

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|            |            |             |             |            |             |       |
|------------|------------|-------------|-------------|------------|-------------|-------|
| acaaaaatcc | aggatacggg | atcgagtcgt  | tttgctgggt  | tccgaatggc | agggaagtga  | 10620 |
| gtcctatttt | ttttttttgc | cgctcagatg  | catcccgtgc  | tgcgacagat | gcgcccccaa  | 10680 |
| caacagcccc | cctcgcagca | gcagcagcag  | caatcacaaa  | aggctgtccc | tgcaactact  | 10740 |
| gcaactgccg | ccgtgagcgg | tgccgggacag | cccgccctatg | atctggactt | ggaagagggc  | 10800 |
| gaaggactgg | cacgtctagg | tgcgccctca  | cccgagcggc  | atccgcgagt | tcaactgaaa  | 10860 |
| aaagattctc | gcgaggcgta | tgtgccccaa  | cagaacctat  | ttagagacag | aagcggcgag  | 10920 |
| gagccggagg | agatgcgagc | ttcccgcctt  | aacgcgggtc  | gtgagctgcg | tcacggtttg  | 10980 |
| gaccgaagac | gagtgttgcg | ggacgaggat  | ttcgaagtgt  | atgaaatgac | agggatcagt  | 11040 |
| cctgccaggg | cacacgtggc | tgccagccaac | cttgtatcgg  | cttacgagca | gacagtaaag  | 11100 |
| gaagagcgta | acttccaaaa | gtcttttaat  | aatcatgtgc  | gaaccctgat | tgcccgcgaa  | 11160 |
| gaagttaccc | ttggtttgat | gcatttgtgg  | gatttgcgtg  | aagctatcat | tcagaaccct  | 11220 |
| actagcaaac | ctctgaccgc | ccagctgttt  | ctgggtgggtc | aacacagcag | agacaatgag  | 11280 |
| gctttcagag | aggcgctgct | gaacatcacc  | gaacccgagg  | ggagatgggt | gtatgatctt  | 11340 |
| atcaacattc | tacagagtat | catagtgcag  | gagcggagcc  | tgggcctggc | cgagaagggtg | 11400 |
| gctgccatca | attactcggg | tttgagcttg  | ggaaaatatt  | acgctcgcaa | aatctacaag  | 11460 |
| actccatacg | ttcccataga | caaggagggtg | aagatagatg  | ggttctacat | gcgcatgacg  | 11520 |
| ctcaaggctc | tgaccctgag | cgatgatctt  | gggggtgtatc | gcaatgacag | aatgcatcgc  | 11580 |
| gcggttagcg | ccagcaggag | gcgcgagtta  | agcgacaggg  | aactgatgca | cagtttgcaa  | 11640 |
| agagctctga | ctggagctgg | aaccgagggt  | gagaattact  | tcgacatggg | agctgacttg  | 11700 |
| cagtggcagc | ctagtgcgag | ggctctgagc  | gccgcgacgg  | caggatgtga | gcttccttac  | 11760 |
| atagaagagg | cggatgaagg | cgaggaggaa  | gagggcgagt  | acttggaaga | ctgatggcac  | 11820 |
| aaccctgtgt | ttttgctaga | tggaacagca  | agcaccggat  | cccgcaatgc | gggcggcgct  | 11880 |
| gcagagccag | ccgtccggca | tttaactcctc | ggacgattgg  | acccaggcca | tgcaacgtat  | 11940 |
| catggcggtg | acgactcgca | accccgaagc  | ctttagacag  | caaccccagg | ccaaccgtct  | 12000 |

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|                                             |                                     |       |
|---------------------------------------------|-------------------------------------|-------|
| atcgccatc atggaagctg tagtgccttc ccgctcta    | cccactcatg agaaggtcct               | 12060 |
| ggccatcgtg aacgcgttgg tggagaacaa agctattcgt | ccagatgagg ccggactgg                | 12120 |
| atacaacgct ctcttagaac gcgtggctcg ctacaacagt | agcaatgtgc aaaccaat                 | 12180 |
| ggaccgtatg ataacagatg tacgcgaagc cgtgtctcag | cgcgaaaggt tccagcgtga               | 12240 |
| tgccaacctg ggttcgctgg tggcgtaaaa tgctttcttg | agtactcagc ctgcta                   | 12300 |
| gccgcgtggg caacaggatt atactaactt ttttaagtgt | ttgagactga tggatatcaga              | 12360 |
| agtacctcag agcgaagtgt atcagtcagg tcctgattac | ttctttcaga ctagcagaca               | 12420 |
| gggcttgtag acggtaaa                         | tc tgagccaagc ttttaaaaac cttaaagg   | 12480 |
| gcattgcccc gtaggagaaa gagcaaccgt gtctagcttg | ttactccga actccgcct                 | 12540 |
| attattactg ttggtagctc ctttcaccga cagcggtagc | atcgaccgta attcctatt                | 12600 |
| gggttaccta ctaaacctgt atcgcgaagc catagggcaa | agtcagggtg acgagcagac               | 12660 |
| ctatcaagaa attaccaag tcagtcgcgc tttgggacag  | gaagacactg gcagtttgga               | 12720 |
| agccactctg aacttcttgc ttaccaatcg gtctcaaaag | atccctcctc aatatgctct               | 12780 |
| tactgcggag gaggagagga tccttagata tgtgcagcag | agcgtgggat tgtttctgat               | 12840 |
| gcaagagggg gcaactccga ctgcagcact ggacatgaca | gcgcgaaata tggagcccag               | 12900 |
| catgtatgcc agtaaccgac ctttcattaa caaactgtcg | gactacttgc acagagctgc               | 12960 |
| cgctatgaac tctgattatt tcaccaatgc catcttaa   | ac ccgcactggc tgccccacc             | 13020 |
| tggtttctac acgggcgaat atgacatgcc cgacccta   | at gacggatttc tgtgggacga            | 13080 |
| cgtggacagc gatgtttttt cacctctttc tgatcatcgc | acgtggaaaa aggaaggcgg               | 13140 |
| cgatagaatg cattcttctg catcgctgtc cggggatc   | atg ggtgctaccg cggtgagcc            | 13200 |
| cgagtctgca agtccttttc ctagtctacc cttttctcta | cacagtgtac gtagcagcga               | 13260 |
| agtgggtaga ataagtcgcc cgagttta              | at gggcgaagag gagtatctaa acgattcctt | 13320 |
| gctcagaccg gcaagagaaa aaaatttccc aaacaatgga | atagaaaagt tgggtggataa              | 13380 |
| aatgagtaga tggaagactt atgctcagga tcacagagac | gagcctggga tcatggggat               | 13440 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| tacaagtaga gcgagccgta gacgccagcg ccatgacaga cagaggggtc ttgtgtggga  | 13500 |
| cgatgaggat tcggccgatg atagcagcgt gctggacttg ggtgggagag gaaggggcaa  | 13560 |
| cccgtttgct cattttgcgcc ctcgcttggg tggatatgtt taaaaaaaaa taaaaaaaaa | 13620 |
| actcaccaag gccatggcga cgagcgtagc ttcgttcttc tttattatct gtgtctagta  | 13680 |
| taatgaggcg agtcgtgcta ggcggagcgg tgggtatcc ggagggtcct cctccttcgt   | 13740 |
| acgagagcgt gatgcagcag cagcaggcga cggcgggtgat gcaatcccca ctggaggctc | 13800 |
| cctttgtgcc tccgcgatac ctggcaccta cggagggcag aaacagcatt cgttattcgg  | 13860 |
| aactggcacc tcagtacgat accaccagg tgtatctggt ggacaacaag tcggcggaca   | 13920 |
| ttgcttctct gaactatcag aatgaccaca gcaacttctt gaccacgggtg gtgcaaaaca | 13980 |
| atgactttac ccctacggaa gccagcacc agaccattaa ctttgatgaa cgatcgcggt   | 14040 |
| ggggcgggtca gctaaagacc atcatgcata ctaacatgcc aaacgtgaac gagtatatgt | 14100 |
| ttagtaacaa gttcaaagcg cgtgtgatgg tgtccagaaa acctcccgac ggtgctgcag  | 14160 |
| ttggggatac ttatgatcac aagcaggata ttttgaaata tgagtgggtc gagtttactt  | 14220 |
| tgccagaagg caacttttca gttactatga ctattgattt gatgaacaat gccatcatag  | 14280 |
| ataattactt gaaagtgggt agacagaatg gagtgcttga aagtgcatt ggtgttaagt   | 14340 |
| tcgacaccag gaacttcaag ctgggatggg atcccgaac caagttgatc atgcctggag   | 14400 |
| tgtatacgta tgaagccttc catcctgaca ttgtcttact gcctggctgc ggagtggatt  | 14460 |
| ttaccgagag tcgtttgagc aaccttcttg gtatcagaaa aaaacagcca tttcaagagg  | 14520 |
| gttttaagat tttgtatgaa gatttagaag gtggtaatat tccggccctc ttggatgtag  | 14580 |
| atgcctatga gaacagtaag aaagaacaaa aagccaaaat agaagctgct acagctgctg  | 14640 |
| cagaagctaa ggcaaacata gttgccagcg actctacaag ggttgctaac gctggagagg  | 14700 |
| tcagaggaga caattttgcg ccaacacctg ttccgactgc agaatacatta ttggccgatg | 14760 |
| tgtctgaagg aacggacgtg aaactcacta ttcaacctgt agaaaaagat agtaagaata  | 14820 |
| gaagctataa tgtgttgga gacaaaatca acacagccta tcgcagttgg tatctttcgt   | 14880 |

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|                                   |                                    |       |
|-----------------------------------|------------------------------------|-------|
| acaattatgg cgatcccgaa aaaggagtg   | gttcctggac attgctcacc acctcagatg   | 14940 |
| tcacctgcgg agcagagcag gtctactgg   | cgcttccaga catgatgaag gatcctgtca   | 15000 |
| ctttccgctc cactagacaa gtcagtaact  | accctgtggg ggggtgcagag cttatgccc   | 15060 |
| tcttctcaaa gagcttctac aacgaacaag  | ctgtgtactc ccagcagctc cgccagtcca   | 15120 |
| cctcgcttac gcacgtcttc aaccgctttc  | ctgagaacca gattttaatc cgtccgccgg   | 15180 |
| cgcccacat taccaccgtc agtgaaaacg   | ttcctgctct cacagatcac gggaccctgc   | 15240 |
| cggtgcgcag cagtatccgg ggagtccaac  | gtgtgaccgt tactgacgcc agacgccgca   | 15300 |
| cctgtcccta cgtgtacaag gactgggca   | tagtcgcacc gcgcgtcctt tcaagccgca   | 15360 |
| ctttctaaaa aaaaaaaaaa tgtccattct  | tatctcgccc agtaataaca ccggttgggg   | 15420 |
| tctgcgcgct ccaagcaaga tgtacggagg  | cgcacgcaaa cgttctaccc aacatcctgt   | 15480 |
| ccgtgttcgc ggacattttc gcgctccatg  | gggcgccctc aagggccgca ctcgcgttcg   | 15540 |
| aaccaccgtc gatgatgtaa tcgatcagg   | ggttgccgac gcccgttaatt atactcctac  | 15600 |
| tgcgccata tctactgtgg atgcagttat   | tgacagtgtg gtggctgacg ctcgcaacta   | 15660 |
| tgctcgacgt aagagccggc gaaggcgc    | atgccagacgc caccgagcta ccactgccat  | 15720 |
| gcgagccgca agagctctgc tacgaagag   | c tagacgcgtg gggcgaagag ccatgcttag | 15780 |
| ggcggccaga cgtgcagctt cgggcgccag  | cgccggcagg tcccgcaggc aagcagccgc   | 15840 |
| tgctgcagcg gcgactattg ccgacatgg   | c ccaatcgca agaggcaatg tatactgggt  | 15900 |
| gcgtgacgct gccaccggc aacgtgtacc   | cgtgcgcacc cgtccccctc gcacttagaa   | 15960 |
| gatactgagc agtctccgat gttgtgtccc  | agcggcgagg atgtccaagc gcaaatacaa   | 16020 |
| ggaagaaatg ctgcaggtta tcgcacctga  | agtctacggc caaccgttga aggatgaaaa   | 16080 |
| aaaacccgc aaaatcaagc gggttaaaaa   | ggacaaaaaa gaagaggaag atggcgatga   | 16140 |
| tgggctggcg gagtttgtgc gcgagtttgc  | cccacggcga cgcgtgcaat ggcgtggg     | 16200 |
| caaagttcga catgtgttga gacctggaac  | ttcgggtggtc ttacacccg gcgagcgttc   | 16260 |
| aagcgctact ttttaagcgtt cctatgatga | ggtgtacggg gatgatgata ttcttgagca   | 16320 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| ggcggctgac cgattaggcg agtttgctta tggcaagcgt agtagaataa cttccaagga   | 16380 |
| tgagacagtg tcgataccct tggatcatgg aaatcccacc cctagtctta aaccgggtcac  | 16440 |
| tttgcagcaa gtgttaccgc taactccgcg aacaggtgtt aaacgcgaag gtgaagattt   | 16500 |
| gtatcccact atgcaactga tggtagccaa acgccagaag ttggaggacg ttttggagaa   | 16560 |
| agtaaaagtg gatccagata ttcaacctga ggtaaagt agaccatta agcaggtagc      | 16620 |
| gcctgggtctg ggggtacaaa ctgtagacat taagattccc actgaaagta tggaagtgc   | 16680 |
| aactgaacct gcaaagccta ctgccacct cactgaagtg caaacggatc catggatgcc    | 16740 |
| catgcctatt acaactgacg ccgccgtcc cactcgaaga tcccgacgaa agtacgggtcc   | 16800 |
| agcaagtctg ttgatgcca attatgttgt acacccatct attattccta ctcttggtta    | 16860 |
| ccgaggcact cgctactatc gcagccgaaa cagtacctcc cgccgtcgcc gcaagacacc   | 16920 |
| tgcaaatcgc agtcgtcgcc gtagacgcac aagcaaaccg actcccggcg ccctgggtgcg  | 16980 |
| gcaagtgtac cgcaatggta gtgcggaacc tttgacactg ccgcgtgcgc gttaccatcc   | 17040 |
| gagtatcatc acttaataca tgttgccgct gcctccttgc agatatggcc ctacttgtc    | 17100 |
| gccttcgcgt tcccatcact ggttaccgag gaagaaactc gcgccgtaga agagggatgt   | 17160 |
| tgggacgcgg aatgcgacgc tacaggcgac ggcgtgctat ccgcaagcaa ttgcgggggtg  | 17220 |
| gttttttacc agccttaatt ccaattatcg ctgctgcaat tggcgcgata ccaggcatag   | 17280 |
| cttccgtggc ggttcaggcc tcgcaacgac attgacattg gaaaaaacg tataaataaa    | 17340 |
| aaaaaaaaa tacaatggac tctgacactc ctggtcctgt gactatgttt tcttagagat    | 17400 |
| ggaagacatc aatttttcat cttgggtcc gcgacacggc acgaagccgt acatgggcac    | 17460 |
| ctggagcgac atcggcacga gccaaactgaa cggggggcgcc ttcaattgga gcagtatctg | 17520 |
| gagcgggctt aaaaattttg gctcaaccat aaaaacatac gggaacaaag cttggaacag   | 17580 |
| cagtacagga caggcgctta gaaataaact taaagaccag aacttccaac aaaaagtagt   | 17640 |
| cgatgggata gcttccggca tcaatggagt ggtagatttg gctaaccagg ctgtgcagaa   | 17700 |
| aaagataaac agtcgttttg acccgccgcc agcaacccca ggtgaaatgc aagtggagga   | 17760 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| agaaattcct cgcagaaaa aacgaggcga caagcgccg cgtcccgatt tggaagagac    | 17820 |
| gctggtgacg cgcgtagatg aaccgccttc ttatgaggaa gcaacgaagc ttggaatgcc  | 17880 |
| caccactaga ccgatagccc caatggccac cgggggtgatg aaaccttctc agttgcatcg | 17940 |
| acccgtcacc ttggatttgc cccctccccc tgctgctact gctgtacccg cttctaagcc  | 18000 |
| tgctgctgcc ccgaaaccag tcgccgtagc caggtcacgt cccggggggcg ctcctcgtcc | 18060 |
| aaatgcgcac tggcaaaaata ctctgaacag catcgtgggt ctaggcgtgc aaagtgtaaa | 18120 |
| acgccgtcgc tgcttttaat taaatatgga gtagcgctta acttgcctat ctgtgtatat  | 18180 |
| gtgtcattac acgccgtcac agcagcagag gaaaaaagga agaggtcgtg cgtcgacgct  | 18240 |
| gagttacttt caagatggcc accccatcga tgctgcccc aatgggcatac atgcacatcg  | 18300 |
| ccggacagga tgcttcggag tacctgagtc cgggtctggt gcagttcgcc cgcgccacag  | 18360 |
| acacctactt caatctggga aataagttta gaaatccac cgtagcgccg acccacgatg   | 18420 |
| tgaccaccga ccgtagccag cggctcatgt tgcgcttcgt gcccgttgac cgggaggaca  | 18480 |
| atacatactc ttacaaagtg cggtagaccc tggccgtggg cgacaacaga gtgctggata  | 18540 |
| tggccagcac gttctttgac attaggggtg tgttggacag aggtcccagt ttcaaaccct  | 18600 |
| attctggtac ggcttacaac tccctggctc ctaaaggcgc tccaaataca tctcagtgga  | 18660 |
| ttgcagaagg tgtaaaaaat acaactgggtg aggaacacgt aacagaagag gaaaccaata | 18720 |
| ctactactta cacttttggc aatgctcctg taaaagctga agctgaaatt acaaaagaag  | 18780 |
| gactcccagt aggttttgaa gtttcagatg aagaaagtaa accgatttat gctgataaaa  | 18840 |
| catatcagcc agaacctcag ctgggagatg aaacttggac tgaccttgat ggaaaaaccg  | 18900 |
| aaaagtatgg aggcagggtc ctcaaaccgc atactaagat gaaaccatgc tacgggtcct  | 18960 |
| ttgccaaacc tactaatgtg aaaggcggtc aggcaaaaca aaaaacaacg gagcagccaa  | 19020 |
| atcagaaaagt cgaatatgat atcgacatgg agttttttga tgcggcatcg cagaaaacaa | 19080 |
| acttaagtcc taaaattgtc atgtatgcag aaaatgtaaa tttggaaact ccagacactc  | 19140 |
| atgtagtgtg caaacctgga acagaagaca caagttccga agctaatttg ggacaacaat  | 19200 |



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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| ctatgccccaa cagacccaac tacattggct tcagagataa ctttattgga cttatgtact  | 19260 |
| ataacagtac tggtaacatg ggggtgctgg ctggtcaagc gtctcagtta aatgcagtgg   | 19320 |
| ttgacttgca ggacagaaac acagaacttt cttaccaact cttgcttgac tctctgggcg   | 19380 |
| acagaaccag atacttttagc atgtggaatc aggctgtgga cagttatgat cctgatgtac  | 19440 |
| gtgttattga aaatcatggg gtggaagatg aacttcccaa ctactgtttt ccactggacg   | 19500 |
| gcataggtgt tccaacaacc agttacaaat caatagttcc aaatggagac aatgcgccta   | 19560 |
| attggaagga acctgaagta aatggaacaa gtgagatcgg acagggtaat ttgtttgcca   | 19620 |
| tggaaattaa ccttcaagcc aatctatggc gaagtttcct ttattccaat gtggctctat   | 19680 |
| atctcccaga ctctgtacaaa tacaccccggt ccaatgtcac tcttccagaa aacaaaaaca | 19740 |
| cctacgacta catgaacggg cgggtggtgc cgccatctct agtagacacc tatgtgaaca   | 19800 |
| ttggtgccag gtggtctctg gatgccatgg acaatgtcaa cccattcaac caccaccgta   | 19860 |
| acgctggctt gcgttaccga tccatgcttc tgggtaacgg acgttatgtg cttttccaca   | 19920 |
| tacaagtgcc tcaaaaaattc ttcgctgtta aaaacctgct gcttctccca ggctcctaca  | 19980 |
| cttatgagtg gaactttagg aaggatgtga acatggttct acagagttcc ctcggtaacg   | 20040 |
| acctgcgggt agatggcgcc agcatcagtt tcacgagcat caacctctat gctacttttt   | 20100 |
| tccccatggc tcacaacacc gcttccaccc ttgaagccat gctgcggaat gacaccaatg   | 20160 |
| atcagtcatt caacgactac ctatctgcag ctaacatgct ctacccatt cctgccaatg    | 20220 |
| caaccaatat tcccatttcc attccttctc gcaactgggc ggctttcaga ggctggcat    | 20280 |
| ttaccagact gaaaacaaaa gaaactccct ctttggggtc tggatttgac ccctactttg   | 20340 |
| tctattctgg ttctattccc tacctggatg gtaccttcta cctgaaccac acttttaaga   | 20400 |
| aggtttccat catgtttgac tcttcagtga gctggcctgg aaatgacagg ttactatctc   | 20460 |
| ctaacgaatt tgaaataaag cgcactgtgg atggcgaagg ctacaacgta gcccaatgca   | 20520 |
| acatgaccaa agactgggtc ttggtacaga tgctcgccaa ctacaacatc ggctatcagg   | 20580 |
| gcttctacat tccagaagga tacaaagatc gcatgtattc atttttcaga aacttccagc   | 20640 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| ccatgagcag gcaggtggtt gatgaggtca attacaaaga cttcaaggcc gtcgccatac  | 20700 |
| cctaccaaca caacaactct ggctttgtgg gttacatggc tccgaccatg cgccaaggtc  | 20760 |
| aaccctatcc cgctaactat ccctatccac tcattggaac aactgccgta aatagtgtta  | 20820 |
| cgcagaaaaa gttcttgtgt gacagaacca tgtggcgcat accgttctcg agcaacttca  | 20880 |
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| aacaccttaa tcccagaaat tggcccgccg ccctagtgtta ccaggaaagt cccgctccca | 26760 |
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| tgggtcaaaag aatgctggct tcagttgtaa tcaaaactcc atcgcatcta atcgttctga | 33240 |
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| cggaagaacc atgttaatth ttattccaaa cgatctcgca gtacttcaaa ttgtagatcg  | 33360 |
| cgcagatggc atctctcgcc cccactgtgt tgggtgaaaa gcacagctag atcaaaagaa  | 33420 |
| atgcatgttt caaggtgctc aacggtggct tccagcaaag cctccacgcg cacatccaag  | 33480 |
| aacaaaagaa taccaaaaaga aggagcattt tctaactcct caatcatcat attacattcc | 33540 |
| tgcaccattc ccagataatt ttcagctttc cagccttgaa ttattcgtgt cagttcttgt  | 33600 |

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|                                                                     |       |
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| tggcaacatc aattgacatg cccttggctc taagttcttc ttttaagttct agttgtaaaa  | 33780 |
| actctctcat attatcacca aactgcttag ccagaagccc cccgggaaca agagcagggg   | 33840 |
| acgctacagt gcagtacaag cgcagacctc cccaattggc tccagcaaaa acaagattgg   | 33900 |
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| gagtttcttg taaaaattga ataaaagaaa aatttgccaa aaaaacattc aaaacctctg   | 34020 |
| ggatgcaaat gcaatagggt accgcgtgc gctccaacat tgtagtttt gaattagtct     | 34080 |
| gcaaaaaataa aaaaaaaaaac aagcgtcata tcatagtagc ctgacgaaca gatggataaa | 34140 |
| tcagtctttc catcacaaga caagccacag ggtctccagc tcgacctcg taaaacctgt    | 34200 |
| catcatgatt aaacaacagc accgaaagtt cctcgcggtg accagcatga ataattcttg   | 34260 |
| atgaagcata caatccagac atgttagcat cagttaacga gaaaaaacag ccaacatagc   | 34320 |
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| taaaaggcac aggagaataa aaaatataat tatttctctg ctgctgttca ggcaacgtcg   | 34440 |
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| acagcgggca cacaaagcac aagctctaaa gtgactctcc aacctctcca caatatatat   | 34560 |
| atacacaagc cctaaactga cgtaatggga gtaaagtgtg aaaaatcccg ccaaaccxaa   | 34620 |
| cacacacccc gaaactgcgt caccagggaa aagtacagtt tcacttccgc aatcccaaca   | 34680 |
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| cacggtcgca ccgccccctt tagccgttaa cccacagcc aatcaccaca cgatccacac    | 34800 |
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| ataga                                                               | 34865 |

<210> 82  
 <211> 34186  
 <212> DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; NG-606 (EnAd-SA-FAPBiTE) without deca-His tag

&lt;400&gt; 82

|                                                                      |      |
|----------------------------------------------------------------------|------|
| tctatctata taatataacct tatagatgga atggtgccaa tatgtaaatg aggtgatttt   | 60   |
| aaaaagtgtg gatcgtgtgg tgattggctg tggggttaac ggctaaaagg ggcgggtcga    | 120  |
| ccgtgggaaa atgacgtttt gtgggggtgg agtttttttg caagttgtcg cgggaaatgt    | 180  |
| gacgcataaa aaggcttttt tctcacggaa ctacttagtt ttcccacggg atttaacagg    | 240  |
| aaatgaggta gttttgaccg gatgcaagtg aaaattgttg attttcgcgc gaaaactgaa    | 300  |
| tgaggaagtg tttttctgaa taatgtggta tttatggcag ggtggagtat ttgttcaggg    | 360  |
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| ccgcgtaccg tgtcaaagtc ttctgttttt acgtagggtg cagctgatcg ctagggattt    | 480  |
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| aatctctgct gagactggaa atgaaatatt ggagcttggtg gtgcacgccc tgatgggaga   | 660  |
| cgatccggag ccacctgtgc agctttttga gcctcctacg cttcaggaac tgtatgattt    | 720  |
| agaggtagag ggatcggagg attctaataa ggaagctgta aatggctttt ttaccgattc    | 780  |
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| tccaggggta attgtggaaa gcggtacagg tgtaagaaaa ttacctgatt tgagttccgt    | 900  |
| ggactgtgat ttgcactgct atgaagacgg gtttcctccg agtgatgagg aggaccatga    | 960  |
| aaaggagcag tccatgcaga ctgcagcggg tgagggagtg aaggctgcca atgttggttt    | 1020 |
| tcagttggat tgccccggagc ttcctggaca tggctgtaag tcttgatgaat ttcacaggaa  | 1080 |
| aaatactgga gtaaaggaaac tgttatgttc gctttgttat atgagaacgc actgccactt   | 1140 |
| tatttacagt aagtgtgttt aagttaaaaa ttaaaggaat atgctgtttt tcacatgtat    | 1200 |
| attgagtgtg agttttgtgc ttcttattat aggtcctgtg tctgatgctg atgaatcacc    | 1260 |

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| cttgttacag ggtggggacg gacctttgga cttgagtaca cggaaacgtc caagacaata  | 1440 |
| agtgttccat atccgtgttt acttaagggtg acgtcaatat ttgtgtgaca gtgcaatgta | 1500 |
| ataaaaaatat gttaactgtt cactgggtttt tattgctttt tgggcgggga ctcaggata | 1560 |
| taagtagaag cagacctgtg tggttagctc ataggagctg gctttcatcc atggagggtt  | 1620 |
| gggccatttt ggaagacctt aggaagacta ggcaactgtt agagaacgct tcggacggag  | 1680 |
| tctccggttt ttggagattc tggttcgcta gtgaattagc taggtagtt tttaggataa   | 1740 |
| aacaggacta taaacaagaa tttgaaaagt tgttggtaga ttgccagga ctttttgaag   | 1800 |
| ctcttaattt gggccatcag gttcacttta aagaaaaagt tttatcagtt ttagactttt  | 1860 |
| caaccccagg tagaactgct gctgctgtgg cttttcttac ttttatatta gataaatgga  | 1920 |
| tcccgagac tcatttcagc aggggatacg ttttggttt catagccaca gcattgtgga    | 1980 |
| gaacatggaa ggttcgcaag atgaggacaa tcttaggtta ctggccagtg cagcctttgg  | 2040 |
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| aagaggacaa cccgagagcc ggcctggacc ctccagtgga ggaggcggag tagctgactt  | 2160 |
| gtctcctgaa ctgcaacggg tgcttactgg atctacgtcc actggacggg ataggggcgt  | 2220 |
| taagaggggag agggcatcta gtggtactga tgctagatct gagttggctt taagttaa   | 2280 |
| gagtcgcaga cgtcctgaaa ccatttggtg gcatgagggt cagaaagagg gaagggatga  | 2340 |
| agtttctgta ttgcaggaga aatattcact ggaacagggtg aaaacatgtt ggttggagcc | 2400 |
| tgaggatgat tgggaggtgg ccattaaaaa ttatgccaag atagctttga ggcctgataa  | 2460 |
| acagtataag attactagac ggattaatat ccggaatgct tgttacatat ctggaaatgg  | 2520 |
| ggctgagggtg gtaatagata ctcaagacaa ggcagttatt agatgctgca tgatggatat | 2580 |
| gtggcctggg gtagtcggta tggaagcagt aacttttgta aatgttaagt ttaggggaga  | 2640 |
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|                                                                     |      |
|---------------------------------------------------------------------|------|
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| atgcatatTTT caaagatgta acctgggcat tctgaatgaa ggcgaagcaa ggggtccgcca | 2880 |
| ctgcgcttct acagatactg gatgttttat tttgattaag ggaaatgcca gcgtaaagca   | 2940 |
| taacatgatt tgcggtgctt ccgatgagag gccttatcaa atgctcactt gtgctggtgg   | 3000 |
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| tgccgccaag atcccgctctt gggttcatgt tatgaaggac caccaagacg gtgtatccgg  | 4380 |
| tacatttagg aaatttatcg tgcagcttgg atggaaaagc gtggaaaaat ttggagacac   | 4440 |
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| tgccttgtaa | gggcagcagc  | ccttctctac  | gggtagagag | tatgcttgag  | cagcttttcg  | 7140 |
| tagcgaagcg | tgagtaaggg  | caaaggtgtc  | tctgaccatg | actttgagga  | attggtatth  | 7200 |
| gaagtcgatg | tcgtcacagg  | ctccctgttc  | ccagagttgg | aagtctaccc  | gtttcttgta  | 7260 |
| ggcgggggtg | ggcaaagcga  | aagtaacatc  | attgaagaga | atcttgccgg  | ccctgggcat  | 7320 |
| gaaattgcga | gtgatgcgaa  | aaggctgtgg  | tacttccgct | cggttattga  | taacctgggc  | 7380 |
| agctaggacg | atctcgtcga  | aaccgttgat  | gttgtgtcct | acgatgtata  | attctatgaa  | 7440 |
| acgcggcgtg | cctctgacgt  | gaggtagctt  | actgagctca | tcaaaggtta  | ggtctgtggg  | 7500 |
| gtcagataag | gcgtagtggt  | cgagagccca  | ttcgtgcagg | tgaggattcg  | ctttaaggaa  | 7560 |
| ggaggaccag | aggtccactg  | ccagtgtgtg  | ttgtaactgg | tcccgggtact | gacgaaaatg  | 7620 |
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| gatgtcgatg | gcttgccagg  | ttccgtgtcc  | cttgggcgct | accaccgtgc  | ccttgththt  | 8400 |
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|                                                                     |      |
|---------------------------------------------------------------------|------|
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| ctgaaagaga gttcaacaga atcaatctcg gtatcgttga cggcggcttg cctaaggatt   | 8700 |
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| cgcccaatga gttgagagaa tgcattcatg cccgcctcgt tccagacgcg gctgtagacc   | 8880 |
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| cgggtgaaga ccgcatagtt gcataggcgc tggaaaaggt agttgagtgt ggtggcgatg   | 9000 |
| tgctcgggtga cgaagaaata catgatccat cgtctcagcg gcatctcgct gacatcgccc  | 9060 |
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| atctcttcct cttcagggtgg ggctgcagga ggagggggaa cgcggcgacg ccggcggcgc  | 9300 |
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| aagtgggtgac tgggagggtt tccgtttggg agggagaggg cgctgattat acattttatt  | 9480 |
| aattggcccc tagggactgc acgcagagat ctgatcgtgt caagatccac gggatctgaa   | 9540 |
| aacctttcga cgaaagcgtc taaccagtca cagtcacaag gtaggctgag tacggcttct   | 9600 |
| tgtgggcggg ggtggttatg tggtcggctt gggctctctg tttcttcttc atctcgggaa   | 9660 |
| ggtgagacga tgctgctggt gatgaaatta aagtaggcag ttctaagacg gcggatggtg   | 9720 |
| gcgaggagca ccaggctttt gggctccggct tgctggatac gcaggcgatt ggccattccc  | 9780 |
| caagcattat cctgacatct agcaagatct ttgtagtagt cttgcatgag ccgttctacg   | 9840 |
| ggcacttctt cctcaccgct tctgccatgc atacgtgtga gtccaaatcc gcgcattggt   | 9900 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| tgtaccagtg ccaagtcagc tacgactctt tcggcgagga tggcttgctg tacttgggta  | 9960  |
| agggtggctt gaaagtcacg aaaatccaca aagcgggtgg aagctcctgt attaatgggtg | 10020 |
| taagcacagt tggccatgac tgaccagtta actgtctggt gaccagggcg cacgagctcg  | 10080 |
| gtgtatttaa ggcggaata ggcgcggggtg tcaaagatgt aatcgttgca ggtgcgcacc  | 10140 |
| agatactggt accctataag aaaatgcggc ggtgggtggc ggtagagagg ccatcgttct  | 10200 |
| gtagctggag cgccaggggc gaggtcttcc aacataaggc ggtgatagcc gtagatgtac  | 10260 |
| ctggacatcc aggtgattcc tgcggcggtg gtagaagccc gaggaaactc gcgtacgcgg  | 10320 |
| ttccaaatgt tgcgtagcgg catgaagtag ttcatgtag gcacggtttg accagtgagg   | 10380 |
| cgcgcgagc cattgatgct ctatagacac ggagaaaaatg aaagcggttca gcgactcgac | 10440 |
| tccgtagcct ggaggaacgt gaacgggttg ggtcgcggtg taccgccggtt cgagacttgt | 10500 |
| actcgagccg gccggagccg cggctaacgt ggtattggca ctcccgtctc gaccagcct   | 10560 |
| acaaaaatcc aggatacggg atcgagtcgt tttgctgggt tccgaatggc aggggaagtga | 10620 |
| gtcctatttt ttttttttgc cgctcagatg catcccgtgc tgcgacagat gcgcccccaa  | 10680 |
| caacagcccc cctcgcagca gcagcagcag caatcacaaa aggctgtccc tgcaactact  | 10740 |
| gcaactgccg ccgtgagcgg tgcgggacag cccgcctatg atctggactt ggaagagggc  | 10800 |
| gaaggactgg cacgtctagg tgcgccttca cccgagcggc atccgcgagt tcaactgaaa  | 10860 |
| aaagattctc gcgaggcgta tgtgccccaa cagaacctat ttagagacag aagcggcgag  | 10920 |
| gagccggagg agatgcgagc ttcccgtttt aacgcgggtc gtgagctgcg tcacggtttg  | 10980 |
| gaccgaagac gagtgttgcg ggacgaggat ttcgaagttg atgaaatgac agggatcagt  | 11040 |
| cctgccaggg cacacgtggc tgcagccaac cttgtatcgg cttacgagca gacagtaaag  | 11100 |
| gaagagcgta acttccaaaa gtcttttaaat aatcatgtgc gaaccctgat tgcccgcgaa | 11160 |
| gaagttaccc ttggtttgat gcatttgtgg gatttgatgg aagctatcat tcagaaccct  | 11220 |
| actagcaaac ctctgaccgc ccagctgttt ctggtgggtgc aacacagcag agacaatgag | 11280 |
| gctttcagag aggcgtgct gaacatcacc gaacccgagg ggagatgggt gtatgatctt   | 11340 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| atcaacattc tacagagtat catagtgcag gagcggagcc tgggcctggc cgagaagggtg | 11400 |
| gctgccatca attactcgggt tttagacttg ggaaaatatt acgctcgcaa aatctacaag | 11460 |
| actccatacg ttcccataga caaggagggtg aagatagatg ggttctacat gcgcatgacg | 11520 |
| ctcaagggtct tgaccctgag cgatgatctt ggggtgtatc gcaatgacag aatgcatcgc | 11580 |
| gcggttagcg ccagcaggag gcgcgagtta agcgacaggg aactgatgca cagtttgcaa  | 11640 |
| agagctctga ctggagctgg aaccgagggt gagaattact tcgacatggg agctgacttg  | 11700 |
| cagtggcagc ctagtcgcag ggctctgagc gccgcgacgg caggatgtga gcttccttac  | 11760 |
| atagaagagg cggatgaagg cgaggaggaa gagggcgagt acttgaaga ctgatggcac   | 11820 |
| aacccgtgtt ttttgctaga tggaacagca agcaccggat cccgcaatgc gggcggcgct  | 11880 |
| gcagagccag ccgtccggca ttaactcctc ggacgattgg acccaggcca tgcaacgtat  | 11940 |
| catggcgttg acgactcgca acccgaagc ctttagacag caaccccagg ccaaccgtct   | 12000 |
| atcggccatc atggaagctg tagtgccttc ccgctctaata cccactcatg agaaggctct | 12060 |
| ggccatcgtg aacgcgttgg tggagaacaa agctattcgt ccagatgagg ccggactggt  | 12120 |
| atacaacgct ctcttagaac gcgtggctcg ctacaacagt agcaatgtgc aaaccaatth  | 12180 |
| ggaccgtatg ataacagatg tacgcgaagc cgtgtctcag cgcgaaagggt tccagcgtga | 12240 |
| tgccaacctg ggctcgctgg tggcgtaaaa tgctttcttg agtactcagc ctgctaattg  | 12300 |
| gccgcgtggt caacaggatt atactaactt ttttaagtgt ttgagactga tggatatcaga | 12360 |
| agtacctcag agcgaagtgt atcagtccgg tcctgattac ttctttcaga ctagcagaca  | 12420 |
| gggcttgtag acggtaaatc tgagccaagc ttttaaaaac cttaaagggt tgtggggagt  | 12480 |
| gcatgccccg gtaggagaaa gagcaaccgt gtctagcttg ttaactccga actccgcct   | 12540 |
| attattactg ttggtagctc ctttcaccga cagcggtagc atcgaccgta attcctatth  | 12600 |
| gggttaccta ctaaacctgt atcgcgaagc catagggcaa agtcagggtgg acgagcagac | 12660 |
| ctatcaagaa attacccaag tcagtcgcgc tttgggacag gaagacactg gcagtttgga  | 12720 |
| agccactctg aacttcttgc ttaccaatcg gtctcaaaag atccctcctc aatatgctct  | 12780 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| tactgcggag gaggagagga tccttagata tgtgcagcag agcgtgggat tgtttctgat  | 12840 |
| gcaagagggg gcaactccga ctgcagcact ggacatgaca gcgcgaaata tggagcccag  | 12900 |
| catgtatgcc agtaaccgac ctttcattaa caaactgctg gactacttgc acagagctgc  | 12960 |
| cgctatgaac tctgattatt tcaccaatgc catcttaaac ccgcactggc tgccccacc   | 13020 |
| tggtttctac acgggcgaat atgacatgcc cgaccctaata gacggatttc tgtgggacga | 13080 |
| cgtggacagc gatgtttttt cacctctttc tgatcatcgc acgtggaaaa aggaaggcgg  | 13140 |
| cgatagaatg cattcttctg catcgctgtc cgggggtcatg ggtgctaccg cggctgagcc | 13200 |
| cgagtctgca agtccttttc ctagtctacc cttttctcta cacagtgtac gtagcagcga  | 13260 |
| agtgggtaga ataagtcgcc cgagttaaat gggcgaagag gagtatctaa acgattcctt  | 13320 |
| gctcagaccg gcaagagaaa aaaatttccc aaacaatgga atagaaagtt tgggtggataa | 13380 |
| aatgagtaga tggaagactt atgctcagga tcacagagac gagcctggga tcatggggat  | 13440 |
| tacaagtaga gcgagccgta gacgccagcg ccatgacaga cagaggggtc ttgtgtggga  | 13500 |
| cgatgaggat tcggccgatg atagcagcgt gctggacttg ggtgggagag gaaggggcaa  | 13560 |
| cccgtttgct catttgcgcc ctcgcttggg tggtatgttg taaaaaaaaa taaaaaaaaa  | 13620 |
| actcaccaag gccatggcga cgagcgtacg ttcgttcttc tttattatct gtgtctagta  | 13680 |
| taatgaggcg agtcgtgcta ggcggagcgg tgggtgtatcc ggagggtcct cctccttcgt | 13740 |
| acgagagcgt gatgcagcag cagcaggcga cggcgggtgat gcaatcccca ctggaggctc | 13800 |
| cctttgtgcc tccgcgatac ctggcaccta cggagggcag aaacagcatt cgttattcgg  | 13860 |
| aactggcacc tcagtacgat accaccaggt tgtatctggt ggacaacaag tcggcggaca  | 13920 |
| ttgcttctct gaactatcag aatgaccaca gcaacttctt gaccacggtg gtgcaaaaca  | 13980 |
| atgactttac ccctacggaa gccagcacc agaccattaa ctttgatgaa cgatcgcggt   | 14040 |
| ggggcgggtca gctaaagacc atcatgcata ctaacatgcc aaacgtgaac gagtatatgt | 14100 |
| ttagtaacaa gttcaaagcg cgtgtgatgg tgtccagaaa acctcccgac ggtgctgcag  | 14160 |
| ttgggggatac ttatgatcac aagcaggata ttttgaaata tgagtggttc gagtttactt | 14220 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| tgccagaagg caacttttca gttactatga ctattgattt gatgaacaat gccatcatag  | 14280 |
| ataattactt gaaagtgggt agacagaatg gagtgcttga aagtgacatt ggtgttaagt  | 14340 |
| tcgacaccag gaacttcaag ctgggatggg atcccgaac caagttgatc atgcctggag   | 14400 |
| tgtatacgta tgaagccttc catcctgaca ttgtcttact gcctggctgc ggagtggatt  | 14460 |
| ttaccgagag tcgtttgagc aaccttcttg gtatcagaaa aaaacagcca tttcaagagg  | 14520 |
| gttttaagat tttgtatgaa gatttagaag gtggtaatat tccggccctc ttggatgtag  | 14580 |
| atgcctatga gaacagtaag aaagaacaaa aagccaaaat agaagctgct acagctgctg  | 14640 |
| cagaagctaa ggcaaacata gttgccagcg actctacaag ggttgctaac gctggagagg  | 14700 |
| tcagaggaga caattttgcg ccaacacctg ttccgactgc agaatcatta ttggccgatg  | 14760 |
| tgtctgaagg aacggacgtg aaactcacta ttcaacctgt agaaaaagat agtaagaata  | 14820 |
| gaagctataa tgtgttgga gacaaaatca acacagccta tcgcagttgg tatctttcgt   | 14880 |
| acaattatgg cgatcccgaa aaaggagtc gttcctggac attgctcacc acctcagatg   | 14940 |
| tcacctgcgg agcagagcag gtctactggg cgcttccaga catgatgaag gatcctgtca  | 15000 |
| ctttccgctc cactagacaa gtcagtaact accctgtggg gggcgcagag cttatgccc   | 15060 |
| tcttctcaaa gagcttctac aacgaacaag ctgtgtactc ccagcagctc cgccagtcca  | 15120 |
| cctcgcttac gcacgtcttc aaccgctttc ctgagaacca gattttaatc cgtccgccgg  | 15180 |
| cgcccacat taccaccgtc agtgaaaacg ttcctgctct cacagatcac gggaccctgc   | 15240 |
| cggtgcgcag cagtatccgg ggagtccaac gtgtgaccgt tactgacgcc agacgccgca  | 15300 |
| cctgtcccta cgtgtacaag gcactgggca tagtcgcacc gcgcgtcctt tcaagccgca  | 15360 |
| ctttctaaaa aaaaaaaaaa tgtccattct tatctcgccc agtaataaca ccggttgggg  | 15420 |
| tctgcgcgct ccaagcaaga tgtacggagg cgacgcgaaa cgcttctaccc aacatcctgt | 15480 |
| ccgtgttcgc ggacattttc gcgctccatg gggcgccctc aagggccgca ctcgcgttcg  | 15540 |
| aaccaccgtc gatgatgtaa tcgatcaggt ggttgccgac gcccgtaatt atactcctac  | 15600 |
| tgcgcctaca tctactgtgg atgcagttat tgacagtgtg gtggctgacg ctcgcaacta  | 15660 |

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|                                   |                                   |       |
|-----------------------------------|-----------------------------------|-------|
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| gcgagccgca agagctctgc tacgaagagc  | tagacgcgtg gggcgaagag ccatgcttag  | 15780 |
| ggcggccaga cgtgcagctt cgggcgccag  | cgccggcagg tcccgcaggc aagcagccgc  | 15840 |
| tgctgcagcg gcgactattg ccgacatggc  | ccaatcgcga agaggcaatg tatactgggt  | 15900 |
| gcgtgacgct gccaccggtc aacgtgtacc  | cgtgcgcacc cgtccccctc gcacttagaa  | 15960 |
| gatactgagc agtctccgat gttgtgtccc  | agcggcgagg atgtccaagc gcaaatacaa  | 16020 |
| ggaagaaatg ctgcaggtta tcgcacctga  | agtctacggc caaccgttga aggatgaaaa  | 16080 |
| aaaaccccg c aaaatcaagc gggttaaaaa | ggacaaaaaa gaagaggaag atggcgatga  | 16140 |
| tgggctggcg gagtttgtgc gcgagtttgc  | cccacggcga cgcgtgcaat ggcgtagggcg | 16200 |
| caaagttcga catgtgttga gacctggaac  | ttcgggtggtc ttacacccg gcgagcgttc  | 16260 |
| aagcgctact ttttaagcgtt cctatgatga | ggtgtacggg gatgatgata ttcttgagca  | 16320 |
| ggcggctgac cgattaggcg agtttgctta  | tggcaagcgt agtagaataa cttccaagga  | 16380 |
| tgagacagtg tcgataccct tggatcatgg  | aaatcccacc cctagtctta aaccggtcac  | 16440 |
| tttgcagcaa gtgttaccgc taactccgcg  | aacaggtgtt aaacgcgaag gtgaagattt  | 16500 |
| gtatcccact atgcaactga tggtaaccaa  | acgccagaag ttggaggacg ttttggagaa  | 16560 |
| agtaaaaagt gatccagata ttcaacctga  | ggttaaagt agacccatta agcaggtagc   | 16620 |
| gcctggctctg ggggtacaaa ctgtagacat | taagattccc actgaaagta tgggaagtga  | 16680 |
| aactgaaccc gcaaagccta ctgccacctc  | cactgaagtg caaacggatc catggatgcc  | 16740 |
| catgcctatt acaactgacg ccgccggtcc  | cactcgaaga tcccgcgaa agtacggtcc   | 16800 |
| agcaagtctg ttgatgcca attatgttgt   | acacccatct attattccta ctcttggtta  | 16860 |
| ccgaggcact cgctactatc gcagccgaaa  | cagtacctcc cgccgtcgcc gcaagacacc  | 16920 |
| tgcaaatacgc agtcgtcgcc gtagacgcac | aagcaaaccg actcccggcg ccctgggtgcg | 16980 |
| gcaagtgtac cgcaatggta gtgcggaacc  | tttgacactg ccgcgtgcgc gttaccatcc  | 17040 |
| gagtatcatc acttaataca tgttgccgct  | gcctccttgc agatatggcc ctacttgtc   | 17100 |

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|             |             |             |             |             |             |       |
|-------------|-------------|-------------|-------------|-------------|-------------|-------|
| gccttcgcgt  | tcccatcact  | ggttaccgag  | gaagaaactc  | gcgccgtaga  | agagggatgt  | 17160 |
| tgggacgcgg  | aatgcgacgc  | tacaggcgac  | ggcgtgctat  | ccgcaagcaa  | ttgcgggggtg | 17220 |
| gttttttacc  | agccttaatt  | ccaattatcg  | ctgctgcaat  | tggcgcgata  | ccaggcatag  | 17280 |
| cttccgtggc  | ggttcaggcc  | tcgcaacgac  | attgacattg  | gaaaaaaacg  | tataaataaa  | 17340 |
| aaaaaaaaaa  | tacaatggac  | tctgacactc  | ctggtcctgt  | gactatgttt  | tcttagagat  | 17400 |
| ggaagacatc  | aatttttcat  | ccttggctcc  | gcgacacggc  | acgaagccgt  | acatgggcac  | 17460 |
| ctggagcgac  | atcggcacga  | gccaactgaa  | cggggggcgcc | ttcaattgga  | gcagtatctg  | 17520 |
| gagcgggctt  | aaaaattttg  | gctcaaccat  | aaaaacatac  | gggaacaaag  | cttggaacag  | 17580 |
| cagtacagga  | caggcgctta  | gaaataaaact | taaagaccag  | aacttccaac  | aaaaagtagt  | 17640 |
| cgatgggata  | gcttccggca  | tcaatggagt  | ggtagatttg  | gctaaccagg  | ctgtgcagaa  | 17700 |
| aaagataaac  | agtcgttttg  | acccgccgcc  | agcaacccca  | ggtgaaatgc  | aagtggagga  | 17760 |
| agaaaattcct | ccgccagaaa  | aacgaggcga  | caagcgtccg  | cgtcccgatt  | tggaagagac  | 17820 |
| gctggtgacg  | cgcgtagatg  | aaccgccttc  | ttatgaggaa  | gcaacgaagc  | ttggaatgcc  | 17880 |
| caccactaga  | ccgatagccc  | caatggccac  | cgggggtgatg | aaaccttctc  | agttgcatcg  | 17940 |
| acccgtcacc  | ttggatttgc  | cccctcccc   | tgctgtact   | gctgtacccg  | cttctaagcc  | 18000 |
| tgtcgctgcc  | ccgaaaccag  | tcgccgtagc  | caggtcacgt  | cccggggggcg | ctcctcgtcc  | 18060 |
| aaatgcgcac  | tggcaaaaata | ctctgaacag  | catcgtgggt  | ctaggcgtgc  | aaagtgtaaa  | 18120 |
| acgccgtcgc  | tgcttttaat  | taaatatgga  | gtagcgctta  | acttgccat   | ctgtgtatat  | 18180 |
| gtgtcattac  | acgccgtcac  | agcagcagag  | gaaaaaaagga | agaggtcgtg  | cgtcgacgct  | 18240 |
| gagttacttt  | caagatggcc  | accccatcga  | tgctgcccc   | atgggcatac  | atgcacatcg  | 18300 |
| ccggacagga  | tgcttcggag  | tacctgagtc  | cgggtctgggt | gcagttcgcc  | cgcgccacag  | 18360 |
| acacctactt  | caatctggga  | aataagttta  | gaaatcccac  | cgtagcgccg  | accacgatg   | 18420 |
| tgaccaccga  | ccgtagccag  | cggctcatgt  | tgcgcttcgt  | gcccgttgac  | cgggaggaca  | 18480 |
| atacatactc  | ttacaaaagt  | cgggtacaccc | tggccgtggg  | cgacaacaga  | gtgctggata  | 18540 |



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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| tggccagcac gttctttgac attaggggtg tgttggacag aggtcccagt ttcaaaccct  | 18600 |
| attctggtac ggcttacaac tccctggctc cttaaaggcg tccaaataca tctcagtgga  | 18660 |
| ttgcagaagg tgtaaaaaat acaactggtg aggaacacgt aacagaagag gaaaccaata  | 18720 |
| ctactactta cacttttggc aatgctcctg taaaagctga agctgaaatt acaaaagaag  | 18780 |
| gactcccagt aggtttggaa gtttcagatg aagaaagtaa accgatttat gctgataaaa  | 18840 |
| catatcagcc agaacctcag ctgggagatg aaacttggac tgaccttgat ggaaaaaccg  | 18900 |
| aaaagtatgg aggcagggtc ctcaaaccgc atactaagat gaaaccatgc tacgggtcct  | 18960 |
| ttgccaaacc tactaatgtg aaaggcggtc aggcaaaaca aaaaacaacg gagcagccaa  | 19020 |
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| atgtagtgtg caaacctgga acagaagaca caagttccga agctaatttg ggacaacaat  | 19200 |
| ctatgccccaa cagacccaac tacattggct tcagagataa ctttattgga cttatgtact | 19260 |
| ataacagtac tggtaacatg ggggtgctgg ctggtcaagc gtctcagtta aatgcagtgg  | 19320 |
| ttgacttgca ggacagaaac acagaacttt cttaccaact cttgcttgac tctctgggcg  | 19380 |
| acagaaccag atacttttagc atgtggaatc aggctgtgga cagttatgat cctgatgtac | 19440 |
| gtgttattga aaatcatggt gtggaagatg aacttcccaa ctactgtttt ccactggacg  | 19500 |
| gcataggtgt tccaacaacc agttacaaat caatagttcc aaatggagac aatgcgccta  | 19560 |
| attggaagga acctgaagta aatggaacaa gtgagatcgg acagggtaat ttgtttgcca  | 19620 |
| tggaaattaa ccttcaagcc aatctatggc gaagtttcct ttattccaat gtggctctat  | 19680 |
| atctcccaga ctctgtaaaa tacaccccg tccaatgtcac tcttccagaa aacaaaaaca  | 19740 |
| cctacgacta catgaacggg cgggtggtgc cgccatctct agtagacacc tatgtgaaca  | 19800 |
| ttggtgccag gtggtctctg gatgccatgg acaatgtcaa cccattcaac caccaccgta  | 19860 |
| acgctggctt gcgttaccga tccatgcttc tgggtaacgg acgttatgtg cttttccaca  | 19920 |
| tacaagtgcc tcaaaaattc ttcgctgtta aaaacctgct gcttctccca ggctcctaca  | 19980 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| cttatgagtg gaacttttagg aaggatgtga acatggttct acagagttcc ctcggtaacg | 20040 |
| acctgcgggt agatggcgcc agcatcagtt tcacgagcat caacctctat gctacttttt  | 20100 |
| tcccatggc tcacaacacc gcttccaccc ttgaagccat gctgcggaat gacaccaatg   | 20160 |
| atcagtcatt caacgactac ctatctgcag ctaacatgct ctacccatt cctgccaatg   | 20220 |
| caaccaatat tccattttcc attccttctc gcaactgggc ggctttcaga ggctggcat   | 20280 |
| ttaccagact gaaaaccaa gaaactccct ctttggggtc tggatttgac ccctactttg   | 20340 |
| tctattctgg ttctattccc tacctggatg gtaccttcta cctgaaccac acttttaaga  | 20400 |
| aggtttccat catgtttgac tcttcagtga gctggcctgg aaatgacagg ttactatctc  | 20460 |
| ctaacgaatt tgaaataaag cgactgtgg atggcgaagg ctacaacgta gcccaatgca   | 20520 |
| acatgaccaa agactgggtc ttggtacaga tgctcgccaa ctacaacatc ggctatcagg  | 20580 |
| gcttctacat tccagaagga taaaagatc gcatgtattc atttttcaga aacttccagc   | 20640 |
| ccatgagcag gcaggtggtt gatgaggtca attacaaaga cttcaaggcc gtcgccatac  | 20700 |
| cctaccaaca caacaactct ggctttgtgg gttacatggc tccgaccatg cgccaaggtc  | 20760 |
| aaccctatcc cgctaactat ccctatccac tcattggaac aactgccgta aatagtgtta  | 20820 |
| cgcagaaaaa gttcttgtgt gacagaacca tgtggcgcat accgttctcg agcaacttca  | 20880 |
| tgtctatggg ggcccttaca gacttgggac agaatatgct ctatgccaac tcagctcatg  | 20940 |
| ctctggacat gacctttgag gtggatccca tggatgagcc caccctgctt tatcttctct  | 21000 |
| tcgaagtttt cgacgtggtc agagtgcac agccacaccg cggcatcatc gaggcagtct   | 21060 |
| acctgcgtac accgttctcg gccggtaacg ctaccacgta agaagcttct tgcttcttgc  | 21120 |
| aaatagcagc tgcaaccatg gcctgcggat cccaaaacgg ctccagcgag caagagctca  | 21180 |
| gagccattgt ccaagacctg ggttgcggac cctatTTTTT gggaacctac gataagcgct  | 21240 |
| tccgggggtt catggcccc gataagctcg cctgtgccat tgtaaatacg gccggacgtg   | 21300 |
| agacgggggg agagcactgg ttggctttcg gttggaaccc acgttctaac acctgctacc  | 21360 |
| TTTTTgatcc ttttggattc tcggatgatc gtctcaaaca gatttaccag tttgaatatg  | 21420 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| aggggtctcct gcgccgcagc gctcttgcta ccaaggaccg ctgtattacg ctggaaaaat | 21480 |
| ctacccagac cgtgcagggt ccccgttctg ccgcctgcgg acttttctgc tgcattgttcc | 21540 |
| ttcacgcctt tgtgcactgg cctgaccgtc ccatggacgg aaaccccacc atgaaattgc  | 21600 |
| taactggagt gccaaacaac atgcttcatt ctctaaagt ccagcccacc ctgtgtgaca   | 21660 |
| atcaaaaagc actctaccat tttcttaata cccattcgcc ttattttctgc tcccatcgta | 21720 |
| cacacatcga aagggccact gcgttcgacc gtatggatgt tcaataatga ctcatgtaaa  | 21780 |
| caacgtgttc aataaacatc actttatttt ttacatgta tcaaggctct gcattactta   | 21840 |
| tttatttaca agtcgaatgg gttctgacga gaatcagaat gacccgcagg cagtgatacg  | 21900 |
| ttgcgggaact gatacttggg ttgccacttg aattcgggaa tcaccaactt gggaaccggt | 21960 |
| atatcgggca ggatgtcact ccacagcttt ctggtcagct gcaaagctcc aagcagggtca | 22020 |
| ggagccgaaa tcttgaaatc acaattagga ccagtgttt gagcgcgaga gttgcggtac   | 22080 |
| accggattgc agcactgaaa caccatcagc gacggatgtc tcacgcttgc cagcacggtg  | 22140 |
| ggatctgcaa tcatgcccac atccagatct tcagcattgg caatgctgaa cgggggtcatc | 22200 |
| ttgcagggtct gcctacccat ggcgggcacc caattaggct tgtggttgca atcgcagtg  | 22260 |
| aggggggatca gtatcatctt ggctgatcc tgtctgattc ctggatacac ggctctcatg  | 22320 |
| aaagcatcat attgcttgaa agcctgtgg gctttactac cctcgggtata aaacatccc   | 22380 |
| caggacctgc tcgaaaactg gttagctgca cagccggcat cattcacaca gcagcgggcg  | 22440 |
| tcattgttag ctatttgcac cacacttctg cccagcgggt tttgggtgat tttggttcgc  | 22500 |
| tcgggattct cctttaaggc tcgttgtccg ttctcgctgg ccacatccat ctcgataatc  | 22560 |
| tgctccttct gaatcataat attgccatgc aggcacttca gcttgccctc ataattcattg | 22620 |
| cagccatgag gccacaacgc acagcctgta cattcccaat tatggtgggc gatctgagaa  | 22680 |
| aaagaatgta tcattcccctg cagaaatctt cccatcatcg tgctcagtg cttgtgacta  | 22740 |
| gtgaaagtta actggatgcc tcgggtgctc tcgtttacgt actggtgaca gatgcgcttg  | 22800 |
| tattgttcgt gttgctcagg cattagttta aaagagggtc taagttcggt atccagcctg  | 22860 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| tactttctcca tcagcagaca catcacttcc atgcctttct cccaagcaga caccaggggc | 22920 |
| aagctaatacg gattcttaac agtgcaggca gcagctcctt tagccagagg gtcacattta | 22980 |
| gcgatctttct caatgcttct tttgccatcc ttctcaacga tgcgcacggg cgggtagctg | 23040 |
| aaaccactg ctacaagttg cgcctcttct ctttcttctt cgctgtcttg actgatgtct   | 23100 |
| tgcatgggga tatgtttggt cttccttggc ttcttttttg ggggtatcgg aggaggagga  | 23160 |
| ctgtcgctcc gttccggaga caggaggat tgtgacgttt cgctcaccat taccaactga   | 23220 |
| ctgtcggtag aagaacctga cccacacagg cgacagggtg ttctcttcgg gggcagaggt  | 23280 |
| ggaggcgatt gcgaagggt cgggtccgac ctggaaggcg gatgactggc agaaccctt    | 23340 |
| ccgcgttcgg ggggtgtgct cctgtggcgg tcgcttaact gatttccttc gcggctggcc  | 23400 |
| attgtgttct cctaggcaga gaaacaacag acatggaaac tcagccattg ctgtcaacat  | 23460 |
| cgccacgagt gccatcacat ctcgtcctca gcgacgagga aaaggagcag agcttaagca  | 23520 |
| ttccaccgcc cagtcctgcc accacctcta ccctagaaga taaggaggtc gacgcatctc  | 23580 |
| atgacatgca gaataaaaaa gcgaaagagt ctgagacaga catcgagcaa gaccgggct   | 23640 |
| atgtgacacc ggtggaacac gaggaagagt tgaaacgctt tctagagaga gaggatgaaa  | 23700 |
| actgccccaa acaacgagca gataactatc accaagatgc tggaaatagg gatcagaaca  | 23760 |
| ccgactacct catagggtt gacgggggaag acgcgtcct taaacatcta gcaagacagt   | 23820 |
| cgctcatagt caaggatgca ttattggaca gaactgaagt gcccatcagt gtggaagagc  | 23880 |
| tcagccgcgc ctacgagctt aacctctttt cacctcgtac tcccccaaa cgtcagccaa   | 23940 |
| acggcacctg cgagccaaat cctcgcttaa acttttatcc agcttttgct gtgccagaag  | 24000 |
| tactggctac ctatcacatc ttttttaaaa atcaaaaaat tccagtctcc tgccgcgcta  | 24060 |
| atcgcacccg cgccgatgcc ctactcaatc tgggacctgg ttcacgctta cctgatatag  | 24120 |
| cttccttga agaggttcca aagatcttcg agggctctggg caataatgag actcgggccg  | 24180 |
| caaatgctct gcaaaaaggga gaaaatggca tggatgagca tcacagcgtt ctggtggaat | 24240 |
| tggaaggcga taatgccaga ctcgcagtac tcaagcgaag catcgaggtc acacacttcg  | 24300 |

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|            |            |            |            |            |            |       |
|------------|------------|------------|------------|------------|------------|-------|
| catatcccg  | tgcaacctg  | ccccctaaag | tcatgacggc | ggcatggac  | cagttactca | 24360 |
| ttaagcgcg  | aagtcctt   | tcagaagaca | tgcatgaccc | agatgcctgt | gatgagggtg | 24420 |
| aaccagtgg  | cagtgatgag | cagctaacc  | gatggctggg | caccgactct | cccagggatt | 24480 |
| tggaagagcg | tcgaagctt  | atgatggccg | tggtgctgg  | taccgtagaa | ctagagtgtc | 24540 |
| tccgacgtt  | ctttaccgat | tcagaaacct | tgcgcaaa   | cgaagagaat | ctgcactaca | 24600 |
| cttttagaca | cggctttgtg | cggcaggcat | gcaagatatc | taacgtggaa | ctcaccaacc | 24660 |
| tggtttccta | catgggtatt | ctgcatgaga | atcgctagg  | acaaagcgtg | ctgcacagca | 24720 |
| ccctgaagg  | ggaagcccg  | cgtgattaca | tccgcgattg | tgtctatctg | tacctgtgcc | 24780 |
| acacgtggca | aaccggcatg | ggtgtatggc | agcaatgttt | agaagaacag | aacttgaaag | 24840 |
| agcttgacaa | gctcttacag | aaatctctta | aggttctgtg | gacagggttc | gacgagcgca | 24900 |
| ccgtcgcttc | cgacctggca | gacctcatct | tcccagagcg | tctcagggtt | actttgcgaa | 24960 |
| acggattgcc | tgactttatg | agccagagca | tgcttaacaa | ttttcgctct | ttcatcctgg | 25020 |
| aacgctccgg | tatcctgccc | gccacctgct | gcgcactgcc | ctccgacttt | gtgcctctca | 25080 |
| cctaccgcga | gtgccccccg | ccgctatgga | gtcactgcta | cctgttccgt | ctggccaact | 25140 |
| atctctccta | ccactcggat | gtgatcgagg | atgtgagcgg | agacggcttg | ctggagtgtc | 25200 |
| actgccgctg | caatctgtgc | acgccccacc | ggtccctagc | ttgcaacccc | cagttgatga | 25260 |
| gcgaaaccca | gataataggc | acctttgaat | tgcaaggccc | cagcagccaa | ggcgatgggt | 25320 |
| cttctcctgg | gcaaagttaa | aaactgaccc | cgggactgtg | gacctccgcc | tacttgcgca | 25380 |
| agtttgctcc | ggaagattac | caccctatg  | aaatcaagtt | ctatgaggac | caatcacagc | 25440 |
| ctccaaaggc | cgaactttcg | gcctgcgtca | tcaccaggg  | ggcaattctg | gccaattgc  | 25500 |
| aagccatcca | aaaatcccg  | caagaatttc | tactgaaaaa | gggtaagggg | gtctaccttg | 25560 |
| accccagac  | cggcgaggaa | ctcaacacaa | ggttcctca  | ggatgtcca  | acgacgagaa | 25620 |
| aacaagaagt | tgaagggtga | gccgccgccc | ccagaagata | tggaggaaga | ttgggacagt | 25680 |
| caggcagagg | aggcggagga | ggacagtctg | gaggacagtc | tggaggaaga | cagtttgag  | 25740 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| gaggaaaacg aggaggcaga ggaggtggaa gaagtaaccg ccgacaaaca gttatcctcg   | 25800 |
| gctgcggaga caagcaacag cgctaccatc tccgctccga gtcgaggaac ccggcggcgt   | 25860 |
| cccagcagta gatgggacga gaccggacgc ttcccgaacc caaccagcgc ttccaagacc   | 25920 |
| ggtaagaagg atcggcaggg atacaagtcc tggcgggggc ataagaatgc catcatctcc   | 25980 |
| tgcttgcatg agtgcggggg caacatatcc ttcacgcggc gctacttgct attccaccat   | 26040 |
| ggggtgaact ttccgcgcaa tgttttgcat tactaccgtc acctccacag cccctactat   | 26100 |
| agccagcaaa tcccggcagt ctgcacagat aaagacagcg gcggcgacct ccaacagaaa   | 26160 |
| accagcagcg gcagttagaa aatacacaac aagtgcagca acaggaggat taaagattac   | 26220 |
| agccaacgag ccagcgcaaa cccgagagtt aagaaatcgg atctttccaa ccctgtatgc   | 26280 |
| catcttccag cagagtcggg gtcaagagca ggaactgaaa ataaaaaacc gatctctgcg   | 26340 |
| ttcgctcacc agaagttggt tgtatcacia gagcgaagat caacttcagc gcactctcga   | 26400 |
| ggacgccgag gctctcttca acaagtactg cgcgctgact cttaaagagt aggcagcgac   | 26460 |
| cgcgcttatt caaaaaaggc gggaattaca tcatcctcga catgagtaaa gaaattccca   | 26520 |
| cgcccttacat gtggagttat caaccccaaa tgggattggc ggcaggcgcc tcccaggact  | 26580 |
| actccacccg catgaattgg ctacgcgccg ggcccttctat gatttctcga gttaatgata  | 26640 |
| tacgcgccta ccgaaaccaa atacttttgg aacagtcagc tcttaccacc acgccccgcc   | 26700 |
| aacaccttaa tcccagaaat tggcccgccg ccctagtgtgta ccaggaaagt cccgctccca | 26760 |
| ccactgtatt acttcctcga gacgcccagg ccgaagtcca aatgactaat gcaggtgcgc   | 26820 |
| agttagctgg cggctccacc ctatgtcgtc acaggcctcg gcataatata aaacgcctga   | 26880 |
| tgatcagagg ccgaggtatc cagctcaacg acgagtcggt gagctctccg cttggtctac   | 26940 |
| gaccagacgg aatctttcag attgccggct gcgggagatc ttccttcacc cctcgtcagg   | 27000 |
| ctgttctgac tttggaaagt tcgtcttcgc aaccccgctc gggcggaatc gggaccgttc   | 27060 |
| aatttggtgga ggagtttact ccctctgtct atttcaaccc cttctccgga tctcctgggc  | 27120 |
| attacccgga cgagttcata ccgaacttcg acgcgattag cgagtcagtg gacggctacg   | 27180 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| attgatgtct ggtgacgcgg ctgagctatc tcggctgcga catctagacc actgccgccg  | 27240 |
| ctttcgctgc tttgcccggg aactcattga gttcatctac ttcgaactcc ccaaggatca  | 27300 |
| ccctcaaggt ccggcccacg gaggcgcatg ttctatcgaa ggcaaaatag actctcgcct  | 27360 |
| gcaacgaatt ttctcccagc ggcccgtgct gatcgagcga gaccagggaac acaccacggt | 27420 |
| ttccatctac tgcatttgta atcaccccg attgcatgaa agcctttgct gtcttatgtg   | 27480 |
| tactgagttt aataaaaact gaattaagac tctcctacgg actgccgctt cttcaaccgc  | 27540 |
| gattttacaa ccagaagaac gaaacttttc ctgtcgtcca ggactctggt aacttcacct  | 27600 |
| ttcctactca caaactagaa gctcaacgac tacaccgctt ttccagaagc attttccta   | 27660 |
| ctaatactac tttcaaaacc ggaggtagc tccaaggctt tcctacagaa aacccttggg   | 27720 |
| tggaagcggg ccttgtagtg ctaggaattc ttgcccgttg gcttgtagatt attctttgct | 27780 |
| acctatacac accttgcttc actttcttag tgggtgtgtg gtattgggtt aaaaaatggg  | 27840 |
| gcccatacta gtcttgcttg ttttactttc gcttttggaa ccgggttctg ccaattacga  | 27900 |
| tccatgtcta gacttcgacc cagaaaactg cacacttact ttgaccccg acacaagccg   | 27960 |
| catctgtgga gttcatcgcc tctcttacga acttggcccc caacgacaaa aatttacctg  | 28020 |
| catggtggga atcaaccca tagttatcac ccagcaaagt ggagatacta agggttgcat   | 28080 |
| tcactgtccc tgcgattcca tcgagtgac ctacaccctg ctgaagaccc tatgcggcct   | 28140 |
| aagagacctg ctaccaatga attaaaaaat gattaataaa aaatcactta cttgaaatca  | 28200 |
| gcaataaggt ctctgttgaa attttctccc agcagcacct cacttcctc ttcccaactc   | 28260 |
| tggatttcta aaccccgctc agcggcatac tttctccata ctttaaaggg gatgtcaaat  | 28320 |
| tttagctcct ctctgtacc cacaatcttc atgtctttct tcccagatga ccaagagagt   | 28380 |
| ccggctcagt gactccttca accctgtcta cccctatgaa gatgaaagca cctcccaaca  | 28440 |
| cccctttata aaccagggt ttatttcccc aaatggcttc acacaaagcc caaacggagt   | 28500 |
| tcttacttta aaatgttta cccactaac aaccacaggc ggatctctac agctaaaagt    | 28560 |
| gggaggggga cttacagtgg atgacaccaa cgggtttttg aaagaaaaca taagtgccac  | 28620 |

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|             |             |             |             |             |            |       |
|-------------|-------------|-------------|-------------|-------------|------------|-------|
| cacaccactc  | gttaagactg  | gtcactctat  | aggttttacca | ctaggagccg  | gattgggaac | 28680 |
| gaatgaaaaat | aaacttttgta | tcaaattagg  | acaaggactt  | acattcaatt  | caaacaacat | 28740 |
| ttgcattgat  | gacaatatta  | acaccttatg  | gacaggagtc  | aaccccaccg  | aagccaactg | 28800 |
| tcaaatcatg  | aactccagtg  | aatctaata   | ttgcaaatta  | attctaacac  | tagttaaaac | 28860 |
| tggagcacta  | gtcactgcat  | ttgtttatgt  | tataggagta  | tctaacaatt  | ttaatatgct | 28920 |
| aactacacac  | agaaatataa  | atctttactgc | agagctgttt  | ttcgattcta  | ctggtaattt | 28980 |
| actaactaga  | ctctcatccc  | tcaaaactcc  | acttaatcat  | aaatcaggac  | aaaacatggc | 29040 |
| tactggtgcc  | attactaatg  | ctaaaggttt  | catgcccagc  | acgactgcct  | atcctttcaa | 29100 |
| tgataattct  | agagaaaaag  | aaaactacat  | ttacggaact  | tggttactaca | cagctagtga | 29160 |
| tcgcactgct  | tttcccattg  | acatatctgt  | catgcttaac  | cgaagagcaa  | taaatgacga | 29220 |
| gacatcatat  | tgtattcgta  | taacttggtc  | ctggaacaca  | ggagatgccc  | cagaggtgca | 29280 |
| aacctctgct  | acaaccctag  | tcacctcccc  | atttaccttt  | tactacatca  | gagaagacga | 29340 |
| ctgacaaaata | aagtttgcca  | tcgccaggcc  | caccatgggc  | tggagctgca  | tcattctgtt | 29400 |
| cctggtcgca  | actgctaccg  | gagtcatttc  | ggacatcgtc  | atgacccaaa  | gccctgactc | 29460 |
| gctcgctgtg  | tcactgggag  | agcgggcgac  | tatcaactgc  | aaatcatccc  | agagcctgct | 29520 |
| gtattcacgc  | aatcagaaaa  | actacctggc  | ctggatatcag | cagaagccgg  | gccagcctcc | 29580 |
| caagctgctg  | atcttctggg  | cctccacccg  | cgaagcggc   | gtgccggacc  | gcttcagcgg | 29640 |
| aagcggattc  | ggaactgact  | ttactctgac  | cattagctcc  | ttgcaggcgg  | aggacgtggc | 29700 |
| cgtctactac  | tgccagcagt  | atcttctcta  | tccgctcacc  | tttgggcaag  | gcaccaaggt | 29760 |
| ggagattaag  | ggagggggcg  | gcagcggggg  | aggcggcagc  | ggcggcgggg  | gatcgcaggt | 29820 |
| ccagctcgtc  | caatccggag  | ccgaagtcaa  | gaagccggga  | gcgtcgggtca | aggtcagctg | 29880 |
| caaaacttcg  | cgctacacct  | tcactgagta  | cacgatccac  | tgggtccgcc  | aggcgcccgg | 29940 |
| ccagcggctg  | gagtggatcg  | gcgggatcaa  | cccaaacaac  | ggaatcccaa  | attacaatca | 30000 |
| gaaatttaaa  | gggcgggtga  | ctatcacctg  | ggataacctg  | gcctccacgg  | cgtacatgga | 30060 |



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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| gctctcatca ctcagatcgg aggacaccgc ggtctattac tgcgcccgcc gccggatcgc   | 30120 |
| ttatggatac gatgaaggac atgcgatgga ttactggggc cagggcaccc tcgtcacggt   | 30180 |
| gtcgtcagga ggcgggcggtt cagatgtgca actcgtgcag tccgggtgcgg aagtgaaaaa | 30240 |
| gccggggcgcg agcgtcaaag tgtcatgcaa ggcgtcagga tatacgttta ctagatacac  | 30300 |
| tatgcactgg gtgcgccagg cacctgggtca gggccttgaa tggatcggct acatcaatcc  | 30360 |
| gtcgagaggc tacactaatt acgcggactc agtcaaaggg cgcttcacga ttacgaccga   | 30420 |
| caagtccacc tcgactgcat acatggaact gtcctcgctg agaagcgagg acaccgctac   | 30480 |
| ttactactgc gctagatact acgatgatca ctactgcctc gattactggg gccagggaac   | 30540 |
| cactgtcacg gtgtcatcgg gagagggcac ctcaaccgga tcaggggggat cgggaggctc  | 30600 |
| gggcggcgca gacgacatcg tcctgaccca gtcgcccgcc accttgctgc tgtccccagg   | 30660 |
| agaaagagcg accctgtcat gccgggcgtc gcaaagcgtg agctatatga attggtatca   | 30720 |
| gcagaagcca ggaaaaggcgc cgaagagatg gatctacgac acctccaagg tcgcttcagg  | 30780 |
| tgtcccggt agattctcag gatcgggatc aggaacggac tactccctga ccatcaattc    | 30840 |
| actggaagca gaagatgcgg ccacctacta ctgtcagcag tggctctcca acccgctgac   | 30900 |
| tttcggaggc ggaactaagg tcgagatcaa gtaggctagc ttgactgact gagatacagc   | 30960 |
| gtaccttcag ctcacagaca tgataagata cattgatgag tttggacaaa ccacaactag   | 31020 |
| aatgcagtga aaaaaatgct ttatttgtga aatttgtgat gctattgctt tatttgtaac   | 31080 |
| cattataagc tgcaataaac aagttaacaa caacaattgc attcatttta tgtttcaggt   | 31140 |
| tcagggggag gtgtgggagg ttttttaaag caagtaaaac ctctacaaat gtggtagtcg   | 31200 |
| tcagctatcc tgcaggaact tgtttatttg aaaatcaatt cacaaaatcc gagtagttat   | 31260 |
| tttgctccc ctttcccatt taacagaata caccaatctc tccccacgca cagctttaaa    | 31320 |
| catttgata ccattagata tagacatggt tttagattcc acattccaaa cagtttcaga    | 31380 |
| gcgagccaat ctggggtcag tgatagataa aaatccatcg ggatagtctt ttaaagcgct   | 31440 |
| ttcacagtcc aactgctgcg gatgcgactc cggagtctgg atcacggtca tctggaagaa   | 31500 |

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|--------------------------------------------------------------------|-------|
| gaacgatggg aatcataatc cgaaaacggt atcggacgat tgtgtctcat caaaccacaca | 31560 |
| agcagccgct gtctgcgtcg ctccgtgcga ctgctgttta tgggatcagg gtccacagtg  | 31620 |
| tcctgaagca tgattttaat agcccttaac atcaactttc tgggtgcgatg cgcgcagcaa | 31680 |
| cgcattctga tttcactcaa atctttgcag taggtacaac acattattac aatattgttt  | 31740 |
| aataaaccat aattaaagc gctccagcca aaactcatat ctgatataat cgcccctgca   | 31800 |
| tgaccatcat accaaagttt aatataaatt aaatgacgtt ccctcaaaaa cactactacc  | 31860 |
| acatacatga tctcttttgg catgtgcata ttaacaatct gtctgtacca tggacaacgt  | 31920 |
| tggttaatca tgcaacccaa tataaccttc cggaaccaca ctgccaacac cgctcccca   | 31980 |
| gccatgcatt gaagtgaacc ctgctgatta caatgacaat gaagaaccca attctctcga  | 32040 |
| ccgtgaatca cttgagaatg aaaaatatct atagtggcac aacatagaca taaatgcatg  | 32100 |
| catcttctca taatttttaa ctctcagga tttagaaaca tatcccaggg aataggaagc   | 32160 |
| tcttgagaa cagtaaagct ggacagaaca ggaagaccac gaacacaact tacactatgc   | 32220 |
| atagtcatag tatcacaatc tggcaacagc ggggtggtctt cagtcataga agctcgggtt | 32280 |
| tcattttcct cacaacgtgg taactgggct ctggtgtaag ggtgatgtct ggcgcatgat  | 32340 |
| gtcgagcgtg cgcgcaacct tgtcataatg gagttgcttc ctgacattct cgtattttgt  | 32400 |
| atagcaaaac gcggccctgg cagaacacac tcttcttcgc cttctatcct gccgcttagc  | 32460 |
| gtgttccgtg tgatagttca agtacaacca cactcttaag ttggtcaaaa gaatgctggc  | 32520 |
| ttcagttgta atcaaaactc catcgcatct aatcgttctg aggaaatcat ccaagcaatg  | 32580 |
| caactggatt gtgtttcaag caggagagga gaggaagag acggaagaac catgttaatt   | 32640 |
| tttattccaa acgatctcgc agtacttcaa attgtagatc gcgcagatgg catctctcgc  | 32700 |
| ccccactgtg ttggtgaaaa agcacagcta gatcaaaaga aatgcgattt tcaagggtgct | 32760 |
| caacgggtggc ttccagcaaa gcctccacgc gcacatccaa gaacaaaaga ataccaaaag | 32820 |
| aaggagcatt ttctaactcc tcaatcatca tattacattc ctgcaccatt ccagataat   | 32880 |
| tttcagcttt ccagccttga attattcgtg tcagttcttg tggtaaatcc aatccacaca  | 32940 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| ttacaaacag gtccccggagg gcgccctcca ccaccattct taaacacacc ctcataatga | 33000 |
| caaaaatatct tgctcctgtg tcacctgtag cgaattgaga atggcaacat caattgacat | 33060 |
| gcccttggct ctaagttctt ctttaagttc tagttgtaaa aactctctca tattatcacc  | 33120 |
| aaactgctta gccagaagcc ccccggaac aagagcaggg gacgctacag tgcagtacaa   | 33180 |
| gcgcagacct cccaattgg ctccagcaaa aacaagattg gaataagcat attgggaacc   | 33240 |
| gccagtaata tcatcgaagt tgctggaaat ataatcaggc agagtttctt gtaaaaattg  | 33300 |
| aataaaagaa aaatttgcca aaaaaacatt caaaacctct gggatgcaaa tgcaataggt  | 33360 |
| taccgcgctg cgctccaaca ttgttagttt tgaattagtc tgcaaaaata aaaaaaaaaa  | 33420 |
| caagcgtcat atcatagtag cctgacgaac agatggataa atcagtcttt ccatacacaag | 33480 |
| acaagccaca gggctctccag ctcgaccctc gtaaaacctg tcatcatgat taaacaacag | 33540 |
| caccgaaagt tcctcgcggt gaccagcatg aataattctt gatgaagcat acaatccaga  | 33600 |
| catgttagca tcagttaacg agaaaaaaca gccaacatag cttttgggta taattatgct  | 33660 |
| taatcgtaag tatagcaaag ccacccctcg cggatacaaa gtaaaaggca caggagaata  | 33720 |
| aaaaatataa ttatttctct gctgctgttc aggcaacgtc gccccgggc cctctaaata   | 33780 |
| cacatacaaa gcctcatcag ccatggctta ccagacaaag tacagcgggc acacaaagca  | 33840 |
| caagctctaa agtgactctc caacctctcc acaatatata tatacacaag ccctaaactg  | 33900 |
| acgtaatggg agtaaagtgt aaaaaatccc gccaaacca acacacaccc cgaaactgcg   | 33960 |
| tcaccaggga aaagtacagt ttcacttccg caatccaac aggcgtaact tcctctttct   | 34020 |
| cacggtacgt gatatccac taacttgcaa cgtcattttc ccacggtcgc accgcccctt   | 34080 |
| ttagccgtta accccacagc caatcaccac acgatccaca ctttttaaaa tcacctcatt  | 34140 |
| tacatatagg caccattcca tctataaggt atattatata gataga                 | 34186 |

<210> 83

<211> 1539

<212> DNA

<213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; EpCam BiTE nucleic acid sequence (OKT3)

&lt;400&gt; 83

|                                                                    |      |
|--------------------------------------------------------------------|------|
| atgggatgga gctgcatcat cctattcctc gtggcgacgg ccactggagt gcatagcgaa  | 60   |
| ctggtgatga ctcagtcccc gtcatccctg acggtgaccg ccggcgagaa ggtcaccatg  | 120  |
| tcgtgcaagt cctcgcaaag cctgcttaac agcggcaacc agaaaaacta cctcacgtgg  | 180  |
| tatcagcaaa agccagggtca accccccaaaa ctgctcatct actgggagag caccgcgag | 240  |
| tcgggggtgc cagaccggtt caccggctcc gggtcaggaa ctgatttcac cctaaccatc  | 300  |
| agctcgggtgc aagcggagga cctggccgtg tactactgcc aaaatgatta ctcgtaccct | 360  |
| ctgacctttg gagcgggcac caagctcgaa atcaagggcg gtggagggaag cggcggggga | 420  |
| ggctcagggtg ggggaggatc agaagtccaa ctgctggagc agtcaggagc cgaactggtc | 480  |
| cgcccgaggaa cctccgtcaa gatttcctgt aaggcttccg gctacgcttt taccaattac | 540  |
| tggctgggct ggggtcaagca aagaccgggg catggcctgg agtggatcgg cgacatcttc | 600  |
| ccaggagagcg gcaacatcca ctacaacgag aagttcaagg ggaaagcgac tctgactgcc | 660  |
| gacaaatcat ccagcaccgc ctacatgcag ctgtcgtcgc tcactttcga agacagcgcg  | 720  |
| gtgtactttt gtgctcggct ccggaactgg gatgaaccaa tggactactg gggacaagga  | 780  |
| actaccgtga ccgtctctc cggcggcggg ggaagccagg tgcagctgca gcagtctggg   | 840  |
| gctgaactgg caagacctgg ggcctcagtg aagatgtcct gcaaggcttc tggctacacc  | 900  |
| tttactaggt acacgatgca ctgggtaaaa cagaggcctg gacagggtct ggaatggatt  | 960  |
| ggatacatta atcctagccg tggttatact aattacaatc agaagttcaa ggacaaggcc  | 1020 |
| acattgacta cagacaaatc ctccagcaca gcctacatgc aactgagcag cctgacatct  | 1080 |
| gaggactctg cagtctatta ctgtgcaaga tattatgatg atcattactg ccttgactac  | 1140 |
| tggggccaag gcaccactct cacagtctcc tcagggtggcg gtggctcggg cgggtgggga | 1200 |
| tctggtggcg gcggatctga tatcgtgctc actcagtctc cagcaatcat gtctgcatct  | 1260 |
| ccaggggaga aggtcaccat gacctgcagt gccagctcaa gtgtaagtta catgaactgg  | 1320 |

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| taccagcaga agtcaggcac ctcccccaaa agatggattt atgacacatc caaactggct  | 1380 |
| tctggagtcc ctgctcactt caggggcagt gggctctggga cctcttactc tctcacaatc | 1440 |
| agcggcatgg aggctgaaga tgctgccact tattactgcc agcagtggag tagtaaccca  | 1500 |
| ttcacgttcg gctcggggac aaagttggaa ataaaccgg                         | 1539 |

<210> 84

<400> 84  
000

<210> 85

<211> 1551

<212> DNA

<213> Artificial Sequence

<220>

<223> FAP BiTE nucleic acid sequence (OKT3)

<400> 85

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| atgggctgga gctgcatcat cttgttcctg gtcgcaactg ctaccggagt ccattcggac  | 60  |
| atcgtcatga cccaaagccc tgactcgctc gctgtgtcac tgggagagcg ggcgactatc  | 120 |
| aactgcaaat catcccagag cctgctgtat tcacgcaatc agaaaaacta cctggcctgg  | 180 |
| tatcagcaga agccgggcca gcctcccaag ctgctgatct tctgggcctc caccgcgaa   | 240 |
| agcggcgtgc cggaccgctt cagcgggaagc ggattcggaa ctgactttac tctgaccatt | 300 |
| agctccttgc aggcggagga cgtggccgtc tactactgcc agcagtattt ctcctatccg  | 360 |
| ctcacctttg ggcaaggcac caaggtggag attaaggag ggggcggcag cgggggaggc   | 420 |
| ggcagcggcg gcgggggatc gcaggtccag ctcgtccaat ccggagccga agtcaagaag  | 480 |
| ccgggagcgt cgggtcaaggt cagctgcaaa acttcgcgct acaccttcac tgagtacacg | 540 |
| atccactggg tccgccaggc gcccgccag cggctggagt ggatcggcgg gatcaacca    | 600 |
| aacaacggaa tcccaaatta caatcagaaa tttaaaggc gggtgactat caccgtggat   | 660 |
| acctcggcct ccacggcgta catggagctc tcactactca gatcggagga caccgcggtc  | 720 |
| tattactgcg cccgccgccg gatcgcttat ggatacgatg aaggacatgc gatggattac  | 780 |

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|                                                                     |      |
|---------------------------------------------------------------------|------|
| tggggccagg gcacccctcgt cacggtgtcg tcaggaggcg gcggttcaca ggtgcagctg  | 840  |
| cagcagtctg gggctgaact ggcaagacct ggggcctcag tgaagatgtc ctgcaaggct   | 900  |
| tctggctaca cctttactag gtacacgatg cactgggtaa aacagaggcc tggacagggt   | 960  |
| ctggaatgga ttggatacat taatcctagc cgtgggtata ctaattacaa tcagaagttc   | 1020 |
| aaggacaagg ccacattgac tacagacaaa tcctccagca cagcctacat gcaactgagc   | 1080 |
| agcctgacat ctgaggactc tgcagtctat tactgtgcaa gatattatga tgatcattac   | 1140 |
| tgccttgact actggggcca aggcaccact ctcacagtct cctcagggtgg cggtaggctcg | 1200 |
| ggcggtggtg gatctgggtg cggcggatct gatatcgtgc tctcagtc tccagcaatc     | 1260 |
| atgtctgcat ctccagggga gaaggtcacc atgacctgca gtgccagctc aagtgttaagt  | 1320 |
| tacatgaact ggtaccagca gaagtcaggc acctcccca aaagatggat ttatgacaca    | 1380 |
| tccaaactgg cttctggagt ccctgctcac ttcaggggca gtgggtctgg gacctttac    | 1440 |
| tctctcacia tcagcggcat ggaggctgaa gatgctgcca cttattactg ccagcagtgg   | 1500 |
| agtagtaacc cattcacgtt cggctcgggg acaaagttgg aaataaaccg g            | 1551 |

<210> 86

<400> 86  
000

<210> 87

<211> 1557

<212> DNA

<213> Artificial Sequence

<220>

<223> FAP BiTE nucleic acid sequence (aCD3)

<400> 87

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| atgggctgga gctgcatcat cttgttcctg gtcgcaactg ctaccggagt ccattcggac | 60  |
| atcgtcatga cccaaagccc tgactcgctc gctgtgtcac tgggagagcg ggcgactatc | 120 |
| aactgcaaat catcccagag cctgctgtat tcacgcaatc agaaaaacta cctggcctgg | 180 |

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|                                                                     |      |
|---------------------------------------------------------------------|------|
| tatcagcaga agccgggcca gcctcccaag ctgctgatct tctgggcctc caccgcgaa    | 240  |
| agcggcgtgc cggaccgctt cagcgggaagc ggattcggaa ctgactttac tctgaccatt  | 300  |
| agctccttgc aggcgggagga cgtggccgctc tactactgcc agcagtatct ctcctatccg | 360  |
| ctcacctttg ggcaaggcac caaggtggag attaagggag ggggcggcag cgggggaggc   | 420  |
| ggcagcggcg gcgggggatc gcaggtccag ctcgtccaat ccggagccga agtcaagaag   | 480  |
| ccgggagcgt cgggtcaaggt cagctgcaaa acttcgcgct acaccttcac tgagtacacg  | 540  |
| atccactggg tccgccaggc gcccggccag cggctggagt ggatcggcgg gatcaaccca   | 600  |
| aacaacggaa tcccaaatta caatcagaaa tttaaagggc gggtgactat caccgtggat   | 660  |
| acctcggcct ccacggcgta catggagctc tcatcactca gatcggagga caccgcggtc   | 720  |
| tattactgcg cccgccgccc gatcgcttat ggatacgatg aaggacatgc gatggattac   | 780  |
| tggggccagg gcaccctcgt cacggtgtcg tcaggaggcg gcggttcaga tgtgcaactc   | 840  |
| gtgcagtccg gtgcggaagt gaaaaagccg ggcgcgagcg tcaaagtgtc atgcaaggcg   | 900  |
| tcaggatata cgtttactag atacactatg cactgggtgc gccaggcacc tggtcagggc   | 960  |
| cttgaatgga tcggctacat caatccgtcg agaggctaca ctaattacgc ggactcagtc   | 1020 |
| aaaggcgct tcacgattac gaccgacaag tccacctga ctgcatacat ggaactgtcc     | 1080 |
| tcgctgagaa gcgaggacac cgctacttac tactgcgcta gatactacga tgatcactac   | 1140 |
| tgccctcgatt actggggcca gggaaccact gtcacggtgt catcgggaga gggcacctca  | 1200 |
| accggatcag ggggatcggg aggctcgggc ggcgagacg acatcgtcct gaccagtcg     | 1260 |
| cccgccacct tgtcgctgtc cccaggagaa agagcgaccc tgtcatgccg ggcgtcgaa    | 1320 |
| agcgtgagct atatgaattg gtatcagcag aagccaggaa aggcgccgaa gagatggatc   | 1380 |
| tacgacacct ccaaggctgc ttcagggtgtc ccggctagat tctcaggatc gggatcagga  | 1440 |
| acggactact ccctgaccat caattcactg gaagcagaag atgcggccac ctactactgt   | 1500 |
| cagcagtggg cctccaaccc gctgactttc ggaggcggaa ctaaggctga gatcaag      | 1557 |

<211> 1856  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> NG-611 Transgene cassette

<400> 88  
 caggcccacc atgggatgga gctgcatcat cctattcctc gtggcgacgg ccactggagt 60  
 gcatagcgaa ctggtgatga ctcagtcccc gtcattccctg acggtgaccg ccggcgagaa 120  
 ggtaaccatg tcgtgcaagt cctcgcaaag cctgcttaac agcggcaacc agaaaaacta 180  
 cctcacgtgg tatcagcaaa agccagggtca acccccaaaa ctgctcatct actgggcgag 240  
 caccgcgag tcgggggtgc cagaccgggt caccggctcc gggtcaggaa ctgatttcac 300  
 cctaaccatc agctcgggtgc aagcggagga cctggccgtg tactactgcc aaaatgatta 360  
 ctcgtaccct ctgacctttg gagcgggcac caagctcgaa atcaagggcg gtggaggaag 420  
 cggcggggga ggctcagggt ggggaggatc agaagtcaa ctgctggagc agtcaggagc 480  
 cgaactgggtc cgcccgggaa cctccgtcaa gatttcctgt aaggcttccg gctacgcttt 540  
 taccaattac tggctgggct gggtaagca aagaccgggg catggcctgg agtggatcgg 600  
 cgacatcttc ccaggagcg gcaacatcca ctacaacgag aagttcaagg ggaaagcgac 660  
 tctgactgcc gacaaatcat ccagcaccgc ctacatgcag ctgtcgtcgc tcactttcga 720  
 agacagcgcg gtgtactttt gtgctcggct ccggaactgg gatgaaccaa tggactactg 780  
 gggacaagga actaccgtga ccgtctcctc cggcggcggt ggaagccagg tgcagctgca 840  
 gcagtctggg gctgaactgg caagacctgg ggcctcagt aagatgtcct gcaaggcttc 900  
 tggctacacc tttagtaggt acacgatgca ctgggtaaaa cagaggcctg gacagggtct 960  
 ggaatggatt ggatacatta atcctagccg tggttatact aattacaatc agaagttcaa 1020  
 ggacaaggcc acattgacta cagacaaatc ctccagcaca gcctacatgc aactgagcag 1080  
 cctgacatct gaggactctg cagtctatta ctgtgcaaga tattatgatg atcattactg 1140  
 ccttgactac tggggccaag gcaccactct cacagtctcc tcagggtggcg gtggctcggg 1200



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|                                                                     |      |
|---------------------------------------------------------------------|------|
| cggtggtgga tctggtggcg gcggatctga tatcgtgctc actcagtctc cagcaatcat   | 1260 |
| gtctgcatct ccaggggaga aggtcaccat gacctgcagt gccagctcaa gtgtaagtta   | 1320 |
| catgaactgg taccagcaga agtcaggcac ctccccaaa agatggattt atgacacatc    | 1380 |
| caaaactggct tctggagtcc ctgctcactt caggggcagt gggctctggga cctcttactc | 1440 |
| tctcacaatc agcggcatgg aggctgaaga tgctgccact tattactgcc agcagtggag   | 1500 |
| tagtaaccca ttcacgttcg gctcggggac aaagttagaa ataaaccggc atcaccatca   | 1560 |
| ccatcaccac catcaccatt aggctagctt gactgactga gatacagcgt accttcagct   | 1620 |
| cacagacatg ataagataca ttgatgagtt tggacaaacc acaactagaa tgcagtgaaa   | 1680 |
| aaaatgcttt atttgtgaaa tttgtgatgc tattgcttta tttgtaacca ttataagctg   | 1740 |
| caataaaca gttacaaca acaattgcat tcattttatg tttcaggttc agggggagggt    | 1800 |
| gtgggagggt ttttaaagca agtaaaacct ctacaaatgt ggtagtcgtc agctat       | 1856 |

<210> 89

<211> 1868

<212> DNA

<213> Artificial Sequence

<220>

<223> NG-612 Transgene cassette

<400> 89

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| cagggcccacc atgggctgga gctgcatcat cttgttcctg gtcgcaactg ctaccggagt | 60  |
| ccattcggac atcgtcatga cccaaagccc tgactcgctc gctgtgtcac tgggagagcg  | 120 |
| ggcgactatc aactgcaaat catcccagag cctgctgtat tcacgcaatc agaaaaacta  | 180 |
| cctggcctgg tatcagcaga agccggggcca gcctcccaag ctgctgatct tctgggcctc | 240 |
| cacccgcgaa agcggcgtgc cggaccgctt cagcgggaagc ggattcggaa ctgactttac | 300 |
| tctgaccatt agctccttgc aggcggagga cgtggccgtc tactactgcc agcagtatct  | 360 |
| ctcctatccg ctcacctttg ggcaaggcac caaggtaggag attaaaggag ggggcggcag | 420 |
| cgggggaggc ggcagcggcg gcgggggatc gcagggtccag ctcgtccaat ccggagccga | 480 |

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| agtcaagaag ccgggagcgt cgggtcaaggt cagctgcaaa acttcgcgct acaccttcac | 540  |
| tgagtacacg atccactggg tccgccaggc gcccggccag cggctggagt ggatcggcgg  | 600  |
| gatcaaccca aacaacggaa tcccaaatta caatcagaaa tttaaagggc ggggtgactat | 660  |
| caccgtggat acctcggcct ccacggcgta catggagctc tcatcactca gatcggagga  | 720  |
| caccgcggtc tattactgcg cccgccgccg gatcgcttat ggatacgatg aaggacatgc  | 780  |
| gatggattac tggggccagg gcaccctcgt cacgggtgtcg tcaggaggcg gcggttcaca | 840  |
| ggtgcagctg cagcagtctg gggctgaact ggcaagacct ggggcctcag tgaagatgtc  | 900  |
| ctgcaaggct tctggctaca cttttactag gtacacgatg cactgggtaa aacagaggcc  | 960  |
| tggacagggg ctggaatgga ttggatacat taatcctagc cgtgggtata ctaattacaa  | 1020 |
| tcagaagttc aaggacaagg ccacattgac tacagacaaa tcctccagca cagcctacat  | 1080 |
| gcaactgagc agcctgacat ctgaggactc tgcagtctat tactgtgcaa gatattatga  | 1140 |
| tgatcattac tgccttgact actggggcca aggaccact ctcacagtct cctcaggtgg   | 1200 |
| cgggtggctcg ggcgggtggg gatctgggtg cggcggatct gatatcgtgc tcactcagtc | 1260 |
| tccagcaatc atgtctgcat ctccagggga gaaggtcacc atgacctgca gtgccagctc  | 1320 |
| aagtgtaagt tacatgaact ggtaccagca gaagtcaggc acctcccca aaagatggat   | 1380 |
| ttatgacaca tccaaactgg cttctggagt ccctgctcac ttcaggggca gtgggtctgg  | 1440 |
| gacctcttac tctctcaca tcagcggcat ggaggctgaa gatgctgcca cttattactg   | 1500 |
| ccagcagtgg agtagtaacc cattcacgtt cggctcgggg acaaagttgg aaataaaccg  | 1560 |
| gcatcaccat caccatcacc accatcacca ttaggctagc ttgactgact gagatacagc  | 1620 |
| gtaccttcag ctcacagaca tgataagata cattgatgag tttggacaaa ccacaactag  | 1680 |
| aatgcagtga aaaaaatgct ttatttgtga aatttgtgat gctattgctt tatttgtaac  | 1740 |
| cattataagc tgcaataaac aagttaacaa caacaattgc attcatttta tgtttcaggt  | 1800 |
| tcaggggggag gtgtgggagg ttttttaaag caagtaaac ctctacaaat gtggtagtcg  | 1860 |
| tcagctat                                                           | 1868 |

<210> 90  
 <211> 1878  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> NG-613 Transgene cassette

<400> 90  
 tttctctctt caggcccacc atgggctgga gctgcatcat cttgttcctg gtcgcaactg 60  
 ctaccggagt ccattcggac atcgtcatga cccaaagccc tgactcgctc gctgtgtcac 120  
 tgggagagcg ggcgactatc aactgcaaat catcccagag cctgctgtat tcacgcaatc 180  
 agaaaaacta cctggcctgg tatcagcaga agccgggcca gcctcccaag ctgctgatct 240  
 tctgggcctc caccgcgaa agcggcgtgc cggaccgctt cagcgggaagc ggattcggaa 300  
 ctgactttac tctgaccatt agctccttgc aggcggagga cgtggccgtc tactactgcc 360  
 agcagtatth ctcctatccg ctcacctttg ggcaaggcac caaggtggag attaagggag 420  
 ggggcggcag cgggggaggc ggcagcggcg gcgggggatc gcaggtccag ctcgtccaat 480  
 ccggagccga agtcaagaag ccgggagcgt cgggtcaaggt cagctgcaaa acttcgcgct 540  
 acaccttcac tgagtacacg atccactggg tccgccaggc gcccgccag cggctggagt 600  
 ggatcggcgg gatcaacca aacaacggaa tcccaaatta caatcagaaa tttaaagggc 660  
 gggtgactat caccgtggat acctcggcct ccacggcgta catggagctc tcatcactca 720  
 gatcggagga caccgcggtc tattactgcg cccgccgccg gatcgcttat ggatacgatg 780  
 aaggacatgc gatggattac tggggccagg gcaccctcgt cacggtgtcg tcaggaggcg 840  
 gcggttcaca ggtgcagctg cagcagtctg gggctgaact ggcaagacct ggggcctcag 900  
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 aacagaggcc tggacagggt ctggaatgga ttggatacat taatcctagc cgtggttata 1020  
 ctaattacaa tcagaagttc aaggacaagg ccacattgac tacagacaaa tcctccagca 1080  
 cagcctacat gcaactgagc agcctgacat ctgaggactc tgcagtctat tactgtgcaa 1140

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| gatattatga tgatcattac tgccttgact actggggcca aggcaccact ctcacagtct  | 1200 |
| cctcaggtgg cgggtggctcg ggcgggtggg gatctgggtg cggcggatct gatatcgtgc | 1260 |
| tcactcagtc tccagcaatc atgtctgcat ctccagggga gaaggtcacc atgacctgca  | 1320 |
| gtgccagctc aagtgtaatg tacatgaact ggtaccagca gaagtcaggc acctcccca   | 1380 |
| aaagatggat ttatgacaca tccaaactgg cttctggagt ccctgctcac ttcaggggca  | 1440 |
| gtgggtctgg gacctcttac tctctcacia tcagcggcat ggaggctgaa gatgctgcca  | 1500 |
| cttattactg ccagcagtg agtagtaacc cattcacgtt cggctcgggg acaaagttgg   | 1560 |
| aaataaaccg gcatcaccat caccatcacc accatcacca ttaggctagc ttgactgact  | 1620 |
| gagatacagc gtaccttcag ctcacagaca tgataagata cattgatgag tttggacaaa  | 1680 |
| ccacaactag aatgcagtga aaaaaatgct ttatttgtga aatttgtgat gctattgctt  | 1740 |
| tatttgtaac cattataagc tgcaataaac aagttaacaa caacaattgc attcatttta  | 1800 |
| tgtttcaggt tcagggggag gtgtgggagg ttttttaaag caagtaaac ctctacaaat   | 1860 |
| gtggtagtcg tcagctat                                                | 1878 |

<210> 91

<211> 1884

<212> DNA

<213> Artificial Sequence

<220>

<223> NG-614 Transgene cassette

<400> 91

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| tttctctctt caggcccacc atgggctgga gctgcatcat cttgttcctg gtcgcaactg | 60  |
| ctaccggagt ccattcggac atcgtcatga cccaaagccc tgactcgctc gctgtgtcac | 120 |
| tgggagagcg ggcgactatc aactgcaaat catcccagag cctgctgtat tcacgcaatc | 180 |
| agaaaaacta cctggcctgg tatcagcaga agccgggcca gcctcccaag ctgctgatct | 240 |
| tctgggcctc caccgcgaa agcggcgtgc cggaccgctt cagcgggaagc ggattcggaa | 300 |
| ctgactttac tctgaccatt agctccttgc aggcggagga cgtggccgtc tactactgcc | 360 |

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|            |             |             |             |            |            |      |
|------------|-------------|-------------|-------------|------------|------------|------|
| agcagtat   | ctcctatccg  | ctcacctttg  | ggcaaggcac  | caaggtggag | attaagggag | 420  |
| ggggcggcag | cgggggaggc  | ggcagcggcg  | gcgggggatc  | gcaggtccag | ctcgtccaat | 480  |
| ccggagccga | agtcaagaag  | ccgggagcgt  | cgggtcaaggt | cagctgcaaa | acttcgcgct | 540  |
| acaccttcac | tgagtacacg  | atccactggg  | tccgccaggc  | gcccggccag | cggctggagt | 600  |
| ggatcggcgg | gatcaaccca  | aacaacggaa  | tcccaaatta  | caatcagaaa | tttaaagggc | 660  |
| gggtgactat | caccgtggat  | acctcggcct  | ccacggcgta  | catggagctc | tcatcactca | 720  |
| gatcggagga | caccgcggtc  | tattactgcg  | ccgcccgcg   | gatcgcttat | ggatacgatg | 780  |
| aaggacatgc | gatggattac  | tggggccagg  | gcaccctcgt  | cacggtgtcg | tcaggaggcg | 840  |
| gcggttcaga | tgtgcaactc  | gtgcagtccg  | gtgcggaagt  | gaaaaagccg | ggcgcgagcg | 900  |
| tcaaagtgtc | atgcaaggcg  | tcaggatata  | cgtttactag  | atacactatg | cactgggtgc | 960  |
| gccaggcacc | tggtcagggc  | cttgaatgga  | tcggctacat  | caatccgtcg | agaggctaca | 1020 |
| ctaattacgc | ggactcagtc  | aaagggcgct  | tcacgattac  | gaccgacaag | tccacctcga | 1080 |
| ctgcatacat | ggaactgtcc  | tcgctgagaa  | gcgaggacac  | cgctacttac | tactgcgcta | 1140 |
| gatactacga | tgatcactac  | tgccctcgatt | actggggcca  | gggaaccact | gtcacggtgt | 1200 |
| catcgggaga | gggcacctca  | accggatcag  | ggggatcggg  | aggctcgggc | ggcgcagacg | 1260 |
| acatcgtcct | gacccagtcg  | cccgccacct  | tgtcgtgtgc  | cccaggagaa | agagcgaccc | 1320 |
| tgtcatgccg | ggcgtcgcaa  | agcgtgagct  | atatgaattg  | gtatcagcag | aagccaggaa | 1380 |
| aggcgccgaa | gagatggatc  | tacgacacct  | ccaaggtcgc  | ttcaggtgtc | ccggctagat | 1440 |
| tctcaggatc | gggatcagga  | acggactact  | ccctgaccat  | caattcactg | gaagcagaag | 1500 |
| atgcggccac | ctactactgt  | cagcagtggg  | cctccaaccc  | gctgactttc | ggaggcggaa | 1560 |
| ctaaggctga | gatcaagcat  | caccatcacc  | atcaccacca  | tcaccattag | gctagcttga | 1620 |
| ctgactgaga | tacagcgta   | cttcagctca  | cagacatgat  | aagatacatt | gatgagtttg | 1680 |
| gacaaaccac | aactagaatg  | cagtgaaaaa  | aatgctttat  | ttgtgaaatt | tgtgatgcta | 1740 |
| ttgctttatt | tgttaaccatt | ataagctgca  | ataaacaagt  | taacaacaac | aattgcattc | 1800 |

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attttatgtt tcaggttcag ggggaggtgt gggaggtttt ttaaagcaag taaaacctct 1860  
 acaaatgtgg tagtcgtcag ctat 1884

<210> 92  
 <211> 1838  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> NG-617 Transgene cassette

<400> 92  
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 ccattcggac atcgtcatga cccaaagccc tgactcgtc gctgtgtcac tgggagagcg 120  
 ggcgactatc aactgcaa atcatccagag cctgctgtat tcacgcaatc agaaaaacta 180  
 cctggcctgg tatcagcaga agccgggcca gcctccaag ctgctgatct tctgggcctc 240  
 caccgcgaa agcggcgtgc cggaccgctt cagcggaagc ggattcggaa ctgactttac 300  
 tctgaccatt agctccttgc aggcggagga cgtggccgtc tactactgcc agcagtatct 360  
 ctctatccg ctacaccttg ggcaaggcac caaggtggag attaagggag ggggcggcag 420  
 cgggggaggc ggcagcggcg gcgggggatc gcagggtccag ctgtccaat ccggagccga 480  
 agtcaagaag ccgggagcgt cgggtcaaggt cagctgcaaa acttcgcgct acaccttcac 540  
 tgagtacacg atccactggg tccgccaggc gcccggccag cggctggagt ggatcggcgg 600  
 gatcaacca aacaacggaa tcccaaatta caatcagaaa tttaaagggc ggggtgactat 660  
 caccgtggat acctcggcct ccacggcgta catggagctc tcatcactca gatcggagga 720  
 caccgcggtc tattactgcg cccgccgccg gatcgcttat ggatacgatg aaggacatgc 780  
 gatggattac tggggccagg gcaccctcgt cacgggtgtc tcaggaggcg gcggttcaca 840  
 ggtgcagctg cagcagtctg gggctgaact ggcaagacct ggggcctcag tgaagatgtc 900  
 ctgcaaggct tctggctaca cttttactag gtacacgatg cactgggtaa aacagaggcc 960  
 tggacagggt ctggaatgga ttggatacat taatcctagc cgtgggttata ctaattacaa 1020

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tcagaagttc aaggacaagg ccacattgac tacagacaaa tcctccagca cagcctacat 1080  
gcaactgagc agcctgacat ctgaggactc tgcagtctat tactgtgcaa gatattatga 1140  
tgatcattac tgccttgact actggggcca aggcaccact ctcacagtct cctcaggtgg 1200  
cgggtggctcg ggcggtggtg gatctggtgg cggcggatct gatatcgtgc tcactcagtc 1260  
tccagcaatc atgtctgcat ctccagggga gaaggtcacc atgacctgca gtgccagctc 1320  
aagtgtaagt tacatgaact ggtaccagca gaagtcaggc acctcccca aaagatggat 1380  
ttatgacaca tccaaactgg cttctggagt ccctgctcac ttcaggggca gtgggtcttg 1440  
gacctcttac tctctcacia tcagcggcat ggaggctgaa gatgctgcca cttattactg 1500  
ccagcagtgagg agtagtaacc cattcacgtt cggctcgggg acaaagttgg aaataaaccg 1560  
gtaggctagc ttgactgact gagatacagc gtaccttcag ctcacagaca tgataagata 1620  
cattgatgag tttggacaaa ccacaactag aatgcagtga aaaaaatgct ttatttgtga 1680  
aatttgtgat gctattgctt tatttghtaac cattataagc tgcaataaac aagttaacaa 1740  
caacaattgc attcatttta tgtttcaggt tcagggggag gtgtgggagg ttttttaaag 1800  
caagtaaaac ctctacaaat gtggtagtcg tcagctat 1838

<210> 93

<211> 513

<212> PRT

<213> Artificial Sequence

<220>

<223> EpCam BiTE amino acid sequence (OKT3)

<400> 93

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly  
1 5 10 15

Val His Ser Glu Leu Val Met Thr Gln Ser Pro Ser Ser Leu Thr Val  
20 25 30

Thr Ala Gly Glu Lys Val Thr Met Ser Cys Lys Ser Ser Gln Ser Leu

35

40

45

Leu Asn Ser Gly Asn Gln Lys Asn Tyr Leu Thr Trp Tyr Gln Gln Lys  
 50 55 60

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

Ser Gly Val Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe  
 85 90 95

Thr Leu Thr Ile Ser Ser Val Gln Ala Glu Asp Leu Ala Val Tyr Tyr  
 100 105 110

Cys Gln Asn Asp Tyr Ser Tyr Pro Leu Thr Phe Gly Ala Gly Thr Lys  
 115 120 125

Leu Glu Ile Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
 130 135 140

Gly Gly Ser Glu Val Gln Leu Leu Glu Gln Ser Gly Ala Glu Leu Val  
 145 150 155 160

Arg Pro Gly Thr Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala  
 165 170 175

Phe Thr Asn Tyr Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly  
 180 185 190

Leu Glu Trp Ile Gly Asp Ile Phe Pro Gly Ser Gly Asn Ile His Tyr  
 195 200 205

Asn Glu Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser  
 210 215 220

Ser Thr Ala Tyr Met Gln Leu Ser Ser Leu Thr Phe Glu Asp Ser Ala



|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| 225 |     | 230 |     | 235 |     | 240 |
| Val | Tyr | Phe | Cys | Ala | Arg | Tyr |
|     |     |     |     | 245 |     | 255 |
| Trp | Gly | Gln | Gly | Thr | Thr | Val |
|     |     |     | 260 |     |     | 265 |
| Gln | Val | Gln | Leu | Gln | Gln | Ser |
|     |     |     | 275 |     |     | 280 |
| Ser | Val | Lys | Met | Ser | Cys | Lys |
|     |     |     |     |     |     | 295 |
| Thr | Met | His | Trp | Val | Lys | Gln |
| 305 |     |     |     |     | 310 |     |
| Gly | Tyr | Ile | Asn | Pro | Ser | Arg |
|     |     |     |     |     |     | 325 |
| Lys | Asp | Lys | Ala | Thr | Leu | Thr |
|     |     |     |     |     |     | 340 |
| Met | Gln | Leu | Ser | Ser | Leu | Thr |
|     |     |     |     |     |     | 355 |
| Ala | Arg | Tyr | Tyr | Asp | Asp | His |
|     |     |     |     |     |     | 370 |
| Thr | Thr | Leu | Thr | Val | Ser | Ser |
| 385 |     |     |     |     | 390 |     |
| Ser | Gly | Gly | Gly | Gly | Ser | Gly |
|     |     |     |     |     |     | 405 |
| Met | Ser | Ala | Ser | Pro | Gly | Glu |
|     |     |     |     |     |     | 410 |

420

425

430

Ser Ser Val Ser Tyr Met Asn Trp Tyr Gln Gln Lys Ser Gly Thr Ser  
 435 440 445

Pro Lys Arg Trp Ile Tyr Asp Thr Ser Lys Leu Ala Ser Gly Val Pro  
 450 455 460

Ala His Phe Arg Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile  
 465 470 475 480

Ser Gly Met Glu Ala Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Trp  
 485 490 495

Ser Ser Asn Pro Phe Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Asn  
 500 505 510

Arg

<210> 94  
 <211> 517  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> FAP BiTE amino acid sequence (OKT3)

<400> 94

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly  
 1 5 10 15

Val His Ser Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val  
 20 25 30

Ser Leu Gly Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Leu  
 35 40 45

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Tyr | Ser | Arg | Asn | Gln | Lys | Asn | Tyr | Leu | Ala | Trp | Tyr | Gln | Gln | Lys |
| 50  |     |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Pro | Gly | Gln | Pro | Pro | Lys | Leu | Leu | Ile | Phe | Trp | Ala | Ser | Thr | Arg | Glu |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Ser | Gly | Val | Pro | Asp | Arg | Phe | Ser | Gly | Ser | Gly | Phe | Gly | Thr | Asp | Phe |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Thr | Leu | Thr | Ile | Ser | Ser | Leu | Gln | Ala | Glu | Asp | Val | Ala | Val | Tyr | Tyr |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     |     | 110 |     |
| Cys | Gln | Gln | Tyr | Phe | Ser | Tyr | Pro | Leu | Thr | Phe | Gly | Gln | Gly | Thr | Lys |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Val | Glu | Ile | Lys | Gly | Gly | Gly | Gly | Ser | Gly | Gly | Gly | Gly | Ser | Gly | Gly |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Gly | Gly | Ser | Gln | Val | Gln | Leu | Val | Gln | Ser | Gly | Ala | Glu | Val | Lys | Lys |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Pro | Gly | Ala | Ser | Val | Lys | Val | Ser | Cys | Lys | Thr | Ser | Arg | Tyr | Thr | Phe |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Thr | Glu | Tyr | Thr | Ile | His | Trp | Val | Arg | Gln | Ala | Pro | Gly | Gln | Arg | Leu |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Glu | Trp | Ile | Gly | Gly | Ile | Asn | Pro | Asn | Asn | Gly | Ile | Pro | Asn | Tyr | Asn |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Gln | Lys | Phe | Lys | Gly | Arg | Val | Thr | Ile | Thr | Val | Asp | Thr | Ser | Ala | Ser |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Thr | Ala | Tyr | Met | Glu | Leu | Ser | Ser | Leu | Arg | Ser | Glu | Asp | Thr | Ala | Val |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |

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Tyr Tyr Cys Ala Arg Arg Arg Ile Ala Tyr Gly Tyr Asp Glu Gly His  
245 250 255

Ala Met Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly  
260 265 270

Gly Gly Gly Ser Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala  
275 280 285

Arg Pro Gly Ala Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr  
290 295 300

Phe Thr Arg Tyr Thr Met His Trp Val Lys Gln Arg Pro Gly Gln Gly  
305 310 315 320

Leu Glu Trp Ile Gly Tyr Ile Asn Pro Ser Arg Gly Tyr Thr Asn Tyr  
325 330 335

Asn Gln Lys Phe Lys Asp Lys Ala Thr Leu Thr Thr Asp Lys Ser Ser  
340 345 350

Ser Thr Ala Tyr Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala  
355 360 365

Val Tyr Tyr Cys Ala Arg Tyr Tyr Asp Asp His Tyr Cys Leu Asp Tyr  
370 375 380

Trp Gly Gln Gly Thr Thr Leu Thr Val Ser Ser Gly Gly Gly Gly Ser  
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Leu Thr Gln  
405 410 415

Ser Pro Ala Ile Met Ser Ala Ser Pro Gly Glu Lys Val Thr Met Thr  
420 425 430

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Cys Ser Ala Ser Ser Ser Val Ser Tyr Met Asn Trp Tyr Gln Gln Lys  
435 440 445

Ser Gly Thr Ser Pro Lys Arg Trp Ile Tyr Asp Thr Ser Lys Leu Ala  
450 455 460

Ser Gly Val Pro Ala His Phe Arg Gly Ser Gly Ser Gly Thr Ser Tyr  
465 470 475 480

Ser Leu Thr Ile Ser Gly Met Glu Ala Glu Asp Ala Ala Thr Tyr Tyr  
485 490 495

Cys Gln Gln Trp Ser Ser Asn Pro Phe Thr Phe Gly Ser Gly Thr Lys  
500 505 510

Leu Glu Ile Asn Arg  
515

<210> 95  
<211> 519  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> FAP BiTE amino acid sequence (aCD3)

<400> 95

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly  
1 5 10 15

Val His Ser Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val  
20 25 30

Ser Leu Gly Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Leu  
35 40 45

Leu Tyr Ser Arg Asn Gln Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys

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50

55

60

Pro Gly Gln Pro Pro Lys Leu Leu Ile Phe Trp Ala Ser Thr Arg Glu  
65 70 75 80

Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Phe Gly Thr Asp Phe  
85 90 95

Thr Leu Thr Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr  
100 105 110

Cys Gln Gln Tyr Phe Ser Tyr Pro Leu Thr Phe Gly Gln Gly Thr Lys  
115 120 125

Val Glu Ile Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
130 135 140

Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys  
145 150 155 160

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Thr Ser Arg Tyr Thr Phe  
165 170 175

Thr Glu Tyr Thr Ile His Trp Val Arg Gln Ala Pro Gly Gln Arg Leu  
180 185 190

Glu Trp Ile Gly Gly Ile Asn Pro Asn Asn Gly Ile Pro Asn Tyr Asn  
195 200 205

Gln Lys Phe Lys Gly Arg Val Thr Ile Thr Val Asp Thr Ser Ala Ser  
210 215 220

Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val  
225 230 235 240

Tyr Tyr Cys Ala Arg Arg Arg Ile Ala Tyr Gly Tyr Asp Glu Gly His

245

250

255

Ala Met Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly  
 260 265 270

Gly Gly Gly Ser Asp Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
 275 280 285

Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr  
 290 295 300

Phe Thr Arg Tyr Thr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly  
 305 310 315 320

Leu Glu Trp Ile Gly Tyr Ile Asn Pro Ser Arg Gly Tyr Thr Asn Tyr  
 325 330 335

Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Thr Thr Asp Lys Ser Thr  
 340 345 350

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
 355 360 365

Thr Tyr Tyr Cys Ala Arg Tyr Tyr Asp Asp His Tyr Cys Leu Asp Tyr  
 370 375 380

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Gly Thr Ser  
 385 390 395 400

Thr Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ala Asp Asp Ile Val  
 405 410 415

Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala  
 420 425 430

Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Tyr Met Asn Trp Tyr

435

440

445

Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Trp Ile Tyr Asp Thr Ser  
 450 455 460

Lys Val Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly  
 465 470 475 480

Thr Asp Tyr Ser Leu Thr Ile Asn Ser Leu Glu Ala Glu Asp Ala Ala  
 485 490 495

Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Leu Thr Phe Gly Gly  
 500 505 510

Gly Thr Lys Val Glu Ile Lys  
 515

<210> 96  
 <211> 34198  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> NG-611 Genome

<400> 96  
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 ccgtgggaaa atgacgtttt gtgggggtgg agtttttttg caagttgtcg cgggaaatgt 180  
 gacgcataaa aaggcttttt tctcacggaa ctacttagtt ttcccacggg atttaacagg 240  
 aaatgaggta gttttgaccg gatgcaagtg aaaattgttg attttcgcgc gaaaactgaa 300  
 tgaggaagtg tttttctgaa taatgtggta tttatggcag ggtggagtat ttgttcaggg 360  
 ccaggtagac tttgacccat tacgtggagg tttcgattac cgtgtttttt acctgaattt 420  
 ccgcgtaccg tgtcaaagtc ttctgttttt acgtagggtgt cagctgatcg ctaggggtatt 480



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|                                                                     |      |
|---------------------------------------------------------------------|------|
| tataacctcag ggttttgtgtc aagaggccac tcttgagtgc cagcgagaag agttttctcc | 540  |
| tctgcgccgg cagtttaata ataaaaaaaaat gagagatttg cgatttctgc ctcaggaaat | 600  |
| aatctctgct gagactggaa atgaaatatt ggagcttgtg gtgcacgccc tgatgggaga   | 660  |
| cgatccggag ccacctgtgc agctttttga gcctcctacg cttcaggaac tgtatgattt   | 720  |
| agaggtagag ggatcggagg attctaataa ggaagctgta aatggctttt ttaccgattc   | 780  |
| tatgctttta gctgctaata aagggttaga attagatccg cctttggaca cttttgatac   | 840  |
| tccaggggta attgtggaaa gcggtacagg tgtaagaaaa ttacctgatt tgagttccgt   | 900  |
| ggactgtgat ttgcactgct atgaagacgg gtttcctccg agtgatgagg aggaccatga   | 960  |
| aaaggagcag tccatgcaga ctgcagcggg tgaggagtg aaggctgcca atgttggttt    | 1020 |
| tcagttggat tgcccggagc ttcctggaca tggctgtaag tcttgtgaat ttcacaggaa   | 1080 |
| aaatactgga gtaaaggaac tgttatgttc gctttgttat atgagaacgc actgccactt   | 1140 |
| tatttacagt aagtgtgttt aagttaaaat ttaaaggaat atgctgtttt tcacatgtat   | 1200 |
| attgagtgtg agttttgtgc ttcttattat aggtcctgtg tctgatgctg atgaatcacc   | 1260 |
| atctcctgat tctactacct cacctcctga gattcaagca cctgttcctg tggacgtgcg   | 1320 |
| caagcccatt cctgtgaagc ttaagcctgg gaaacgtcca gcagtggaaa aacttgagga   | 1380 |
| cttgttacag ggtggggacg gacctttgga cttgagtaca cggaacgctc caagacaata   | 1440 |
| agtgttccat atccgtgttt acttaagggtg acgtcaatat ttgtgtgaca gtgcaatgta  | 1500 |
| ataaaaaatat gttaactggt cactggtttt tattgctttt tgggcgggga ctcaggata   | 1560 |
| taagtagaag cagacctgtg tggtagctc ataggagctg gctttcatcc atggaggttt    | 1620 |
| gggccatttt ggaagacctt aggaagacta ggcaactggt agagaacgct tcggacggag   | 1680 |
| tctccggttt ttggagattc tggttcgcta gtgaattagc tagggtagtt tttaggataa   | 1740 |
| aacaggacta taaacaagaa ttgaaaagt tgttggtaga ttgccagga ctttttgaag     | 1800 |
| ctcttaattt gggccatcag gttcacttta aagaaaaagt tttatcagtt ttagactttt   | 1860 |
| caaccccagg tagaactgct gctgctgtgg cttttcttac ttttatatta gataaatgga   | 1920 |

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| tccccgagac tcatttcagc aggggatacg ttttggattt catagccaca gcattgtgga  | 1980 |
| gaacatggaa ggttcgcaag atgaggacaa tcttaggtta ctggccagtg cagcctttgg  | 2040 |
| gtgtagcggg aatcctgagg catccaccgg tcatgccagc ggttctggag gaggaacagc  | 2100 |
| aagaggacaa cccgagagcc ggcttgacc ctccagtgga ggaggcggag tagctgactt   | 2160 |
| gtctcctgaa ctgcaacggg tgcttactgg atctacgtcc actggacggg ataggggcgt  | 2220 |
| taagaggagagg agggcatcta gtggtactga tgctagatct gagttggctt taagttta  | 2280 |
| gagtcgcaga cgtcctgaaa ccatttggtg gcatgagggt cagaaagagg gaagggatga  | 2340 |
| agtttctgta ttgcaggaga aatattcact ggaacagggt aaaacatgtt ggttggagcc  | 2400 |
| tgaggatgat tgggagggtg ccattaaaaa ttatgccaa atagctttga ggctgataa    | 2460 |
| acagtataag attactagac ggattaatat ccggaatgct tgttacatat ctggaaatgg  | 2520 |
| ggctgagggtg gtaatagata ctcaagacaa ggcagttatt agatgctgca tgatggatat | 2580 |
| gtggcctggg gtagtcggta tggaagcagt aacttttgta aatgttaagt ttaggggaga  | 2640 |
| tggttataat ggaatagtgt ttatggccaa taccaaactt atattgcatg gttgtagctt  | 2700 |
| ttttggtttc aacaatacct gtgtagatgc ctggggacag gttagtgtac ggggatgtag  | 2760 |
| tttctatgcg tgttggattg ccacagctgg cagaaccaag agtcaattgt ctctgaagaa  | 2820 |
| atgcatattt caaagatgta acctgggcat tctgaatgaa ggcgaagcaa ggggtccgca  | 2880 |
| ctgcgcttct acagatactg gatgttttat tttgattaag ggaaatgcca gcgtaaagca  | 2940 |
| taacatgatt tgcggtgctt ccgatgagag gccttatcaa atgctcactt gtgctgggtg  | 3000 |
| gcattgtaat atgctggcta ctgtgcatat tgtttcccat caacgcaaaa aatggcctgt  | 3060 |
| ttttgatcac aatgtgatga cgaagtgtac catgcatgca ggtgggcgta gaggaatgtt  | 3120 |
| tatgccttac cagtgtaca tgaatcatgt gaaagtgttg ttggaaccag atgccttttc   | 3180 |
| cagaatgagc ctaacaggaa tttttgacat gaacatgcaa atctggaaga tcctgaggta  | 3240 |
| tgatgatacg agatcgaggg tacgcgcatg cgaatgcgga ggcaagcatg ccaggttcca  | 3300 |
| gccggtgtgt gtagatgtga ctgaagatct cagaccggat catttggtta ttgcccgcac  | 3360 |

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|                                                                     |      |
|---------------------------------------------------------------------|------|
| tggagcagag ttcggatcca gtggagaaga aactgactaa ggtgagtatt gggaaaactt   | 3420 |
| tgggggtggga ttttcagatg gacagattga gtaaaaaattt gttttttctg tcttgcagct | 3480 |
| gtcatgagtg gaaacgcttc ttttaagggg ggagtccttca gcccttatct gacagggcgt  | 3540 |
| ctcccatcct gggcaggagt tcgtcagaat gttatgggat ctactgtgga tggaagaccc   | 3600 |
| gtccaacccg ccaattcttc aacgctgacc tatgctactt taagttcttc acctttggac   | 3660 |
| gcagctgcag ctgccgccgc cgcttctgtt gccgctaaca ctgtgcttgg aatgggttac   | 3720 |
| tatggaagca tcatggctaa ttccacttcc tctaataacc cttctaccct gactcaggac   | 3780 |
| aagttacttg tccttttggc ccagctggag gctttgaccc aacgtctggg tgaactttct   | 3840 |
| cagcaggtgg tcgagttgcg agtacaaact gagtctgctg tcggcacggc aaagtctaaa   | 3900 |
| taaaaaaatc ccagaatcaa tgaataaata aacaagcttg ttgttgattt aaaatcaagt   | 3960 |
| gtttttattt catttttcgc gcacggtatg ccctagacca ccgatctcta tcattgagaa   | 4020 |
| ctcgggtgat tttttccagg atcctataga ggtgggattg aatgtttaga tacatgggca   | 4080 |
| ttaggccgtc tttgggggtgg agatagctcc attgaaggga ttcattgctcc ggggtagtgt | 4140 |
| tgtaaatacac ccagtcataa caaggctgca gtgcatggtg ttgcacaata tcttttagaa  | 4200 |
| gtaggctgat tgccacagat aagcccttgg tgtaggtgtt tacaacccgg ttgagctggg   | 4260 |
| atgggtgcat tcggggtgaa attatgtgca ttttggattg gatttttaag ttggcaatat   | 4320 |
| tgccgccaag atcccgtctt gggttcatgt tatgaaggac caccaagacg gtgtatccgg   | 4380 |
| tacatttagg aaatttatcg tgcagcttgg atggaaaagc gtggaaaaat ttggagacac   | 4440 |
| ccttgtgtcc tccaagattt tccatgcact catccatgat aatagcaatg gggccgtggg   | 4500 |
| cagcggcgcg ggcaaacacg ttccgtgggt ctgacacatc atagttatgt tcctgagtta   | 4560 |
| aatcatcata agccatttta atgaatttgg ggcggagagt accagattgg ggtatgaatg   | 4620 |
| ttccttcggg ccccgagca tagttcccct cacagatttg catttcccaa gctttcagtt    | 4680 |
| ccgaggggtg aatcatgtcc acctgggggg ctatgaaaaa caccgtttct ggggcggggg   | 4740 |
| tgattaattg tgatgatagc aaatttctga gcaattgaga tttgccacat ccggtggggc   | 4800 |

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|                                                                     |      |
|---------------------------------------------------------------------|------|
| cataaatgat tccgattacg ggttgcaggt ggtagtttag ggaacggcaa ctgccgtctt   | 4860 |
| ctcgaagcaa gggggccacc tcgttcatca tttcccttac atgcatattt tcccgcacca   | 4920 |
| aatccattag gaggcgctct cctcctagtg atagaagttc ttgtagtgag gaaaagtttt   | 4980 |
| tcagcggttt cagaccgtca gccatgggca ttttggagag agtttgctgc aaaagttcta   | 5040 |
| gtctgttcca cagttcagtg atgtgttcta tggcatctcg atccagcaga cctcctcggt   | 5100 |
| tcgcggggtt ggacggctcc tggaataggg tatgagacga tgggcgtcca gcgctgccag   | 5160 |
| ggttcgggcc ttccagggtc tcagtgttcg agtcagggtt gtttccgtca cagtgaaggg   | 5220 |
| gtgtgcgctt gcttgggcgc ttgccagggt gcgcttcaga ctcatcctgc tggtcgaaaa   | 5280 |
| cttctgtcgc ttggcgccct gtatgtcggc caagtagcag ttaccatga gttcgtagtt    | 5340 |
| gagcgccctg gctgcgtggc ctttggcgcg gagcttacct ttggaagttt tcttgcatac   | 5400 |
| cgggcagtat aggcatattca gcgcatacaa cttgggcgca aggaaaacgg attctggggga | 5460 |
| gtatgcatct gcgccgcagg aggcgcaaac agtttcacat tccaccagcc aggttaaadc   | 5520 |
| cggttcattg ggggtcaaaaa caagttttcc gccatatttt ttgatgcgtt tcttaccttt  | 5580 |
| ggctctccatg agttcgtgtc ctggttgagt gacaaacagg ctgtccgtgt ccccgtagac  | 5640 |
| tgattttaca ggctctttct ccagtggagt gcctcggctt tcttcgtaca ggaactctga   | 5700 |
| ccactctgat acaaaggcgc gcgtccaggc cagcacaaag gaggctatgt gggaggggta   | 5760 |
| gcgatcgttg tcaaccaggg ggtccacctt ttccaaagta tgcaaacaca tgtcaccctc   | 5820 |
| ttcaacatcc aggaatgtga ttggcttgta ggtgtatttc acgtgacctg ggggtccccgc  | 5880 |
| tgggggggta taaaaggggg cggttctttg ctcttcctca ctgtcttccg gatcgtgtc    | 5940 |
| caggaacgtc agctgttggg gtaggtattc cctctcgaag gcgggcatga cctctgcact   | 6000 |
| caggttgtca gtttctaaga acgaggagga tttgatattg acagtgccgg ttgagatgcc   | 6060 |
| tttcatgagg ttttcgtcca tctggtcaga aaacacaatt tttttattgt caagtttgg    | 6120 |
| ggcaaatgat ccatacaggg cgttggataa aagtttggca atggatcgca tggtttgggt   | 6180 |
| cttttccttg tccgcgcgct ctttggcggc gatgttgagt tggacatact cgcgtgccag   | 6240 |

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| gcacttccat tcggggaaga tagttgttaa ttcattctggc acgattctca cttgccaccc | 6300 |
| tcgattatgc aaggtaatta aatccacact ggtggccacc tcgcctcgaa ggggttcatt  | 6360 |
| ggtccaacag agcctacctc ctttcctaga acagaaaggg ggaagtgggt ctagcataag  | 6420 |
| ttcatcggga gggctctgcat ccatggtaaa gattcccga agtaaattcct tatcaaaata | 6480 |
| gctgatggga gtggggtcat ctaaggccat ttgccattct cgagctgcca gtgcgcgctc  | 6540 |
| atatgggtta aggggactgc cccatggcat gggatgggtg agtgcagagg catacatgcc  | 6600 |
| acagatgtca tagacgtaga tgggatcctc aaagatgcct atgtaggttg gatagcatcg  | 6660 |
| ccccctctg atacttgctc gcacatagtc atatagttca tgtgatggcg ctagcagccc   | 6720 |
| cggacccaag ttggtgcgat tgggtttttc tgttctgtag acgatctggc gaaagatggc  | 6780 |
| gtgagaattg gaagagatgg tgggtctttg aaaaatgttg aaatgggcat gaggtagacc  | 6840 |
| tacagagtct ctgacaaagt gggcataaga ttcttgaagc ttggttacca gttcggcggt  | 6900 |
| gacaagtacg tctagggcgc agtagtcaag tgtttcttga atgatgtcat aacctggttg  | 6960 |
| gtttttcttt tcccacagtt cgcggttgag aaggatttct tcgcgatcct tccagtactc  | 7020 |
| ttctagcgga aaccctgctt tgtctgcacg gtaagatcct agcatgtaga actgattaac  | 7080 |
| tgctttgtaa gggcagcagc ctttctctac gggtagagag tatgcttgag cagcttttcg  | 7140 |
| tagcgaagcg tgagtaaggg caaagggtgc tctgaccatg actttgagga attgggtattt | 7200 |
| gaagtcgatg tcgtcacagg ctccctgttc ccagagtgg aagtctaccc gtttcttgta   | 7260 |
| ggcgggggtg ggcaaagcga aagtaacatc attgaagaga atcttgccgg ccctgggcat  | 7320 |
| gaaattgcga gtgatgcgaa aaggctgtgg tacttccgct cggttattga taacctgggc  | 7380 |
| agctaggacg atctcgtcga aaccgttgat gttgtgtcct acgatgtata attctatgaa  | 7440 |
| acgcggcgtg cctctgacgt gaggtagctt actgagctca tcaaaggtta ggtctgtggg  | 7500 |
| gtcagataag gcgtagtggt cgagagccca ttcgtgcagg tgaggattcg ctttaaggaa  | 7560 |
| ggaggaccag aggtccactg ccagtgtgtt ttgtaactgg tcccgggtact gacgaaaatg | 7620 |
| ccgtccgact gccatttttt ctgggggtgac gcaatagaag gtttgggggt cctgccgcca | 7680 |

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| gcgatccac ttgagtttta tggcgaggct ataggcgatg ttgacgagcc gctggctctcc  | 7740 |
| agagagtttc atgaccagca tgaaggggat tagctgcttg ccaaaggacc ccatccaggt  | 7800 |
| gtaggtttcc acatcgtagg tgagaaagag cctttctgtg cgaggatgag agccaatcgg  | 7860 |
| gaagaactgg atctcctgcc accagttgga ggaatggctg ttgatgtgat ggaagtagaa  | 7920 |
| ctccctgcga cgcgccgagc attcatgctt gtgcttgtag agacggccgc agtagtcgca  | 7980 |
| gcgttgccacg gggtgtatct cgtgaatgag ttgtacctgg cttcccttga cgagaaatth | 8040 |
| cagtgggaag ccgaggcctg gcgattgtat ctcgtgctth actatgttgt ctgcatcggc  | 8100 |
| ctgttcatct tctgtctcga tgggtggtcat gctgacgagc cctcgcggga ggcaagtcca | 8160 |
| gacctcggcg cggcaggggc ggagctcgag gacgagagcg cgcaggctgg agctgtccag  | 8220 |
| ggtcctgaga cgctgcggac tcaggttagt aggcagtgct aggagattaa cttgcatgat  | 8280 |
| cttttggagg gcgtgcggga gggtcagata gtacttgatc tcaacgggtc cgttgggtga  | 8340 |
| gatgtcgatg gcttgcaggg ttccgtgtcc cttgggcgct accaccgtgc cttgtttth   | 8400 |
| cattttggac ggcggtggct ctgttgcttc ttgcatgtth agaagcgggtg tcgagggcgc | 8460 |
| gcaccgggcg gcaggggcgg ctcgggaccc ggcggcagtg ctggcagtggt tacgtcggcg | 8520 |
| ccgcgcgcgg gtaggttctg gtactgcgcc ctgagaagac tcgcatgcgc gacgacgcgg  | 8580 |
| cggttgacat cctggatctg acgcctctgg gtgaaaagcta ccggccccgt gagcttgaac | 8640 |
| ctgaaagaga gttcaacaga atcaatctcg gtatcgttga cggcggcttg cctaaggatt  | 8700 |
| tcttgcacgt caccagagtt gtcctggtag gcgatctccg ccatgaactg ctcgatctct  | 8760 |
| tcctcttgaa gatctccgcg gcccgtctc tcgacgggtg ccgcgaggtc gttggagatg   | 8820 |
| cgcccaatga gttgagagaa tgcattcatg cccgcctcgt tccagacgcg gctgtagacc  | 8880 |
| acggcccca cgggatctct cgcgcgcatg accacctggg cgaggttgag ctccacgtgg   | 8940 |
| cgggtgaaga ccgcatagtt gcataggcgc tggaaaaggt agttgagtgt ggtggcgatg  | 9000 |
| tgctcgggtga cgaagaaata catgatccat cgtctcagcg gcatctcgct gacatcgccc | 9060 |
| agagcttcca agcgtcccat ggccctcgtag aagtccacgg caaaattaaa aaactgggag | 9120 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| tttcgcgcgg acacggtcaa ctctctttcc agaagacgga taagttcggc gatggtggtg  | 9180  |
| cgcacctcgc gctcgaaaagc ccctgggatt tcttcctcaa tctcttcttc ttccactaac | 9240  |
| atctcttcct cttcaggtgg ggctgcagga ggagggggaa cgcggcgacg ccggcggcgc  | 9300  |
| acgggcagac ggtc gatgaa tctttcaatg acctctccgc ggaggcgggc catggtttca | 9360  |
| gtgacggcgc ggccgttctc gcgcggctgc agagtaaaaa caccgccgcg catctcctta  | 9420  |
| aagtggtgac tgggaggttc tccgtttggg agggagaggg cgctgattat acattttatt  | 9480  |
| aattggcccc tagggactgc acgcagagat ctgatcgtgt caagatccac gggatctgaa  | 9540  |
| aacctttcga cgaaagcgtc taaccagtca cagtcacaag gtaggctgag tacggcttct  | 9600  |
| tgtgggcggg ggtggttatg tggtcggctt gggtcttctg tttcttcttc atctcgggaa  | 9660  |
| ggtgagacga tgctgctggt gatgaaatta aagtaggcag ttctaagacg gcggatggtg  | 9720  |
| gcgaggagca ccaggctttt gggtccggct tgctggatac gcaggcgatt ggccattccc  | 9780  |
| caagcattat cctgacatct agcaagatct ttgtagtagt cttgcatgag ccgttctacg  | 9840  |
| ggcacttctt cctcaccctg tctgccatgc atacgtgtga gtccaaatcc gcgcattggt  | 9900  |
| tgtaccagtg ccaagtcagc tacgactctt tcggcgagga tggcttgctg tacttgggta  | 9960  |
| agggtggctt gaaagtcac aaatccaca aagcggtggt aagctcctgt attaatggtg    | 10020 |
| taagcacagt tggccatgac tgaccagtta actgtctggt gaccagggcg cacgagctcg  | 10080 |
| gtgtatttaa ggcggaata ggcgcggggtg tcaaagatgt aatcgttgca ggtgcgcacc  | 10140 |
| agatactggt accctataag aaaatgcggc ggtggttggc ggtagagagg ccatcgttct  | 10200 |
| gtagctggag cgccaggggc gaggtcttcc aacataaggc ggtgatagcc gtagatgtac  | 10260 |
| ctggacatcc aggtgattcc tgcggcggtg gtagaagccc gaggaaactc gcgtacgcgg  | 10320 |
| ttccaaatgt tgcgtagcgg catgaagtag ttcatgtag gcacggtttg accagtgagg   | 10380 |
| cgcgcgcagt cattgatgct ctatagacac ggagaaaatg aaagcgttca gcgactcgac  | 10440 |
| tccgtagcct ggaggaacgt gaacgggttg ggtcgcggtg taccgggtt cgagacttgt   | 10500 |
| actcgagccg gccggagccg cggctaactg ggtattggca ctcccgtctc gaccagcct   | 10560 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| acaaaaatcc aggatacggg atcgagtcgt tttgctgggt tccgaatggc aggggaagtga | 10620 |
| gtcctatttt ttttttttgc cgctcagatg catcccgtgc tgcgacagat gcgcccccaa  | 10680 |
| caacagcccc cctcgcagca gcagcagcag caatcacaaa aggctgtccc tgcaactact  | 10740 |
| gcaactgccg ccgtgagcgg tgcgggacag cccgcctatg atctggactt ggaagagggc  | 10800 |
| gaaggactgg cacgtctagg tgcgccttca cccgagcggc atccgcgagt tcaactgaaa  | 10860 |
| aaagattctc gcgaggcgta tgtgccccaa cagaacctat ttagagacag aagcggcgag  | 10920 |
| gagccggagg agatgcgagc ttcccgtttt aacgcgggtc gtgagctgcg tcacggtttg  | 10980 |
| gaccgaagac gagtgttgcg ggacgaggat ttcgaagttg atgaaatgac agggatcagt  | 11040 |
| cctgccaggg cacacgtggc tgcagccaac cttgtatcgg cttacgagca gacagtaaag  | 11100 |
| gaagagcgta acttccaaaa gtcttttaaat aatcatgtgc gaaccctgat tgcccgcgaa | 11160 |
| gaagttaccc ttggtttgat gcatttgtgg gatttgcgag aagctatcat tcagaaccct  | 11220 |
| actagcaaac ctctgaccgc ccagctgttt ctggtgggtgc aacacagcag agacaatgag | 11280 |
| gctttcagag aggcgctgct gaacatcacc gaacccgagg ggagatgggt gtatgatctt  | 11340 |
| atcaacattc tacagagtat catagtgcag gagcggagcc tgggcctggc cgagaagggtg | 11400 |
| gctgccatca attactcggg tttgagcttg ggaaaatatt acgctcgcaa aatctacaag  | 11460 |
| actccatacg ttcccataga caaggagggtg aagatagatg ggttctacat gcgcatgacg | 11520 |
| ctcaaggctt tgaccctgag cgatgatctt ggggtgtatc gcaatgacag aatgcatcgc  | 11580 |
| gcggttagcg ccagcaggag gcgcgagtta agcgacaggg aactgatgca cagtttgcaa  | 11640 |
| agagctctga ctggagctgg aaccgagggt gagaattact tcgacatggg agctgacttg  | 11700 |
| cagtggcagc ctagtcgcag ggctctgagc gccgcgacgg caggatgtga gcttccttac  | 11760 |
| atagaagagg cggatgaagg cgaggaggaa gagggcgagt acttggaaga ctgatggcac  | 11820 |
| aaccctgtgt ttttgctaga tggaacagca agcaccggat cccgcaatgc gggcggcgct  | 11880 |
| gcagagccag ccgtccggca ttaactcctc ggacgattgg acccaggcca tgcaacgtat  | 11940 |
| catggcggtg acgactcgca accccgaagc ctttagacag caaccccagg ccaaccgtct  | 12000 |



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|                                              |                           |       |
|----------------------------------------------|---------------------------|-------|
| atcgccatc atggaagctg tagtgccttc ccgctcta     | atc cccactcatg agaaggtcct | 12060 |
| ggccatcgtg aacgcgttgg tggagaacaa agctattcgt  | ccagatgagg ccggactgg      | 12120 |
| atacaacgct ctcttagaac gcgtggctcg ctacaacagt  | agcaatgtgc aaaccaat       | 12180 |
| ggaccgtatg ataacagatg tacgcgaagc cgtgtctcag  | cgcgaaaggt tccagcgtga     | 12240 |
| tgccaacctg ggttcgctgg tggcgtaaaa tgctttcttg  | agtactcagc ctgcta         | 12300 |
| gccgcgtggg caacaggatt atactaactt ttttaagtgt  | ttgagactga tggatcaga      | 12360 |
| agtacctcag agcgaagtgt atcagtcagg tcctgattac  | ttctttcaga ctagcagaca     | 12420 |
| gggcttgtag acggtaaatc tgagccaagc ttttaaaaac  | cttaaagggt tgtggggagt     | 12480 |
| gcatgccccg gtaggagaaa gagcaaccgt gtctagcttg  | ttaactccga actccgcct      | 12540 |
| attattactg ttggtagctc ctttcaccga cagcggtagc  | atcgaccgta attcctat       | 12600 |
| gggttaccta ctaaacctgt atcgcggaagc catagggcaa | agtcagggtg acgagcagac     | 12660 |
| ctatcaagaa attaccaag tcagtcgagc tttgggacag   | gaagacactg gcagtttga      | 12720 |
| agccactctg aacttcttgc ttaccaatcg gtctcaaaaag | atccctcctc aatatgctct     | 12780 |
| tactgcggag gaggagagga tccttagata tgtgcagcag  | agcgtgggat tgtttctgat     | 12840 |
| gcaagagggg gcaactccga ctgcagcact ggacatgaca  | gcgcgaaata tggagcccag     | 12900 |
| catgtatgcc agtaaccgac ctttcattaa caaactgtctg | gactacttgc acagagctgc     | 12960 |
| cgctatgaac tctgattatt tcaccaatgc catcttaaac  | ccgcactggc tgccccacc      | 13020 |
| tggtttctac acgggcgaat atgacatgcc cgacccta    | at gacggatttc tgtgggacga  | 13080 |
| cgtggacagc gatgtttttt cacctctttc tgatcatcgc  | acgtggaaaa aggaaggcgg     | 13140 |
| cgatagaatg cattcttctg catcgctgtc cggggatcatg | ggtgctaccg cggtgagcc      | 13200 |
| cgagtctgca agtccttttc ctagtctacc cttttctcta  | cacagtgtac gtagcagcga     | 13260 |
| agtgggtaga ataagtcgcc cgagtttaaat gggcgaagag | gagtatctaa acgattcctt     | 13320 |
| gctcagaccg gcaagagaaa aaaatttccc aaacaatgga  | atagaaaagt tgggtggataa    | 13380 |
| aatgagtaga tggaagactt atgctcagga tcacagagac  | gagcctggga tcatggggat     | 13440 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| tacaagtaga gcgagccgta gacgccagcg ccatgacaga cagaggggtc ttgtgtggga  | 13500 |
| cgatgaggat tcggccgatg atagcagcgt gctggacttg ggtgggagag gaaggggcaa  | 13560 |
| cccgtttgct catttgcgcc ctcgcttggg tggatatgtt taaaaaaaaa taaaaaaaaa  | 13620 |
| actcaccaag gccatggcga cgagcgtagc ttcgttcttc tttattatct gtgtctagta  | 13680 |
| taatgaggcg agtcgtgcta ggcggagcgg tgggtatatcc ggagggtcct cctccttcgt | 13740 |
| acgagagcgt gatgcagcag cagcaggcga cggcgggtgat gcaatcccca ctggaggctc | 13800 |
| cctttgtgcc tccgcgatac ctggcaccta cggagggcag aaacagcatt cgttattcgg  | 13860 |
| aactggcacc tcagtacgat accaccaggt tgtatctggt ggacaacaag tcggcggaca  | 13920 |
| ttgcttctct gaactatcag aatgaccaca gcaacttctt gaccacgggtg gtgcaaaaca | 13980 |
| atgactttac ccctacggaa gccagcacc agaccattaa ctttgatgaa cgatcgcggt   | 14040 |
| ggggcgggtca gctaaagacc atcatgcata ctaacatgcc aaacgtgaac gagtatatgt | 14100 |
| ttagtaacaa gttcaaagcg cgtgtgatgg tgtccagaaa acctcccgac ggtgctgcag  | 14160 |
| ttggggatac ttatgatcac aagcaggata ttttgaaata tgagtgggtc gagtttactt  | 14220 |
| tgccagaagg caacttttca gttactatga ctattgattt gatgaacaat gccatcatag  | 14280 |
| ataattactt gaaagtgggt agacagaatg gagtgcttga aagtgacatt ggtgttaagt  | 14340 |
| tcgacaccag gaacttcaag ctgggatggg atcccgaac caagttgatc atgcctggag   | 14400 |
| tgtatacgta tgaagccttc catcctgaca ttgtcttact gcctggctgc ggagtggatt  | 14460 |
| ttaccgagag tcgtttgagc aaccttcttg gtatcagaaa aaaacagcca tttcaagagg  | 14520 |
| gttttaagat tttgtatgaa gatttagaag gtggtaatat tccggccctc ttggatgtag  | 14580 |
| atgcctatga gaacagtaag aaagaacaaa aagccaaaat agaagctgct acagctgctg  | 14640 |
| cagaagctaa ggcaaacata gttgccagcg actctacaag ggttgctaac gctggagagg  | 14700 |
| tcagaggaga caattttgcg ccaacacctg ttccgactgc agaatacatta ttggccgatg | 14760 |
| tgtctgaagg aacggacgtg aaactcacta ttcaacctgt agaaaaagat agtaagaata  | 14820 |
| gaagctataa tgtgttgga gacaaaatca acacagccta tcgcagttgg tatctttcgt   | 14880 |

## eolf-othd-000005

|                                   |                                   |       |
|-----------------------------------|-----------------------------------|-------|
| acaattatgg cgatcccgaa aaaggagtg   | gttcctggac attgctcacc acctcagatg  | 14940 |
| tcacctgcgg agcagagcag gtctactgg   | cgcttccaga catgatgaag gatcctgtca  | 15000 |
| ctttccgctc cactagacaa gtcagtaact  | accctgtggg gggcgcagag cttatgccc   | 15060 |
| tcttctcaaa gagcttctac aacgaacaag  | ctgtgtactc ccagcagctc cgccagtcca  | 15120 |
| cctcgcttac gcacgtcttc aaccgctttc  | ctgagaacca gattttaatc cgtccgccgg  | 15180 |
| cgcccacat taccaccgtc agtgaacacg   | ttcctgtctc cacagatcac gggaccctgc  | 15240 |
| cggtgcgcag cagtatccgg ggagtccaac  | gtgtgaccgt tactgacgcc agacgccgca  | 15300 |
| cctgtcccta cgtgtacaag gcactgggca  | tagtcgcacc gcgcgtcctt tcaagccgca  | 15360 |
| ctttctaaaa aaaaaaaaaa tgtccattct  | tatctcgccc agtaataaca ccggttgggg  | 15420 |
| tctgcgcgct ccaagcaaga tgtacggagg  | cgcacgcaaa cgttctaccc aacatcctgt  | 15480 |
| ccgtgttcgc ggacattttc gcgctccatg  | gggcgccctc aagggccgca ctcgcgttcg  | 15540 |
| aaccaccgtc gatgatgtaa tcgatcagg   | ggttgccgac gcccgttaatt atactcctac | 15600 |
| tgcgccata tctactgtgg atgcagttat   | tgacagtgtg gtggctgacg ctcgcaacta  | 15660 |
| tgctcgacgt aagagccggc gaaggcgc    | atgccagacgc caccgagcta ccactgccat | 15720 |
| gcgagccgca agagctctgc tacgaagagc  | tagacgcgtg gggcgaagag ccatgcttag  | 15780 |
| ggcggccaga cgtgcagctt cgggcgccag  | cgccggcagg tcccgcaggc aagcagccgc  | 15840 |
| tgctgcagcg gcgactattg ccgacatggc  | ccaatcgca agaggcaatg tatactgggt   | 15900 |
| gcgtgacgct gccaccggc aacgtgtacc   | cgtgcgcacc cgtccccctc gcacttagaa  | 15960 |
| gatactgagc agtctccgat gttgtgtccc  | agcggcgagg atgtccaagc gcaaatacaa  | 16020 |
| ggaagaaatg ctgcaggtta tcgcacctga  | agtctacggc caaccgttga aggatgaaaa  | 16080 |
| aaaacccgc aaaatcaagc gggttaaaaa   | ggacaaaaaa gaagaggaag atggcgatga  | 16140 |
| tgggctggcg gagtttgtgc gcgagtttgc  | cccacggcga cgcgtgcaat ggcgtggg    | 16200 |
| caaagttcga catgtgttga gacctggaac  | ttcgggtggtc ttacacccg gcgagcgttc  | 16260 |
| aagcgctact ttttaagcgtt cctatgatga | ggtgtacggg gatgatgata ttcttgagca  | 16320 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| ggcggctgac cgattaggcg agtttgctta tggcaagcgt agtagaataa cttccaagga   | 16380 |
| tgagacagtg tcgataccct tggatcatgg aaatcccacc cctagtctta aaccgggtcac  | 16440 |
| tttgcagcaa gtgttaccgc taactccgcg aacagggtgtt aaacgcgaag gtgaagattt  | 16500 |
| gtatcccact atgcaactga tggtagccaa acgccagaag ttggaggacg ttttggagaa   | 16560 |
| agtaaaagtg gatccagata ttcaacctga ggtaaagt agaccatta agcaggtagc      | 16620 |
| gcctgggtctg ggggtacaaa ctgtagacat taagattccc actgaaagta tggaagtgc   | 16680 |
| aactgaacct gcaaagccta ctgccacct cactgaagtg caaacggatc catggatgcc    | 16740 |
| catgcctatt acaactgacg ccgccgtcc cactcgaaga tcccgacgaa agtacgggtcc   | 16800 |
| agcaagtctg ttgatgcca attatgttgt acacccatct attattccta ctcttggtta    | 16860 |
| ccgaggcact cgctactatc gcagccgaaa cagtacctcc cgccgtcgcc gcaagacacc   | 16920 |
| tgcaaatcgc agtcgtcgcc gtagacgcac aagcaaaccg actcccggcg ccctgggtgcg  | 16980 |
| gcaagtgtac cgcaatggta gtgcggaacc tttgacactg ccgcgtgcgc gttaccatcc   | 17040 |
| gagtatcatc acttaataa tgttgccgct gcctccttgc agatatggcc ctacttgtc     | 17100 |
| gccttcgcgt tcccatcact ggttaccgag gaagaaactc gcgccgtaga agagggatgt   | 17160 |
| tgggacgcgg aatgcgacgc tacaggcgac ggcgtgctat ccgcaagcaa ttgcgggggtg  | 17220 |
| gttttttacc agccttaatt ccaattatcg ctgctgcaat tggcgcgata ccaggcatag   | 17280 |
| cttccgtggc gggttcaggcc tcgcaacgac attgacattg gaaaaaacg tataaataaa   | 17340 |
| aaaaaaaaa tacaatggac tctgacactc ctggtcctgt gactatgttt tcttagagat    | 17400 |
| ggaagacatc aatttttcat ctttggtcc gcgacacggc acgaagccgt acatgggcac    | 17460 |
| ctggagcgac atcggcacga gccaaactgaa cggggggcgcc ttcaattgga gcagtatctg | 17520 |
| gagcgggctt aaaaattttg gctcaaccat aaaaacatac gggaacaaag cttggaacag   | 17580 |
| cagtacagga caggcgctta gaaataaact taaagaccag aacttccaac aaaaagtagt   | 17640 |
| cgatgggata gcttccggca tcaatggagt ggtagatttg gctaaccagg ctgtgcagaa   | 17700 |
| aaagataaac agtcgttttg acccgccgcc agcaacccca ggtgaaatgc aagtggagga   | 17760 |

## eolf-othd-000005

|             |             |            |             |            |            |       |
|-------------|-------------|------------|-------------|------------|------------|-------|
| agaaattcct  | ccgccagaaa  | aacgaggcga | caagcgtccg  | cgtcccgatt | tggaagagac | 17820 |
| gctggtgacg  | cgcgtagatg  | aaccgccttc | ttatgaggaa  | gcaacgaagc | ttggaatgcc | 17880 |
| caccactaga  | ccgatagccc  | caatggccac | cgggggtgatg | aaaccttctc | agttgcatcg | 17940 |
| acccgtcacc  | ttggatttgc  | ccccctcccc | tgctgctact  | gctgtacccg | cttctaagcc | 18000 |
| tgtcgctgcc  | ccgaaaccag  | tcgccgtagc | caggtcacgt  | cccgggggcg | ctcctcgtcc | 18060 |
| aaatgcgcac  | tggcaaaaata | ctctgaacag | catcgtgggt  | ctaggcgtgc | aaagtgtaaa | 18120 |
| acgccgtcgc  | tgctttttaat | taaatatgga | gtagcgctta  | acttgcctat | ctgtgtatat | 18180 |
| gtgtcattac  | acgccgtcac  | agcagcagag | gaaaaaagga  | agaggtcgtg | cgtcgacgct | 18240 |
| gagttacttt  | caagatggcc  | accccatcga | tgctgccccca | atgggcatac | atgcacatcg | 18300 |
| ccggacagga  | tgcttcggag  | tacctgagtc | cgggtctggt  | gcagttcgcc | cgcgccacag | 18360 |
| acacctactt  | caatctggga  | aataagttta | gaaatcccac  | cgtagcgccg | accacgatg  | 18420 |
| tgaccaccga  | ccgtagccag  | cggctcatgt | tgcgcttcgt  | gcccgttgac | cgggaggaca | 18480 |
| atacatactc  | ttacaaaagt  | cggtacaccc | tggccgtggg  | cgacaacaga | gtgctggata | 18540 |
| tggccagcac  | gttctttgac  | attaggggtg | tgttggacag  | aggtcccagt | ttcaaaccct | 18600 |
| attctggtac  | ggcttacaac  | tccctggctc | ctaaaggcgc  | tccaaataca | tctcagtgga | 18660 |
| ttgcagaagg  | tgtaaaaaat  | acaactgggt | aggaacacgt  | aacagaagag | gaaaccaata | 18720 |
| ctactactta  | cacttttggc  | aatgctcctg | taaaagctga  | agctgaaatt | acaaaagaag | 18780 |
| gactcccagt  | aggtttggaa  | gtttcagatg | aagaaagtaa  | accgatttat | gctgataaaa | 18840 |
| catatcagcc  | agaacctcag  | ctgggagatg | aaacttggac  | tgaccttgat | ggaaaaaccg | 18900 |
| aaaagtatgg  | aggcagggtc  | ctcaaaccgc | atactaagat  | gaaaccatgc | tacgggtcct | 18960 |
| ttgccaaacc  | tactaatgtg  | aaaggcggtc | aggcaaaaaca | aaaaacaacg | gagcagccaa | 19020 |
| atcagaaaagt | cgaatatgat  | atcgacatgg | agttttttga  | tgcggcatcg | cagaaaacaa | 19080 |
| acttaagtcc  | taaaattgtc  | atgtatgcag | aaaatgtaaa  | tttggaaact | ccagacactc | 19140 |
| atgtagtgtg  | caaacctgga  | acagaagaca | caagttccga  | agctaatttg | ggacaacaat | 19200 |

## eolf-othd-000005

|                                                                     |       |
|---------------------------------------------------------------------|-------|
| ctatgccccaa cagacccaac tacattggct tcagagataa ctttattgga cttatgtact  | 19260 |
| ataacagtac tggtaacatg ggggtgctgg ctggtcaagc gtctcagtta aatgcagtgg   | 19320 |
| ttgacttgca ggacagaaac acagaacttt cttaccaact cttgcttgac tctctgggcg   | 19380 |
| acagaaccag atacttttagc atgtggaatc aggctgtgga cagttatgat cctgatgtac  | 19440 |
| gtgttattga aaatcatggg gtggaagatg aacttcccaa ctactgtttt ccactggacg   | 19500 |
| gcataggtgt tccaacaacc agttacaaat caatagttcc aaatggagac aatgcgccta   | 19560 |
| attggaagga acctgaagta aatggaacaa gtgagatcgg acagggtaat ttgtttgcca   | 19620 |
| tggaaattaa ccttcaagcc aatctatggc gaagtttcct ttattccaat gtggctctat   | 19680 |
| atctcccaga ctctgtacaaa tacaccccggt ccaatgtcac tcttccagaa aacaaaaaca | 19740 |
| cctacgacta catgaacggg cgggtggtgc cgccatctct agtagacacc tatgtgaaca   | 19800 |
| ttggtgccag gtggtctctg gatgccatgg acaatgtcaa ccattcaac caccaccgta    | 19860 |
| acgctggctt gcgttaccga tccatgcttc tgggtaacgg acgttatgtg cttttccaca   | 19920 |
| tacaagtgcc tcaaaaaattc ttcgctgtta aaaacctgct gcttctccca ggctcctaca  | 19980 |
| cttatgagtg gaactttagg aaggatgtga acatggttct acagagttcc ctcggtaacg   | 20040 |
| acctgcgggt agatggcgcc agcatcagtt tcacgagcat caacctctat gctacttttt   | 20100 |
| tccccatggc tcacaacacc gcttccaccc ttgaagccat gctgcggaat gacaccaatg   | 20160 |
| atcagtcatt caacgactac ctatctgcag ctaacatgct ctacccatt cctgccaatg    | 20220 |
| caaccaatat tcccatttcc attccttctc gcaactgggc ggctttcaga ggctggtcac   | 20280 |
| ttaccagact gaaaacaaaa gaaactccct ctttggggtc tggatttgac ccctactttg   | 20340 |
| tctattctgg ttctattccc tacctggatg gtaccttcta cctgaaccac acttttaaga   | 20400 |
| aggtttccat catgtttgac tcttcagtga gctggcctgg aaatgacagg ttactatctc   | 20460 |
| ctaacgaatt tgaaataaag cgcactgtgg atggcgaagg ctacaacgta gcccaatgca   | 20520 |
| acatgaccaaa agactgggtt ttggtacaga tgctcgccaa ctacaacatc ggctatcagg  | 20580 |
| gcttctacat tccagaagga taaaaagatc gcatgtattc atttttcaga aacttccagc   | 20640 |

## eolf-othd-000005

|                                                                    |       |
|--------------------------------------------------------------------|-------|
| ccatgagcag gcaggtggtt gatgaggtca attacaaaga cttcaaggcc gtcgccatac  | 20700 |
| cctaccaaca caacaactct ggctttgtgg gttacatggc tccgaccatg cgccaaggtc  | 20760 |
| aaccctatcc cgctaactat ccctatccac tcattggaac aactgccgta aatagtgtta  | 20820 |
| cgcagaaaaa gttcttgtgt gacagaacca tgtggcgcat accgttctcg agcaacttca  | 20880 |
| tgtctatggg ggcccttaca gacttgggac agaatatgct ctatgccaac tcagctcatg  | 20940 |
| ctctggacat gacctttgag gtggatccca tggatgagcc caccctgctt tatcttctct  | 21000 |
| tcgaagtttt cgacgtggtc agagtgcac agccacaccg cggcatcatc gaggcagtct   | 21060 |
| acctgcgtac accgttctcg gccggtaacg ctaccacgta agaagcttct tgcttcttgc  | 21120 |
| aaatagcagc tgcaaccatg gcctgcggat cccaaaacgg ctccagcgag caagagctca  | 21180 |
| gagccattgt ccaagacctg ggttgccggac cctatTTTTT gggaacctac gataagcgct | 21240 |
| tcccgggggt catggcccc gataagctcg cctgtgccat tgtaaatacg gccggacgtg   | 21300 |
| agacgggggg agagcactgg ttggctttcg gttggaaccc acgttctaac acctgctacc  | 21360 |
| TTTTTgatcc TTTTggattc tcggatgatc gtctcaaaca gatttaccag tttgaatatg  | 21420 |
| agggtctcct gcgccgcagc gctcttgcta ccaaggaccg ctgtattacg ctggaaaaat  | 21480 |
| ctaccagac cgtgcagggt ccccgttctg ccgcctgcgg acttttctgc tgcattgtcc   | 21540 |
| ttcacgcctt tgtgcactgg cctgaccgtc ccatggacgg aaacccacc atgaaattgc   | 21600 |
| taactggagt gccaaacaac atgcttcatt ctctaaagt ccagcccacc ctgtgtgaca   | 21660 |
| atcaaaaagc actctaccat tttcttaata cccattcgcc ttatttttcgc tcccatcgta | 21720 |
| cacacatcga aagggccact gcgttcgacc gtatggatgt tcaataatga ctcatgtaaa  | 21780 |
| caacgtgttc aataaacatc actttatTTT ttacatgta tcaaggctct gcattactta   | 21840 |
| tttatttaca agtcgaatgg gttctgacga gaatcagaat gacccgcagg cagtgatacg  | 21900 |
| ttgcggaact gatacttggg ttgccacttg aattcgggaa tcaccaactt gggaaccggt  | 21960 |
| atatcgggca ggatgtcact ccacagcttt ctggtcagct gcaaagctcc aagcagggtca | 22020 |
| ggagccgaaa tcttgaaatc acaattagga ccagtgcttt gagcgcgaga gttgcggtac  | 22080 |

## eolf-othd-000005

|                                                                     |       |
|---------------------------------------------------------------------|-------|
| accggattgc agcactgaaa caccatcagc gacggatgtc tcacgcttgc cagcacggtg   | 22140 |
| ggatctgcaa tcatgcccac atccagatct tcagcattgg caatgctgaa cgggggtcatc  | 22200 |
| ttgcaggtct gcctacccat ggccgggcacc caattaggct tgtggttgca atcgcagtg   | 22260 |
| aggggggatca gtatcatctt ggccctgatcc tgtctgattc ctggatacac ggctctcatg | 22320 |
| aaagcatcat attgcttgaa agcctgctgg gctttactac cctcggtata aaacatccc    | 22380 |
| caggacctgc tcgaaaactg gtttagctgca cagccggcat cattcacaca gcagcgggcg  | 22440 |
| tcattgttag ctatttgcac cacacttctg cccagcgggt tttgggtgat tttggttcgc   | 22500 |
| tcgggattct cctttaaggc tcgttgtccg ttctcgctgg ccacatccat ctcgataatc   | 22560 |
| tgctccttct gaatcataat attgccatgc aggcacttca gcttgccctc ataatcattg   | 22620 |
| cagccatgag gccacaacgc acagcctgta cattcccaat tatgggtgggc gatctgagaa  | 22680 |
| aaagaatgta tcattccctg cagaaatctt cccatcatcg tgctcagtgt cttgtgacta   | 22740 |
| gtgaaagtta actggatgcc tcggtgctcc tcgtttacgt actggtgaca gatgcgcttg   | 22800 |
| tattgttcgt gttgctcagg cattagttta aaagagggtc taagtctgtt atccagcctg   | 22860 |
| tacttctcca tcagcagaca catcacttcc atgcctttct cccaagcaga caccaggggc   | 22920 |
| aagctaatacg gattcttaac agtgcaggca gcagctcctt tagccagagg gtcactttta  | 22980 |
| gcgatcttct caatgcttct tttgccatcc ttctcaacga tgcgcacggg cgggtagctg   | 23040 |
| aaaccactg ctacaagttg cgcctcttct ctttcttctt cgctgtcttg actgatgtct    | 23100 |
| tgcatgggga tatgtttggt cttccttggc ttctttttgg ggggtatcgg aggaggagga   | 23160 |
| ctgtcgctcc gttccggaga caggaggat tgtgacgtt cgctcaccat taccaactga     | 23220 |
| ctgtcggtag aagaacctga cccacacagg cgacagggtt ttctcttcgg gggcagaggt   | 23280 |
| ggaggcgatt gcgaagggt gcggtccgac ctggaaggcg gatgactggc agaaccctt     | 23340 |
| ccgcgttcgg ggggtgtgct cctgtggcgg tcgcttaact gatttccttc gcggctggcc   | 23400 |
| attgtgttct cctaggcaga gaaacaacag acatggaaac tcagccattg ctgtcaacat   | 23460 |
| cgccacgagt gccatcacat ctcgtcctca gcgacgagga aaaggagcag agcttaagca   | 23520 |



## eolf-othd-000005

|            |            |             |             |             |             |       |
|------------|------------|-------------|-------------|-------------|-------------|-------|
| ttccaccgcc | cagtcctgcc | accacctcta  | ccctagaaga  | taaggaggtc  | gacgcatctc  | 23580 |
| atgacatgca | gaataaaaaa | gcgaaaagagt | ctgagacaga  | catcgagcaa  | gacccgggct  | 23640 |
| atgtgacacc | ggtggaacac | gaggaagagt  | tgaaacgctt  | tctagagaga  | gaggatgaaa  | 23700 |
| actgccccaa | acaacgagca | gataactatc  | accaagatgc  | tggaaatagg  | gatcagaaca  | 23760 |
| ccgactacct | catagggctt | gacggggaag  | acgcgctcct  | taaacatcta  | gcaagacagt  | 23820 |
| cgctcatagt | caaggatgca | ttattggaca  | gaactgaagt  | gcccacagtc  | gtggaagagc  | 23880 |
| tcagccgcgc | ctacgagctt | aacctctttt  | cacctcgtac  | ttcccccaaa  | cgtcagccaa  | 23940 |
| acggcacctg | cgagccaaat | cctcgcttaa  | acttttatcc  | agcttttgct  | gtgccagaag  | 24000 |
| tactgggtac | ctatcacatc | ttttttaaaa  | atcaaaaaat  | tccagtctcc  | tgccgcgcta  | 24060 |
| atcgcacccg | cgccgatgcc | ctactcaatc  | tgggacctgg  | ttcacgctta  | cctgatatag  | 24120 |
| cttccttgga | agaggttcca | aagatcttcg  | agggctctggg | caataatgag  | actcgggccg  | 24180 |
| caaatgctct | gcaaaaagga | gaaaatggca  | tggatgagca  | tcacagcggt  | ctggtggaat  | 24240 |
| tggaaggcga | taatgccaga | ctcgcagtac  | tcaagcgaag  | catcgaggtc  | acacacttcg  | 24300 |
| catatccgc  | tgtcaacctg | ccccctaaag  | tcatgacggc  | ggatcatggac | cagttactca  | 24360 |
| ttaagcgcg  | aagtccccct | tcagaagaca  | tgcacgaccc  | agatgcctgt  | gatgagggtta | 24420 |
| aaccagtgg  | cagtgatgag | cagctaacc   | gatggctggg  | caccgactct  | cccagggatt  | 24480 |
| tggaagagcg | tcgcaagctt | atgatggccg  | tgggtgctggt | taccgtagaa  | ctagagtgtc  | 24540 |
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| acacgtggca | aaccggcatg | ggtgtatggc  | agcaatgttt  | agaagaacag  | aacttgaaag  | 24840 |
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| caggcagagg aggcggagga ggacagtctg gaggacagtc tggaggaaga cagtttgag   | 25740 |
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| ggtaagaagg atcggcaggg atacaagtcc tggcgggggc ataagaatgc catcatctcc  | 25980 |
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|                                                                     |       |
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| cctcgtggcg acggccactg gagtgcatac cgaactgggtg atgactcagt ccccgctcatc | 29460 |
| cctgacgggtg accgccggcg agaagggtcac catgtcgtgc aagtcctcgc aaagcctgct | 29520 |
| taacagcggc aaccagaaaa actacctcac gtggtatcag caaaagccag gtcaaccccc   | 29580 |
| aaaactgctc atctactggg cgagcaccgc cgagtcgggg gtgccagacc gggttcaccgg  | 29640 |
| ctccgggtca ggaactgatt tcaccctaac catcagctcg gtgcaagcgg aggacctggc   | 29700 |
| cgtgtactac tgccaaaatg attactcgta ccctctgacc tttggagcgg gcaccaagct   | 29760 |
| cgaaatcaag ggcggtggag gaagcggcgg gggagggtca ggtgggggag gatcagaagt   | 29820 |
| ccaactgctg gagcagtcag gagccgaact ggtccgcccc ggaacctccg tcaagatttc   | 29880 |
| ctgtaaggct tccggctacg cttttaccaa ttactggctg ggctgggtca agcaaagacc   | 29940 |
| ggggcatggc ctggagtgga tcggcgacat cttcccaggg agcggcaaca tccactacaa   | 30000 |
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| aaaacagagg cctggacagg gtctggaatg gattggatac attaataccta gccgtgggta  | 30360 |
| tactaattac aatcagaagt tcaaggacaa ggccacattg actacagaca aatcctccag   | 30420 |
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| ctgagataca gcgtaccttc agctcacaga catgataaga tacattgatg agtttggaca   | 31020 |
| aaccacaact agaatgcagt gaaaaaaaaatg ctttatttgt gaaatttgtg atgctattgc | 31080 |
| tttatttgtg accattataa gctgcaataa acaagttaac aacaacaatt gcattcattt   | 31140 |
| tatgtttcag gttcaggggg aggtgtggga ggttttttaa agcaagtaaa acctctacaa   | 31200 |
| atgtggtagt cgtcagctat cctgcaggaa cttgtttatt tgaaaaatcaa ttcacaaaat  | 31260 |
| ccgagtagtt attttgcctc ccccttccca tttaacagaa tacaccaatc tctccccacg   | 31320 |
| cacagcttta aacatttggg taccattaga tatagacatg gtttttagatt ccacattcca  | 31380 |
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|                                                                   |       |
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| gcaccgcccc ttttagccgt taacccccaca gccaatcacc acacgatcca cacttttta | 34140 |
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 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> NG-612 Genome

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| <400> 97                                                            |     |
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| aaaaagtgtg gatcgtgtgg tgattggctg tgggggttaac ggctaaaagg ggcgggtgcga | 120 |
| ccgtgggaaa atgacgtttt gtgggggtgg agtttttttg caagttgtcg cgggaaatgt   | 180 |
| gacgcataaa aaggcttttt tctcacggaa ctacttagtt ttcccacggg atttaacagg   | 240 |
| aaatgaggta gttttgaccg gatgcaagtg aaaattgttg attttcgcgc gaaaactgaa   | 300 |
| tgaggaagtg tttttctgaa taatgtggta tttatggcag ggtggagtat ttgttcaggg   | 360 |
| ccaggtagac tttgacccat tacgtggagg tttcgattac cgtgtttttt acctgaattt   | 420 |
| ccgcgtaccg tgtcaaagtc ttctgttttt acgtagggtg cagctgatcg ctagggattt   | 480 |
| tataacctcag ggtttgtgtc aagaggccac tcttgagtgc cagcgagaag agttttctcc  | 540 |



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| aatctctgct  | gagactggaa | atgaaatatt  | ggagcttggtg | gtgcacgccc | tgatgggaga | 660  |
| cgatccggag  | ccacctgtgc | agctttttga  | gcctcctacg  | cttcaggaac | tgtatgattt | 720  |
| agaggtagag  | ggatcggagg | attctaata   | ggaagctgta  | aatggctttt | ttaccgattc | 780  |
| tatgctttta  | gctgctaata | aagggttaga  | attagatccg  | cctttggaca | cttttgatac | 840  |
| tccaggggta  | attgtggaaa | gcggtacagg  | tgtaagaaaa  | ttacctgatt | tgagttccgt | 900  |
| ggactgtgat  | ttgcactgct | atgaagacgg  | gtttcctccg  | agtgatgagg | aggaccatga | 960  |
| aaaggagcag  | tccatgcaga | ctgcagcggg  | tgagggagtg  | aaggctgcca | atgttggttt | 1020 |
| tcagttggat  | tgcccggagc | ttcctggaca  | tggctgtaag  | tcttgtgaat | ttcacaggaa | 1080 |
| aaatactgga  | gtaaaggaac | tgttatgttc  | gctttgttat  | atgagaacgc | actgccactt | 1140 |
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| agtgttccat  | atccgtgttt | acttaagggtg | acgtcaatat  | ttgtgtgaca | gtgcaatgta | 1500 |
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| taagtagaag  | cagacctgtg | tggtagctc   | ataggagctg  | gctttcatcc | atggagggtt | 1620 |
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| aacaggacta  | taaacaagaa | tttgaaaagt  | tgttggtaga  | ttgccagga  | ctttttgaag | 1800 |
| ctcttaattt  | gggccatcag | gttcacttta  | aagaaaaagt  | tttatcagtt | ttagactttt | 1860 |
| caaccccagg  | tagaactgct | gctgctgtgg  | cttttcttac  | ttttatatta | gataaatgga | 1920 |
| tcccgacagac | tcatttcagc | aggggatacg  | ttttggattt  | catagccaca | gcattgtgga | 1980 |

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|                                                                     |      |
|---------------------------------------------------------------------|------|
| gaacatggaa ggttcgcaag atgaggacaa tcttaggtta ctggccagtg cagcctttgg   | 2040 |
| gtgtagcggg aatcctgagg catccaccgg tcatgccagc ggttctggag gaggaacagc   | 2100 |
| aagaggacaa cccgagagcc ggccctggacc ctccagtgga ggaggcggag tagctgactt  | 2160 |
| gtctcctgaa ctgcaacggg tgcttactgg atctacgtcc actggacggg ataggggcgt   | 2220 |
| taagaggagagg agggcatcta gtggtactga tgctagatct gagttggctt taagtttaat | 2280 |
| gagtcgcaga cgtcctgaaa ccatttgggtg gcatgagggtt cagaaagagg gaagggatga | 2340 |
| agtttctgta ttgcaggaga aatattcact ggaacagggtg aaaacatgtt ggttggagcc  | 2400 |
| tgaggatgat tgggagggtg ccattaaaaa ttatgccaa atagctttga ggctgataa     | 2460 |
| acagtataag attactagac ggattaatat ccggaatgct tgttacatat ctggaaatgg   | 2520 |
| ggctgagggtg gtaatagata ctcaagacaa ggcagttatt agatgctgca tgatggatat  | 2580 |
| gtggcctggg gtagtcggta tggaagcagt aacttttgta aatgttaagt ttaggggaga   | 2640 |
| tggttataat ggaatagtgt ttatggccaa taccaaactt atattgcatg gttgtagctt   | 2700 |
| ttttggtttc aacaatacct gtgtagatgc ctggggacag gttagtgtac ggggatgtag   | 2760 |
| tttctatgcg tgttggattg ccacagctgg cagaaccaag agtcaattgt ctctgaagaa   | 2820 |
| atgcatattt caaagatgta acctgggcat tctgaatgaa ggcgaagcaa ggggccgcca   | 2880 |
| ctgcgcttct acagatactg gatgttttat tttgattaag ggaaatgcca gcgtaaagca   | 2940 |
| taacatgatt tgcggtgctt ccgatgagag gccttatcaa atgctcactt gtgctgggtg   | 3000 |
| gcattgtaat atgctggcta ctgtgcatat tgtttcccat caacgcaaaa aatggcctgt   | 3060 |
| ttttgatcac aatgtgatga cgaagtgtac catgcatgca ggtgggcgta gaggaatgtt   | 3120 |
| tatgccttac cagtgtaaaca tgaatcatgt gaaagtgttg ttggaaccag atgccttttc  | 3180 |
| cagaatgagc ctaacaggaa tttttgacat gaacatgcaa atctggaaga tcctgaggta   | 3240 |
| tgatgatacg agatcgaggg tacgcgcatg cgaatgcgga ggcaagcatg ccaggttcca   | 3300 |
| gccggtgtgt gtagatgtga ctgaagatct cagaccggat catttggtta ttgcccgcac   | 3360 |
| tggagcagag ttcggatcca gtggagaaga aactgactaa ggtgagtatt gggaaaactt   | 3420 |

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| tggggtggga ttttcagatg gacagattga gtaaaaaattt gttttttctg tcttgagct  | 3480 |
| gtcatgagtg gaaacgcttc ttttaagggg ggagtcttca gcccttatct gacagggcgt  | 3540 |
| ctcccatcct gggcaggagt tcgtcagaat gttatgggat ctactgtgga tggaagaccc  | 3600 |
| gtccaacccg ccaattcttc aacgctgacc tatgctactt taagttcttc acctttggac  | 3660 |
| gcagctgcag ctgccgccgc cgcttctgtt gccgctaaca ctgtgcttgg aatgggttac  | 3720 |
| tatggaagca tcatggctaa ttccacttcc tctaataacc cttctaccct gactcaggac  | 3780 |
| aagttacttg tccttttggc ccagctggag gctttgaccc aacgtctggg tgaactttct  | 3840 |
| cagcaggtgg tcgagttgcg agtacaaact gagtctgctg tcggcacggc aaagtctaaa  | 3900 |
| taaaaaaatc ccagaatcaa tgaataaata aacaagcttg ttgttgattt aaaatcaagt  | 3960 |
| gtttttattt catttttcgc gcacggtatg ccctagacca ccgatctcta tcattgagaa  | 4020 |
| ctcgggtgat tttttccagg atcctataga ggtgggattg aatgtttaga tacatgggca  | 4080 |
| ttaggccgtc tttggggtgg agatagctcc attgaaggga ttcattgctcc ggggtagtgt | 4140 |
| tgtaaatcac ccagtcataa caaggctgca gtgcatgggtg ttgcacaata tcttttagaa | 4200 |
| gtaggctgat tgccacagat aagcccttgg tgtaggtgtt taaaaaccgg ttgagctggg  | 4260 |
| atgggtgcat tcggggtgaa attatgtgca ttttggattg gatttttaag ttggcaatat  | 4320 |
| tgccgccaag atcccgctctt gggttcatgt tatgaaggac caccaagacg gtgtatccgg | 4380 |
| tacatttagg aaatttatcg tgcagcttgg atggaaaagc gtggaaaaat ttggagacac  | 4440 |
| ccttgtgtcc tccaagattt tccatgcact catccatgat aatagcaatg gggccgtggg  | 4500 |
| cagcggcgcg ggcaaacacg ttccgtgggt ctgacacatc atagttatgt tcctgagtta  | 4560 |
| aatcatcata agccatttta atgaatttgg ggcggagagt accagattgg ggtatgaatg  | 4620 |
| ttccttcggg ccccgagca tagttcccct cacagatttg catttcccaa gctttcagtt   | 4680 |
| ccgagggtgg aatcatgtcc acctgggggg ctatgaaaaa caccgtttct ggggcggggg  | 4740 |
| tgattaattg tgatgatagc aaatttctga gcaattgaga tttgccacat ccggtggggc  | 4800 |
| cataaatgat tccgattacg ggttgcaggt ggtagtttag ggaacggcaa ctgccgtctt  | 4860 |

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|                                                                     |      |
|---------------------------------------------------------------------|------|
| ctcgaagcaa gggggccacc tcgttcatca tttcccttac atgcatattt tcccgcacca   | 4920 |
| aatccattag gaggcgctct cctcctagtg atagaagttc ttgtagtgag gaaaagtttt   | 4980 |
| tcagcggttt cagaccgtca gccatgggca ttttggagag agtttgctgc aaaagttcta   | 5040 |
| gtctgttcca cagttcagtg atgtgttcta tggcatctcg atccagcaga cctcctcggt   | 5100 |
| tcgcgggttt ggacggctcc tggaataggg tatgagacga tgggcgtcca gcgctgccag   | 5160 |
| ggttcgggtcc ttccagggtc tcagtgttcg agtcagggtt gtttccgtca cagtgaaggg  | 5220 |
| gtgtgcgctt gcttgggcgc ttgccagggt gcgcttcaga ctcatcctgc tggtcgaaaa   | 5280 |
| cttctgtcgc ttggcgccct gtatgtcggc caagtagcag tttacatga gttcgtagtt    | 5340 |
| gagcgctcg gctgcgtggc ctttggcgcg gagcttacct ttggaagttt tcttgcatatc   | 5400 |
| cgggcagtat aggcatttca gcgcatacaa cttgggcgca aggaaaacgg attctggggga  | 5460 |
| gtatgcatct gcgccgcagg aggcgcaaac agtttcacat tccaccagcc aggttaaadc   | 5520 |
| cggttcattg ggggtcaaaaa caagttttcc gccatatattt ttgatgcgtt tcttaccttt | 5580 |
| ggctctccatg agttcgtgtc ctggttgagt gacaaacagg ctgtccgtgt ccccgtagac  | 5640 |
| tgattttaca ggcctcttct ccagtggagt gcctcgggtt tcttcgtaca ggaactctga   | 5700 |
| ccactctgat acaaaggcgc gcgtccaggc cagcacaaag gaggctatgt gggaggggta   | 5760 |
| gcgatcggtg tcaaccaggg ggtccacctt ttccaaagta tgcaaacaca tgtcacctc    | 5820 |
| ttcaacatcc aggaatgtga ttggcttgta ggtgtatttc acgtgacctg ggggtccccgc  | 5880 |
| tgggggggta taaaaggggg cggttctttg ctcttcctca ctgtcttccg gatcgtgtc    | 5940 |
| caggaacgtc agctgttggg gtaggtattc cctctcgaag gcgggcatga cctctgcact   | 6000 |
| caggttgtca gtttctaaga acgaggagga tttgatattg acagtgccgg ttgagatgcc   | 6060 |
| tttcatgagg ttttcgtcca tctggtcaga aaacacaatt tttttattgt caagtttggt   | 6120 |
| ggcaaatgat ccatacaggg cgttggataa aagtttggca atggatcgca tggtttggtt   | 6180 |
| cttttccttg tccgcgcgct ctttggcggc gatgttgagt tggacatact cgcgtgccag   | 6240 |
| gcacttccat tcggggaaga tagttgttaa ttcactctggc acgattctca cttgccaccc  | 6300 |

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| tcgattatgc aaggtaatta aatccacact ggtggccacc tcgcctcgaa ggggttcatt  | 6360 |
| ggtccaacag agcctacctc ctttcctaga acagaaaagg ggaagtgggt ctagcataag  | 6420 |
| ttcatcggga ggggtctgcat ccatggtaaa gattcccgga agtaaadcct tatcaaaata | 6480 |
| gctgatggga gtgggggtcat ctaaggccat ttgccattct cgagctgcca gtgcgcgctc | 6540 |
| atatgggtta aggggactgc cccatggcat gggatgggtg agtgcagagg catacatgcc  | 6600 |
| acagatgtca tagacgtaga tgggatcctc aaagatgcct atgtaggttg gatagcatcg  | 6660 |
| ccccctctg atacttgctc gcacatagtc atatagttca tgtgatggcg ctagcagccc   | 6720 |
| cggacccaag ttggtgcgat tgggtttttc tgttctgtag acgatctggc gaaagatggc  | 6780 |
| gtgagaattg gaagagatgg tgggtctttg aaaaatgttg aaatgggcat gaggtagacc  | 6840 |
| tacagagtct ctgacaaagt gggcataaga ttcttgaagc ttggttacca gttcggcggt  | 6900 |
| gacaagtacg tctagggcgc agtagtcaag tgtttcttga atgatgtcat aacctggttg  | 6960 |
| gtttttcttt tcccacagtt cgcggttgag aaggatttct tcgcgatcct tccagtactc  | 7020 |
| ttctagcgga aaccctgctt tgtctgcacg gtaagatcct agcatgtaga actgattaac  | 7080 |
| tgctttgtaa gggcagcagc ctttctctac gggtagagag tatgcttgag cagcttttcg  | 7140 |
| tagcgaagcg tgagtaaggg caaagggtgc tctgaccatg actttgagga attggtattt  | 7200 |
| gaagtcgatg tcgtcacagg ctccctgttc ccagagttgg aagtctaccc gtttcttgta  | 7260 |
| ggcgggggttg ggcaaagcga aagtaacatc attgaagaga atcttgccgg ccctgggcat | 7320 |
| gaaattgcga gtgatgcgaa aaggctgtgg tacttccgct cggttattga taacctgggc  | 7380 |
| agctaggacg atctcgtcga aaccgttgat gttgtgtcct acgatgtata attctatgaa  | 7440 |
| acgcggcgtg cctctgacgt gaggtagctt actgagctca tcaaagggtta ggtctgtggg | 7500 |
| gtcagataag gcgtagtggt cgagagccca ttcgtgcagg tgaggattcg ctttaaggaa  | 7560 |
| ggaggaccag aggtccactg ccagtgtgtt ttgtaactgg tcccgggtact gacgaaaatg | 7620 |
| ccgtccgact gccatTTTTT ctgggggtgac gcaatagaag gtttgggggt cctgccgcca | 7680 |
| gcgatccac ttgagtttta tggcgagggtc ataggcgatg ttgacgagcc gctgggtctcc | 7740 |

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| agagagtttc atgaccagca tgaaggggat tagctgcttg ccaaaggacc ccatccaggt  | 7800 |
| gtaggtttcc acatcgtagg tgagaaaagag cttttctgtg cgaggatgag agccaatcgg | 7860 |
| gaagaactgg atctcctgcc accagttgga ggaatggctg ttgatgtgat ggaagtagaa  | 7920 |
| ctccctgcga cgcgccgagc attcatgctt gtgcttgtag agacggccgc agtagtcgca  | 7980 |
| gcgttgcacg ggttgatatc cgtgaatgag ttgtacctgg cttcccttga cgagaaattt  | 8040 |
| cagtgggaag ccgaggcctg gcgattgtat ctcgtgcttt actatgttgt ctgcatcggc  | 8100 |
| ctgttcatct tctgtctcga tgggtggcat gctgacgagc cctcgcggga ggcaagtcca  | 8160 |
| gacctcggcg cggcaggggc ggagctcgag gacgagagcg cgcaggctgg agctgtccag  | 8220 |
| ggtcctgaga cgctgcggac tcaggtagt aggcagtgtc aggagattaa cttgcatgat   | 8280 |
| cttttgagg gcgtgcggga ggttcagata gtacttgatc tcaacgggtc cgttggtgga   | 8340 |
| gatgtcgatg gcttgcaagg ttccgtgtcc cttgggcgct accaccgtgc cttgttttt   | 8400 |
| cattttggac ggcggtggct ctgttgcttc ttgcatgttt agaagcgggtg tcgaggcg   | 8460 |
| gcaccgggcg gcagggcggc ctcgggaccc ggcgcatgg ctggcagtgg tacgtcggcg   | 8520 |
| ccgcgcgcgg gtaggttctg gtactgcgcc ctgagaagac tcgcatgcgc gacgacgcgg  | 8580 |
| cggttgacat cctggatctg acgcctctgg gtgaaagcta ccggccccgt gagcttgaac  | 8640 |
| ctgaaagaga gttcaacaga atcaatctcg gtatcgttga cggcggcttg cctaaggatt  | 8700 |
| tcttgcacgt caccagagtt gtcctggtag gcgatctccg ccatgaactg ctcgatctct  | 8760 |
| tcctcttgaa gatctccgcg gcccgctctc tcgacgggtg ccgcgaggtc gttggagatg  | 8820 |
| cgcccaatga gttgagagaa tgcattcatg ccgcctcgt tccagacgcg gctgtagacc   | 8880 |
| acggccccc cgggatctct cgcgcgcatg accacctggg cgaggttgag ctccacgtgg   | 8940 |
| cgggtgaaga ccgcatagtt gcataggcgc tggaaaaggt agttgagtgt ggtggcgatg  | 9000 |
| tgctcggatga cgaagaaata catgatccat cgtctcagcg gcatctcgct gacatcgccc | 9060 |
| agagcttcca agcgctccat ggccctcgtg aagtccacgg caaaattaaa aaactgggag  | 9120 |
| tttcgcgcgg acacggtcaa ctctcttcc agaagacgga taagttcggc gatgggtggtg  | 9180 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| cgcacctcgc gctcgaagc ccctgggatt tcttctcaa tctcttcttc ttccactaac    | 9240  |
| atctcttcct cttcaggtgg ggctgcagga ggagggggaa cgcggcgacg ccggcggcgc  | 9300  |
| acgggcagac ggctgatgaa tctttcaatg acctctccgc ggccggcgcg catggtttca  | 9360  |
| gtgacggcgc ggccgttctc gcgcggctgc agagtaaaaa caccgccgcg catctcctta  | 9420  |
| aagtggtgac tgggaggttc tccgtttggg agggagaggg cgctgattat acattttatt  | 9480  |
| aattggcccc tagggactgc acgcagagat ctgatcgtgt caagatccac gggatctgaa  | 9540  |
| aacctttcga cgaaagcgtc taaccagtca cagtcacaag gtaggctgag tacggcttct  | 9600  |
| tgtgggcggg ggtggttatg tggtcggctt gggtcttctg tttcttcttc atctcgggaa  | 9660  |
| ggtgagacga tgctgctggt gatgaaatta aagtaggcag ttctaagacg gcggatggtg  | 9720  |
| gcgaggagca ccaggtcttt gggtccggct tgctggatac gcaggcgatt ggccattccc  | 9780  |
| caagcattat cctgacatct agcaagatct ttgtagtagt cttgcatgag ccgttctacg  | 9840  |
| ggcacttctt cctcaccctg tctgccatgc atacgtgtga gtccaaatcc gcgcattggt  | 9900  |
| tgtaccagtg ccaagtcagc tacgactctt tcggcgagga tggcttgctg tacttgggta  | 9960  |
| agggtggctt gaaagtcatc aaaatccaca aagcgggtgt aagctcctgt attaatggtg  | 10020 |
| taagcacagt tggccatgac tgaccagtta actgtctggt gaccagggcg cacgagctcg  | 10080 |
| gtgtatttaa ggcgcaata ggcgcggtg tcaaagatgt aatcgttgca ggtgcgcacc    | 10140 |
| agatactggt accctataag aaaatgcggc ggtggttggc ggtagagagg ccatcgttct  | 10200 |
| gtagctggag cgccaggggc gaggtcttcc aacataaggc ggtgatagcc gtagatgtac  | 10260 |
| ctggacatcc aggtgattcc tgcggcggtg gtagaagccc gaggaactc gcgtacgcgg   | 10320 |
| ttccaaatgt tgcgtagcgg catgaagtag ttcattgtag gcacggtttg accagtgagg  | 10380 |
| cgcgcgcagt cattgatgct ctatagacac ggagaaaatg aaagcgttca gcgactcgac  | 10440 |
| tccgtagcct ggaggaacgt gaacgggttg ggtcgcggtg taccgggtt cgagacttgt   | 10500 |
| actcgagccg gccggagccg cggctaacgt ggtattggca ctcccgcttc gaccagcct   | 10560 |
| acaaaaatcc aggatacggg atcgagtcgt tttgctggtt tccgaatggc agggaaagtga | 10620 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| gtcctatttt ttttttttgc cgctcagatg catcccgtgc tgcgacagat gcgcccccaa   | 10680 |
| caacagcccc cctcgcagca gcagcagcag caatcacaaa aggctgtccc tgcaactact   | 10740 |
| gcaactgccg ccgtgagcgg tgcgggacag cccgcctatg atctggactt ggaagagggc   | 10800 |
| gaaggactgg cacgtctagg tgcgccttca cccgagcggc atccgcgagt tcaactgaaa   | 10860 |
| aaagattctc gcgaggcgta tgtgccccaa cagaacctat ttagagacag aagcggcgag   | 10920 |
| gagccggagg agatgcgagc ttcccgtttt aacgcgggtc gtgagctgcg tcacggtttg   | 10980 |
| gaccgaagac gagtgttgcg ggacgaggat ttcgaagttg atgaaatgac agggatcagt   | 11040 |
| cctgccaggg cacacgtggc tgcagccaac cttgtatcgg cttacgagca gacagtaaag   | 11100 |
| gaagagcgta acttccaaaa gtcttttaaat aatcatgtgc gaaccctgat tgcccgcgaa  | 11160 |
| gaagttaccc ttggtttgat gcatttgtgg gattt gatgg aagctatcat tcagaaccct  | 11220 |
| actagcaaac ctctgaccgc ccagctgttt ctggtggtgc aacacagcag agacaatgag   | 11280 |
| gctttcagag aggcgctgct gaacatcacc gaacccgagg ggagatgggt gtatgatctt   | 11340 |
| atcaacattc tacagagtat catagtgcag gagcggagcc tgggcctggc cgagaagggtg  | 11400 |
| gctgccatca attactcggg tttagacttg ggaaaatatt acgctcgcaa aatctacaag   | 11460 |
| actccatacg ttcccataga caaggagggtg aagatagatg gggttctacat gcgcatgacg | 11520 |
| ctcaaggctt tgacctgag cgatgatctt ggggtgtatc gcaatgacag aatgcatcgc    | 11580 |
| gcggttagcg ccagcaggag gcgcgagtta agcgacaggg aactgatgca cagtttgcaa   | 11640 |
| agagctctga ctggagctgg aaccgagggg gagaattact tcgacatggg agctgacttg   | 11700 |
| cagtggcagc ctagtcgcag ggctctgagc gccgcgacgg caggatgtga gcttccttac   | 11760 |
| atagaagagg cggatgaagg cgaggaggaa gagggcgagt acttggaaga ctgatggcac   | 11820 |
| aacccgtgtt ttttgctaga tggaacagca agcaccggat cccgcaatgc gggcggcgct   | 11880 |
| gcagagccag ccgtccggca ttaactcctc ggacgattgg acccaggcca tgcaacgtat   | 11940 |
| catggcggtg acgactcgca accccgaagc ctttagacag caaccccagg ccaaccgtct   | 12000 |
| atcggccatc atggaagctg tagtgccttc ccgctctaata cccactcatg agaaggctct  | 12060 |



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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| ggccatcgtg aacgcgttgg tggagaacaa agctattcgt ccagatgagg ccggactggt   | 12120 |
| atacaacgct ctcttagaac gcgtggctcg ctacaacagt agcaatgtgc aaaccaatth   | 12180 |
| ggaccgtatg ataacagatg tacgcgaagc cgtgtctcag cgcgaaaggt tccagcgtga   | 12240 |
| tgccaacctg ggttcgctgg tggcgtaaaa tgctttcttg agtactcagc ctgctaattgt  | 12300 |
| gccgcgtggt caacaggatt atactaactt ttttaagtgt ttgagactga tggatatcaga  | 12360 |
| agtacctcag agcgaagtgt atcagtcagg tcctgattac ttctttcaga ctagcagaca   | 12420 |
| gggcttgtag acggtaaatc tgagccaagc ttttaaaaaac cttaaagggtt tgtggggagt | 12480 |
| gcatgccccg gtaggagaaa gagcaaccgt gtctagcttg ttaactccga actccgcct    | 12540 |
| attattactg ttggtagctc ctttcaccga cagcggtagc atcgaccgta attcctatth   | 12600 |
| gggttaccta ctaaacctgt atcgcggaagc catagggcaa agtcagggtgg acgagcagac | 12660 |
| ctatcaagaa attaccaag tcagtcgcgc tttgggacag gaagacactg gcagtttgga    | 12720 |
| agccactctg aacttcttg cttaccaatcg gtctcaaaag atccctcctc aatatgctct   | 12780 |
| tactgcggag gaggagagga tccttagata tgtgcagcag agcgtgggat tgtttctgat   | 12840 |
| gcaagagggg gcaactccga ctgcagcact ggacatgaca gcgcgaaata tggagcccag   | 12900 |
| catgtatgcc agtaaccgac ctttcattaa caaactgctg gactacttgc acagagctgc   | 12960 |
| cgctatgaac tctgattatt tcaccaatgc catcttaaac ccgcactggc tgccccacc    | 13020 |
| tggtttctac acgggcgaat atgacatgcc cgaccctaag gacggatttc tgtgggacga   | 13080 |
| cgtggacagc gatgtttttt cacctctttc tgatcatcgc acgtggaaaa aggaaggcgg   | 13140 |
| cgatagaatg cattcttctg catcgctgtc cggggctcatg ggtgctaccg cggctgagcc  | 13200 |
| cgagtctgca agtccttttc ctagtctacc cttttctcta cacagtgtac gtagcagcga   | 13260 |
| agtgggtaga ataagtcgcc cgagtttaat gggcgaagag gagtatctaa acgattcctt   | 13320 |
| gctcagaccg gcaagagaaa aaaattttccc aaacaatgga atagaaagtt tggtaggataa | 13380 |
| aatgagtaga tggaagactt atgctcagga tcacagagac gagcctggga tcatggggat   | 13440 |
| tacaagtaga gcgagccgta gacgccagcg ccatgacaga cagaggggtc ttgtgtggga   | 13500 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| cgatgaggat tcggccgatg atagcagcgt gctggacttg ggtgggagag gaaggggcaa   | 13560 |
| cccgttttgct catttgcgcc ctgcgttggg tggatatgtt taaaaaaaaa taaaaaaaaa  | 13620 |
| actcaccaag gccatggcga cgagcgtacg ttcgttcttc tttattatct gtgtctagta   | 13680 |
| taatgaggcg agtcgtgcta ggccggagcgg tgggtgtatcc ggagggtcct cctccttcgt | 13740 |
| acgagagcgt gatgcagcag cagcaggcga cggcgggtgat gcaatcccca ctggaggctc  | 13800 |
| cctttgtgcc tccgcgatac ctggcaccta cggaggggcag aaacagcatt cgttattcgg  | 13860 |
| aactggcacc tcagtacgat accaccagggt tgtatctggt ggacaacaag tcggcggaca  | 13920 |
| ttgcttctct gaactatcag aatgaccaca gcaacttctt gaccacgggtg gtgcaaaaca  | 13980 |
| atgactttac ccctacggaa gccagcaccc agaccattaa ctttgatgaa cgatcgcggt   | 14040 |
| ggggcgggtca gctaaagacc atcatgcata ctaacatgcc aaacgtgaac gagtatatgt  | 14100 |
| ttagtaacaa gttcaaagcg cgtgtgatgg tgtccagaaa acctcccgac ggtgctgcag   | 14160 |
| ttggggatac ttatgatcac aagcaggata ttttgaaata tgagtgggtc gagtttactt   | 14220 |
| tgccagaagg caacttttca gttactatga ctattgattt gatgaacaat gccatcatag   | 14280 |
| ataattactt gaaagtgggt agacagaatg gagtgcttga aagtgacatt ggtgttaagt   | 14340 |
| tcgacaccag gaacttcaag ctgggatggg atcccgaac caagttgatc atgcctggag    | 14400 |
| tgtatacgta tgaagccttc catcctgaca ttgtcttact gcctggctgc ggagtggatt   | 14460 |
| ttaccgagag tcgtttgagc aaccttcttg gtatcagaaa aaaacagcca tttcaagagg   | 14520 |
| gttttaagat tttgtatgaa gatttagaag gtggtaatat tccggccctc ttggatgtag   | 14580 |
| atgcctatga gaacagtaag aaagaacaaa aagccaaaat agaagctgct acagctgctg   | 14640 |
| cagaagctaa ggcaaacata gttgccagcg actctacaag ggttgctaac gctggagagg   | 14700 |
| tcagaggaga caattttgcg ccaacacctg ttccgactgc agaatacatta ttggccgatg  | 14760 |
| tgtctgaagg aacggacgtg aaactcacta ttcaacctgt agaaaaagat agtaagaata   | 14820 |
| gaagctataa tgtgttgga gacaaaatca acacagccta tcgcagttgg tatctttcgt    | 14880 |
| acaattatgg cgatcccgaa aaaggagtgc gttcctggac attgctcacc acctcagatg   | 14940 |

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|----------------------------------------------------------------------|-------|
| tcacctgcgg agcagagcag gtctactggg cgcttccaga catgatgaag gatcctgtca    | 15000 |
| ctttccgctc cactagacaa gtcagtaact accctgtggg ggggtgcagag cttatgcccg   | 15060 |
| tcttctcaaa gagcttctac aacgaacaag ctgtgtactc ccagcagctc cgccagtcca    | 15120 |
| cctcgcttac gcacgtcttc aaccgctttc ctgagaacca gattttaatc cgtccgccgg    | 15180 |
| cgcccacat taccaccgtc agtgaaaacg ttcctgtctt cacagatcac gggaccctgc     | 15240 |
| cggtgcgcag cagtatccgg ggagtccaac gtgtgaccgt tactgacgcc agacgccgca    | 15300 |
| cctgtcccta cgtgtacaag gcactgggca tagtcgcacc gcgcgtcctt tcaagccgca    | 15360 |
| ctttctaataa aaaaaaaaaa tgtccattct tatctcgccc agtaataaca ccggttgggg   | 15420 |
| tctgcgcgct ccaagcaaga tgtacggagg cgcacgcaaa cgcttctaccc aacatcctgt   | 15480 |
| ccgtgttcgc ggacattttc gcgctccatg gggcgccctc aagggccgca ctcgcgttcg    | 15540 |
| aaccaccgtc gatgatgtaa tcgatcagggt gggtgccgac gcccgtaatt atactcctac   | 15600 |
| tgcgccctaca tctactgtgg atgcagttat tgacagtgtg gtggctgacg ctcgcaacta   | 15660 |
| tgctcgacgt aagagccggc gaaggcgcac tgccagacgc caccgagcta ccactgccat    | 15720 |
| gcgagccgca agagctctgc tacgaagagc tagacgcgtg gggcgaagag ccatgcttag    | 15780 |
| ggcggccaga cgtgcagctt cgggcgccag gccggcagg tcccgaggc aagcagccgc      | 15840 |
| tgctgcagcg gcgactattg ccgacatggc ccaatcgca agaggcaatg tatactgggt     | 15900 |
| gcgtgacgct gccaccggtc aacgtgtacc cgtgcgcacc cgtccccctc gcacttagaa    | 15960 |
| gatactgagc agtctccgat gttgtgtccc agcggcgagg atgtccaagc gcaaatacaa    | 16020 |
| ggaagaaatg ctgcaggtta tcgcacctga agtctacggc caaccgttga aggatgaaaa    | 16080 |
| aaaaccccg c aaaaatcaagc ggggttaaaaa ggacaaaaaa gaagaggaag atggcgatga | 16140 |
| tgggctggcg gagtttgtgc gcgagtttgc cccacggcga cgcgtgcaat ggcgtgggcg    | 16200 |
| caaagttcga catgtgttga gacctggaac ttcggtggtc ttacacccg gcgagcggtc     | 16260 |
| aagcgctact tttaagcgtt cctatgatga ggtgtacggg gatgatgata ttcttgagca    | 16320 |
| ggcggctgac cgattaggcg agtttgctta tggcaagcgt agtagaataa cttccaagga    | 16380 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| tgagacagtg tcgataccct tggatcatgg aaatcccacc ctagtctta aaccggtcac    | 16440 |
| tttgcagcaa gtgttaccg taactccgcg aacagggtgtt aaacgcgaag gtgaagattt   | 16500 |
| gtatcccact atgcaactga tggtagccaa acgccagaag ttggaggacg ttttggagaa   | 16560 |
| agtaaaagtg gatccagata ttcaacctga ggtaaagtg agaccatta agcaggtagc     | 16620 |
| gcctgggtctg ggggtacaaa ctgtagacat taagattccc actgaaagta tggaagtgc   | 16680 |
| aactgaaccc gcaaagccta ctgccacctc cactgaagtg caaacggatc catggatgcc   | 16740 |
| catgcctatt acaactgacg ccgccggtcc cactcgaaga tcccgcgaa agtacgggtcc   | 16800 |
| agcaagtctg ttgatgcca attatgttgt acacccatct attattccta ctcttggtta    | 16860 |
| ccgaggcact cgctactatc gcagccgaaa cagtacctcc cgccgtcgcc gcaagacacc   | 16920 |
| tgcaaatcgc agtcgtcgcc gtagacgcac aagcaaaccg actcccggcg ccctgggtgcg  | 16980 |
| gcaagtgtac cgcaatggta gtgcggaacc tttgacactg ccgcgtgcgc gttaccatcc   | 17040 |
| gagtatcatc acttaataca tgttgccgct gcctccttgc agatatggcc ctcaattgtc   | 17100 |
| gccttcgcgt tcccatcact ggttaccgag gaagaaactc gcgccgtaga agagggatgt   | 17160 |
| tgggacgcgg aatgcgacgc tacaggcgac ggcggtgctat ccgcaagcaa ttgcgggggtg | 17220 |
| gttttttacc agccttaatt ccaattatcg ctgctgcaat tggcgcgata ccaggcatag   | 17280 |
| cttccgtggc gggttcaggcc tcgcaacgac attgacattg gaaaaaacg tataaataaa   | 17340 |
| aaaaaaaaa tacaatggac tctgacactc ctggtcctgt gactatgttt tcttagagat    | 17400 |
| ggaagacatc aatttttcat ccttggctcc gcgacacggc acgaagccgt acatgggcac   | 17460 |
| ctggagcgac atcggcacga gccaaactgaa cgggggcgcc ttcaattgga gcagtatctg  | 17520 |
| gagcgggctt aaaaattttg gctcaaccat aaaaacatac gggaacaaag cttggaacag   | 17580 |
| cagtacagga caggcgctta gaaataaact taaagaccag aacttccaac aaaaagtagt   | 17640 |
| cgatgggata gcttccggca tcaatggagt ggtagatttg gctaaccagg ctgtgcagaa   | 17700 |
| aaagataaac agtcgttttg acccgccgcc agcaacccca ggtgaaatgc aagtggagga   | 17760 |
| agaaattcct ccgccagaaa aacgaggcga caagcgtccg cgtcccgatt tggaagagac   | 17820 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| gctggtgacg cgcgtagatg aaccgccttc ttatgaggaa gcaacgaagc ttggaatgcc  | 17880 |
| caccactaga ccgatagccc caatggccac cggggtgatg aaaccttctc agttgcatcg  | 17940 |
| acccgtcacc ttggatttgc cccctcccc tgctgctact gctgtacccg cttctaagcc   | 18000 |
| tgtcgctgcc ccgaaaccag tcgccgtagc caggtcacgt cccgggggcg ctcctcgtcc  | 18060 |
| aaatgcgcac tggcaaaaata ctctgaacag catcgtgggt ctaggcgtgc aaagtgtaaa | 18120 |
| acgccgtcgc tgcttttaata taaatatgga gtagcgctta acttgcctat ctgtgtatat | 18180 |
| gtgtcattac acgccgtcac agcagcagag gaaaaaagga agaggtcgtg cgtcgacgct  | 18240 |
| gagttacttt caagatggcc accccatcga tgctgcccc atgggcatac atgcacatcg   | 18300 |
| ccggacagga tgcttcggag tacctgagtc cgggtctggt gcagttcgcc cgcgccacag  | 18360 |
| acacctactt caatctggga aataagtta gaaatccac cgtagcgccg acccacgatg    | 18420 |
| tgaccaccga ccgtagccag cggctcatgt tgcgcttcgt gcccgttgac cgggaggaca  | 18480 |
| atacatactc ttacaaaagt cggtacaccc tggccgtggg cgacaacaga gtgctggata  | 18540 |
| tggccagcac gttctttgac attaggggtg tgttggacag aggtcccagt ttcaaaccct  | 18600 |
| attctggtac ggcttacaac tccctggctc ctaaaggcgc tccaaataca tctcagtgga  | 18660 |
| ttgcagaagg tgtaaaaaat acaactgggt aggaacacgt aacagaagag gaaaccaata  | 18720 |
| ctactactta cacttttggc aatgctcctg taaaagctga agctgaaatt acaaaagaag  | 18780 |
| gactcccagt aggttttgaa gtttcagatg aagaaagtaa accgatttat gctgataaaa  | 18840 |
| catatcagcc agaacctcag ctgggagatg aaacttggac tgaccttgat ggaaaaaccg  | 18900 |
| aaaagtatgg aggcagggt ctcaaaccg atactaagat gaaaccatgc tacgggtcct    | 18960 |
| ttgccaaacc tactaatgtg aaaggcggtc aggcaaaaca aaaaacaacg gagcagccaa  | 19020 |
| atcagaaagt cgaatatgat atcgacatgg agttttttga tgcggcatcg cagaaaacaa  | 19080 |
| acttaagtcc taaaattgtc atgtatgcag aaaatgtaaa tttggaaact ccagacactc  | 19140 |
| atgtagtgta caaacctgga acagaagaca caagttccga agctaatttg ggacaacaat  | 19200 |
| ctatgccccaa cagaccaaac tacattggct tcagagataa ctttattgga cttatgtact | 19260 |

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|            |            |            |            |            |            |       |
|------------|------------|------------|------------|------------|------------|-------|
| ataacagtac | tggtaacatg | ggggtgctgg | ctggtcaagc | gtctcagtta | aatgcagtgg | 19320 |
| ttgacttgca | ggacagaaac | acagaacttt | cttaccaact | cttgcttgac | tctctgggcg | 19380 |
| acagaaccag | atactttagc | atgtggaatc | aggctgtgga | cagttatgat | cctgatgtac | 19440 |
| gtgttattga | aaatcatggt | gtggaagatg | aacttcccaa | ctactgtttt | ccactggacg | 19500 |
| gcataggtgt | tccaacaacc | agttacaaat | caatagttcc | aaatggagac | aatgcgcta  | 19560 |
| attggaagga | acctgaagta | aatggaacaa | gtgagatcgg | acagggtaat | ttgtttgcca | 19620 |
| tggaaattaa | ccttcaagcc | aatctatggc | gaagtttcct | ttattccaat | gtggctctat | 19680 |
| atctcccaga | ctcgtacaaa | tacaccccg  | ccaatgtcac | tcttccagaa | aacaaaaaca | 19740 |
| cctacgacta | catgaacggg | cgggtggtgc | cgccatctct | agtagacacc | tatgtgaaca | 19800 |
| ttggtgccag | gtggtctctg | gatgccatgg | acaatgtcaa | cccattcaac | caccaccgta | 19860 |
| acgctggctt | gcgttaccga | tccatgcttc | tgggtaacgg | acgttatgtg | cctttccaca | 19920 |
| tacaagtgcc | tcaaaaattc | ttcgtgttta | aaaacctgct | gcttctccca | ggctcctaca | 19980 |
| cttatgagtg | gaactttagg | aaggatgtga | acatggttct | acagagttcc | ctcggtaacg | 20040 |
| acctgcgggt | agatggcgcc | agcatcagtt | tcacgagcat | caacctctat | gctacttttt | 20100 |
| tccccatggc | tcacaacacc | gcttccaccc | ttgaagccat | gctgcggaat | gacaccaatg | 20160 |
| atcagtcatt | caacgactac | ctatctgcag | ctaactgct  | ctacccatt  | cctgccaatg | 20220 |
| caaccaatat | tcccatttcc | attccttctc | gcaactgggc | ggctttcaga | ggctggtcac | 20280 |
| ttaccagact | gaaaacaaa  | gaaactccct | ctttggggtc | tggatttgac | ccctactttg | 20340 |
| tctattctgg | ttctattccc | tacctggatg | gtaccttcta | cctgaaccac | acttttaaga | 20400 |
| aggtttccat | catgtttgac | tcttcagtga | gctggcctgg | aaatgacagg | ttactatctc | 20460 |
| ctaacgaatt | tgaaataaag | cgcactgtgg | atggcgaagg | ctacaacgta | gcccattgca | 20520 |
| acatgaccaa | agactgggtc | ttggtacaga | tgctcgccaa | ctacaacatc | ggctatcagg | 20580 |
| gcttctacat | tccagaagga | tacaaagatc | gcatgtattc | atttttcaga | aacttccagc | 20640 |
| ccatgagcag | gcagggtggt | gatgaggtca | attacaaaga | cttcaaggcc | gtcgccatac | 20700 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| cctaccaaca caacaactct ggctttgtgg gttacatggc tccgaccatg cgccaaggtc  | 20760 |
| aaccctatcc cgctaactat ccctatccac tcattggaac aactgccgta aatagtgtta  | 20820 |
| cgcagaaaaa gttcttgtgt gacagaacca tgtggcgcat accgttctcg agcaacttca  | 20880 |
| tgtctatggg ggcccttaca gacttgggac agaatatgct ctatgccaac tcagctcatg  | 20940 |
| ctctggacat gacctttgag gtggatccca tggatgagcc caccctgctt tatcttctct  | 21000 |
| tcgaagtttt cgacgtggtc agagtgcac agccacaccg cggcatcatc gaggcagtct   | 21060 |
| acctgcgtac accgttctcg gccggtaacg ctaccacgta agaagcttct tgcttcttgc  | 21120 |
| aaatagcagc tgcaaccatg gcctgcggat cccaaaacgg ctccagcgag caagagctca  | 21180 |
| gagccattgt ccaagacctg ggttgccggac cctatTTTTT gggaacctac gataagcgct | 21240 |
| tcccgggggt catggcccc gataagctcg cctgtgccat tgtaaatacg gccggacgtg   | 21300 |
| agacgggggg agagcactgg ttggctttcg gttggaaccc acgttctaac acctgctacc  | 21360 |
| tttttgatcc ttttggattc tcggatgatc gtctcaaaca gatttaccag tttgaatatg  | 21420 |
| agggtctcct gcgccgcagc gctcttgcta ccaaggaccg ctgtattacg ctggaaaaat  | 21480 |
| ctaccagac cgtgcagggt ccccgttctg ccgcctgcgg acttttctgc tgcattgtcc   | 21540 |
| ttcacgcctt tgtgcactgg cctgaccgtc ccatggacgg aaaccccacc atgaaattgc  | 21600 |
| taactggagt gccaaacaac atgcttcatt ctctaaagt ccagcccacc ctgtgtgaca   | 21660 |
| atcaaaaagc actctaccat tttcttaata cccattcgcc ttatttttcgc tcccatcgta | 21720 |
| cacacatcga aagggccact gcgttcgacc gtatggatgt tcaataatga ctcatgtaaa  | 21780 |
| caacgtgttc aataaacatc actttatTTT ttacatgta tcaaggctct gcattactta   | 21840 |
| tttatttaca agtcgaatgg gttctgacga gaatcagaat gacccgcagg cagtgatacg  | 21900 |
| ttgcggaact gatacttggg ttgccacttg aattcgggaa tcaccaactt gggaaccggt  | 21960 |
| atatcgggca ggatgtcact ccacagcttt ctggtcagct gcaaagctcc aagcagggtca | 22020 |
| ggagccgaaa tcttgaaatc acaattagga ccagtgttt gagcgcgaga gttgcggtac   | 22080 |
| accggattgc agcactgaaa caccatcagc gacggatgtc tcacgcttgc cagcacggtg  | 22140 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| ggatctgcaa tcatgcccac atccagatct tcagcattgg caatgctgaa cggggtcatc  | 22200 |
| ttgcagggtct gcctacccat ggcgggcacc caattaggct tgtggttgca atcgcagtg  | 22260 |
| aggggggatca gtatcatctt ggcctgatcc tgtctgattc ctggatacac ggctctcatg | 22320 |
| aaagcatcat attgcttgaa agcctgctgg gctttactac cctcggtata aaacatccc   | 22380 |
| caggacctgc tcgaaaactg gttagctgca cagccggcat cattcacaca gcagcgggc   | 22440 |
| tcattgttag ctatttgcac cacacttctg cccagcgggt tttgggtgat tttggttcgc  | 22500 |
| tcgggattct cctttaaggc tcgttgtccg ttctcgctgg ccacatccat ctcgataatc  | 22560 |
| tgctccttct gaatcataat attgccatgc aggcacttca gcttgccctc ataatcattg  | 22620 |
| cagccatgag gccacaacgc acagcctgta cattcccaat tatggtgggc gatctgagaa  | 22680 |
| aaagaatgta tcattccctg cagaaatctt cccatcatcg tgctcagtggt cttgtgacta | 22740 |
| gtgaaagtta actggatgcc tcggtgctcc tcgtttacgt actggtgaca gatgcgcttg  | 22800 |
| tattgttcgt gttgctcagg cattagttaa aaagagggtc taagtctgtt atccagcctg  | 22860 |
| tacttctcca tcagcagaca catcacttcc atgcctttct cccaagcaga caccaggggc  | 22920 |
| aagctaatacg gattcttaac agtgcaggca gcagctcctt tagccagagg gtcattctta | 22980 |
| gcgatcttct caatgcttct tttgccatcc ttctcaacga tgcgcacggg cgggtagctg  | 23040 |
| aaacccactg ctacaagttg cgcctcttct ctttcttctt cgctgtcttg actgatgtct  | 23100 |
| tgcatgggga tatgtttggt cttccttggtc ttcttttttg ggggtatcgg aggaggagga | 23160 |
| ctgtcgctcc gttccggaga caggaggat tgtgacgttt cgctcacat taccaactga    | 23220 |
| ctgtcggtag aagaacctga cccacacgg cgacagggtt ttctcttcgg gggcagaggt   | 23280 |
| ggaggcgatt gcgaagggtc gcggtccgac ctggaaggcg gatgactggc agaaccctt   | 23340 |
| ccgcgttcgg ggggtgtgctc cctgtggcgg tcgcttaact gatttccttc gcggctggcc | 23400 |
| attgtgttct cctaggcaga gaaacaacag acatggaaac tcagccattg ctgtcaacat  | 23460 |
| cgccacgagt gccatcacat ctgctcctca gcgacgagga aaaggagcag agcttaagca  | 23520 |
| ttccaccgcc cagtcctgcc accacctcta ccctagaaga taaggagggtc gacgcatctc | 23580 |



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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| atgacatgca gaataaaaaa gcgaaagagt ctgagacaga catcgagcaa gaccgggct    | 23640 |
| atgtgacacc ggtggaacac gaggaagagt tgaaacgctt tctagagaga gaggatgaaa   | 23700 |
| actgccccaa acaacgagca gataactatc accaagatgc tggaaatagg gatcagaaca   | 23760 |
| ccgactacct catagggctt gacggggaag acgcgctcct taaacatcta gcaagacagt   | 23820 |
| cgctcatagt caaggatgca ttattggaca gaactgaagt gcccacatcagt gtggaagagc | 23880 |
| tcagccgcgc ctacgagctt aacctctttt cacctcgtac tccccccaaa cgtcagccaa   | 23940 |
| acggcacctg cgagccaaat cctcgcttaa acttttatcc agcttttgct gtgccagaag   | 24000 |
| tactggctac ctatcacatc ttttttaaaa atcaaaaaat tccagtctcc tgccgcgcta   | 24060 |
| atcgcacccg cgccgatgcc ctactcaatc tgggacctgg ttcacgctta cctgatatag   | 24120 |
| cttccttgga agaggttcca aagatcttcg agggctctggg caataatgag actcgggccg  | 24180 |
| caaatgctct gcaaaaggga gaaaatggca tggatgagca tcacagcggt ctggtggaat   | 24240 |
| tggaaggcga taatgccaga ctcgcagtac tcaagcgaag catcgaggtc acacacttcg   | 24300 |
| catatccgc tgtcaacctg cccctaaag tcatgacggc ggtcatggac cagttactca     | 24360 |
| ttaagcgcgc aagtccccct tcagaagaca tgcatgaccc agatgcctgt gatgagggtta  | 24420 |
| aaccagtggc cagtgatgag cagctaacc gatggctggg caccgactct cccagggtt     | 24480 |
| tggaagagcg tcgcaagctt atgatggccg tggctgctggc taccgtagaa ctagagtgtc  | 24540 |
| tccgacgttt ctttaccgat tcagaaacct tgcgcaaact cgaagagaat ctgcactaca   | 24600 |
| cttttagaca cggctttgtg cggcaggcat gcaagatatc taacgtggaa ctcaccaacc   | 24660 |
| tggtttccta catgggtatt ctgcatgaga atcgccatagg acaaagcgtg ctgcacagca  | 24720 |
| ccctgaagg ggaagccgc cgtgattaca tccgcgattg tgtctatctg tacctgtgcc     | 24780 |
| acacgtggca aaccggcatg ggtgtatggc agcaatgttt agaagaacag aacttgaaag   | 24840 |
| agcttgacaa gctcttacag aaatctctta aggttctgtg gacagggttc gacgagcgca   | 24900 |
| ccgtcgcttc cgacctggca gacctcatct tcccagagcg tctcagggtt actttgcgaa   | 24960 |
| acggattgcc tgactttatg agccagagca tgcttaacaa ttttcgctct ttcacctgg    | 25020 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| aacgctccgg tatcctgccc gccacctgct gcgcactgcc ctccgacttt gtgcctctca  | 25080 |
| cctaccgcga gtgccccccg ccgctatgga gtcactgcta cctgttccgt ctggccaact  | 25140 |
| atctctccta ccactcggat gtgatcgagg atgtgagcgg agacggcttg ctggagtgtc  | 25200 |
| actgccgctg caatctgtgc acgccccacc ggtccctagc ttgcaacccc cagttgatga  | 25260 |
| gcgaaaccca gataataggc acctttgaat tgcaaggccc cagcagccaa ggcgatgggt  | 25320 |
| cttctcctgg gcaaagttaa aaactgaccc cgggactgtg gacctccgcc tacttgcgca  | 25380 |
| agtttgctcc ggaagattac caccctatg aaatcaagtt ctatgaggac caatcacagc   | 25440 |
| ctccaaaggc cgaactttcg gcctgcgtca tcaccaggg ggcaattctg gccaattgc    | 25500 |
| aagccatcca aaaatccccg caagaatttc tactgaaaaa gggtaagggg gtctaccttg  | 25560 |
| acccccagac cggcgaggaa ctcaacacaa ggttccctca ggatgtccca acgacgagaa  | 25620 |
| aacaagaagt tgaagggtgca gccgccgccc ccagaagata tggaggaaga ttgggacagt | 25680 |
| caggcagagg aggcggagga ggacagtctg gaggacagtc tggaggaaga cagtttgag   | 25740 |
| gaggaaaacg aggaggcaga ggaggtggaa gaagtaaccg ccgacaaaca gttatcctcg  | 25800 |
| gctgcggaga caagcaacag cgctaccatc tccgctccga gtcgaggaac ccggcggcgt  | 25860 |
| cccagcagta gatgggacga gaccggacgc ttcccgaacc caaccagcgc ttccaagacc  | 25920 |
| ggtaagaagg atcggcaggg atacaagtcc tggcgggggc ataagaatgc catcatctcc  | 25980 |
| tgcttgcatg agtgcggggg caacatatcc ttcacgcggc gctacttgct attccacat   | 26040 |
| ggggtgaact ttccgcgcaa tgttttgcat tactaccgtc acctccacag cccctactat  | 26100 |
| agccagcaaa tcccggcagt ctgcacagat aaagacagcg gcggcgacct ccaacagaaa  | 26160 |
| accagcagcg gcagttagaa aatacacaac aagtgcagca acaggaggat taaagattac  | 26220 |
| agccaacgag ccagcgcaaa cccgagagtt aagaaatcgg atctttccaa ccctgtatgc  | 26280 |
| catcttccag cagagtcggg gtcaagagca ggaactgaaa ataaaaaacc gatctctgcg  | 26340 |
| ttcgctcacc agaagttggt tgtatcacia gagcgaagat caacttcagc gcactctcga  | 26400 |
| ggacgccgag gctctcttca acaagtactg cgcgctgact cttaaagagt aggcagcgac  | 26460 |

## eolf-othd-000005

|                                                                     |       |
|---------------------------------------------------------------------|-------|
| cgcgcttatt caaaaaaggc gggaattaca tcatcctcga catgagtaaa gaaattccca   | 26520 |
| cgcccttacat gtggagttat caaccccaaa tgggattggc ggcaggcgcc tcccaggact  | 26580 |
| actccacccg catgaattgg ctcagcgccg ggcccttctat gatttctcga gttaatgata  | 26640 |
| tacgcgccta ccgaaaccaa atacttttgg aacagtcagc tcttaccacc acgccccgcc   | 26700 |
| aacaccttaa tcccagaaat tggcccgccg ccctagtgtgta ccaggaaagt cccgctccca | 26760 |
| ccactgtatt acttcctcga gacgcccagg ccgaagtcca aatgactaat gcagggtgcgc  | 26820 |
| agttagctgg cggctccacc ctatgtcgtc acaggcctcg gcataatata aaacgcctga   | 26880 |
| tgatcagagg ccgaggatc cagctcaacg acgagtcggt gagctctccg cttggtctac    | 26940 |
| gaccagacgg aatctttcag attgccggct gcgggagatc ttccttcacc cctcgtcagg   | 27000 |
| ctgttctgac tttggaaagt tcgtcttcgc aaccccgctc gggcggaatc gggaccgttc   | 27060 |
| aatttgtgga ggagtttact ccctctgtct acttcaaccc cttctccgga tctcctgggc   | 27120 |
| attacccgga cgagttcata ccgaacttcg acgcgattag cgagtcagtg gacggctacg   | 27180 |
| attgatgtct ggtgacgcgg ctgagctatc tcggctgcga catctagacc actgccgccg   | 27240 |
| ctttcgtgc tttgcccggg aactcattga gttcatctac ttcgaactcc ccaaggatca    | 27300 |
| ccctcaaggt ccggcccacg gagtgcggat ttctatcgaa ggcaaaatag actctgcct    | 27360 |
| gcaacgaatt ttctcccagc ggcccgtgct gatcgagcga gaccagggaa acaccacggc   | 27420 |
| ttccatctac tgcatttgta atcaccgccg attgcatgaa agcctttgct gtcttatgtg   | 27480 |
| tactgagttt aataaaaact gaattaagac tctcctacgg actgccgctt cttcaacccg   | 27540 |
| gattttacaa ccagaagaac gaaacttttc ctgtcgtcca ggactctgtt aacttcacct   | 27600 |
| ttcctactca caaactagaa gctcaacgac tacaccgctt ttccagaagc attttcccta   | 27660 |
| ctaatactac tttcaaaacc ggaggtgagc tccaaggtct tcctacagaa aacccttggg   | 27720 |
| tggaagcggg cttttagtg ctaggaattc ttgcgggtgg gcttgtgatt attctttgct    | 27780 |
| acctatacac accttgcttc actttcttag tgggtgtgtg gtattgggtt aaaaaatggg   | 27840 |
| gcccatacta gtcttgcttg ttttactttc gcttttggaa ccgggttctg ccaattacga   | 27900 |

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|                                                                   |       |
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| catggtggga atcaacccca tagttatcac ccagcaaagt ggagatacta agggttgcat | 28080 |
| tcactgctcc tgcgattcca tcgagtgcac ctacaccctg ctgaagaccc tatgcggcct | 28140 |
| aagagacctg ctaccaatga attaaaaaat gattaataaa aaatcactta cttgaaatca | 28200 |
| gcaataaggt ctctgttgaa attttctccc agcagcacct cacttccctc ttcccaactc | 28260 |
| tggtattcta aaccccgttc agcggcatac tttctccata ctttaaaggg gatgtcaa   | 28320 |
| tttagctcct ctctgtacc cacaatcttc atgtctttct tcccagatga ccaagagagt  | 28380 |
| ccggctcagt gactccttca accctgtcta cccctatgaa gatgaaagca cctcccaaca | 28440 |
| cccctttata aacccagggt ttatttcccc aaatggcttc acacaaagcc caaacggagt | 28500 |
| tcttacttta aaatgtttaa cccactaac aaccacaggc ggatctctac agctaaaagt  | 28560 |
| gggaggggga cttacagtgg atgacaccaa cggttttttg aaagaaaaca taagtgccac | 28620 |
| cacaccactc gttaagactg gtcactctat aggtttacca ctaggagccg gattgggaac | 28680 |
| gaatgaaaat aaactttgta tcaaattagg acaaggactt acattcaatt caaacaacat | 28740 |
| ttgcattgat gacaatatta acaccttatg gacaggagtc aacccaccg aagccaactg  | 28800 |
| tcaaatcatg aactccagt aatctaataa ttgcaaatta attctaacac tagttaa     | 28860 |
| tgagacta gtcactgcat ttgtttatgt tataggagta tctaacaatt ttaatatgct   | 28920 |
| aactacacac agaaatataa attttactgc agagctgttt ttcgattcta ctggtaattt | 28980 |
| actaactaga ctctcatccc tcaaaactcc acttaatcat aaatcaggac aaaacatggc | 29040 |
| tactggtgcc attactaatg ctaaagggtt catgcccagc acgactgcct atcctttcaa | 29100 |
| tgataattct agagaaaaag aaaactacat ttacggaact tgttactaca cagctagtga | 29160 |
| tcgcactgct tttccattg acatatctgt catgcttaac cgaagagcaa taaatgacga  | 29220 |
| gacatcatat tgtattcgta taacttggtc ctggaacaca ggagatgccc cagaggtgca | 29280 |
| aacctctgct acaaccctag tcacctcccc atttaccttt tactacatca gagaagacga | 29340 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| ctgacaaata aagtttgcga tcgccaggcc caccatgggc tggagctgca tcatcttggt   | 29400 |
| cctggtcgca actgctaccg gagtccattc ggacatcgtc atgacccaaa gccctgactc   | 29460 |
| gctcgctgtg tcaactgggag agcgggcgac tatcaactgc aaatcatccc agagcctgct  | 29520 |
| gtattcacgc aatcagaaaa actacctggc ctggtatcag cagaagccgg gccagcctcc   | 29580 |
| caagctgctg atcttctggg cctccacccg cgaaagcggc gtgccggacc gcttcagcgg   | 29640 |
| aagcggattc ggaactgact ttactctgac cattagctcc ttgcaggcgg aggacgtggc   | 29700 |
| cgtctactac tgccagcagt atttctccta tccgctcacc tttgggcaag gcaccaaggt   | 29760 |
| ggagattaag ggagggggcg gcagcggggg aggcggcagc ggccggcggg gatcgcaggt   | 29820 |
| ccagctcgtc caatccggag ccgaagtcaa gaagccggga gcgtcgggtca aggtcagctg  | 29880 |
| caaaacttcg cgctacacct tcaactgagta cacgatccac tgggtccgcc aggcgcccgg  | 29940 |
| ccagcggctg gagtggatcg gcgggatcaa cccaaacaac ggaatcccaa attacaatca   | 30000 |
| gaaatttaaa gggcgggtga ctatcacctg ggatacctcg gcctccacgg cgtacatgga   | 30060 |
| gctctcatca ctacagatcgg aggacaccgc ggtctattac tgcgcccgcc gccggatcgc  | 30120 |
| ttatggatac gatgaaggac atgcgatgga ttactggggc cagggcaccc tcgtcacggt   | 30180 |
| gtcgtcagga ggccggcggtt cacagggtgca gctgcagcag tctggggctg aactggcaag | 30240 |
| acctggggcc tcagtgaaga tgtcctgcaa ggcttctggc tacaccttta ctaggtacac   | 30300 |
| gatgcactgg gtaaaacaga ggcctggaca gggctctggaa tggattggat acattaatcc  | 30360 |
| tagccgtggt tatactaatt acaatcagaa gttcaaggac aaggccacat tgactacaga   | 30420 |
| caaatcctcc agcacagcct acatgcaact gagcagcctg acatctgagg actctgcagt   | 30480 |
| ctattactgt gcaagatatt atgatgatca ttactgcctt gactactggg gccaaggcac   | 30540 |
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| atctgatatc gtgctcactc agtctccagc aatcatgtct gcatctccag gggagaaggt   | 30660 |
| caccatgacc tgcagtgccg gctcaagtgt aagttacatg aactgggtacc agcagaagtc  | 30720 |
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|                                                                     |       |
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| tcacttcagg ggcagtgggt ctgggacctc ttactctctc acaatcagcg gcatggaggc   | 30840 |
| tgaagatgct gccacttatt actgccagca gtggagtagt aaccattca cgttcggctc    | 30900 |
| ggggacaaag ttggaaataa accggcatca ccatcaccat caccaccatc accattaggc   | 30960 |
| tagcttgact gactgagata cagcgtacct tcagctcaca gacatgataa gatacattga   | 31020 |
| tgagtttggg caaaccacaa ctagaatgca gtgaaaaaaaa tgctttatatt gtgaaatttg | 31080 |
| tgatgctatt gctttatttg taaccattat aagctgcaat aaacaagtta acaacaacaa   | 31140 |
| ttgcattcat tttatgtttc aggttcaggg ggagggtgtgg gaggtttttt aaagcaagta  | 31200 |
| aaacctctac aaatgtggta gtcgtcagct atcctgcagg aacttgttta tttgaaaatc   | 31260 |
| aattcacaaa atccgagtag ttattttgcc tcccccttcc catttaacag aatacaccaa   | 31320 |
| tctctcccca cgcacagctt taaacatttg gataccatta gatatagaca tggttttaga   | 31380 |
| ttccacattc caaacagttt cagagcgagc caatctgggg tcagtgatag ataaaaatcc   | 31440 |
| atcgggatag tcttttaaag cgctttcaca gtccaactgc tgcggatgcg actccggagt   | 31500 |
| ctggatcacg gtcatctgga agaagaacga tgggaatcat aatccgaaaa cggtatcgga   | 31560 |
| cgattgtgtc tcatcaaacc cacaagcagc cgctgtctgc gtcgctccgt gcgactgctg   | 31620 |
| tttatgggat cagggtccac agtgtcctga agcatgattt taatagccct taacatcaac   | 31680 |
| tttctggtgc gatgcgcgca gcaacgcatt ctgatttcac tcaaatcttt gcagtaggta   | 31740 |
| caacacatta ttacaatatt gttaataaaa ccataattaa aagcgctcca gccaaaactc   | 31800 |
| atatctgata taatcgcccc tgcattgacca tcataccaaa gttaaatata aattaaatga  | 31860 |
| cgttccctca aaaacacact acccacatac atgatctctt ttggcatgtg catattaaca   | 31920 |
| atctgtctgt accatggaca acgttggtta atcatgcaac ccaatataac cttccggaac   | 31980 |
| cacactgcca acaccgctcc cccagccatg cattgaagtg aaccctgctg attacaatga   | 32040 |
| caatgaagaa cccaattctc tcgaccgtga atcacttgag aatgaaaaat atctatagtg   | 32100 |
| gcacaacata gacataaatg catgcatctt ctcataattt ttaactcctc aggatttaga   | 32160 |
| aacatatccc aggggaatagg aagctcttgc agaacagtaa agctggcaga acaaggaaga  | 32220 |

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|                                                                     |       |
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| taagggtgat gtctggcgca tgatgtcgag cgtgcgcgca accttgatcat aatggagttg  | 32400 |
| cttcctgaca ttctcgtatt ttgtatagca aaacgcggcc ctggcagaac acactcttct   | 32460 |
| tcgccttcta tcctgccgct tagcgtgttc cgtgtgatag ttcaagtaca accacactct   | 32520 |
| taagttgggtc aaaagaatgc tggcttcagt tgtaatcaaa actccatcgc atctaatacgt | 32580 |
| tctgaggaaa tcatccaagc aatgcaactg gattgtgttt caagcaggag aggagagggga  | 32640 |
| agagacggaa gaaccatgtt aatTTTTtatt ccaaacgata tcgcagtact tcaaattgta  | 32700 |
| gatcgcgcag atggcatctc tcgccccac tgtgttgggtg aaaaagcaca gctagatcaa   | 32760 |
| aagaaatgcg attttcaagg tgctcaacgg tggcttccag caaagcctcc acgcgcacat   | 32820 |
| ccaagaacaa aagaatacca aaagaaggag catttttctaa ctctcaatc atcatattac   | 32880 |
| attcctgcac cattcccaga taattttcag ctttccagcc ttgaattatt cgtgtcagtt   | 32940 |
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| ttcttaaaca caccctcata atgacaaaat atcttgctcc tgtgtcacct gtagcgaatt   | 33060 |
| gagaatggca acatcaattg acatgccctt ggctctaagt tcttctttaa gttctagttg   | 33120 |
| taaaaactct ctcatattat caccaaactg cttagccaga agccccccgg gaacaagagc   | 33180 |
| aggggacgct acagtgcagt acaagcgag acctcccaa ttggctccag caaaaacaag     | 33240 |
| attggaataa gcatattggg aaccgccagt aatatcatcg aagttgctgg aaatataatc   | 33300 |
| aggcagagtt tcttgtaaaa attgaataaa agaaaaattt gccaaaaaaa cattcaaac    | 33360 |
| ctctgggatg caaatgcaat aggttaccgc gctgcgctcc aacattgtta gttttgaatt   | 33420 |
| agtctgcaaa aataaaaaaa aaaacaagcg tcatatcata gtagcctgac gaacagatgg   | 33480 |
| ataaatcagt ctttccatca caagacaagc cacagggtct ccagctcgac cctcgtaaaa   | 33540 |
| cctgtcatca tgattaaaca acagcaccga aagttcctcg cggtgaccag catgaataat   | 33600 |
| tcttgatgaa gcatacaatc cagacatgtt agcatcagtt aacgagaaaa aacagccaac   | 33660 |

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|                                                                   |       |
|-------------------------------------------------------------------|-------|
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| cgctgcccc ggtccctcta aatacacata caaagcctca tcagccatgg cttaccagac  | 33840 |
| aaagtacagc gggcacacaa agcacaagct ctaaagtgac tctccaacct ctccacaata | 33900 |
| tatatataca caagccctaa actgacgtaa tgggagtaaa gtgtaaaaaa tcccgccaaa | 33960 |
| cccaacacac accccgaaac tgcgtcacca gggaaaagta cagtttcact tccgcaatcc | 34020 |
| caacaggcgt aacttcctct ttctcacggt acgtgatatc ccactaactt gcaacgtcat | 34080 |
| tttcccacgg tcgcaccgcc ctttttagcc gttaacccca cagccaatca ccacacgatc | 34140 |
| cacacttttt aaaatcacct catttacata ttggcaccat tccatctata aggtatatta | 34200 |
| tatagataga                                                        | 34210 |

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 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> NG-613 Genome

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| <400> 98                                                           |     |
| tctatctata taatataacct tatagatgga atggtgccaa tatgtaaatg aggtgatttt | 60  |
| aaaaagtgtg gatcgtgtgg tgattggctg tgggggttaac ggctaaaagg ggcggtgcga | 120 |
| ccgtgggaaa atgacgtttt gtgggggtgg agtttttttg caagttgtcg cgggaaatgt  | 180 |
| gacgcataaa aaggcttttt tctcacggaa ctacttagtt ttcccacggg atttaacagg  | 240 |
| aaatgaggta gttttgaccg gatgcaagtg aaaattgttg attttcgcgc gaaaactgaa  | 300 |
| tgaggaagtg tttttctgaa taatgtggta tttatggcag ggtggagtat ttgttcaggg  | 360 |
| ccaggtagac ttgacccat tacgtggagg tttcgattac cgtgtttttt acctgaattt   | 420 |
| ccgcgtaccg tgtcaaagtc ttctgttttt acgtagggtg cagctgatcg ctagggattt  | 480 |
| tataacctcag ggtttgtgtc aagaggccac tcttgagtgc cagcgagaag agttttctcc | 540 |



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|-------------|------------|-------------|-------------|------------|------------|------|
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| aatctctgct  | gagactggaa | atgaaatatt  | ggagcttggtg | gtgcacgccc | tgatgggaga | 660  |
| cgatccggag  | ccacctgtgc | agctttttga  | gcctcctacg  | cttcaggaac | tgtatgattt | 720  |
| agaggtagag  | ggatcggagg | attctaata   | ggaagctgta  | aatggctttt | ttaccgattc | 780  |
| tatgctttta  | gctgctaata | aagggttaga  | attagatccg  | cctttggaca | cttttgatac | 840  |
| tccaggggta  | attgtggaaa | gcggtacagg  | tgtaagaaaa  | ttacctgatt | tgagttccgt | 900  |
| ggactgtgat  | ttgcactgct | atgaagacgg  | gtttcctccg  | agtgatgagg | aggaccatga | 960  |
| aaaggagcag  | tccatgcaga | ctgcagcggg  | tgagggagtg  | aaggctgcca | atgttggttt | 1020 |
| tcagttggat  | tgcccggagc | ttcctggaca  | tggctgtaag  | tcttgtgaat | ttcacaggaa | 1080 |
| aaatactgga  | gtaaaggaac | tgttatgttc  | gctttgttat  | atgagaacgc | actgccactt | 1140 |
| tatttacagt  | aagtgtgttt | aagttaaaat  | ttaaaggaat  | atgctgtttt | tcacatgtat | 1200 |
| attgagtgtg  | agttttgtgc | ttcttattat  | aggtcctgtg  | tctgatgctg | atgaatcacc | 1260 |
| atctcctgat  | tctactacct | cacctcctga  | gattcaagca  | cctgttcctg | tggacgtgcg | 1320 |
| caagcccatt  | cctgtgaagc | ttaagcctgg  | gaaacgtcca  | gcagtggaaa | aacttgagga | 1380 |
| cttgttacag  | ggtggggacg | gacctttgga  | cttgagtaca  | cggaaacgtc | caagacaata | 1440 |
| agtgttccat  | atccgtgttt | acttaagggtg | acgtcaatat  | ttgtgtgaca | gtgcaatgta | 1500 |
| ataaaaaatat | gttaactggt | cactgggtttt | tattgctttt  | tgggcgggga | ctcaggtata | 1560 |
| taagtagaag  | cagacctgtg | tggttagctc  | ataggagctg  | gctttcatcc | atggagggtt | 1620 |
| gggccatttt  | ggaagacctt | aggaagacta  | ggcaactggt  | agagaacgct | tcggacggag | 1680 |
| tctccggttt  | ttggagattc | tggttcgcta  | gtgaattagc  | tagggtagtt | tttaggataa | 1740 |
| aacaggacta  | taaacaagaa | tttgaaaagt  | tgttggtaga  | ttgccagga  | ctttttgaag | 1800 |
| ctcttaattt  | gggccatcag | gttcacttta  | aagaaaaagt  | tttatcagtt | ttagactttt | 1860 |
| caaccccagg  | tagaactgct | gctgctgtgg  | cttttcttac  | ttttatatta | gataaatgga | 1920 |
| tcccgacagac | tcatttcagc | aggggatacg  | ttttggattt  | catagccaca | gcattgtgga | 1980 |

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|                                                                     |      |
|---------------------------------------------------------------------|------|
| gaacatggaa ggttcgcaag atgaggacaa tcttaggtta ctggccagtg cagcctttgg   | 2040 |
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| aagaggacaa cccgagagcc ggccctggacc ctccagtgga ggaggcggag tagctgactt  | 2160 |
| gtctcctgaa ctgcaacggg tgcttactgg atctacgtcc actggacggg ataggggcgt   | 2220 |
| taagagggag agggcatcta gtggtactga tgctagatct gagttggctt taagtttaat   | 2280 |
| gagtcgcaga cgtcctgaaa ccattttggtg gcatgagggtt cagaaagagg gaagggatga | 2340 |
| agtttctgta ttgcaggaga aatattcact ggaacagggtg aaaacatggtt ggttggagcc | 2400 |
| tgaggatgat tgggagggtg ccattaaaaa ttatgccaa atagctttga ggctgataa     | 2460 |
| acagtataag attactagac ggattaatat ccggaatgct tgttacatat ctggaaatgg   | 2520 |
| ggctgagggtg gtaatagata ctcaagacaa ggcagttatt agatgctgca tgatggatat  | 2580 |
| gtggcctggg gtagtcggta tggaagcagt aacttttgta aatgttaagt ttaggggaga   | 2640 |
| tggttataat ggaatagtgt ttatggccaa taccaaactt atattgcatg gttgtagctt   | 2700 |
| ttttggtttc aacaatacct gtgtagatgc ctggggacag gttagtgtac ggggatgtag   | 2760 |
| tttctatgcg tgttggattg ccacagctgg cagaaccaag agtcaattgt ctctgaagaa   | 2820 |
| atgcatattt caaagatgta acctgggcat tctgaatgaa ggcgaagcaa ggggccgcca   | 2880 |
| ctgcgcttct acagatactg gatgttttat tttgattaag ggaaatgcca gcgtaaagca   | 2940 |
| taacatgatt tgcggtgctt ccgatgagag gccttatcaa atgctcactt gtgctgggtg   | 3000 |
| gcattgtaat atgctggcta ctgtgcatat tgtttcccat caacgcaaaa aatggcctgt   | 3060 |
| ttttgatcac aatgtgatga cgaagtgtac catgcatgca ggtgggcgta gaggaatggt   | 3120 |
| tatgccttac cagtgtaaaca tgaatcatgt gaaagtgttg ttggaaccag atgccttttc  | 3180 |
| cagaatgagc ctaacaggaa tttttgacat gaacatgcaa atctggaaga tcctgaggta   | 3240 |
| tgatgatacg agatcgaggg tacgcgcatg cgaatgcgga ggcaagcatg ccaggttcca   | 3300 |
| gccggtgtgt gtagatgtga ctgaagatct cagaccggat catttggtta ttgcccgcac   | 3360 |
| tggagcagag ttcggatcca gtggagaaga aactgactaa ggtgagtatt gggaaaactt   | 3420 |

## eolf-othd-000005

|                                                                    |      |
|--------------------------------------------------------------------|------|
| tggggtggga ttttcagatg gacagattga gtaaaaaattt gttttttctg tcttgagct  | 3480 |
| gtcatgagtg gaaacgcttc ttttaagggg ggagtcttca gcccttatct gacagggcgt  | 3540 |
| ctcccatcct gggcaggagt tcgtcagaat gttatgggat ctactgtgga tggaagaccc  | 3600 |
| gtccaacccg ccaattcttc aacgctgacc tatgctactt taagttcttc acctttggac  | 3660 |
| gcagctgcag ctgccgccgc cgcttctgtt gccgctaaca ctgtgcttgg aatgggttac  | 3720 |
| tatggaagca tcatggctaa ttccacttcc tctaataacc cttctaccct gactcaggac  | 3780 |
| aagttacttg tccttttggc ccagctggag gctttgaccc aacgtctggg tgaactttct  | 3840 |
| cagcaggtgg tcgagttgcg agtacaaact gagtctgctg tcggcacggc aaagtctaaa  | 3900 |
| taaaaaaatc ccagaatcaa tgaataaata aacaagcttg ttgttgattt aaaatcaagt  | 3960 |
| gtttttattt catttttcgc gcacggtatg ccctagacca ccgatctcta tcattgagaa  | 4020 |
| ctcgggtgat tttttccagg atcctataga ggtgggattg aatgtttaga tacatgggca  | 4080 |
| ttaggccgtc tttggggtgg agatagctcc attgaaggga ttcattgctcc ggggtagtgt | 4140 |
| tgtaaatcac ccagtcataa caaggctgca gtgcatgggtg ttgcacaata tcttttagaa | 4200 |
| gtaggctgat tgccacagat aagcccttgg tgtagggtgtt taaaaaccgg ttgagctggg | 4260 |
| atgggtgcat tcggggtgaa attatgtgca ttttggattg gatttttaag ttggcaatat  | 4320 |
| tgccgccaag atcccgctctt gggttcatgt tatgaaggac caccaagacg gtgtatccgg | 4380 |
| tacatttagg aaatttatcg tgcagcttgg atggaaaagc gtggaaaaat ttggagacac  | 4440 |
| ccttgtgtcc tccaagattt tccatgcact catccatgat aatagcaatg gggccgtggg  | 4500 |
| cagcggcgcg ggcaaacacg ttccgtgggt ctgacacatc atagttatgt tcctgagtta  | 4560 |
| aatcatcata agccatttta atgaatttgg ggcggagagt accagattgg ggtatgaatg  | 4620 |
| ttccttcggg ccccgagca tagttcccct cacagatttg catttcccaa gctttcagtt   | 4680 |
| ccgagggtgg aatcatgtcc acctgggggg ctatgaaaaa caccgtttct ggggcggggg  | 4740 |
| tgattaattg tgatgatagc aaatttctga gcaattgaga tttgccacat ccggtggggc  | 4800 |
| cataaatgat tccgattacg ggttgcaggt ggtagtttag ggaacggcaa ctgccgtctt  | 4860 |

## eolf-othd-000005

|                                                                    |      |
|--------------------------------------------------------------------|------|
| ctcgaagcaa gggggccacc tcgttcatca tttcccttac atgcatattt tcccgcacca  | 4920 |
| aatccattag gaggcgctct cctcctagtg atagaagttc ttgtagtgag gaaaagtttt  | 4980 |
| tcagcggttt cagaccgtca gccatgggca ttttggagag agtttgctgc aaaagttcta  | 5040 |
| gtctgttcca cagttcagtg atgtgttcta tggcatctcg atccagcaga cctcctcggt  | 5100 |
| tcgcgggttt ggacggctcc tggaataggg tatgagacga tgggcgtcca gcgctgccag  | 5160 |
| ggttcgggtcc ttccagggtc tcagtgttcg agtcagggtt gtttccgtca cagtgaaggg | 5220 |
| gtgtgcgctt gcttgggcgc ttgccagggt gcgcttcaga ctcatcctgc tggtcgaaaa  | 5280 |
| cttctgtcgc ttggcgccct gtatgtcggc caagtagcag tttacatga gttcgtagtt   | 5340 |
| gagcgctcgc gctgcgtggc ctttggcgcg gagcttacct ttggaagttt tcttgcatat  | 5400 |
| cgggcagtat aggcatttca gcgcatacaa cttgggcgca aggaaaacgg attctggggga | 5460 |
| gtatgcatct gcgccgcagg aggcgcaaac agtttcacat tccaccagcc aggttaaadc  | 5520 |
| cggttcattg ggggtcaaaaa caagttttcc gccatatatt ttgatgcgtt tcttaccttt | 5580 |
| ggctctccatg agttcgtgtc ctggttgagt gacaaacagg ctgtccgtgt ccccgtagac | 5640 |
| tgattttaca ggcctcttct ccagtggagt gcctcgggtt tcttcgtaca ggaactctga  | 5700 |
| ccactctgat acaaaggcgc gcgtccaggc cagcacaaag gaggctatgt gggaggggta  | 5760 |
| gcgatcgttg tcaaccaggg ggtccacctt ttccaaagta tgcaaacaca tgtcaccttc  | 5820 |
| ttcaacatcc aggaatgtga ttggcttgta ggtgtatttc acgtgacctg ggggtccccgc | 5880 |
| tgggggggta taaaaggggg cggttctttg ctcttcctca ctgtcttccg gatcgtgtc   | 5940 |
| caggaacgtc agctgttggg gtaggtattc cctctcgaag gcgggcatga cctctgcact  | 6000 |
| caggttgtca gtttctaaga acgaggagga tttgatattg acagtgccgg ttgagatgcc  | 6060 |
| tttcatgagg ttttcgtcca tctggtcaga aaacacaatt tttttattgt caagtttggt  | 6120 |
| ggcaaatgat ccatacaggg cgttggataa aagtttggca atggatcgca tggtttggtt  | 6180 |
| cttttccttg tccgcgcgct ctttggcggc gatgttgagt tggacatact cgcgtgccag  | 6240 |
| gcacttccat tcggggaaga tagttgttaa ttcactctggc acgattctca cttgccaccc | 6300 |

## eolf-othd-000005

|                                                                     |      |
|---------------------------------------------------------------------|------|
| tcgattatgc aaggtaatta aatccacact ggtggccacc tcgcctcgaa ggggttcatt   | 6360 |
| ggtccaacag agcctacctc ctttcctaga acagaaaggg ggaagtgggt ctagcataag   | 6420 |
| ttcatcggga gggctctgcat ccatggtaaa gattcccgga agtaaattcct tatcaaaata | 6480 |
| gctgatggga gtgggggtcat ctaaggccat ttgccattct cgagctgcca gtgcgcgctc  | 6540 |
| atatgggtta aggggactgc cccatggcat gggatgggtg agtgcagagg catacatgcc   | 6600 |
| acagatgtca tagacgtaga tgggatcctc aaagatgcct atgtaggttg gatagcatcg   | 6660 |
| ccccctctg atacttgctc gcacatagtc atatagttca tgtgatggcg ctagcagccc    | 6720 |
| cggacccaag ttggtgcgat tgggtttttc tgttctgtag acgatctggc gaaagatggc   | 6780 |
| gtgagaattg gaagagatgg tgggtctttg aaaaatgttg aaatgggcat gaggtagacc   | 6840 |
| tacagagtct ctgacaaagt gggcataaga ttcttgaagc ttggttacca gttcggcggt   | 6900 |
| gacaagtacg tctagggcgc agtagtcaag tgtttcttga atgatgtcat aacctggttg   | 6960 |
| gtttttcttt tcccacagtt cgcggttgag aaggatttct tcgcgatcct tccagtactc   | 7020 |
| ttctagcgga aaccctgtctt tgtctgcacg gtaagatcct agcatgtaga actgattaac  | 7080 |
| tgctttgtaa gggcagcagc ctttctctac gggtagagag tatgcttgag cagcttttcg   | 7140 |
| tagcgaagcg tgagtaaggg caaagggtgc tctgaccatg actttgagga attggtattt   | 7200 |
| gaagtcgatg tcgtcacagg ctccctgttc ccagagttgg aagtctaccc gtttcttgta   | 7260 |
| ggcgggggttg ggcaaagcga aagtaacatc attgaagaga atcttgccgg ccctgggcat  | 7320 |
| gaaattgcga gtgatgcgaa aaggctgtgg tacttccgct cggttattga taacctgggc   | 7380 |
| agctaggacg atctcgtcga aaccgttgat gttgtgtcct acgatgtata attctatgaa   | 7440 |
| acgcggcgtg cctctgacgt gaggtagctt actgagctca tcaaaggtta ggtctgtggg   | 7500 |
| gtcagataag gcgtagtggt cgagagccca ttcgtgcagg tgaggattcg ctttaaggaa   | 7560 |
| ggaggaccag aggtccactg ccagtgtgtt ttgtaactgg tcccgggtact gacgaaaatg  | 7620 |
| ccgtccgact gccatTTTTT ctgggggtgac gcaatagaag gtttgggggt cctgccgcca  | 7680 |
| gcgatccac ttgagtttta tggcgagggtc ataggcgatg ttgacgagcc gctgggtctcc  | 7740 |

## eolf-othd-000005

|                                                                   |      |
|-------------------------------------------------------------------|------|
| agagagtttc atgaccagca tgaaggggat tagctgcttg ccaaaggacc ccatccaggt | 7800 |
| gtaggtttcc acatcgtagg tgagaaagag cttttctgtg cgaggatgag agccaatcgg | 7860 |
| gaagaactgg atctcctgcc accagttgga ggaatggctg ttgatgtgat ggaagtagaa | 7920 |
| ctccctgcga cgcgccgagc attcatgctt gtgcttgtag agacggccgc agtagtcgca | 7980 |
| gcgttgcacg ggttgatatc cgtgaatgag ttgtacctgg cttcccttga cgagaaattt | 8040 |
| cagtgggaag ccgaggcctg gcgattgtat ctcgtgcttt actatgttgt ctgcatcggc | 8100 |
| ctgttcatct tctgtctcga tgggtggcat gctgacgagc cctcgcggga ggcaagtcca | 8160 |
| gacctcggcg cggcaggggc ggagctcgag gacgagagcg cgcaggctgg agctgtccag | 8220 |
| ggtcctgaga cgctgcggac tcaggtagt aggcagtgac aggagattaa cttgcatgat  | 8280 |
| cttttgagg gcgtgcggga ggttcagata gtacttgatc tcaacgggtc cgttggtgga  | 8340 |
| gatgtcgatg gcttgcaagg ttccgtgtcc cttgggcgct accaccgtgc cttgttttt  | 8400 |
| cattttggac ggcggtggct ctgttgcttc ttgcatgttt agaagcgggtg tcgaggcg  | 8460 |
| gcaccgggcg gcagggcg ctcgggaccc ggcgcatgg ctggcagtgg tacgtcggcg    | 8520 |
| ccgcgcgagg gtaggttctg gtactgcgcc ctgagaagac tcgcatgcgc gacgacgcgg | 8580 |
| cggttgacat cctggatctg acgcctctgg gtgaaagcta ccggccccgt gagcttgaac | 8640 |
| ctgaaagaga gttcaacaga atcaatctcg gtatcgttga cggcggcttg cctaaggatt | 8700 |
| tcttgacagt caccagagtt gtcctggtag gcgatctccg ccatgaactg ctcgatctct | 8760 |
| tcctcttgaa gatctccgcg gcccgctctc tcgacgggtg ccgcgaggtc gttggagatg | 8820 |
| cgcccaatga gttgagagaa tgcattcatg cccgcctcgt tccagacgcg gctgtagacc | 8880 |
| acggccccc cgggatctct cgcgcgcatg accacctggg cgaggttgag ctccacgtgg  | 8940 |
| cgggtgaaga ccgcatagtt gcataggcgc tggaaaaggt agttgagtgt ggtggcgatg | 9000 |
| tgctcggatg cgaagaaata catgatccat cgtctcagcg gcatctcgct gacatcgccc | 9060 |
| agagcttcca agcgctccat ggccctcgtg aagtccacgg caaaattaaa aaactgggag | 9120 |
| tttcgcgcgg acacggtcaa ctctcttcc agaagacgga taagttcggc gatgggtggtg | 9180 |

## eolf-othd-000005

|                                                                    |       |
|--------------------------------------------------------------------|-------|
| cgcacctcgc gctcgaagc ccctgggatt tcttctcaa tctcttcttc ttccactaac    | 9240  |
| atctcttcct cttcaggtgg ggctgcagga ggagggggaa cgcggcgacg ccggcggcgc  | 9300  |
| acgggcagac ggctgatgaa tctttcaatg acctctccgc ggccggcgcg catggtttca  | 9360  |
| gtgacggcgc ggccgttctc gcgcggctgc agagtaaaaa caccgccgcg catctcctta  | 9420  |
| aagtggtgac tgggaggttc tccgtttggg agggagaggg cgctgattat acattttatt  | 9480  |
| aattggcccc tagggactgc acgcagagat ctgatcgtgt caagatccac gggatctgaa  | 9540  |
| aacctttcga cgaaagcgtc taaccagtca cagtcacaag gtaggctgag tacggcttct  | 9600  |
| tgtgggcggg ggtggttatg tggtcggctt gggtcttctg tttcttcttc atctcgggaa  | 9660  |
| ggtgagacga tgctgctggt gatgaaatta aagtaggcag ttctaagacg gcggatggtg  | 9720  |
| gcgaggagca ccaggtcttt gggtccggct tgctggatac gcaggcgatt ggccattccc  | 9780  |
| caagcattat cctgacatct agcaagatct ttgtagtagt cttgcatgag ccgttctacg  | 9840  |
| ggcacttctt cctcaccctg tctgccatgc atacgtgtga gtccaaatcc gcgcattggt  | 9900  |
| tgtaccagtg ccaagtcagc tacgactctt tcggcgagga tggcttgctg tacttgggta  | 9960  |
| agggtggctt gaaagtcatc aaaatccaca aagcggtggt aagctcctgt attaatggtg  | 10020 |
| taagcacagt tggccatgac tgaccagtta actgtctggt gaccagggcg cacgagctcg  | 10080 |
| gtgtatttaa ggcgcaata ggcgcggtg tcaaagatgt aatcgttgca ggtgcgcacc    | 10140 |
| agatactggt accctataag aaaatgcggc ggtggttggc ggtagagagg ccatcgttct  | 10200 |
| gtagctggag gccaggggc gaggtcttcc aacataaggc ggtgatagcc gtagatgtac   | 10260 |
| ctggacatcc aggtgattcc tgcggcggtg gtagaagccc gaggaactc gcgtacgcgg   | 10320 |
| ttccaaatgt tgcgtagcgg catgaagtag ttcattgtag gcacggtttg accagtgagg  | 10380 |
| cgcgcgcagt cattgatgct ctatagacac ggagaaaatg aaagcgttca gcgactcgac  | 10440 |
| tccgtagcct ggaggaacgt gaacgggttg ggtcgcggtg taccgggtt cgagacttgt   | 10500 |
| actcgagccg gccggagccg cggctaacgt ggtattggca ctcccgcttc gaccagcct   | 10560 |
| acaaaaatcc aggatacggg atcgagtcgt tttgctggtt tccgaatggc agggaaagtga | 10620 |

## eolf-othd-000005

|                                                                     |       |
|---------------------------------------------------------------------|-------|
| gtcctatttt ttttttttgc cgctcagatg catcccgtgc tgcgacagat gcgcccccaa   | 10680 |
| caacagcccc cctcgcagca gcagcagcag caatcacaaa aggctgtccc tgcaactact   | 10740 |
| gcaactgccg ccgtgagcgg tgcgggacag cccgcctatg atctggactt ggaagagggc   | 10800 |
| gaaggactgg cacgtctagg tgcgccttca cccgagcggc atccgcgagt tcaactgaaa   | 10860 |
| aaagattctc gcgaggcgta tgtgccccaa cagaacctat ttagagacag aagcggcgag   | 10920 |
| gagccggagg agatgcgagc ttcccgtttt aacgcgggtc gtgagctgcg tcacggtttg   | 10980 |
| gaccgaagac gagtgttgcg ggacgaggat ttcgaagttg atgaaatgac agggatcagt   | 11040 |
| cctgccaggg cacacgtggc tgcagccaac cttgtatcgg cttacgagca gacagtaaag   | 11100 |
| gaagagcgta acttccaaaa gtcttttaaat aatcatgtgc gaaccctgat tgcccgcgaa  | 11160 |
| gaagttaccc ttggtttgat gcatttgtgg gatttgatgg aagctatcat tcagaaccct   | 11220 |
| actagcaaac ctctgaccgc ccagctgttt ctggtggtgc aacacagcag agacaatgag   | 11280 |
| gctttcagag aggcgctgct gaacatcacc gaacccgagg ggagatgggt gtatgatctt   | 11340 |
| atcaacattc tacagagtat catagtgcag gagcggagcc tgggcctggc cgagaagggtg  | 11400 |
| gctgccatca attactcggg tttagacttg ggaaaatatt acgctcgcaa aatctacaag   | 11460 |
| actccatacg ttcccataga caaggagggtg aagatagatg gggttctacat gcgcatgacg | 11520 |
| ctcaaggctt tgacctgag cgatgatctt ggggtgtatc gcaatgacag aatgcatcgc    | 11580 |
| gcggttagcg ccagcaggag gcgcgagtta agcgacaggg aactgatgca cagtttgcaa   | 11640 |
| agagctctga ctggagctgg aaccgaggggt gagaattact tcgacatggg agctgacttg  | 11700 |
| cagtggcagc ctagtcgcag ggctctgagc gccgcgacgg caggatgtga gcttccttac   | 11760 |
| atagaagagg cggatgaagg cgaggaggaa gagggcgagt acttggaaga ctgatggcac   | 11820 |
| aaccctgtgt ttttgctaga tggaacagca agcaccggat cccgcaatgc gggcggcgct   | 11880 |
| gcagagccag ccgtccggca ttaactcctc ggacgattgg acccaggcca tgcaacgtat   | 11940 |
| catggcgttg acgactcgca accccgaagc ctttagacag caaccccagg ccaaccgtct   | 12000 |
| atcggccatc atggaagctg tagtgccttc ccgctctaata cccactcatg agaaggctct  | 12060 |



## eolf-othd-000005

|                                                                     |       |
|---------------------------------------------------------------------|-------|
| ggccatcgtg aacgcgttgg tggagaacaa agctattcgt ccagatgagg ccggactggt   | 12120 |
| atacaacgct ctcttagaac gcgtggctcg ctacaacagt agcaatgtgc aaaccaatth   | 12180 |
| ggaccgtatg ataacagatg tacgcgaagc cgtgtctcag cgcgaaaggt tccagcgtga   | 12240 |
| tgccaacctg ggttcgctgg tggcgtaaaa tgctttcttg agtactcagc ctgctaattgt  | 12300 |
| gccgcgtggt caacaggatt atactaactt ttttaagtgt ttgagactga tggatatcaga  | 12360 |
| agtacctcag agcgaagtgt atcagtccgg tcctgattac ttctttcaga ctagcagaca   | 12420 |
| gggcttgtag acggtaaatc tgagccaagc ttttaaaaac cttaaagggtt tgtggggagt  | 12480 |
| gcatgccccg gtaggagaaa gagcaaccgt gtctagcttg ttaactccga actccgcct    | 12540 |
| attattactg ttggtagctc ctttcaccga cagcggtagc atcgaccgta attcctatth   | 12600 |
| gggttaccta ctaaacctgt atcgccaagc catagggcaa agtcagggtgg acgagcagac  | 12660 |
| ctatcaagaa attaccaag tcagtcgcgc tttgggacag gaagacactg gcagtttgga    | 12720 |
| agccactctg aacttcttgc ttaccaatcg gtctcaaaag atccctcctc aatatgctct   | 12780 |
| tactgcggag gaggagagga tccttagata tgtgcagcag agcgtgggat tgthttctgat  | 12840 |
| gcaagagggg gcaactccga ctgcagcact ggacatgaca gcgcgaaata tggagcccag   | 12900 |
| catgtatgcc agtaaccgac ctttcattaa caaactgctg gactacttgc acagagctgc   | 12960 |
| cgctatgaac tctgattatt tcaccaatgc catcttaaac ccgcactggc tgccccacc    | 13020 |
| tggthttctac acgggcgaat atgacatgcc cgaccctaata gacggatttc tgtgggacga | 13080 |
| cgtggacagc gatgtthttt cacctctttc tgatcatcgc acgtggaaaa aggaaggcgg   | 13140 |
| cgatagaatg cattcttctg catcgctgtc cggggctcatg ggtgctaccg cggctgagcc  | 13200 |
| cgagtctgca agtcctthtt ctagtctacc cthttctcta cacagtgtac gtagcagcga   | 13260 |
| agtgggtaga ataagtcgcc cgagthtaata gggcgaagag gagtatctaa acgattcctt  | 13320 |
| gctcagaccg gcaagagaaa aaaatthttc aaacaatgga atagaaagtt tggtaggataa  | 13380 |
| aatgagtaga tggaagactt atgctcagga tcacagagac gagcctggga tcatggggat   | 13440 |
| tacaagtaga gcgagccgta gacgccagcg ccatgacaga cagaggggtc ttgtgtggga   | 13500 |

## eolf-othd-000005

|             |            |            |            |            |            |       |
|-------------|------------|------------|------------|------------|------------|-------|
| cgatgaggat  | tcggccgatg | atagcagcgt | gctggacttg | ggtgggagag | gaaggggcaa | 13560 |
| cccgtttgct  | catttgcgcc | ctcgtttggg | tggtatgttg | taaaaaaaaa | taaaaaaaaa | 13620 |
| actcaccaag  | gccatggcga | cgagcgtacg | ttcgtttctt | tttattatct | gtgtctagta | 13680 |
| taatgaggcg  | agtcgtgcta | ggcggagcgg | tggtgtatcc | ggagggtcct | cctccttcgt | 13740 |
| acgagagcgt  | gatgcagcag | cagcaggcga | cggcggtgat | gcaatcccca | ctggaggctc | 13800 |
| cctttgtgcc  | tccgcgatac | ctggcaccta | cggagggcag | aaacagcatt | cgttattcgg | 13860 |
| aactggcacc  | tcagtacgat | accaccaggt | tgtatctggt | ggacaacaag | tcggcggaca | 13920 |
| ttgcttctct  | gaactatcag | aatgaccaca | gcaacttctt | gaccacgggt | gtgcaaaaca | 13980 |
| atgactttac  | ccctacggaa | gccagcaccc | agaccattaa | ctttgatgaa | cgatcgcggt | 14040 |
| ggggcgggtca | gctaaagacc | atcatgcata | ctaacatgcc | aaacgtgaac | gagtatatgt | 14100 |
| ttagtaacaa  | gttcaaagcg | cgtgtgatgg | tgtccagaaa | acctcccgac | ggtgctgcag | 14160 |
| ttggggatac  | ttatgatcac | aagcaggata | ttttgaaata | tgagtgggtc | gagtttactt | 14220 |
| tgccagaagg  | caacttttca | gttactatga | ctattgattt | gatgaacaat | gccatcatag | 14280 |
| ataattactt  | gaaagtgggt | agacagaatg | gagtgcctga | aagtgcatt  | ggtgttaagt | 14340 |
| tcgacaccag  | gaacttcaag | ctgggatggg | atcccgaac  | caagttgatc | atgcctggag | 14400 |
| tgtatacgta  | tgaagccttc | catcctgaca | ttgtcttact | gcctggctgc | ggagtggatt | 14460 |
| ttaccgagag  | tcgtttgagc | aaccttcttg | gtatcagaaa | aaaacagcca | tttcaagagg | 14520 |
| gttttaagat  | tttgtatgaa | gatttagaag | gtggtaatat | tccggccctc | ttggatgtag | 14580 |
| atgcctatga  | gaacagtaag | aaagaacaaa | aagccaaaat | agaagctgct | acagctgctg | 14640 |
| cagaagctaa  | ggcaaacata | gttgccagcg | actctacaag | ggttgctaac | gctggagagg | 14700 |
| tcagaggaga  | caattttgcg | ccaacacctg | ttccgactgc | agaatcatta | ttggccgatg | 14760 |
| tgtctgaagg  | aacggacgtg | aaactcacta | ttcaacctgt | agaaaaagat | agtaagaata | 14820 |
| gaagctataa  | tgtgttgga  | gacaaaatca | acacagccta | tcgcagttgg | tatctttcgt | 14880 |
| acaattatgg  | cgatcccgaa | aaaggagtgc | gttcctggac | attgctcacc | acctcagatg | 14940 |

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|                                                                      |       |
|----------------------------------------------------------------------|-------|
| tcacctgcgg agcagagcag gtctactggg cgcttccaga catgatgaag gatcctgtca    | 15000 |
| ctttccgctc cactagacaa gtcagtaact accctgtggg ggggtgcagag cttatgcccg   | 15060 |
| tcttctcaaa gagcttctac aacgaacaag ctgtgtactc ccagcagctc cgccagtcca    | 15120 |
| cctcgcttac gcacgtcttc aaccgctttc ctgagaacca gattttaatc cgtccgccgg    | 15180 |
| cgcccacat taccaccgtc agtgaanaacg ttcctgtctt cacagatcac gggaccctgc    | 15240 |
| cggtgcgcag cagtatccgg ggagtccaac gtgtgaccgt tactgacgcc agacgccgca    | 15300 |
| cctgtcccta cgtgtacaag gcactgggca tagtcgcacc gcgcgtcctt tcaagccgca    | 15360 |
| ctttctaanaa aaaaaaaaaa tgtccattct tatctcgccc agtaataaca ccggttgggg   | 15420 |
| tctgcgcgct ccaagcaaga tgtacggagg cgcacgcaaa cgcttctaccc aacatcctgt   | 15480 |
| ccgtgttcgc ggacattttc gcgctccatg gggcgccctc aagggccgca ctcgcgttcg    | 15540 |
| aaccaccgtc gatgatgtaa tcgatcagggt gggtgccgac gcccgtaatt atactcctac   | 15600 |
| tgcgcttaca tctactgtgg atgcagttat tgacagtgtg gtggctgacg ctcgcaacta    | 15660 |
| tgctcgacgt aagagccggc gaaggcgcat tgccagacgc caccgagcta ccactgccat    | 15720 |
| gcgagccgca agagctctgc tacgaagagc tagacgcgtg gggcgaagag ccatgcttag    | 15780 |
| ggcggccaga cgtgcagctt cgggcgccag gccggcagg tcccgaggc aagcagccgc      | 15840 |
| tgctgcagcg gcgactattg ccgacatggc ccaatcgca agaggcaatg tatactgggt     | 15900 |
| gcgtgacgct gccaccggtc aacgtgtacc cgtgcgcacc cgtccccctc gcacttagaa    | 15960 |
| gatactgagc agtctccgat gttgtgtccc agcggcgagg atgtccaagc gcaaatacaa    | 16020 |
| ggaagaaatg ctgcaggtta tcgcacctga agtctacggc caaccgttga aggatgaaaa    | 16080 |
| aaaaccccg c aaaaatcaagc ggggttaaaaa ggacaaaaaa gaagaggaag atggcgatga | 16140 |
| tgggctggcg gagtttgtgc gcgagtttgc cccacggcga cgcgtgcaat ggcgtgggcg    | 16200 |
| caaagttcga catgtgttga gacctggaac ttcgggtggc ttacacccg gcgagcgctc     | 16260 |
| aagcgctact ttttaagcgtt cctatgatga ggtgtacggg gatgatgata ttcttgagca   | 16320 |
| ggcggctgac cgattaggcg agtttgctta tggcaagcgt agtagaataa cttccaagga    | 16380 |

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|             |            |             |            |             |             |       |
|-------------|------------|-------------|------------|-------------|-------------|-------|
| tgagacagtg  | tcgataccct | tggatcatgg  | aaatcccacc | cctagtctta  | aaccggtcac  | 16440 |
| tttgcagcaa  | gtgttaccg  | taactccg    | aacaggtgtt | aaacgcgaag  | gtgaagattt  | 16500 |
| gtatcccact  | atgcaactga | tggtagccaa  | acgccagaag | ttggaggacg  | ttttggagaa  | 16560 |
| agtaaaagtg  | gatccagata | ttcaacctga  | ggttaaagtg | agacccatta  | agcaggtagc  | 16620 |
| gcctgggtctg | ggggtacaaa | ctgtagacat  | taagattccc | actgaaagta  | tggaagtgc   | 16680 |
| aactgaaccc  | gcaaagccta | ctgccacctc  | cactgaagtg | caaacggatc  | catggatgcc  | 16740 |
| catgcctatt  | acaactgacg | ccgccgggtcc | cactcgaaga | tcccgcgaa   | agtacgggtcc | 16800 |
| agcaagtctg  | ttgatgccc  | attatgttgt  | acacccatct | attattccta  | ctcctgggtta | 16860 |
| ccgaggcact  | cgctactatc | gcagccgaaa  | cagtacctcc | cgccgtcgcc  | gcaagacacc  | 16920 |
| tgcaaactgc  | agtcgtcgcc | gtagacgcac  | aagcaaaccg | actcccggcg  | ccctgggtgcg | 16980 |
| gcaagtgtac  | cgcaatggta | gtgcggaacc  | tttgacactg | ccgcgtgcgc  | gttaccatcc  | 17040 |
| gagtatcatc  | acttaataca | tgttgccgct  | gcctccttgc | agatatggcc  | ctcacttgtc  | 17100 |
| gccttcgcgt  | tcccatcact | ggttaccgag  | gaagaaactc | gcgccgtaga  | agagggatgt  | 17160 |
| tgggacgcgg  | aatgcgacgc | tacaggcgac  | ggcgtgctat | ccgcaagcaa  | ttgcgggggtg | 17220 |
| gttttttacc  | agccttaatt | ccaattatcg  | ctgctgcaat | tggcgcgata  | ccaggcatag  | 17280 |
| cttccgtggc  | ggttcaggcc | tcgcaacgac  | attgacattg | gaaaaaaacg  | tataaataaa  | 17340 |
| aaaaaaaaaa  | tacaatggac | tctgacactc  | ctggtcctgt | gactatgttt  | tcttagagat  | 17400 |
| ggaagacatc  | aatttttcat | ccttggctcc  | gcgacacggc | acgaagccgt  | acatgggcac  | 17460 |
| ctggagcgac  | atcggcacga | gccaactgaa  | cgggggcgcc | ttcaattgga  | gcagtatctg  | 17520 |
| gagcgggctt  | aaaaattttg | gctcaaccat  | aaaaacatac | gggaacaaag  | cttggaacag  | 17580 |
| cagtacagga  | caggcgctta | gaaataaact  | taaagaccag | aacttccaac  | aaaaagtagt  | 17640 |
| cgatgggata  | gcttccggca | tcaatggagt  | ggtagatttg | gctaaccagg  | ctgtgcagaa  | 17700 |
| aaagataaac  | agtcgttttg | acccgccgcc  | agcaacccca | ggtgaaatgc  | aagtggagga  | 17760 |
| agaaattcct  | ccgccagaaa | aacgaggcga  | caagcgtccg | cgtcccgtatt | tggaagagac  | 17820 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| gctggtgacg cgcgtagatg aaccgccttc ttatgaggaa gcaacgaagc ttggaatgcc  | 17880 |
| caccactaga ccgatatgcc caatggccac cggggtgatg aaaccttctc agttgcatcg  | 17940 |
| acccgtcacc ttggatttgc cccctcccc tgctgctact gctgtacccg cttctaagcc   | 18000 |
| tgtcgtgcc ccgaaaccag tcgccgtagc caggtcacgt cccgggggcg ctcctcgtcc   | 18060 |
| aaatgcgac tggcaaaaata ctctgaacag catcgtgggt ctaggcgtgc aaagtgtaaa  | 18120 |
| acgccgtcgc tgcttttaat taaatatgga gtagcgctta acttgcctat ctgtgtatat  | 18180 |
| gtgtcattac acgccgtcac agcagcagag gaaaaaagga agaggtcgtg cgtcgacgct  | 18240 |
| gagttacttt caagatggcc accccatcga tgctgcccc atgggcatac atgcacatcg   | 18300 |
| ccggacagga tgcttcggag tacctgagtc cgggtctggt gcagttcgcc cgcgccacag  | 18360 |
| acacctactt caatctggga aataagtta gaaatccac cgtagcgccg acccacgatg    | 18420 |
| tgaccaccga ccgtagccag cggctcatgt tgcgcttcgt gcccgttgac cgggaggaca  | 18480 |
| atacatactc ttacaaaagt cggtacaccc tggccgtggg cgacaacaga gtgctggata  | 18540 |
| tggccagcac gttctttgac attaggggtg tgttggacag aggtcccagt ttcaaaccct  | 18600 |
| attctggtac ggcttacaac tccctggctc cttaaaggcg tccaaataca tctcagtgga  | 18660 |
| ttgcagaagg tgtaaaaaat acaactgggt aggaacacgt aacagaagag gaaaccaata  | 18720 |
| ctactactta cacttttggc aatgctcctg taaaagctga agctgaaatt acaaaagaag  | 18780 |
| gactcccagt aggttttgaa gtttcagatg aagaaagtaa accgatttat gctgataaaa  | 18840 |
| catatcagcc agaacctcag ctgggagatg aaacttggac tgaccttgat ggaaaaaccg  | 18900 |
| aaaagtatgg aggcagggt ctcaaaccg atactaagat gaaaccatgc tacgggtcct    | 18960 |
| ttgccaaacc tactaatgtg aaaggcggtc aggcaaaaca aaaaacaacg gagcagccaa  | 19020 |
| atcagaaagt cgaatatgat atcgacatgg agttttttga tgcggcatcg cagaaaacaa  | 19080 |
| acttaagtcc taaaattgtc atgtatgcag aaaatgtaaa tttggaaact ccagacactc  | 19140 |
| atgtagtgta caaacctgga acagaagaca caagttccga agctaatttg ggacaacaat  | 19200 |
| ctatgccccaa cagacccaac tacattggct tcagagataa ctttattgga cttatgtact | 19260 |

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|            |            |            |            |            |            |       |
|------------|------------|------------|------------|------------|------------|-------|
| ataacagtac | tggtaacatg | ggggtgctgg | ctggtcaagc | gtctcagtta | aatgcagtgg | 19320 |
| ttgacttgca | ggacagaaac | acagaacttt | cttaccaact | cttgcttgac | tctctgggcg | 19380 |
| acagaaccag | atactttagc | atgtggaatc | aggctgtgga | cagttatgat | cctgatgtac | 19440 |
| gtgttattga | aaatcatggt | gtggaagatg | aacttcccaa | ctactgtttt | ccactggacg | 19500 |
| gcataggtgt | tccaacaacc | agttacaaat | caatagttcc | aaatggagac | aatgcgcta  | 19560 |
| attggaagga | acctgaagta | aatggaacaa | gtgagatcgg | acagggtaat | ttgtttgcca | 19620 |
| tggaaattaa | ccttcaagcc | aatctatggc | gaagtttcct | ttattccaat | gtggctctat | 19680 |
| atctcccaga | ctcgtacaaa | tacaccccg  | ccaatgtcac | tcttccagaa | aacaaaaaca | 19740 |
| cctacgacta | catgaacggg | cgggtggtgc | cgccatctct | agtagacacc | tatgtgaaca | 19800 |
| ttggtgccag | gtggtctctg | gatgccatgg | acaatgtcaa | cccattcaac | caccaccgta | 19860 |
| acgctggcct | gcgttaccga | tccatgcttc | tgggtaacgg | acgttatgtg | cctttccaca | 19920 |
| tacaagtgcc | tcaaaaattc | ttcgtgttta | aaaacctgct | gcttctccca | ggctcctaca | 19980 |
| cttatgagtg | gaactttagg | aaggatgtga | acatggttct | acagagttcc | ctcggtaacg | 20040 |
| acctgcgggt | agatggcgcc | agcatcagtt | tcacgagcat | caacctctat | gctacttttt | 20100 |
| tccccatggc | tcacaacacc | gcttccaccc | ttgaagccat | gctgcggaat | gacaccaatg | 20160 |
| atcagtcatt | caacgactac | ctatctgcag | ctaactgct  | ctacccatt  | cctgccaatg | 20220 |
| caaccaatat | tcccatttcc | attccttctc | gcaactgggc | ggctttcaga | ggctggtcac | 20280 |
| ttaccagact | gaaaacaaa  | gaaactccct | ctttggggtc | tggatttgac | ccctactttg | 20340 |
| tctattctgg | ttctattccc | tacctggatg | gtaccttcta | cctgaaccac | acttttaaga | 20400 |
| aggtttccat | catgtttgac | tcttcagtga | gctggcctgg | aaatgacagg | ttactatctc | 20460 |
| ctaacgaatt | tgaaataaag | cgcactgtgg | atggcgaagg | ctacaacgta | gcccattgca | 20520 |
| acatgaccaa | agactgggtc | ttggtacaga | tgctcgccaa | ctacaacatc | ggctatcagg | 20580 |
| gcttctacat | tccagaagga | tacaaagatc | gcatgtattc | atttttcaga | aacttccagc | 20640 |
| ccatgagcag | gcagggtggt | gatgaggtca | attacaaaga | cttcaaggcc | gtcgccatac | 20700 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| cctaccaaca caacaactct ggcttttggtg gttacatggc tccgaccatg cgccaaggtc | 20760 |
| aaccctatcc cgctaactat ccctatccac tcattggaac aactgccgta aatagtgtta  | 20820 |
| cgcagaaaaa gttcttgtgt gacagaacca tgtggcgcat accgttctcg agcaacttca  | 20880 |
| tgtctatggg ggcccttaca gacttgggac agaatatgct ctatgccaac tcagctcatg  | 20940 |
| ctctggacat gacctttgag gtggatccca tggatgagcc caccctgctt tatcttctct  | 21000 |
| tcgaagtttt cgacgtggtc agagtgcac agccacaccg cggcatcatc gaggcagtct   | 21060 |
| acctgcgtac accgttctcg gccggtaacg ctaccacgta agaagcttct tgcttcttgc  | 21120 |
| aaatagcagc tgcaaccatg gcctgcggat cccaaaacgg ctccagcgag caagagctca  | 21180 |
| gagccattgt ccaagacctg ggttgccggac cctatTTTTT gggaacctac gataagcgct | 21240 |
| tcccgggggt catggcccc gataagctcg cctgtgccat tgtaaatacg gccggacgtg   | 21300 |
| agacgggggg agagcactgg ttggctttcg gttggaaccc acgttctaac acctgctacc  | 21360 |
| tttttgatcc ttttggattc tcggatgatc gtctcaaaca gatttaccag tttgaatatg  | 21420 |
| agggtctcct gcgccgcagc gctcttgcta ccaaggaccg ctgtattacg ctggaaaaat  | 21480 |
| ctaccagac cgtgcagggt ccccgttctg ccgcctgcgg acttttctgc tgcattgtcc   | 21540 |
| ttcacgcctt tgtgcactgg cctgaccgtc ccatggacgg aaaccccacc atgaaattgc  | 21600 |
| taactggagt gccaaacaac atgcttcatt ctcttaaagt ccagcccacc ctgtgtgaca  | 21660 |
| atcaaaaagc actctaccat tttcttaata cccattcgcc ttatttttcgc tcccatcgta | 21720 |
| cacacatcga aagggccact gcgttcgacc gtatggatgt tcaataatga ctcatgtaaa  | 21780 |
| caacgtgttc aataaacatc actttatTTT tttacatgta tcaaggctct gcattactta  | 21840 |
| tttatttaca agtcgaatgg gttctgacga gaatcagaat gacccgcagg cagtgatacg  | 21900 |
| ttgcggaact gatacttggg ttgccacttg aattcgggaa tcaccaactt gggaaccggt  | 21960 |
| atatcgggca ggatgtcact ccacagcttt ctggtcagct gcaaagctcc aagcagggtca | 22020 |
| ggagccgaaa tcttgaaatc acaattagga ccagtgttt gagcgcgaga gttgcggtac   | 22080 |
| accggattgc agcactgaaa caccatcagc gacggatgtc tcacgcttgc cagcacggtg  | 22140 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| ggatctgcaa tcatgcccac atccagatct tcagcattgg caatgctgaa cggggtcatc  | 22200 |
| ttgcagggtct gcctacccat ggcgggcacc caattaggct tgtggttgca atcgcagtg  | 22260 |
| aggggggatca gtatcatctt ggcctgatcc tgtctgattc ctggatacac ggctctcatg | 22320 |
| aaagcatcat attgcttgaa agcctgctgg gctttactac cctcggtata aaacatccc   | 22380 |
| caggacctgc tcgaaaactg gttagctgca cagccggcat cattcacaca gcagcgggcg  | 22440 |
| tcattgttag ctatttgcac cacacttctg cccagcgggt tttgggtgat tttggttcgc  | 22500 |
| tcgggattct cctttaaggc tcgttgtccg ttctcgctgg ccacatccat ctcgataatc  | 22560 |
| tgctccttct gaatcataat attgccatgc aggcacttca gcttgccctc ataatcattg  | 22620 |
| cagccatgag gccacaacgc acagcctgta cattcccaat tatggtgggc gatctgagaa  | 22680 |
| aaagaatgta tcattccctg cagaaatctt cccatcatcg tgctcagtggt cttgtgacta | 22740 |
| gtgaaagtta actggatgcc tcggtgctcc tcgtttacgt actggtgaca gatgcgcttg  | 22800 |
| tattgttcgt gttgctcagg cattagttaa aaagagggtc taagttcggt atccagcctg  | 22860 |
| tacttctcca tcagcagaca catcacttcc atgcctttct cccaagcaga caccaggggc  | 22920 |
| aagctaatacg gattcttaac agtgcaggca gcagctcctt tagccagagg gtcattctta | 22980 |
| gcgatcttct caatgcttct tttgccatcc ttctcaacga tgcgcacggg cgggtagctg  | 23040 |
| aaacccactg ctacaagttg cgcctcttct ctttcttctt cgctgtcttg actgatgtct  | 23100 |
| tgcatgggga tatgtttggt cttccttggtc ttcttttttg ggggtatcgg aggaggagga | 23160 |
| ctgtcgctcc gttccggaga caggaggat tgtgacgttt cgctcacat taccaactga    | 23220 |
| ctgtcggtag aagaacctga cccacacgg cgacagggtt ttctcttcgg gggcagaggt   | 23280 |
| ggaggcgatt gcgaagggtc gcggtccgac ctggaaggcg gatgactggc agaaccctt   | 23340 |
| ccgcgttcgg ggggtgtgctc cctgtggcgg tcgcttaact gatttccttc gcggctggcc | 23400 |
| attgtgttct cctaggcaga gaaacaacag acatggaaac tcagccattg ctgtcaacat  | 23460 |
| cgccacgagt gccatcacat ctgctcctca gcgacgagga aaaggagcag agcttaagca  | 23520 |
| ttccaccgcc cagtcctgcc accacctcta ccctagaaga taaggagggtc gacgcatctc | 23580 |



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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| atgacatgca gaataaaaaa gcgaaagagt ctgagacaga catcgagcaa gaccgggct    | 23640 |
| atgtgacacc ggtggaacac gaggaagagt tgaaacgctt tctagagaga gaggatgaaa   | 23700 |
| actgccccaa acaacgagca gataactatc accaagatgc tggaaatagg gatcagaaca   | 23760 |
| ccgactacct catagggctt gacggggaag acgcgctcct taaacatcta gcaagacagt   | 23820 |
| cgctcatagt caaggatgca ttattggaca gaactgaagt gcccacatcagt gtggaagagc | 23880 |
| tcagccgcgc ctacgagctt aacctctttt cacctcgtac tccccccaaa cgtcagccaa   | 23940 |
| acggcacctg cgagccaaat cctcgcttaa acttttatcc agcttttgct gtgccagaag   | 24000 |
| tactggctac ctatcacatc ttttttaaaa atcaaaaaat tccagtctcc tgccgcgcta   | 24060 |
| atcgcacccg cgccgatgcc ctactcaatc tgggacctgg ttcacgctta cctgatatag   | 24120 |
| cttccttgga agaggttcca aagatcttcg agggctctggg caataatgag actcgggccg  | 24180 |
| caaatgctct gcaaaaggga gaaaatggca tggatgagca tcacagcggt ctggtggaat   | 24240 |
| tggaaggcga taatgccaga ctcgcagtac tcaagcgaag catcgaggtc acacacttcg   | 24300 |
| catatccgc tgtcaacctg cccctaaag tcatgacggc ggtcatggac cagttactca     | 24360 |
| ttaagcgcgc aagtccccct tcagaagaca tgcatgaccc agatgcctgt gatgagggtta  | 24420 |
| aaccagtggc cagtgatgag cagctaacc gatggctggg caccgactct cccagggtt     | 24480 |
| tggaagagcg tcgcaagctt atgatggccg tggctgctggc taccgtagaa ctagagtgtc  | 24540 |
| tccgacgttt ctttaccgat tcagaaacct tgcgcaaact cgaagagaat ctgcactaca   | 24600 |
| cttttagaca cggctttgtg cggcaggcat gcaagatatc taacgtggaa ctcaccaacc   | 24660 |
| tggtttccta catgggtatt ctgcatgaga atcgccatagg acaaagcgtg ctgcacagca  | 24720 |
| ccctgaaggg ggaagccgc cgtgattaca tccgcgattg tgtctatctg tacctgtgcc    | 24780 |
| acacgtggca aaccggcatg ggtgtatggc agcaatgttt agaagaacag aacttgaaag   | 24840 |
| agcttgacaa gctcttacag aaatctctta aggttctgtg gacagggttc gacgagcgca   | 24900 |
| ccgtcgcttc cgacctggca gacctcatct tcccagagcg tctcagggtt actttgcgaa   | 24960 |
| acggattgcc tgactttatg agccagagca tgcttaacaa ttttcgctct ttcacctgg    | 25020 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| aacgctccgg tatcctgccc gccacctgct gcgcactgcc ctccgacttt gtgcctctca  | 25080 |
| cctaccgcga gtgccccccg ccgctatgga gtcactgcta cctgttccgt ctggccaact  | 25140 |
| atctctccta ccactcggat gtgatcgagg atgtgagcgg agacggcttg ctggagtgtc  | 25200 |
| actgccgctg caatctgtgc acgccccacc ggtccctagc ttgcaacccc cagttgatga  | 25260 |
| gcgaaaccca gataataggc acctttgaat tgcaaggccc cagcagccaa ggcgatgggt  | 25320 |
| cttctcctgg gcaaagttta aaactgaccc cgggactgtg gacctccgcc tacttgcgca  | 25380 |
| agtttgctcc ggaagattac caccctatg aaatcaagtt ctatgaggac caatcacagc   | 25440 |
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| acccccagac cggcgaggaa ctcaacacaa ggttccctca ggatgtccca acgacgagaa  | 25620 |
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| caggcagagg aggcggagga ggacagtctg gaggacagtc tggaggaaga cagtttgag   | 25740 |
| gaggaaaacg aggaggcaga ggaggtggaa gaagtaaccg ccgacaaaca gttatcctcg  | 25800 |
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| cccagcagta gatgggacga gaccggacgc ttcccgaacc caaccagcgc ttccaagacc  | 25920 |
| ggtaagaagg atcggcaggg atacaagtcc tggcgggggc ataagaatgc catcatctcc  | 25980 |
| tgcttgcatg agtgcggggg caacatatcc ttcacgcggc gctacttgct attccaccat  | 26040 |
| ggggtgaact ttccgcgcaa tgttttgcat tactaccgtc acctccacag cccctactat  | 26100 |
| agccagcaaa tcccggcagt ctgcacagat aaagacagcg gcggcgacct ccaacagaaa  | 26160 |
| accagcagcg gcagttagaa aatacacaac aagtgcagca acaggaggat taaagattac  | 26220 |
| agccaacgag ccagcgcaaa cccgagagtt aagaaatcgg atctttccaa ccctgtatgc  | 26280 |
| catcttccag cagagtcggg gtcaagagca ggaactgaaa ataaaaaacc gatctctgcg  | 26340 |
| ttcgctcacc agaagttgtt tgtatcacia gagcgaagat caacttcagc gcactctcga  | 26400 |
| ggacgccgag gctctcttca acaagtactg cgcgctgact cttaaagagt aggcagcgac  | 26460 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
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| actccacccg catgaattgg ctcagcgccg ggcccttctat gatttctcga gttaatgata | 26640 |
| tacgcgccta ccgaaaccaa atacttttgg aacagtcagc tcttaccacc acgccccgcc  | 26700 |
| aacaccttaa tcccagaaat tggcccgccg ccctagtgtg ccaggaaagt cccgctccca  | 26760 |
| ccactgtatt acttcctcga gacgcccagg ccgaagtcca aatgactaat gcagggtcgc  | 26820 |
| agttagctgg cggctccacc ctatgtcgtc acaggcctcg gcataatata aaacgcctga  | 26880 |
| tgatcagagg ccgaggatc cagctcaacg acgagtcggt gagctctccg cttgggtctac  | 26940 |
| gaccagacgg aatctttcag attgccggct gcgggagatc ttccttcacc cctcgtcagg  | 27000 |
| ctgttctgac tttggaaagt tcgtcttcgc aaccccgctc gggcggaatc gggaccgttc  | 27060 |
| aatttgtgga ggagtttact ccctctgtct acttcaaccc cttctccgga tctcctgggc  | 27120 |
| attacccgga cgagttcata ccgaacttcg acgcgattag cgagtcagtg gacggctacg  | 27180 |
| attgatgtct ggtgacgcgg ctgagctatc tcggctgcga catctagacc actgccgccg  | 27240 |
| ctttcgctgc tttgcccggg aactcattga gttcatctac ttcgaactcc ccaaggatca  | 27300 |
| ccctcaaggt ccggcccacg gagtgcggat ttctatcgaa ggcaaaatag actctgcct   | 27360 |
| gcaacgaatt ttctcccagc ggcccgtgct gatcgagcga gaccagggaa acaccacgg   | 27420 |
| ttccatctac tgcatttgta atcaccgccg attgcatgaa agcctttgct gtcttatgtg  | 27480 |
| tactgagttt aataaaaact gaattaagac tctcctacgg actgccgctt cttcaacccg  | 27540 |
| gattttacaa ccagaagaac gaaacttttc ctgtcgtcca ggactctgtt aacttcacct  | 27600 |
| ttcctactca caaactagaa gctcaacgac tacaccgctt ttccagaagc attttcccta  | 27660 |
| ctaatactac tttcaaaacc ggaggtgagc tccaaggtct tcctacagaa aacccttggg  | 27720 |
| tggaagcggg ctttgtagt ctaggaattc ttgcgggtgg gcttgtgatt attctttgct   | 27780 |
| acctatacac accttgcttc actttcttag tgggtgtgtg gtattgggtt aaaaaatggg  | 27840 |
| gcccatacta gtcttgcttg ttttactttc gcttttggaa ccgggttctg ccaattacga  | 27900 |

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|                                                                   |       |
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| catggtggga atcaacccca tagttatcac ccagcaaagt ggagatacta agggttgcat | 28080 |
| tcactgctcc tgcgattcca tcgagtgcac ctacaccctg ctgaagaccc tatgcggcct | 28140 |
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| gcaataaggt ctctgttgaa attttctccc agcagcacct cacttccctc ttcccaactc | 28260 |
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| ccggctcagt gactccttca accctgtcta cccctatgaa gatgaaagca cctcccaaca | 28440 |
| cccctttata aacccagggt ttatttcccc aaatggcttc acacaaagcc caaacggagt | 28500 |
| tcttacttta aaatgtttaa cccactaac aaccacaggc ggatctctac agctaaaagt  | 28560 |
| gggaggggga cttacagtgg atgacaccaa cggttttttg aaagaaaaca taagtgccac | 28620 |
| cacaccactc gttaagactg gtcactctat aggtttacca ctaggagccg gattgggaac | 28680 |
| gaatgaaaat aaactttgta tcaaattagg acaaggactt acattcaatt caaacaacat | 28740 |
| ttgcattgat gacaatatta acaccttatg gacaggagtc aacccaccg aagccaactg  | 28800 |
| tcaaatcatg aactccagt aatctaataa ttgcaaatta attctaacac tagttaa     | 28860 |
| tgagacta gtcactgcat ttgtttatgt tataggagta tctaacaatt ttaatatgct   | 28920 |
| aactacacac agaaatataa attttactgc agagctgttt ttcgattcta ctggtaattt | 28980 |
| actaactaga ctctcatccc tcaaaactcc acttaatcat aaatcaggac aaaacatggc | 29040 |
| tactggtgcc attactaatg ctaaagggtt catgcccagc acgactgcct atcctttcaa | 29100 |
| tgataattct agagaaaaag aaaactacat ttacggaact tggtactaca cagctagtga | 29160 |
| tcgcactgct tttcccattg acatatctgt catgcttaac cgaagagcaa taaatgacga | 29220 |
| gacatcatat tgtattcgta taacttggtc ctggaacaca ggagatgccc cagaggtgca | 29280 |
| aacctctgct acaaccctag tcacctcccc atttaccttt tactacatca gagaagacga | 29340 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| ctgacaaata aagtttgcga tcgctttctc tcttcaggcc caccatgggc tggagctgca   | 29400 |
| tcattcttgtt cctggctcgca actgctaccg gagtccattc ggacatcgtc atgacccaaa | 29460 |
| gccctgactc gctcgtgtgt tcaactgggag agcgggcgac tatcaactgc aaatcatccc  | 29520 |
| agagcctgct gtattcacgc aatcagaaaa actacctggc ctggtatcag cagaagccgg   | 29580 |
| gccagcctcc caagctgctg atcttctggg cctccacccg cgaaagcggc gtgccggacc   | 29640 |
| gcttcagcgg aagcggattc ggaactgact ttactctgac cattagctcc ttgcaggcgg   | 29700 |
| aggacgtggc cgtctactac tgccagcagt atttctccta tccgctcacc tttgggcaag   | 29760 |
| gcaccaaggt ggagattaag ggagggggcg gcagcggggg aggcggcagc ggcggcgggg   | 29820 |
| gacgcaggt ccagctcgtc caatccggag ccgaagtcaa gaagccggga gcgtcgggtca   | 29880 |
| aggtcagctg caaaacttcg cgctacacct tcaactgagta cacgatccac tgggtccgcc  | 29940 |
| aggcgcccgg ccagcggctg gagtggatcg gcgggatcaa cccaaacaac ggaatcccaa   | 30000 |
| attacaatca gaaatttaaa gggcgggtga ctatcacctg ggatacctcg gcctccacgg   | 30060 |
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| gccggatcgc ttatggatac gatgaaggac atgcgatgga ttactggggc cagggcaccc   | 30180 |
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| aactggcaag acctggggcc tcagtgaaga tgtcctgcaa ggcttctggc tacaccttta   | 30300 |
| ctaggtagac gatgcactgg gtaaaacaga ggcttgga gggctctggaa tggattggat    | 30360 |
| acattaatcc tagccgtggt tatactaatt acaatcagaa gttcaaggac aaggccacat   | 30420 |
| tgactacaga caaatcctcc agcacagcct acatgcaact gagcagcctg acatctgagg   | 30480 |
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|                                                                    |       |
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| cgttcggctc ggggacaaag ttggaaataa accggcatca ccatcaccat caccaccatc  | 30960 |
| accattaggc tagcttgact gactgagata cagcgtacct tcagctcaca gacatgataa  | 31020 |
| gatacattga tgagtttgga caaaccacaa ctagaatgca gtgaaaaaaaa tgctttattt | 31080 |
| gtgaaatttg tgatgctatt gctttatttg taaccattat aagctgcaat aaacaagtta  | 31140 |
| acaacaacaa ttgcattcat tttatgtttc aggttcaggg ggagggtgtgg gaggtttttt | 31200 |
| aaagcaagta aaacctctac aaatgtggta gtcgtcagct atcctgcagg aacttgttta  | 31260 |
| tttgaaaatc aattcacaaa atccgagtag ttattttgcc tcccccttcc catttaacag  | 31320 |
| aatacaccaa tctctcccca cgcacagctt taaacatttg gataccatta gatatagaca  | 31380 |
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| actccggagt ctggatcacg gtcacttgga agaagaacga tgggaatcat aatccgaaaa  | 31560 |
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| gccaaaactc atatctgata taatcgcccc tgcatgacca tcataccaaa gttaataata  | 31860 |
| aattaaatga cgttccctca aaaacacact acccacatac atgatctctt ttggcatgtg  | 31920 |
| catattaaca atctgtctgt accatggaca acgttggtta atcatgcaac ccaatataac  | 31980 |
| cttccggaac cacactgcca acaccgctcc ccagccatg cattgaagtg aaccctgctg   | 32040 |
| attacaatga caatgaagaa cccaattctc tcgaccgtga atcacttgag aatgaaaaat  | 32100 |
| atctatagtg gcacaacata gacataaatg catgcatctt ctcataattt ttaactctc   | 32160 |
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|                                                                     |       |
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| ggctctgggtg taaggggtgat gtctggcgca tgatgtcgag cgtgcgcgca accttgtcat | 32400 |
| aatggagttg cttcctgaca ttctcgtatt ttgtatagca aaacgcggcc ctggcagaac   | 32460 |
| acactcttct tcgccttcta tcctgccgct tagcgtgttc cgtgtgatag ttcaagtaca   | 32520 |
| accacactct taagttggtc aaaagaatgc tggcttcagt tgtaatcaaa actccatcgc   | 32580 |
| atctaatcgt tctgaggaaa tcatccaagc aatgcaactg gattgtgttt caagcaggag   | 32640 |
| aggagaggga agagacggaa gaaccatgtt aatttttatt ccaaacgatc tcgcagtact   | 32700 |
| tcaaattgta gatcgcgcag atggcatctc tcgccccac tgtgttggtg aaaaagcaca    | 32760 |
| gctagatcaa aagaaatgcg attttcaagg tgctcaacgg tggcttccag caaagcctcc   | 32820 |
| acgcgcacat ccaagaacaa aagaatacca aaagaaggag cattttctaa ctctcaatc    | 32880 |
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|                                                                    |       |
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| ctcgcgggata caaagtaaaa ggcacaggag aataaaaaat ataattatct ctctgctgct | 33780 |
| gttcaggcaa cgtcgcccc ggtccctcta aatacacata caaagcctca tcagccatgg   | 33840 |
| cttaccagac aaagtacagc gggcacacaa agcacaagct ctaaagtgac tctccaacct  | 33900 |
| ctccacaata tatatataca caagccctaa actgacgtaa tgggagtaaa gtgtaaaaaa  | 33960 |
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| tccgcaatcc caacaggcgt aacttcctct ttctcacggt acgtgatatc ccactaactt  | 34080 |
| gcaacgtcat tttcccacgg tcgcaccgcc ctttttagcc gttaacccca cagccaatca  | 34140 |
| ccacacgatc cacacttttt aaaatcacct catttacata ttggcaccat tccatctata  | 34200 |
| aggtatatta tatagataga                                              | 34220 |

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 <212> DNA  
 <213> Artificial Sequence

<220>  
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|                                                                     |     |
|---------------------------------------------------------------------|-----|
| <400> 99                                                            |     |
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| aaaaagtgtg gatcgtgtgg tgattggctg tgggggttaac ggctaaaagg ggcgggtgcga | 120 |
| ccgtgggaaa atgacgtttt gtgggggtgg agtttttttg caagttgtcg cgggaaatgt   | 180 |
| gacgcataaa aaggcttttt tctcacggaa ctacttagtt ttcccacggg atttaacagg   | 240 |
| aaatgaggta gttttgaccg gatgcaagtg aaaattgttg attttcgcgc gaaaactgaa   | 300 |
| tgaggaagtg tttttctgaa taatgtggta tttatggcag ggtggagtat ttgttcaggg   | 360 |
| ccaggtagac ttgacccat tacgtggagg tttcgattac cgtgtttttt acctgaattt    | 420 |
| ccgcgtaccg tgtcaaagtc ttctgttttt acgtagggtg cagctgatcg ctagggattt   | 480 |
| tataacctcag ggtttgtgtc aagaggccac tcttgagtgc cagcgagaag agttttctcc  | 540 |



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|                                                                     |      |
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| cgatccggag ccacctgtgc agcttttttga gcctcctacg cttcaggaac tgtatgattt  | 720  |
| agaggtagag ggatcggagg attctaataa ggaagctgta aatggctttt ttaccgattc   | 780  |
| tatgctttta gctgctaata aagggttaga attagatccg cttttggaca cttttgatac   | 840  |
| tccaggggta attgtggaaa gcggtacagg tgtaagaaaa ttacctgatt tgagttccgt   | 900  |
| ggactgtgat ttgcactgct atgaagacgg gtttcctccg agtgatgagg aggaccatga   | 960  |
| aaaggagcag tccatgcaga ctgcagcggg tgagggagtg aaggctgcca atgttggttt   | 1020 |
| tcagttggat tgcccggagc ttcctggaca tggctgtaag tcttgtgaat ttcacaggaa   | 1080 |
| aaatactgga gtaaaggaa tgttatgttc gctttgttat atgagaacgc actgccactt    | 1140 |
| tatttacagt aagtgtgttt aagttaaaat ttaaaggaat atgctgtttt tcacatgtat   | 1200 |
| attgagtgtg agttttgtgc ttcttattat aggtcctgtg tctgatgctg atgaatcacc   | 1260 |
| atctcctgat tctactacct cacctcctga gattcaagca cctgttcctg tggacgtgcg   | 1320 |
| caagcccatt cctgtgaagc ttaagcctgg gaaacgtcca gcagtggaaa aacttgagga   | 1380 |
| cttgttacag ggtggggacg gacctttgga cttgagtaca cggaaacgtc caagacaata   | 1440 |
| agtgttccat atccgtgttt acttaagggtg acgtcaatat ttgtgtgaca gtgcaatgta  | 1500 |
| ataaaaaatat gttaactggt cactgggtttt tattgctttt tgggcgggga ctcaggata  | 1560 |
| taagtagaag cagacctgtg tggtagctc ataggagctg gctttcatcc atggagggtt    | 1620 |
| gggccatttt ggaagacctt aggaagacta ggcaactgtt agagaacgct tcggacggag   | 1680 |
| tctccggttt ttggagattc tggttcgcta gtgaattagc tagggtagtt tttaggataa   | 1740 |
| aacaggacta taaacaagaa tttgaaaagt tgttggtaga ttgccagga ctttttgaag    | 1800 |
| ctcttaattt gggccatcag gttcacttta aagaaaaagt tttatcagtt ttagactttt   | 1860 |
| caaccccagg tagaactgct gctgctgtgg cttttcttac ttttatatta gataaatgga   | 1920 |
| tcccgacagac tcatttcagc aggggatacg ttttggattt catagccaca gcattgtgga  | 1980 |

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|                                                                    |      |
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| aagaggacaa cccgagagcc ggccctggacc ctccagtgga ggaggcggag tagctgactt | 2160 |
| gtctcctgaa ctgcaacggg tgcttactgg atctacgtcc actggacggg ataggggcgt  | 2220 |
| taagagggag agggcatcta gtggtactga tgctagatct gagttggctt taagtttaat  | 2280 |
| gagtcgcaga cgtcctgaaa ccatttggtg gcatgagggtt cagaaagagg gaagggatga | 2340 |
| agtttctgta ttgcaggaga aatattcact ggaacagggtg aaaacatgtt ggttggagcc | 2400 |
| tgaggatgat tgggagggtg ccattaaaaa ttatgccaa atagctttga ggctgataa    | 2460 |
| acagtataag attactagac ggattaatat ccggaatgct tgttacatat ctggaaatgg  | 2520 |
| ggctgagggtg gtaatagata ctcaagacaa ggcagttatt agatgctgca tgatggatat | 2580 |
| gtggcctggg gtagtcggta tggaagcagt aacttttgta aatgttaagt ttaggggaga  | 2640 |
| tggttataat ggaatagtgt ttatggccaa taccaaactt atattgcatg gttgtagctt  | 2700 |
| ttttggtttc aacaatacct gtgtagatgc ctggggacag gttagtgtac ggggatgtag  | 2760 |
| tttctatgcg tgttggattg ccacagctgg cagaaccaag agtcaattgt ctctgaagaa  | 2820 |
| atgcatattt caaagatgta acctgggcat tctgaatgaa ggcgaagcaa ggggccgcca  | 2880 |
| ctgcgcttct acagatactg gatgttttat tttgattaag ggaaatgcca gcgtaaagca  | 2940 |
| taacatgatt tgcggtgctt ccgatgagag gccttatcaa atgctcactt gtgctgggtg  | 3000 |
| gcattgtaat atgctggcta ctgtgcatat tgtttcccat caacgcaaaa aatggcctgt  | 3060 |
| ttttgatcac aatgtgatga cgaagtgtac catgcatgca ggtgggcgta gaggaatgtt  | 3120 |
| tatgccttac cagtgtaaaca tgaatcatgt gaaagtgttg ttggaaccag atgccttttc | 3180 |
| cagaatgagc ctaacaggaa tttttgacat gaacatgcaa atctggaaga tcctgaggta  | 3240 |
| tgatgatacg agatcgaggg tacgcgcatg cgaatgcgga ggcaagcatg ccaggttcca  | 3300 |
| gccggtgtgt gtagatgtga ctgaagatct cagaccggat catttggtta ttgcccgcac  | 3360 |
| tggagcagag ttcggatcca gtggagaaga aactgactaa ggtgagtatt gggaaaactt  | 3420 |

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| tggggtggga ttttcagatg gacagattga gtaaaaaattt gttttttctg tcttgagct  | 3480 |
| gtcatgagtg gaaacgcttc ttttaagggg ggagtcttca gcccttatct gacagggcgt  | 3540 |
| ctcccatcct gggcaggagt tcgtcagaat gttatgggat ctactgtgga tggaagaccc  | 3600 |
| gtccaacccg ccaattcttc aacgctgacc tatgctactt taagttcttc acctttggac  | 3660 |
| gcagctgcag ctgccgccgc cgcttctgtt gccgctaaca ctgtgcttgg aatgggttac  | 3720 |
| tatggaagca tcatggctaa ttccacttcc tctaataacc cttctaccct gactcaggac  | 3780 |
| aagttacttg tccttttggc ccagctggag gctttgaccc aacgtctggg tgaactttct  | 3840 |
| cagcaggtgg tcgagttgcg agtacaaact gagtctgctg tcggcacggc aaagtctaaa  | 3900 |
| taaaaaaatc ccagaatcaa tgaataaata aacaagcttg ttgttgattt aaaatcaagt  | 3960 |
| gtttttattt catttttcgc gcacgggatg ccctagacca ccgatctcta tcattgagaa  | 4020 |
| ctcgggtgat tttttccagg atcctataga ggtgggattg aatgtttaga tacatgggca  | 4080 |
| ttaggccgtc tttggggtgg agatagctcc attgaaggga ttcattgctcc ggggtagtgt | 4140 |
| tgtaaatcac ccagtcataa caaggctgca gtgcatgggtg ttgcacaata tcttttagaa | 4200 |
| gtaggctgat tgccacagat aagcccttgg tgtaggtgtt taaaaccgg ttgagctggg   | 4260 |
| atgggtgcat tcggggtgaa attatgtgca ttttggattg gatttttaag ttggcaatat  | 4320 |
| tgccgccaag atcccgctt gggttcatgt tatgaaggac caccaagacg gtgtatccgg   | 4380 |
| tacatttagg aaatttatcg tgcagcttgg atggaaaagc gtggaaaaat ttggagacac  | 4440 |
| ccttgtgtcc tccaagattt tccatgcact catccatgat aatagcaatg gggccgtggg  | 4500 |
| cagcggcgcg ggcaaacacg ttccgtgggt ctgacacatc atagttatgt tcctgagtta  | 4560 |
| aatcatcata agccatttta atgaatttgg ggcggagagt accagattgg ggtatgaatg  | 4620 |
| ttccttcggg ccccgagca tagttcccct cacagatttg catttcccaa gctttcagtt   | 4680 |
| ccgagggtgg aatcatgtcc acctgggggg ctatgaaaaa caccgtttct ggggcggggg  | 4740 |
| tgattaattg tgatgatagc aaatttctga gcaattgaga tttgccacat ccggtggggc  | 4800 |
| cataaatgat tccgattacg ggttgcaggt ggtagtttag ggaacggcaa ctgccgtctt  | 4860 |

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| ctcgaagcaa gggggccacc tcgttcatca tttcccttac atgcatattt tcccgcacca  | 4920 |
| aatccattag gaggcgctct cctcctagtg atagaagttc ttgtagtgag gaaaagtttt  | 4980 |
| tcagcggttt cagaccgtca gccatgggca ttttggagag agtttgctgc aaaagttcta  | 5040 |
| gtctgttcca cagttcagtg atgtgttcta tggcatctcg atccagcaga cctcctcggt  | 5100 |
| tcgcgggttt ggacggctcc tggaataggg tatgagacga tgggcgtcca gcgctgccag  | 5160 |
| ggttcgggtcc ttccagggtc tcagtgttcg agtcagggtt gtttccgtca cagtgaaggg | 5220 |
| gtgtgcgctt gcttgggcgc ttgccagggt gcgcttcaga ctcatcctgc tggtcgaaaa  | 5280 |
| cttctgtcgc ttggcgccct gtatgtcggc caagtagcag tttacatga gttcgtagtt   | 5340 |
| gagcgctcgc gctgcgtggc ctttggcgcg gagcttacct ttggaagttt tcttgcatat  | 5400 |
| cgggcagtat aggcatttca gcgcatacaa cttgggcgca aggaaaacgg attctggggga | 5460 |
| gtatgcatct gcgccgcagg aggcgcaaac agtttcacat tccaccagcc aggttaaadc  | 5520 |
| cggttcattg ggggtcaaaaa caagttttcc gccatatatt ttgatgcgtt tcttaccttt | 5580 |
| ggctctccatg agttcgtgtc ctggttgagt gacaaacagg ctgtccgtgt ccccgtagac | 5640 |
| tgattttaca ggcctcttct ccagtggagt gcctcgggtt tcttcgtaca ggaactctga  | 5700 |
| ccactctgat acaaaggcgc gcgtccaggc cagcacaag gaggctatgt gggaggggta   | 5760 |
| gcgatcgttg tcaaccaggg ggtccacctt ttccaaagta tgcaaacaca tgtcacctc   | 5820 |
| ttcaacatcc aggaatgtga ttggcttgta ggtgtatttc acgtgacctg ggggtccccgc | 5880 |
| tgggggggta taaaaggggg cggttctttg ctcttcctca ctgtcttccg gatcgtgtc   | 5940 |
| caggaacgtc agctgttggg gtaggtattc cctctcgaag gcgggcatga cctctgcact  | 6000 |
| caggttgtca gtttctaaga acgaggagga tttgatattg acagtgccgg ttgagatgcc  | 6060 |
| tttcatgagg ttttcgtcca tctggtcaga aaacacaatt tttttattgt caagtttggt  | 6120 |
| ggcaaatgat ccatacaggg cgttggataa aagtttggca atggatcgca tggtttggtt  | 6180 |
| cttttccttg tccgcgcgct ctttggcggc gatgttgagt tggacatact cgcgtgccag  | 6240 |
| gcacttccat tcggggaaga tagttgttaa ttcactctggc acgattctca cttgccaccc | 6300 |

## eolf-othd-000005

|                                                                     |      |
|---------------------------------------------------------------------|------|
| tcgattatgc aaggtaatta aatccacact ggtggccacc tcgcctcgaa ggggttcatt   | 6360 |
| ggtccaacag agcctacctc ctttcctaga acagaaaagg ggaagtgggt ctagcataag   | 6420 |
| ttcatcggga gggctctgcat ccatggtaaa gattcccgga agtaaattcct tatcaaaata | 6480 |
| gctgatggga gtgggggtcat ctaaggccat ttgccattct cgagctgcca gtgcgcgctc  | 6540 |
| atatgggtta aggggactgc cccatggcat gggatgggtg agtgcagagg catacatgcc   | 6600 |
| acagatgtca tagacgtaga tgggatcctc aaagatgcct atgtaggttg gatagcatcg   | 6660 |
| ccccctctg atacttgctc gcacatagtc atatagttca tgtgatggcg ctagcagccc    | 6720 |
| cggacccaag ttggtgcgat tgggtttttc tgttctgtag acgatctggc gaaagatggc   | 6780 |
| gtgagaattg gaagagatgg tgggtctttg aaaaatgttg aaatgggcat gaggtagacc   | 6840 |
| tacagagtct ctgacaaagt gggcataaga ttcttgaagc ttggttacca gttcggcggt   | 6900 |
| gacaagtacg tctagggcgc agtagtcaag tgtttcttga atgatgtcat aacctggttg   | 6960 |
| gtttttcttt tcccacagtt cgcggttgag aaggatttct tcgcgatcct tccagtactc   | 7020 |
| ttctagcgga aaccctgctt tgtctgcacg gtaagatcct agcatgtaga actgattaac   | 7080 |
| tgctttgtaa gggcagcagc ctttctctac gggtagagag tatgcttgag cagcttttcg   | 7140 |
| tagcgaagcg tgagtaaggc caaagggtgc tctgaccatg actttgagga attggtattt   | 7200 |
| gaagtcgatg tcgtcacagg ctccctgttc ccagagttgg aagtctaccc gtttcttgta   | 7260 |
| ggcgggggttg ggcaaagcga aagtaacatc attgaagaga atcttgccgg ccctgggcat  | 7320 |
| gaaattgcga gtgatgcgaa aaggctgtgg tacttccgct cggttattga taacctgggc   | 7380 |
| agctaggacg atctcgtcga aaccgttgat gttgtgtcct acgatgtata attctatgaa   | 7440 |
| acgcggcgtg cctctgacgt gaggtagctt actgagctca tcaaaggtta ggtctgtggg   | 7500 |
| gtcagataag gcgtagtggt cgagagccca ttcgtgcagg tgaggattcg ctttaaggaa   | 7560 |
| ggaggaccag aggtccactg ccagtgtgtt ttgtaactgg tcccgggtact gacgaaaatg  | 7620 |
| ccgtccgact gccatTTTTT ctgggggtgac gcaatagaag gtttgggggt cctgccgcca  | 7680 |
| gcgatccac ttgagtttta tggcgagggtc ataggcgatg ttgacgagcc gctggtctcc   | 7740 |

## eolf-othd-000005

|                                                                    |      |
|--------------------------------------------------------------------|------|
| agagagtttc atgaccagca tgaaggggat tagctgcttg ccaaaggacc ccatccaggt  | 7800 |
| gtaggtttcc acatcgtagg tgagaaagag cttttctgtg cgaggatgag agccaatcgg  | 7860 |
| gaagaactgg atctcctgcc accagttgga ggaatggctg ttgatgtgat ggaagtagaa  | 7920 |
| ctccctgcga cgcgccgagc attcatgctt gtgcttgtag agacggccgc agtagtcgca  | 7980 |
| gcgttgcacg ggttgatatc cgtgaatgag ttgtacctgg cttcccttga cgagaaattt  | 8040 |
| cagtgggaag ccgaggcctg gcgattgtat ctcgtgcttt actatgttgt ctgcatcggc  | 8100 |
| ctgttcatct tctgtctcga tgggtggcat gctgacgagc cctcgcggga ggcaagtcca  | 8160 |
| gacctcggcg cggcaggggc ggagctcgag gacgagagcg cgcaggctgg agctgtccag  | 8220 |
| ggtcctgaga cgctgcggac tcaggttagt aggcagtgtc aggagattaa cttgcatgat  | 8280 |
| cttttgagg gcgtgcggga ggttcagata gtacttgatc tcaacgggtc cgttggtgga   | 8340 |
| gatgtcgatg gcttgcaagg ttccgtgtcc cttgggcgct accaccgtgc cttgttttt   | 8400 |
| cattttggac ggcggtggct ctgttgcttc ttgcatgttt agaagcggtg tcgaggcg    | 8460 |
| gcaccgggcg gcaggggcgg ctcgggaccc ggcgcatgg ctggcagtgg tacgtcggcg   | 8520 |
| ccgcgcgcgg gtaggttctg gtactgcgcc ctgagaagac tcgcatgcgc gacgacgcgg  | 8580 |
| cggttgacat cctggatctg acgcctctgg gtgaaagcta ccggccccgt gagcttgaac  | 8640 |
| ctgaaagaga gttcaacaga atcaatctcg gtatcgttga cggcggcttg cctaaggatt  | 8700 |
| tcttgcacgt caccagagtt gtcctggtag gcgatctccg ccatgaactg ctcgatctct  | 8760 |
| tcctcttgaa gatctccgcg gcccgctctc tcgacgggtg ccgcgaggtc gttggagatg  | 8820 |
| cgcccaatga gttgagagaa tgcattcatg cccgcctcgt tccagacgcg gctgtagacc  | 8880 |
| acggccccc cgggatctct cgcgcgcatg accacctggg cgaggttgag ctccacgtgg   | 8940 |
| cgggtgaaga ccgcatagtt gcataggcgc tggaaaaggt agttgagtgt ggtggcgatg  | 9000 |
| tgctcggtag cgaagaaata catgatccat cgtctcagcg gcatctcgct gacatcgccc  | 9060 |
| agagcttcca agcgctccat ggccctcgtag aagtccacgg caaaattaaa aaactgggag | 9120 |
| tttcgcgcgg acacggtcaa ctctcttcc agaagacgga taagttcggc gatggtggtg   | 9180 |

## eolf-othd-000005

|                                                                    |       |
|--------------------------------------------------------------------|-------|
| cgcacctcgc gctcgaagc ccctgggatt tcttctcaa tctcttcttc ttccactaac    | 9240  |
| atctcttcct cttcaggtgg ggctgcagga ggagggggaa cgcggcgacg ccggcggcgc  | 9300  |
| acgggcagac ggctgatgaa tctttcaatg acctctccgc ggccggcgcg catggtttca  | 9360  |
| gtgacggcgc ggccgttctc gcgcggctgc agagtaaaaa caccgccgcg catctcctta  | 9420  |
| aagtggtgac tgggaggttc tccgtttggg agggagaggg cgctgattat acattttatt  | 9480  |
| aattggcccc tagggactgc acgcagagat ctgatcgtgt caagatccac gggatctgaa  | 9540  |
| aacctttcga cgaaagcgtc taaccagtca cagtcacaag gtaggctgag tacggcttct  | 9600  |
| tgtgggcggg ggtggttatg tggtcggctt gggtcttctg tttcttcttc atctcgggaa  | 9660  |
| ggtgagacga tgctgctggt gatgaaatta aagtaggcag ttctaagacg gcggatggtg  | 9720  |
| gcgaggagca ccaggtcttt gggtccggct tgctggatac gcaggcgatt ggccattccc  | 9780  |
| caagcattat cctgacatct agcaagatct ttgtagtagt cttgcatgag ccgttctacg  | 9840  |
| ggcacttctt cctcaccctg tctgccatgc atacgtgtga gtccaaatcc gcgcattggt  | 9900  |
| tgtaccagtg ccaagtcagc tacgactctt tcggcgagga tggcttgctg tacttgggta  | 9960  |
| agggtggctt gaaagtcatc aaaatccaca aagcgggtgt aagctcctgt attaatggtg  | 10020 |
| taagcacagt tggccatgac tgaccagtta actgtctggt gaccagggcg cacgagctcg  | 10080 |
| gtgtatttaa ggcgcaata ggcgcggtg tcaaagatgt aatcgttgca ggtgcgcacc    | 10140 |
| agatactggt accctataag aaaatgcggc ggtggttggc ggtagagagg ccatcgttct  | 10200 |
| gtagctggag cgccaggggc gaggtcttcc aacataaggc ggtgatagcc gtagatgtac  | 10260 |
| ctggacatcc aggtgattcc tgcggcggtg gtagaagccc gaggaactc gcgtacgcgg   | 10320 |
| ttccaaatgt tgcgtagcgg catgaagtag ttcattgtag gcacggtttg accagtgagg  | 10380 |
| cgcgcgcagt cattgatgct ctatagacac ggagaaaatg aaagcgttca gcgactcgac  | 10440 |
| tccgtagcct ggaggaacgt gaacgggttg ggtcgcggtg taccgggtt cgagacttgt   | 10500 |
| actcgagccg gccggagccg cggctaacgt ggtattggca ctcccgcttc gaccagcct   | 10560 |
| acaaaaatcc aggatacggg atcgagtcgt tttgctggtt tccgaatggc agggaaagtga | 10620 |

## eolf-othd-000005

|                                                                     |       |
|---------------------------------------------------------------------|-------|
| gtcctatttt ttttttttgc cgctcagatg catcccgtgc tgcgacagat gcgcccccaa   | 10680 |
| caacagcccc cctcgcagca gcagcagcag caatcacaaa aggctgtccc tgcaactact   | 10740 |
| gcaactgccg ccgtgagcgg tgcgggacag cccgcctatg atctggactt ggaagagggc   | 10800 |
| gaaggactgg cacgtctagg tgcgccttca cccgagcggc atccgcgagt tcaactgaaa   | 10860 |
| aaagattctc gcgaggcgta tgtgccccaa cagaacctat ttagagacag aagcggcgag   | 10920 |
| gagccggagg agatgcgagc ttcccgtttt aacgcgggtc gtgagctgcg tcacggtttg   | 10980 |
| gaccgaagac gagtgttgcg ggacgaggat ttcgaagttg atgaaatgac agggatcagt   | 11040 |
| cctgccaggg cacacgtggc tgcagccaac cttgtatcgg cttacgagca gacagtaaag   | 11100 |
| gaagagcgta acttccaaaa gtcttttaaat aatcatgtgc gaaccctgat tgcccgcgaa  | 11160 |
| gaagttaccc ttggtttgat gcatttgtgg gatttgatgg aagctatcat tcagaaccct   | 11220 |
| actagcaaac ctctgaccgc ccagctgttt ctggtggtgc aacacagcag agacaatgag   | 11280 |
| gctttcagag aggcgctgct gaacatcacc gaacccgagg ggagatgggt gtatgatctt   | 11340 |
| atcaacattc tacagagtat catagtgcag gagcggagcc tgggcctggc cgagaagggtg  | 11400 |
| gctgccatca attactcggg tttagacttg ggaaaatatt acgctcgcaa aatctacaag   | 11460 |
| actccatacg ttcccataga caaggagggtg aagatagatg gggttctacat gcgcatgacg | 11520 |
| ctcaaggctc tgacctgag cgatgatctt ggggtgtatc gcaatgacag aatgcatcgc    | 11580 |
| gcggttagcg ccagcaggag gcgcgagtta agcgacaggg aactgatgca cagtttgcaa   | 11640 |
| agagctctga ctggagctgg aaccgagggg gagaattact tcgacatggg agctgacttg   | 11700 |
| cagtggcagc ctagtcgcag ggctctgagc gccgcgacgg caggatgtga gcttccttac   | 11760 |
| atagaagagg cggatgaagg cgaggaggaa gagggcgagt acttggaaga ctgatggcac   | 11820 |
| aaccctgtgt ttttgctaga tggaacagca agcaccggat cccgcaatgc gggcggcgct   | 11880 |
| gcagagccag ccgtccggca ttaactcctc ggacgattgg acccaggcca tgcaacgtat   | 11940 |
| catggcggtg acgactcgca accccgaagc ctttagacag caaccccagg ccaaccgtct   | 12000 |
| atcggccatc atggaagctg tagtgccttc ccgctctaata cccactcatg agaaggctct  | 12060 |



## eolf-othd-000005

|                                                                     |       |
|---------------------------------------------------------------------|-------|
| ggccatcgtg aacgcgttgg tggagaacaa agctattcgt ccagatgagg ccggactggt   | 12120 |
| atacaacgct ctcttagaac gcgtggctcg ctacaacagt agcaatgtgc aaaccaatth   | 12180 |
| ggaccgtatg ataacagatg tacgcgaagc cgtgtctcag cgcgaaaggt tccagcgtga   | 12240 |
| tgccaacctg ggttcgctgg tggcgtaaaa tgctttcttg agtactcagc ctgctaattgt  | 12300 |
| gccgcgtggt caacaggatt atactaactt ttttaagtgt ttgagactga tggatatcaga  | 12360 |
| agtacctcag agcgaagtgt atcagtccgg tcctgattac ttctttcaga ctagcagaca   | 12420 |
| gggcttgtag acggtaaatc tgagccaagc ttttaaaaaac cttaaagggtt tgtggggagt | 12480 |
| gcatgccccg gtaggagaaa gagcaaccgt gtctagcttg ttaactccga actccgcct    | 12540 |
| attattactg ttggtagctc ctttcaccga cagcggtagc atcgaccgta attcctatth   | 12600 |
| gggttaccta ctaaacctgt atcgcgaagc catagggcaa agtcagggtgg acgagcagac  | 12660 |
| ctatcaagaa attaccaag tcagtcgcgc tttgggacag gaagacactg gcagtttgga    | 12720 |
| agccactctg aacttcttgc ttaccaatcg gtctcaaaag atccctcctc aatatgctct   | 12780 |
| tactgcggag gaggagagga tccttagata tgtgcagcag agcgtgggat tgtttctgat   | 12840 |
| gcaagagggg gcaactccga ctgcagcact ggacatgaca gcgcgaaata tggagcccag   | 12900 |
| catgtatgcc agtaaccgac ctttcattaa caaactgctg gactacttgc acagagctgc   | 12960 |
| cgctatgaac tctgattatt tcaccaatgc catcttaaac ccgcactggc tgccccacc    | 13020 |
| tggtttctac acgggcgaat atgacatgcc cgaccctaag gacggatttc tgtgggacga   | 13080 |
| cgtggacagc gatgtttttt cacctctttc tgatcatcgc acgtggaaaa aggaaggcgg   | 13140 |
| cgatagaatg cattcttctg catcgctgtc cggggtcatg ggtgctaccg cggctgagcc   | 13200 |
| cgagtctgca agtccttttc ctagtctacc cttttctcta cacagtgtac gtagcagcga   | 13260 |
| agtgggtaga ataagtcgcc cgagtttaat gggcgaagag gagtatctaa acgattcctt   | 13320 |
| gctcagaccg gcaagagaaa aaaattttccc aaacaatgga atagaaagtt tggtaggataa | 13380 |
| aatgagtaga tggaagactt atgctcagga tcacagagac gagcctggga tcatggggat   | 13440 |
| tacaagtaga gcgagccgta gacgccagcg ccatgacaga cagaggggtc ttgtgtggga   | 13500 |

## eolf-othd-000005

|             |            |            |            |            |            |       |
|-------------|------------|------------|------------|------------|------------|-------|
| cgatgaggat  | tcggccgatg | atagcagcgt | gctggacttg | ggtgggagag | gaaggggcaa | 13560 |
| cccgtttgct  | catttgcgcc | ctcgtttggg | tggtatgttg | taaaaaaaaa | taaaaaaaaa | 13620 |
| actcaccaag  | gccatggcga | cgagcgtacg | ttcgtttctt | tttattatct | gtgtctagta | 13680 |
| taatgaggcg  | agtcgtgcta | ggcggagcgg | tggtgtatcc | ggagggtcct | cctccttcgt | 13740 |
| acgagagcgt  | gatgcagcag | cagcaggcga | cggcggtgat | gcaatcccca | ctggaggctc | 13800 |
| cctttgtgcc  | tccgcgatac | ctggcaccta | cggagggcag | aaacagcatt | cgttattcgg | 13860 |
| aactggcacc  | tcagtacgat | accaccaggt | tgtatctggt | ggacaacaag | tcggcggaca | 13920 |
| ttgcttctct  | gaactatcag | aatgaccaca | gcaacttctt | gaccacgggt | gtgcaaaaca | 13980 |
| atgactttac  | ccctacggaa | gccagcaccc | agaccattaa | ctttgatgaa | cgatcgcggt | 14040 |
| ggggcgggtca | gctaaagacc | atcatgcata | ctaacatgcc | aaacgtgaac | gagtatatgt | 14100 |
| ttagtaacaa  | gttcaaagcg | cgtgtgatgg | tgtccagaaa | acctcccgac | ggtgctgcag | 14160 |
| ttggggatac  | ttatgatcac | aagcaggata | ttttgaaata | tgagtggttc | gagtttactt | 14220 |
| tgccagaagg  | caacttttca | gttactatga | ctattgattt | gatgaacaat | gccatcatag | 14280 |
| ataattactt  | gaaagtgggt | agacagaatg | gagtgcctga | aagtgacatt | ggtgttaagt | 14340 |
| tcgacaccag  | gaacttcaag | ctgggatggg | atcccgaac  | caagttgatc | atgcctggag | 14400 |
| tgtatacgta  | tgaagccttc | catcctgaca | ttgtcttact | gcctggctgc | ggagtggatt | 14460 |
| ttaccgagag  | tcgtttgagc | aaccttcttg | gtatcagaaa | aaaacagcca | tttcaagagg | 14520 |
| gttttaagat  | tttgtatgaa | gatttagaag | gtggtaatat | tccggccctc | ttggatgtag | 14580 |
| atgcctatga  | gaacagtaag | aaagaacaaa | aagccaaaat | agaagctgct | acagctgctg | 14640 |
| cagaagctaa  | ggcaaacata | gttgccagcg | actctacaag | ggttgctaac | gctggagagg | 14700 |
| tcagaggaga  | caattttgcg | ccaacacctg | ttccgactgc | agaatcatta | ttggccgatg | 14760 |
| tgtctgaagg  | aacggacgtg | aaactcacta | ttcaacctgt | agaaaaagat | agtaagaata | 14820 |
| gaagctataa  | tgtgttgga  | gacaaaatca | acacagccta | tcgcagttgg | tatctttcgt | 14880 |
| acaattatgg  | cgatcccgaa | aaaggagtgc | gttcctggac | attgctcacc | acctcagatg | 14940 |

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|                                     |                                   |       |
|-------------------------------------|-----------------------------------|-------|
| tcacctgcgg agcagagcag gtctactggg    | cgcttccaga catgatgaag gatcctgtca  | 15000 |
| ctttccgctc cactagacaa gtcagtaact    | accctgtggg ggggtgcagag cttatgccc  | 15060 |
| tcttctcaaa gagcttctac aacgaacaag    | ctgtgtactc ccagcagctc cgccagtcca  | 15120 |
| cctcgcttac gcacgtcttc aaccgctttc    | ctgagaacca gattttaatc cgtccgccgg  | 15180 |
| cgcccacat taccaccgtc agtgaanaac     | ttcctgtctt cacagatcac gggaccctgc  | 15240 |
| cggtgcgcag cagtatccgg ggagtccaac    | gtgtgaccgt tactgacgcc agacgccgca  | 15300 |
| cctgtcccta cgtgtacaag gcactgggca    | tagtcgcacc gcgcgtcctt tcaagccgca  | 15360 |
| ctttctaanaa aaaaaaaaaa tgtccattct   | tatctcgccc agtaataaca ccggttgggg  | 15420 |
| tctgcgcgct ccaagcaaga tgtacggagg    | cgacgcacaa cgcttctaccc aacatcctgt | 15480 |
| ccgtgttcgc ggacattttc gcgctccatg    | gggcgcccctc aagggccgca ctcgcgttcg | 15540 |
| aaccaccgtc gatgatgtaa tcgatcagg     | ggttgccgac gcccgtaatt atactcctac  | 15600 |
| tgcgcttaca tctactgtgg atgcagttat    | tgacagtgtg gtggctgacg ctcgcaacta  | 15660 |
| tgctcgacgt aagagccggc gaaggcgcat    | tgccagacgc caccgagcta ccactgccat  | 15720 |
| gcgagccgca agagctctgc tacgaagagc    | tagacgcgtg gggcgaagag ccatgcttag  | 15780 |
| ggcggccaga cgtgcagctt cgggcgccag    | cgccggcagg tcccgaggc aagcagccgc   | 15840 |
| tgctgcagcg gcgactattg ccgacatggc    | ccaatcgca agaggcaatg tatactgggt   | 15900 |
| gcgtgacgct gccaccggtc aacgtgtacc    | cgtgcgcacc cgtccccctc gcacttagaa  | 15960 |
| gatactgagc agtctccgat gttgtgtccc    | agcggcgagg atgtccaagc gcaaatacaa  | 16020 |
| ggaagaaatg ctgcaggtta tcgcacctga    | agtctacggc caaccgttga aggatgaaaa  | 16080 |
| aaaaccccg c aaaaatcaagc ggggttaaaaa | ggacaaaaaa gaagaggaag atggcgatga  | 16140 |
| tgggctggcg gagtttgtgc gcgagtttgc    | cccacggcga cgcgtgcaat ggcgtggg    | 16200 |
| caaagttcga catgtgttga gacctggaac    | ttcgggtggc ttacacccg gcgagcgctt   | 16260 |
| aagcgctact ttttaagcgtt cctatgatga   | ggtgtacggg gatgatgata ttcttgagca  | 16320 |
| ggcggctgac cgattaggcg agtttgctta    | tggcaagcgt agtagaataa cttccaagga  | 16380 |

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|             |            |            |            |            |             |       |
|-------------|------------|------------|------------|------------|-------------|-------|
| tgagacagtg  | tcgataccct | tggatcatgg | aaatcccacc | cctagtctta | aaccggtcac  | 16440 |
| tttgcagcaa  | gtgttaccg  | taactccg   | aacaggtgtt | aaacgcgaag | gtgaagattt  | 16500 |
| gtatcccact  | atgcaactga | tggtagccaa | acgccagaag | ttggaggacg | ttttggagaa  | 16560 |
| agtaaaagtg  | gatccagata | ttcaacctga | ggttaaagtg | agaccatta  | agcaggtagc  | 16620 |
| gcctgggtctg | ggggtacaaa | ctgtagacat | taagattccc | actgaaagta | tggaagtgc   | 16680 |
| aactgaaccc  | gcaaagccta | ctgccacctc | cactgaagtg | caaacggatc | catggatgcc  | 16740 |
| catgcctatt  | acaactgacg | ccgccggtcc | cactcgaaga | tcccgcgaa  | agtacgggtcc | 16800 |
| agcaagtctg  | ttgatgcca  | attatgttgt | acacccatct | attattccta | ctcctggtta  | 16860 |
| ccgaggcact  | cgctactatc | gcagccgaaa | cagtacctcc | cgccgtcgcc | gcaagacacc  | 16920 |
| tgcaaatcgc  | agtcgtcgcc | gtagacgcac | aagcaaaccg | actcccggcg | ccctgggtcg  | 16980 |
| gcaagtgtac  | cgcaatggta | gtgcggaacc | tttgacactg | ccgcgtcg   | gttaccatcc  | 17040 |
| gagtatcatc  | acttaatcaa | tgttgccgct | gcctccttgc | agatatggcc | ctcacttgtc  | 17100 |
| gccttcgcgt  | tcccatcact | ggttaccgag | gaagaaactc | gcgccgtaga | agagggatgt  | 17160 |
| tgggacgcgg  | aatgcgacgc | tacaggcgac | ggcgtgctat | ccgcaagcaa | ttgcgggggtg | 17220 |
| gttttttacc  | agccttaatt | ccaattatcg | ctgctgcaat | tggcgcgata | ccaggcatag  | 17280 |
| cttccgtggc  | ggttcaggcc | tcgcaacgac | attgacattg | gaaaaaacg  | tataaataaa  | 17340 |
| aaaaaaaaa   | tacaatggac | tctgacactc | ctggtcctgt | gactatgttt | tcttagagat  | 17400 |
| ggaagacatc  | aatttttcat | ccttggctcc | gcgacacggc | acgaagccgt | acatgggcac  | 17460 |
| ctggagcgac  | atcggcacga | gccaactgaa | cgggggcgcc | ttcaattgga | gcagtatctg  | 17520 |
| gagcgggctt  | aaaaattttg | gctcaaccat | aaaaacatac | gggaacaaag | cttggaacag  | 17580 |
| cagtacagga  | caggcgctta | gaaataaact | taaagaccag | aacttccaac | aaaaagtagt  | 17640 |
| cgatgggata  | gcttccggca | tcaatggagt | ggtagatttg | gctaaccagg | ctgtgcagaa  | 17700 |
| aaagataaac  | agtcgttttg | acccgccgcc | agcaacccca | ggtgaaatgc | aagtggagga  | 17760 |
| agaaattcct  | ccgccagaaa | aacgaggcga | caagcgtccg | cgtcccgtt  | tggaagagac  | 17820 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| gctggtgacg cgcgtagatg aaccgccttc ttatgaggaa gcaacgaagc ttggaatgcc  | 17880 |
| caccactaga ccgatagccc caatggccac cggggtgatg aaaccttctc agttgcatcg  | 17940 |
| acccgtcacc ttggatttgc cccctcccc tgctgctact gctgtacccg cttctaagcc   | 18000 |
| tgtcgctgcc ccgaaaccag tcgccgtagc caggtcacgt cccgggggcg ctcctcgtcc  | 18060 |
| aaatgcgcac tggcaaaaata ctctgaacag catcgtgggt ctaggcgtgc aaagtgtaaa | 18120 |
| acgccgtcgc tgcttttaata taaatatgga gtagcgctta acttgcctat ctgtgtatat | 18180 |
| gtgtcattac acgccgtcac agcagcagag gaaaaaagga agaggtcgtg cgtcgacgct  | 18240 |
| gagttacttt caagatggcc accccatcga tgctgcccc atgggcatac atgcacatcg   | 18300 |
| ccggacagga tgcttcggag tacctgagtc cgggtctggt gcagttcgcc cgcgccacag  | 18360 |
| acacctactt caatctggga aataagtta gaaatccac cgtagcgccg acccacgatg    | 18420 |
| tgaccaccga ccgtagccag cggctcatgt tgcgcttcgt gcccgttgac cgggaggaca  | 18480 |
| atacatactc ttacaaaagt cggtacaccc tggccgtggg cgacaacaga gtgctggata  | 18540 |
| tggccagcac gttctttgac attaggggtg tgttggacag aggtcccagt ttcaaaccct  | 18600 |
| attctggtac ggcttacaac tccctggctc cttaaaggcg tccaaataca tctcagtgga  | 18660 |
| ttgcagaagg tgtaaaaaat acaactgggt aggaacacgt aacagaagag gaaaccaata  | 18720 |
| ctactactta cacttttggc aatgctcctg taaaagctga agctgaaatt acaaaagaag  | 18780 |
| gactcccagt aggttttgaa gtttcagatg aagaaagtaa accgatttat gctgataaaa  | 18840 |
| catatcagcc agaacctcag ctgggagatg aaacttggac tgaccttgat ggaaaaaccg  | 18900 |
| aaaagtatgg aggcagggt ctcaaaccg atactaagat gaaaccatgc tacgggtcct    | 18960 |
| ttgccaaacc tactaatgtg aaaggcggtc aggcaaaaca aaaaacaacg gagcagccaa  | 19020 |
| atcagaaagt cgaatatgat atcgacatgg agttttttga tgcggcatcg cagaaaacaa  | 19080 |
| acttaagtcc taaaattgtc atgtatgcag aaaatgtaaa tttggaaact ccagacactc  | 19140 |
| atgtagtgta caaacctgga acagaagaca caagttccga agctaatttg ggacaacaat  | 19200 |
| ctatgccccaa cagacccaac tacattggct tcagagataa ctttattgga cttatgtact | 19260 |

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|            |            |            |            |            |            |       |
|------------|------------|------------|------------|------------|------------|-------|
| ataacagtac | tggtaacatg | ggggtgctgg | ctggtcaagc | gtctcagtta | aatgcagtgg | 19320 |
| ttgacttgca | ggacagaaac | acagaacttt | cttaccaact | cttgcttgac | tctctgggcg | 19380 |
| acagaaccag | atactttagc | atgtggaatc | aggctgtgga | cagttatgat | cctgatgtac | 19440 |
| gtgttattga | aaatcatggt | gtggaagatg | aacttcccaa | ctactgtttt | ccactggacg | 19500 |
| gcataggtgt | tccaacaacc | agttacaaat | caatagttcc | aaatggagac | aatgcgcta  | 19560 |
| attggaagga | acctgaagta | aatggaacaa | gtgagatcgg | acagggtaat | ttgtttgcca | 19620 |
| tggaaattaa | ccttcaagcc | aatctatggc | gaagtttcct | ttattccaat | gtggctctat | 19680 |
| atctcccaga | ctcgtacaaa | tacaccccg  | ccaatgtcac | tcttccagaa | aacaaaaaca | 19740 |
| cctacgacta | catgaacggg | cgggtggtgc | cgccatctct | agtagacacc | tatgtgaaca | 19800 |
| ttggtgccag | gtggtctctg | gatgccatgg | acaatgtcaa | cccattcaac | caccaccgta | 19860 |
| acgctggcct | gcgttaccga | tccatgcttc | tgggtaacgg | acgttatgtg | cctttccaca | 19920 |
| tacaagtgcc | tcaaaaattc | ttcgtgttta | aaaacctgct | gcttctccca | ggctcctaca | 19980 |
| cttatgagtg | gaactttagg | aaggatgtga | acatggttct | acagagttcc | ctcggtaacg | 20040 |
| acctgcgggt | agatggcgcc | agcatcagtt | tcacgagcat | caacctctat | gctacttttt | 20100 |
| tccccatggc | tcacaacacc | gcttccaccc | ttgaagccat | gctgcggaat | gacaccaatg | 20160 |
| atcagtcatt | caacgactac | ctatctgcag | ctaacatgct | ctacccatt  | cctgccaatg | 20220 |
| caaccaatat | tcccatttcc | attccttctc | gcaactgggc | ggctttcaga | ggctggtcac | 20280 |
| ttaccagact | gaaaacaaa  | gaaactccct | ctttggggtc | tggatttgac | ccctactttg | 20340 |
| tctattctgg | ttctattccc | tacctggatg | gtaccttcta | cctgaaccac | acttttaaga | 20400 |
| aggtttccat | catgtttgac | tcttcagtga | gctggcctgg | aaatgacagg | ttactatctc | 20460 |
| ctaacgaatt | tgaaataaag | cgcactgtgg | atggcgaagg | ctacaacgta | gccaatgca  | 20520 |
| acatgaccaa | agactgggtc | ttggtacaga | tgctcgccaa | ctacaacatc | ggctatcagg | 20580 |
| gcttctacat | tccagaagga | tacaaagatc | gcatgtattc | atttttcaga | aacttccagc | 20640 |
| ccatgagcag | gcagggtggt | gatgaggtca | attacaaaga | cttcaaggcc | gtcgccatac | 20700 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| cctaccaaca caacaactct ggctttgtgg gttacatggc tccgaccatg cgccaaggtc  | 20760 |
| aaccctatcc cgctaactat ccctatccac tcattggaac aactgccgta aatagtgtta  | 20820 |
| cgcagaaaaa gttcttgtgt gacagaacca tgtggcgcat accgttctcg agcaacttca  | 20880 |
| tgtctatggg ggcccttaca gacttgggac agaatatgct ctatgccaac tcagctcatg  | 20940 |
| ctctggacat gacctttgag gtggatccca tggatgagcc caccctgctt tatcttctct  | 21000 |
| tcgaagtttt cgacgtggtc agagtgcac agccacaccg cggcatcatc gaggcagtct   | 21060 |
| acctgcgtac accgttctcg gccggtaacg ctaccacgta agaagcttct tgcttcttgc  | 21120 |
| aaatagcagc tgcaaccatg gcctgcggat cccaaaacgg ctccagcgag caagagctca  | 21180 |
| gagccattgt ccaagacctg ggttgccggac cctatTTTTT gggaacctac gataagcgct | 21240 |
| tcccgggggt catggcccc gataagctcg cctgtgccat tgtaaatacg gccggacgtg   | 21300 |
| agacgggggg agagcactgg ttggctttcg gttggaaccc acgttctaac acctgctacc  | 21360 |
| TTTTTgatcc TTTTggattc tcggatgatc gtctcaaaca gatttaccag tttgaatatg  | 21420 |
| agggtctcct gcgccgcagc gctcttgcta ccaaggaccg ctgtattacg ctggaaaaat  | 21480 |
| ctaccagac cgtgcagggt ccccgttctg ccgcctgcgg acttttctgc tgcattgtcc   | 21540 |
| ttcacgcctt tgtgcactgg cctgaccgtc ccatggacgg aaaccccacc atgaaattgc  | 21600 |
| taactggagt gccaaacaac atgcttcatt ctctaaagt ccagcccacc ctgtgtgaca   | 21660 |
| atcaaaaagc actctaccat tttcttaata cccattcgcc ttatttttcgc tcccatcgta | 21720 |
| cacacatcga aagggccact gcgttcgacc gtatggatgt tcaataatga ctcatgtaaa  | 21780 |
| caacgtgttc aataaacatc actttatTTT ttacatgta tcaaggctct gcattactta   | 21840 |
| tttatttaca agtcgaatgg gttctgacga gaatcagaat gacccgcagg cagtgatacg  | 21900 |
| ttgcggaact gatacttggg ttgccacttg aattcgggaa tcaccaactt gggaaccggt  | 21960 |
| atatcgggca ggatgtcact ccacagcttt ctggtcagct gcaaagctcc aagcaggtca  | 22020 |
| ggagccgaaa tcttgaaatc acaattagga ccagtgcttt gagcgcgaga gttgcggtac  | 22080 |
| accggattgc agcactgaaa caccatcagc gacggatgtc tcacgcttgc cagcacggtg  | 22140 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| ggatctgcaa tcatgcccac atccagatct tcagcattgg caatgctgaa cggggtcatc  | 22200 |
| ttgcagggtct gcctacccat ggcgggcacc caattaggct tgtggttgca atcgcagtgc | 22260 |
| aggggggatca gtatcatctt ggcctgatcc tgtctgattc ctggatacac ggctctcatg | 22320 |
| aaagcatcat attgcttgaa agcctgctgg gctttactac cctcggtata aaacatcccg  | 22380 |
| caggacctgc tcgaaaactg gttagctgca cagccggcat cattcacaca gcagcgggcg  | 22440 |
| tcattgttag ctatttgcac cacacttctg cccagcgggt tttgggtgat tttggttcgc  | 22500 |
| tcgggattct cctttaaggc tcgttgtccg ttctcgctgg ccacatccat ctcgataatc  | 22560 |
| tgctccttct gaatcataat attgccatgc aggcacttca gcttgccctc ataatcattg  | 22620 |
| cagccatgag gccacaacgc acagcctgta cattcccaat tatggtgggc gatctgagaa  | 22680 |
| aaagaatgta tcattccctg cagaaatctt cccatcatcg tgctcagtgt cttgtgacta  | 22740 |
| gtgaaagtta actggatgcc tcggtgctcc tcgtttacgt actggtgaca gatgcgcttg  | 22800 |
| tattgttcgt gttgctcagg cattagttaa aaagagggtc taagtctgtt atccagcctg  | 22860 |
| tacttctcca tcagcagaca catcacttcc atgcctttct cccaagcaga caccaggggc  | 22920 |
| aagctaatacg gattcttaac agtgcaggca gcagctcctt tagccagagg gtcattctta | 22980 |
| gcgatcttct caatgcttct tttgccatcc ttctcaacga tgcgcacggg cgggtagctg  | 23040 |
| aaacccactg ctacaagttg cgcctcttct ctttcttctt cgctgtcttg actgatgtct  | 23100 |
| tgcatgggga tatgtttggt cttccttggtc ttcttttttg ggggtatcgg aggaggagga | 23160 |
| ctgtcgctcc gttccggaga caggaggatc tgtgacgttt cgctcaccat taccaactga  | 23220 |
| ctgtcggtag aagaacctga cccacacagg cgacagggtt ttctcttcgg gggcagaggt  | 23280 |
| ggaggcgatt gcgaagggtc gcggtccgac ctggaaggcg gatgactggc agaaccctt   | 23340 |
| ccgcgttcgg ggggtgtgctc cctgtggcgg tcgcttaact gatttccttc gcggctggcc | 23400 |
| attgtgttct cctaggcaga gaaacaacag acatggaaac tcagccattg ctgtcaacat  | 23460 |
| cgccacgagt gccatcacat ctcgtcctca gcgacgagga aaaggagcag agcttaagca  | 23520 |
| ttccaccgcc cagtcctgcc accacctcta ccctagaaga taaggaggtc gacgcatctc  | 23580 |



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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| atgacatgca gaataaaaaa gcgaaagagt ctgagacaga catcgagcaa gaccgggct    | 23640 |
| atgtgacacc ggtggaacac gaggaagagt tgaaacgctt tctagagaga gaggatgaaa   | 23700 |
| actgccccaa acaacgagca gataactatc accaagatgc tggaaatagg gatcagaaca   | 23760 |
| ccgactacct catagggctt gacggggaag acgcgctcct taaacatcta gcaagacagt   | 23820 |
| cgctcatagt caaggatgca ttattggaca gaactgaagt gcccacatcagt gtggaagagc | 23880 |
| tcagccgcgc ctacgagctt aacctctttt cacctcgtac tccccccaaa cgtcagccaa   | 23940 |
| acggcacctg cgagccaaat cctcgcttaa acttttatcc agcttttgct gtgccagaag   | 24000 |
| tactggctac ctatcacatc ttttttaaaa atcaaaaaat tccagtctcc tgccgcgcta   | 24060 |
| atcgcacccg cgccgatgcc ctactcaatc tgggacctgg ttcacgctta cctgatatag   | 24120 |
| cttccttgga agaggttcca aagatcttcg agggctctggg caataatgag actcgggccg  | 24180 |
| caaatgctct gcaaaaggga gaaaatggca tggatgagca tcacagcggt ctggtggaat   | 24240 |
| tggaaggcga taatgccaga ctcgcagtac tcaagcgaag catcgaggtc acacacttcg   | 24300 |
| catatccgc tgtcaacctg cccctaaag tcatgacggc ggtcatggac cagttactca     | 24360 |
| ttaagcgcgc aagtccccct tcagaagaca tgcatgaccc agatgcctgt gatgagggtta  | 24420 |
| aaccagtggc cagtgatgag cagctaacc gatggctggg caccgactct cccagggtt     | 24480 |
| tggaagagcg tcgcaagctt atgatggccg tgggtgctggc taccgtagaa ctagagtgtc  | 24540 |
| tccgacgttt ctttaccgat tcagaaacct tgcgcaaact cgaagagaat ctgcactaca   | 24600 |
| cttttagaca cggctttgtg cggcaggcat gcaagatatc taacgtggaa ctcaccaacc   | 24660 |
| tggtttccta catgggtatt ctgcatgaga atcgcctagg acaaagcgtg ctgcacagca   | 24720 |
| ccctgaagg ggaagccgc cgtgattaca tccgcgattg tgtctatctg tacctgtgcc     | 24780 |
| acacgtggca aaccggcatg ggtgtatggc agcaatgttt agaagaacag aacttgaaag   | 24840 |
| agcttgacaa gctcttacag aaatctctta aggttctgtg gacagggttc gacgagcgca   | 24900 |
| ccgtcgcttc cgacctggca gacctcatct tcccagagcg tctcagggtt actttgcgaa   | 24960 |
| acggattgcc tgactttatg agccagagca tgcttaacaa ttttcgctct ttcacctgg    | 25020 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| aacgctccgg tatcctgccc gccacctgct gcgcactgcc ctccgacttt gtgcctctca  | 25080 |
| cctaccgcga gtgccccccg ccgctatgga gtcactgcta cctgttccgt ctggccaact  | 25140 |
| atctctccta ccactcggat gtgatcgagg atgtgagcgg agacggcttg ctggagtgtc  | 25200 |
| actgccgctg caatctgtgc acgccccacc ggtccctagc ttgcaacccc cagttgatga  | 25260 |
| gcgaaaccca gataataggc acctttgaat tgcaaggccc cagcagccaa ggcgatgggt  | 25320 |
| cttctcctgg gcaaagttaa aaactgaccc cgggactgtg gacctccgcc tacttgcgca  | 25380 |
| agtttgctcc ggaagattac caccctatg aaatcaagtt ctatgaggac caatcacagc   | 25440 |
| ctccaaaggc cgaactttcg gcctgcgtca tcaccaggg ggcaattctg gccaattgc    | 25500 |
| aagccatcca aaaatcccgc caagaatttc tactgaaaaa gggtaagggg gtctaccttg  | 25560 |
| acccccagac cggcgaggaa ctcaacacaa ggttccctca ggatgtccca acgacgagaa  | 25620 |
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| gctgcggaga caagcaacag cgctaccatc tccgctccga gtcgaggaac ccggcggcgt  | 25860 |
| cccagcagta gatgggacga gaccggacgc ttcccgaacc caaccagcgc ttccaagacc  | 25920 |
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| agccagcaaa tcccggcagt ctgcacagat aaagacagcg gcggcgacct ccaacagaaa  | 26160 |
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| catcttccag cagagtcggg gtcaagagca ggaactgaaa ataaaaaacc gatctctgcg  | 26340 |
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| catggtggga atcaacccca tagttatcac ccagcaaagt ggagatacta agggttgcat  | 28080 |
| tcactgctcc tgcgattcca tcgagtgcac ctacaccctg ctgaagaccc tatgcggcct  | 28140 |
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| gcaataaggt ctctgttgaa attttctccc agcagcacct cacttccctc ttcccaactc  | 28260 |
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| ccggctcagt gactccttca accctgtcta cccctatgaa gatgaaagca cctcccaaca  | 28440 |
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| tcttacttta aaatgtttaa cccactaac aaccacaggc ggatctctac agctaaaagt   | 28560 |
| gggaggggga cttacagtgg atgacaccaa cggttttttg aaagaaaaca taagtgccac  | 28620 |
| cacaccactc gttaagactg gtcactctat aggtttacca ctaggagccg gattgggaac  | 28680 |
| gaatgaaaat aaactttgta tcaaattagg acaaggactt acattcaatt caaacaacat  | 28740 |
| ttgcattgat gacaatatta acaccttatg gacaggagtc aacccaccg aagccaactg   | 28800 |
| tcaaatcatg aactccagt aatctaataa ttgcaaatta attctaacac tagttaa      | 28860 |
| tgagacta gtcactgcat ttgtttatgt tataggagta tctaacaatt ttaatatgct    | 28920 |
| aactacacac agaaatataa attttactgc agagctgttt ttcgattcta ctggtaattt  | 28980 |
| actaactaga ctctcatccc tcaaaaactcc acttaatcat aaatcaggac aaaacatggc | 29040 |
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| tgataattct agagaaaaag aaaactacat ttacggaact tgttactaca cagctagtga  | 29160 |
| tcgcactgct tttcccattg acatatctgt catgcttaac cgaagagcaa taaatgacga  | 29220 |
| gacatcatat tgtattcgta taacttggtc ctggaacaca ggagatgccc cagaggtgca  | 29280 |
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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| ctgacaaata aagtttgcga tcgctttctc tcttcaggcc caccatgggc tggagctgca   | 29400 |
| tcattcttgtt cctggctcgca actgctaccg gagtccattc ggacatcgtc atgacccaaa | 29460 |
| gccctgactc gctcgctgtg tcaactgggag agcgggcgac tatcaactgc aaatcatccc  | 29520 |
| agagcctgct gtattcacgc aatcagaaaa actacctggc ctggtatcag cagaagccgg   | 29580 |
| gccagcctcc caagctgctg atcttctggg cctccacccg cgaaagcggc gtgccggacc   | 29640 |
| gcttcagcgg aagcggattc ggaactgact ttactctgac cattagctcc ttgcaggcgg   | 29700 |
| aggacgtggc cgtctactac tgccagcagt atttctccta tccgctcacc tttgggcaag   | 29760 |
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| gatcgaggt ccagctcgtc caatccggag ccgaagtcaa gaagccggga gcgtcgggtca   | 29880 |
| aggtcagctg caaaacttcg cgctacacct tcaactgagta cacgatccac tgggtccgcc  | 29940 |
| aggcgcccgg ccagcggctg gaggggatcg gcgggatcaa cccaaacaac ggaatcccaa   | 30000 |
| attacaatca gaaatttaaa gggcgggtga ctatcacctg ggatacctcg gcctccacgg   | 30060 |
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| ctagatacac tatgcactgg gtgcgccagg cacctgggtca gggccttgaa tggatcggct  | 30360 |
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| ttacgaccga caagtccacc tcgactgcat acatggaact gtcctcgctg agaagcgagg   | 30480 |
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|                                                                    |       |
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| acccgctgac tttcggaggc ggaactaagg tcgagatcaa gcatcaccat caccatcacc  | 30960 |
| accatcacca ttaggctagc ttgactgact gagatacagc gtaccttcag ctcacagaca  | 31020 |
| tgataagata cattgatgag tttggacaaa ccacaactag aatgcagtga aaaaaatgct  | 31080 |
| ttatttgtga aatttgtgat gctattgctt tatttgtaac cattataagc tgcaataaac  | 31140 |
| aagttaacaa caacaattgc attcatttta tgtttcaggt tcagggggag gtgtgggagg  | 31200 |
| ttttttaaag caagtaaaac ctctacaaat gtggtagtcg tcagctatcc tgcaggaact  | 31260 |
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| gatgcgactc cggagtctgg atcacggtca tctggaagaa gaacgatggg aatcataatc  | 31560 |
| cgaaaacggt atcggacgat tgtgtctcat caaaccaca agcagccgct gtctgcgtcg   | 31620 |
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| agcccttaac atcaactttc tgggtcgatg cgcgagcaa cgatttctga tttcactcaa   | 31740 |
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| aatataaatt aaatgacgtt ccctcaaaaa cactacccc acatacatga tctcttttgg   | 31920 |
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| ctgctgatta caatgacaat gaagaacca attctctcga ccgtgaatca cttgagaatg   | 32100 |
| aaaaatatct atagtggcac aacatagaca taaatgcatg catcttctca taatttttaa  | 32160 |
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|                                                                      |       |
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| tgtcataatg gagttgcttc ctgacattct cgtattttgt atagcaaaac gcggccctgg    | 32460 |
| cagaacacac tcttcttcgc cttctatcct gccgcttagc gtgttccgtg tgatagttca    | 32520 |
| agtacaacca cactcttaag ttggtcaaaa gaatgctggc ttcagttgta atcaaaactc    | 32580 |
| catcgcatct aatcgttctg aggaaatcat ccaagcaatg caactggatt gtgtttcaag    | 32640 |
| caggagagga gaggggaagag acggaagaac catgttaatt tttattccaa acgatctcgc   | 32700 |
| agtacttcaa attgtagatc gcgcagatgg catctctcgc cccactgtg ttggtgaaaa     | 32760 |
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|                                                                   |       |
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| gctgctgttc aggcaacgtc gccccgggtc cctctaaata cacatacaaa gcctcatcag | 33840 |
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| taacttgcaa cgtcatthtt ccacggtcgc accgccccct ttagccgtta accccacagc | 34140 |
| caatcaccac acgatccaca ctttttaaaa tcacctcatt tacatattgg caccattcca | 34200 |
| tctataaggt atattatata gataga                                      | 34226 |

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 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> NG-617 Genome

|                                                                     |     |
|---------------------------------------------------------------------|-----|
| <400> 100                                                           |     |
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| aaaaagtgtg gatcgtgtgg tgattggctg tgggggttaac ggctaaaagg ggcgggtgcga | 120 |
| ccgtgggaaa atgacgtttt gtgggggtgg agtttttttg caagttgtcg cgggaaatgt   | 180 |
| gacgcataaa aaggcttttt tctcacggaa ctacttagtt ttcccacggg atttaacagg   | 240 |
| aaatgaggta gttttgaccg gatgcaagtg aaaattgttg attttcgcgc gaaaactgaa   | 300 |
| tgaggaagtg tttttctgaa taatgtggta tttatggcag ggtggagtat ttgttcaggg   | 360 |
| ccaggtagac ttgacccat tacgtggagg tttcgattac cgtgtttttt acctgaattt    | 420 |
| ccgcgtaccg tgtcaaagtc ttctgttttt acgtagggtg cagctgatcg ctagggattt   | 480 |
| tataacctcag ggtttgtgtc aagaggccac tcttgagtgc cagcgagaag agttttctcc  | 540 |



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| aatctctgct  | gagactggaa  | atgaaatatt  | ggagcttggtg | gtgcacgccc  | tgatgggaga | 660  |
| cgatccggag  | ccacctgtgc  | agctttttga  | gcctcctacg  | cttcaggaac  | tgtatgattt | 720  |
| agaggtagag  | ggatcggagg  | attctaata   | ggaagctgta  | aatggctttt  | ttaccgattc | 780  |
| tatgctttta  | gctgctaata  | aagggttaga  | attagatccg  | cctttggaca  | cttttgatac | 840  |
| tccaggggta  | attgtggaaa  | gcggtacagg  | tgtaagaaaa  | ttacctgatt  | tgagttccgt | 900  |
| ggactgtgat  | ttgcactgct  | atgaagacgg  | gtttcctccg  | agtgatgagg  | aggaccatga | 960  |
| aaaggagcag  | tccatgcaga  | ctgcagcggg  | tgagggagtg  | aaggctgcca  | atgttggttt | 1020 |
| tcagttggat  | tgcccggagc  | ttcctggaca  | tggctgtaag  | tcttgatgaat | ttcacaggaa | 1080 |
| aaatactgga  | gtaaaggaac  | tgttatgttc  | gctttgttat  | atgagaacgc  | actgccactt | 1140 |
| tatttacagt  | aagtgtgttt  | aagttaaaat  | ttaaaggaat  | atgctgtttt  | tcacatgtat | 1200 |
| attgagtgtg  | agttttgtgc  | ttcttattat  | aggtcctgtg  | tctgatgctg  | atgaatcacc | 1260 |
| atctcctgat  | tctactacct  | cacctcctga  | gattcaagca  | cctgttcctg  | tggacgtgcg | 1320 |
| caagcccatt  | cctgtgaagc  | ttaagcctgg  | gaaacgtcca  | gcagtggaaa  | aacttgagga | 1380 |
| cttgttacag  | ggtaggggacg | gacctttgga  | cttgagtaca  | cggaaacgtc  | caagacaata | 1440 |
| agtgttccat  | atccgtgttt  | acttaagggtg | acgtcaatat  | ttgtgtgaca  | gtgcaatgta | 1500 |
| ataaaaaatat | gttaactggt  | cactgggtttt | tattgctttt  | tgggcgggga  | ctcaggtata | 1560 |
| taagtagaag  | cagacctgtg  | tggtagctc   | ataggagctg  | gctttcatcc  | atggagggtt | 1620 |
| gggccatttt  | ggaagacctt  | aggaagacta  | ggcaactggt  | agagaacgct  | tcggacggag | 1680 |
| tctccggttt  | ttggagattc  | tggttcgcta  | gtgaattagc  | tagggtagtt  | tttaggataa | 1740 |
| aacaggacta  | taaacaagaa  | tttgaaaagt  | tgttggtaga  | ttgccagga   | ctttttgaag | 1800 |
| ctcttaattt  | gggccatcag  | gttcacttta  | aagaaaaagt  | tttatcagtt  | ttagactttt | 1860 |
| caaccccagg  | tagaactgct  | gctgctgtgg  | cttttcttac  | ttttatatta  | gataaatgga | 1920 |
| tcccgacagac | tcatttcagc  | aggggatacg  | ttttggattt  | catagccaca  | gcattgtgga | 1980 |

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|                                                                     |      |
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| aagaggacaa cccgagagcc ggccctggacc ctccagtgga ggaggcggag tagctgactt  | 2160 |
| gtctcctgaa ctgcaacggg tgcttactgg atctacgtcc actggacggg ataggggcgt   | 2220 |
| taagagggag agggcatcta gtggtactga tgctagatct gagttggctt taagtttaat   | 2280 |
| gagtcgcaga cgtcctgaaa ccattttggtg gcatgagggtt cagaaagagg gaagggatga | 2340 |
| agtttctgta ttgcaggaga aatattcact ggaacagggtg aaaacatgtt ggttggagcc  | 2400 |
| tgaggatgat tgggagggtg ccattaataaa ttatgccaa atagctttga ggctgataa    | 2460 |
| acagtataag attactagac ggattaatat ccggaatgct tgttacatat ctggaaatgg   | 2520 |
| ggctgagggtg gtaatagata ctcaagacaa ggcagttatt agatgctgca tgatggatat  | 2580 |
| gtggcctggg gtagtcggta tggaagcagt aacttttgta aatgttaagt ttaggggaga   | 2640 |
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| ctgcgcttct acagatactg gatgttttat tttgattaag ggaaatgcca gcgtaaagca   | 2940 |
| taacatgatt tgcggtgctt ccgatgagag gccttatcaa atgctcactt gtgctgggtg   | 3000 |
| gcattgtaat atgctggcta ctgtgcatat tgtttcccat caacgcaaaa aatggcctgt   | 3060 |
| ttttgatcac aatgtgatga cgaagtgtac catgcatgca ggtgggcgta gaggaatgtt   | 3120 |
| tatgccttac cagtgtaaaca tgaatcatgt gaaagtgttg ttggaaccag atgccttttc  | 3180 |
| cagaatgagc ctaacaggaa tttttgacat gaacatgcaa atctggaaga tcctgaggta   | 3240 |
| tgatgatacg agatcgaggg tacgcgcatg cgaatgcgga ggcaagcatg ccaggttcca   | 3300 |
| gccggtgtgt gtagatgtga ctgaagatct cagaccggat catttggtta ttgcccgcac   | 3360 |
| tggagcagag ttcggatcca gtggagaaga aactgactaa ggtgagtatt gggaaaactt   | 3420 |

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| tggggtggga ttttcagatg gacagattga gtaaaaaattt gttttttctg tcttgagct  | 3480 |
| gtcatgagtg gaaacgcttc ttttaagggg ggagtcttca gcccttatct gacagggcgt  | 3540 |
| ctcccatcct gggcaggagt tcgtcagaat gttatgggat ctactgtgga tggaagaccc  | 3600 |
| gtccaacccg ccaattcttc aacgctgacc tatgctactt taagttcttc acctttggac  | 3660 |
| gcagctgcag ctgccgccgc cgcttctgtt gccgctaaca ctgtgcttgg aatgggttac  | 3720 |
| tatggaagca tcatggctaa ttccacttcc tctaataacc cttctaccct gactcaggac  | 3780 |
| aagttacttg tccttttggc ccagctggag gctttgaccc aacgtctggg tgaactttct  | 3840 |
| cagcaggtgg tcgagttgcg agtacaaact gagtctgctg tcggcacggc aaagtctaaa  | 3900 |
| taaaaaaatc ccagaatcaa tgaataaata aacaagcttg ttgttgattt aaaatcaagt  | 3960 |
| gtttttattt catttttcgc gcacggtatg ccctagacca ccgatctcta tcattgagaa  | 4020 |
| ctcgggtgat tttttccagg atcctataga ggtgggattg aatgtttaga tacatgggca  | 4080 |
| ttaggccgtc tttggggtgg agatagctcc attgaaggga ttcattgctcc ggggtagtgt | 4140 |
| tgtaaatcac ccagtcataa caaggctgca gtgcatgggtg ttgcacaata tcttttagaa | 4200 |
| gtaggctgat tgccacagat aagcccttgg tgtagggtgtt taaaaaccgg ttgagctggg | 4260 |
| atgggtgcat tcggggtgaa attatgtgca ttttggattg gatttttaag ttggcaatat  | 4320 |
| tgccgccaag atcccgtctt gggttcatgt tatgaaggac caccaagacg gtgtatccgg  | 4380 |
| tacatttagg aaatttatcg tgcagcttgg atggaaaagc gtggaaaaat ttggagacac  | 4440 |
| ccttgtgtcc tccaagattt tccatgcact catccatgat aatagcaatg gggccgtggg  | 4500 |
| cagcggcgcg ggcaaacacg ttccgtgggt ctgacacatc atagttatgt tcctgagtta  | 4560 |
| aatcatcata agccatttta atgaatttgg ggcggagagt accagattgg ggtatgaatg  | 4620 |
| ttccttcggg ccccgagca tagttcccct cacagatttg catttcccaa gctttcagtt   | 4680 |
| ccgagggtgg aatcatgtcc acctgggggg ctatgaaaaa caccgtttct ggggcggggg  | 4740 |
| tgattaattg tgatgatagc aaatttctga gcaattgaga tttgccacat ccggtggggc  | 4800 |
| cataaatgat tccgattacg ggttgcaggt ggtagtttag ggaacggcaa ctgccgtctt  | 4860 |

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|                                                                     |      |
|---------------------------------------------------------------------|------|
| ctcgaagcaa gggggccacc tcgttcatca tttcccttac atgcatattt tcccgcacca   | 4920 |
| aatccattag gaggcgctct cctcctagtg atagaagttc ttgtagtgag gaaaagtttt   | 4980 |
| tcagcggttt cagaccgtca gccatgggca ttttggagag agtttgctgc aaaagttcta   | 5040 |
| gtctgttcca cagttcagtg atgtgttcta tggcatctcg atccagcaga cctcctcggt   | 5100 |
| tcgcgggttt ggacggctcc tggaataggg tatgagacga tgggcgtcca gcgctgccag   | 5160 |
| ggttcgggtcc ttccagggtc tcagtgttcg agtcagggtt gtttccgtca cagtgaaggg  | 5220 |
| gtgtgcgctt gcttgggcgc ttgccagggt gcgcttcaga ctcatcctgc tggtcgaaaa   | 5280 |
| cttctgtcgc ttggcgccct gtatgtcggc caagtagcag tttacatga gttcgtagtt    | 5340 |
| gagcgctcgc gctgcgtggc ctttggcgcg gagcttacct ttggaagttt tcttgcatatc  | 5400 |
| cgggcagtat aggcatttca gcgcatacaa cttgggcgca aggaaaacgg attctggggga  | 5460 |
| gtatgcatct gcgccgcagg aggcgcaaac agtttcacat tccaccagcc aggttaaadc   | 5520 |
| cggttcattg ggggtcaaaaa caagttttcc gccatatattt ttgatgcgtt tcttaccttt | 5580 |
| ggctctccatg agttcgtgtc ctggttgagt gacaaacagg ctgtccgtgt ccccgtagac  | 5640 |
| tgattttaca ggctctttct ccagtggagt gcctcgggtt tcttcgtaca ggaactctga   | 5700 |
| ccactctgat acaaaggcgc gcgtccaggc cagcacaaag gaggctatgt gggaggggta   | 5760 |
| gcgatcgttg tcaaccaggg ggtccacctt ttccaaagta tgcaaacaca tgtcaccttc   | 5820 |
| ttcaacatcc aggaatgtga ttggcttgta ggtgtatttc acgtgacctg ggggtccccgc  | 5880 |
| tgggggggta taaaaggggg cggttctttg ctcttcctca ctgtcttccg gatcgtgtc    | 5940 |
| caggaacgtc agctgttggg gtaggtattc cctctcgaag gcgggcatga cctctgcact   | 6000 |
| caggttgtca gtttctaaga acgaggagga tttgatattg acagtgccgg ttgagatgcc   | 6060 |
| tttcatgagg ttttcgtcca tctggtcaga aaacacaatt tttttattgt caagtttggt   | 6120 |
| ggcaaatgat ccatacaggg cgttggataa aagtttggca atggatcgca tggtttggtt   | 6180 |
| cttttccttg tccgcgcgct ctttggcggc gatgttgagt tggacatact cgcgtgccag   | 6240 |
| gcacttccat tcggggaaga tagttgttaa ttcactctggc acgattctca cttgccaccc  | 6300 |

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| tcgattatgc aaggtaatta aatccacact ggtggccacc tcgcctcgaa ggggttcatt  | 6360 |
| ggtccaacag agcctacctc ctttcctaga acagaaaagg ggaagtgggt ctagcataag  | 6420 |
| ttcatcggga gggctctgcat ccatggtaaa gattcccgga agtaaadcct tatcaaaata | 6480 |
| gctgatggga gtgggggtcat ctaaggccat ttgccattct cgagctgcca gtgcgcgctc | 6540 |
| atatgggtta aggggactgc cccatggcat gggatgggtg agtgcagagg catacatgcc  | 6600 |
| acagatgtca tagacgtaga tgggatcctc aaagatgcct atgtaggttg gatagcatcg  | 6660 |
| ccccctctg atacttgctc gcacatagtc atatagttca tgtgatggcg ctagcagccc   | 6720 |
| cggacccaag ttggtgcgat tgggtttttc tgttctgtag acgatctggc gaaagatggc  | 6780 |
| gtgagaattg gaagagatgg tgggtctttg aaaaatgttg aaatgggcat gaggtagacc  | 6840 |
| tacagagtct ctgacaaagt gggcataaga ttcttgaagc ttggttacca gttcggcggt  | 6900 |
| gacaagtacg tctagggcgc agtagtcaag tgtttcttga atgatgtcat aacctggttg  | 6960 |
| gtttttcttt tcccacagtt cgcggttgag aaggatttct tcgcgatcct tccagtactc  | 7020 |
| ttctagcgga aaccctgctt tgtctgcacg gtaagatcct agcatgtaga actgattaac  | 7080 |
| tgctttgtaa gggcagcagc ctttctctac gggtagagag tatgcttgag cagcttttcg  | 7140 |
| tagcgaagcg tgagtaaggc caaagggtgc tctgaccatg actttgagga attggtattt  | 7200 |
| gaagtcgatg tcgtcacagg ctccctgttc ccagagttgg aagtctaccc gtttcttgta  | 7260 |
| ggcgggggtg ggcaaagcga aagtaacatc attgaagaga atcttgccgg ccctgggcat  | 7320 |
| gaaattgcga gtgatgcgaa aaggctgtgg tacttccgct cggttattga taacctgggc  | 7380 |
| agctaggacg atctcgtcga aaccgttgat gttgtgtcct acgatgtata attctatgaa  | 7440 |
| acgcggcgtg cctctgacgt gaggtagctt actgagctca tcaaagggtta ggtctgtggg | 7500 |
| gtcagataag gcgtagtggt cgagagccca ttcgtgcagg tgaggattcg ctttaaggaa  | 7560 |
| ggaggaccag aggtccactg ccagtgtgtt ttgtaactgg tcccgggtact gacgaaaatg | 7620 |
| ccgtccgact gccatTTTTT ctgggggtgac gcaatagaag gtttgggggt cctgccgcca | 7680 |
| gcgatccac ttgagtttta tggcgagggtc ataggcgatg ttgacgagcc gctgggtctcc | 7740 |

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| agagagtttc atgaccagca tgaaggggat tagctgcttg ccaaaggacc ccatccaggt  | 7800 |
| gtaggtttcc acatcgtagg tgagaaaagag cttttctgtg cgaggatgag agccaatcgg | 7860 |
| gaagaactgg atctcctgcc accagttgga ggaatggctg ttgatgtgat ggaagtagaa  | 7920 |
| ctccctgcga cgcgccgagc attcatgctt gtgcttgtag agacggccgc agtagtcgca  | 7980 |
| gcgttgcacg ggttgatatc cgtgaatgag ttgtacctgg cttcccttga cgagaaattt  | 8040 |
| cagtgggaag ccgaggcctg gcgattgtat ctcgtgcttt actatgttgt ctgcatcggc  | 8100 |
| ctgttcatct tctgtctcga tgggtggcat gctgacgagc cctcgcggga ggcaagtcca  | 8160 |
| gacctcggcg cggcaggggc ggagctcgag gacgagagcg cgcaggctgg agctgtccag  | 8220 |
| ggtcctgaga cgctgcggac tcaggttagt aggcagtgtc aggagattaa cttgcatgat  | 8280 |
| cttttgagg gcgtgcggga ggttcagata gtacttgatc tcaacgggtc cgttggtgga   | 8340 |
| gatgtcgatg gcttgcaagg ttccgtgtcc cttgggcgct accaccgtgc cttgttttt   | 8400 |
| cattttggac ggcggtggct ctgttgcttc ttgcatgttt agaagcggtg tcgaggcg    | 8460 |
| gcaccgggcg gcaggggcgg ctcgggaccc ggcgcatgg ctggcagtgg tacgtcggcg   | 8520 |
| ccgcgcgcgg gtaggttctg gtactgcgcc ctgagaagac tcgcatgcgc gacgacgcgg  | 8580 |
| cggttgacat cctggatctg acgcctctgg gtgaaagcta ccggccccgt gagcttgaac  | 8640 |
| ctgaaagaga gttcaacaga atcaatctcg gtatcgttga cggcggcttg cctaaggatt  | 8700 |
| tcttgcacgt caccagagtt gtcctggtag gcgatctccg ccatgaactg ctcgatctct  | 8760 |
| tcctcttgaa gatctccgcg gcccgctctc tcgacgggtg ccgcgaggtc gttggagatg  | 8820 |
| cgcccaatga gttgagagaa tgcattcatg ccgcctcgt tccagacgcg gctgtagacc   | 8880 |
| acggccccc cgggatctct cgcgcgcatg accacctggg cgaggttgag ctccacgtgg   | 8940 |
| cgggtgaaga ccgcatagtt gcataggcgc tggaaaaggt agttgagtgt ggtggcgatg  | 9000 |
| tgctcggatga cgaagaaata catgatccat cgtctcagcg gcatctcgct gacatcgccc | 9060 |
| agagcttcca agcgctccat ggccctcgtg aagtccacgg caaaattaaa aaactgggag  | 9120 |
| tttcgcgcgg acacggtcaa ctctcttcc agaagacgga taagttcggc gatgggtggtg  | 9180 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| cgcacctcgc gctcgaagc ccctgggatt tcttcctcaa tctcttcttc ttccactaac   | 9240  |
| atctcttcct cttcaggtgg ggctgcagga ggagggggaa cgcggcgacg ccggcggcgc  | 9300  |
| acgggcagac ggctgatgaa tctttcaatg acctctccgc ggccggcgcg catggtttca  | 9360  |
| gtgacggcgc ggccgttctc gcgcggctgc agagtaaaaa caccgccgcg catctcctta  | 9420  |
| aagtggtgac tgggaggttc tccgtttggg agggagaggg cgctgattat acattttatt  | 9480  |
| aattggcccc tagggactgc acgcagagat ctgatcgtgt caagatccac gggatctgaa  | 9540  |
| aacctttcga cgaaagcgtc taaccagtca cagtcacaag gtaggctgag tacggcttct  | 9600  |
| tgtgggcggg ggtggttatg tggtcggctt gggtcttctg tttcttcttc atctcgggaa  | 9660  |
| ggtgagacga tgctgctggt gatgaaatta aagtaggcag ttctaagacg gcggatggtg  | 9720  |
| gcgaggagca ccaggtcttt gggtccggct tgctggatac gcaggcgatt ggccattccc  | 9780  |
| caagcattat cctgacatct agcaagatct ttgtagtagt cttgcatgag ccgttctacg  | 9840  |
| ggcacttctt cctcaccctg tctgccatgc atacgtgtga gtccaaatcc gcgcattggt  | 9900  |
| tgtaccagtg ccaagtcagc tacgactctt tcggcgagga tggcttgctg tacttgggta  | 9960  |
| agggtggctt gaaagtcatc aaaatccaca aagcgggtgt aagctcctgt attaatggtg  | 10020 |
| taagcacagt tggccatgac tgaccagtta actgtctggt gaccagggcg cacgagctcg  | 10080 |
| gtgtatttaa ggcgcaata ggcgcggtg tcaaagatgt aatcgttgca ggtgcgcacc    | 10140 |
| agatactggt accctataag aaaatgcggc ggtggttggc ggtagagagg ccatcgttct  | 10200 |
| gtagctggag cgccaggggc gaggtcttcc aacataaggc ggtgatagcc gtagatgtac  | 10260 |
| ctggacatcc aggtgattcc tgcggcggtg gtagaagccc gaggaactc gcgtacgcgg   | 10320 |
| ttccaaatgt tgcgtagcgg catgaagtag ttcattgtag gcacggtttg accagtgagg  | 10380 |
| cgcgcgcagt cattgatgct ctatagacac ggagaaaatg aaagcgttca gcgactcgac  | 10440 |
| tccgtagcct ggaggaacgt gaacgggttg ggtcgcggtg taccgggtt cgagacttgt   | 10500 |
| actcgagccg gccggagccg cggctaacgt ggtattggca ctcccgcttc gaccagcct   | 10560 |
| acaaaaatcc aggatacggg atcgagtcgt tttgctgggt tccgaatggc aggggaagtga | 10620 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| gtcctatttt ttttttttgc cgctcagatg catcccgtgc tgcgacagat gcgcccccaa   | 10680 |
| caacagcccc cctcgcagca gcagcagcag caatcacaaa aggctgtccc tgcaactact   | 10740 |
| gcaactgccg ccgtgagcgg tgcgggacag cccgcctatg atctggactt ggaagagggc   | 10800 |
| gaaggactgg cacgtctagg tgcgccttca cccgagcggc atccgcgagt tcaactgaaa   | 10860 |
| aaagattctc gcgaggcgta tgtgccccaa cagaacctat ttagagacag aagcggcgag   | 10920 |
| gagccggagg agatgcgagc ttcccgtttt aacgcgggtc gtgagctgcg tcacggtttg   | 10980 |
| gaccgaagac gagtgttgcg ggacgaggat ttcgaagttg atgaaatgac agggatcagt   | 11040 |
| cctgccaggg cacacgtggc tgcagccaac cttgtatcgg cttacgagca gacagtaaag   | 11100 |
| gaagagcgta acttccaaaa gtcttttaaat aatcatgtgc gaaccctgat tgcccgcgaa  | 11160 |
| gaagttaccc ttggtttgat gcatttgtgg gatttgatgg aagctatcat tcagaaccct   | 11220 |
| actagcaaac ctctgaccgc ccagctgttt ctggtggtgc aacacagcag agacaatgag   | 11280 |
| gctttcagag aggcgctgct gaacatcacc gaacccgagg ggagatgggt gtatgatctt   | 11340 |
| atcaacattc tacagagtat catagtgcag gagcggagcc tgggcctggc cgagaagggtg  | 11400 |
| gctgccatca attactcggg tttagacttg ggaaaatatt acgctcgcaa aatctacaag   | 11460 |
| actccatacg ttcccataga caaggagggtg aagatagatg gggttctacat gcgcatgacg | 11520 |
| ctcaaggctc tgaccctgag cgatgatctt ggggtgtatc gcaatgacag aatgcatcgc   | 11580 |
| gcggttagcg ccagcaggag gcgcgagtta agcgacaggg aactgatgca cagtttgcaa   | 11640 |
| agagctctga ctggagctgg aaccgagggg gagaattact tcgacatggg agctgacttg   | 11700 |
| cagtggcagc ctagtcgcag ggctctgagc gccgcgacgg caggatgtga gcttccttac   | 11760 |
| atagaagagg cggatgaagg cgaggaggaa gagggcgagt acttggaaga ctgatggcac   | 11820 |
| aaccctgtgt ttttgctaga tggaacagca agcaccggat cccgcaatgc gggcggcgct   | 11880 |
| gcagagccag ccgtccggca ttaactcctc ggacgattgg acccaggcca tgcaacgtat   | 11940 |
| catggcgttg acgactcgca accccgaagc ctttagacag caaccccagg ccaaccgtct   | 12000 |
| atcggccatc atggaagctg tagtgccttc ccgctctaata cccactcatg agaaggctct  | 12060 |



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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| ggccatcgtg aacgcgttgg tggagaacaa agctattcgt ccagatgagg cgggactggt   | 12120 |
| atacaacgct ctcttagaac gcgtggctcg ctacaacagt agcaatgtgc aaaccaatth   | 12180 |
| ggaccgtatg ataacagatg tacgcgaagc cgtgtctcag cgcgaaaggt tccagcgtga   | 12240 |
| tgccaacctg ggttcgctgg tggcgtaaaa tgctttcttg agtactcagc ctgctaattgt  | 12300 |
| gccgcgtggt caacaggatt atactaactt ttttaagtgt ttgagactga tggatatcaga  | 12360 |
| agtacctcag agcgaagtgt atcagtccgg tcctgattac ttctttcaga ctagcagaca   | 12420 |
| gggcttgtag acggtaaatc tgagccaagc ttttaaaaaac cttaaagggtt tgtggggagt | 12480 |
| gcatgccccg gtaggagaaa gagcaaccgt gtctagcttg ttaactccga actccgcct    | 12540 |
| attattactg ttggtagctc ctttcaccga cagcggtagc atcgaccgta attcctatth   | 12600 |
| gggttaccta ctaaacctgt atcgcggaagc catagggcaa agtcagggtgg acgagcagac | 12660 |
| ctatcaagaa attaccaag tcagtcgcgc tttgggacag gaagacactg gcagtttgga    | 12720 |
| agccactctg aacttcttgc ttaccaatcg gtctcaaaag atccctcctc aatatgctct   | 12780 |
| tactgcggag gaggagagga tccttagata tgtgcagcag agcgtgggat tgthtctgat   | 12840 |
| gcaagagggg gcaactccga ctgcagcact ggacatgaca gcgcgaaata tggagcccag   | 12900 |
| catgtatgcc agtaaccgac ctttcattaa caaactgctg gactacttgc acagagctgc   | 12960 |
| cgctatgaac tctgattatt tcaccaatgc catcttaaac ccgcactggc tgccccacc    | 13020 |
| tggthtctac acgggcgaat atgacatgcc cgacctaat gacggatttc tgtgggacga    | 13080 |
| cgtggacagc gatgtthtth cactcttht tgatcatcgc acgtggaaaa aggaaggcgg    | 13140 |
| cgatagaatg cattcttctg catcgctgtc cggggctcatg ggtgctaccg cggctgagcc  | 13200 |
| cgagtctgca agtccttht ctagtctacc cthtctcta cacagtgtac gtagcagcga     | 13260 |
| agtgggtaga ataagtcgcc cgagthtaat gggcgaagag gagtatctaa acgattcctt   | 13320 |
| gctcagaccg gcaagagaaa aaaatthtcc aaacaatgga atagaaagtt tggtagataa   | 13380 |
| aatgagtaga tggaagactt atgctcagga tcacagagac gagcctggga tcatggggat   | 13440 |
| tacaagtaga gcgagccgta gacgccagcg ccatgacaga cagaggggtc ttgtgtggga   | 13500 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| cgatgaggat tcggccgatg atagcagcgt gctggacttg ggtgggagag gaaggggcaa  | 13560 |
| cccgttttgct catttgcgcc ctgcgttggg tggatatgtt taaaaaaaaa taaaaaaaaa | 13620 |
| actcaccaag gccatggcga cgagcgtacg ttcgttcttc tttattatct gtgtctagta  | 13680 |
| taatgaggcg agtcgtgcta ggaggagcgg tgggtgtatcc ggagggtcct cctccttcgt | 13740 |
| acgagagcgt gatgcagcag cagcaggcga cggcggtgat gcaatcccca ctggaggctc  | 13800 |
| cctttgtgcc tccgcgatac ctggcaccta cggagggcag aaacagcatt cgttattcgg  | 13860 |
| aactggcacc tcagtacgat accaccagggt tgtatctggt ggacaacaag tcggcggaca | 13920 |
| ttgcttctct gaactatcag aatgaccaca gcaacttctt gaccacggtg gtgcaaaaca  | 13980 |
| atgactttac ccctacggaa gccagcaccc agaccattaa ctttgatgaa cgatcgcggt  | 14040 |
| ggggcgggtca gctaaagacc atcatgcata ctaacatgcc aaacgtgaac gagtatatgt | 14100 |
| ttagtaacaa gttcaaagcg cgtgtgatgg tgtccagaaa acctcccgac ggtgctgcag  | 14160 |
| ttggggatac ttatgatcac aagcaggata ttttgaaata tgagtggttc gagtttactt  | 14220 |
| tgccagaagg caacttttca gttactatga ctattgattt gatgaacaat gccatcatag  | 14280 |
| ataattactt gaaagtgggt agacagaatg gagtgcttga aagtgacatt ggtgttaagt  | 14340 |
| tcgacaccag gaacttcaag ctgggatggg atcccgaac caagttgatc atgcctggag   | 14400 |
| tgtatacgta tgaagccttc catcctgaca ttgtcttact gcctggctgc ggagtggatt  | 14460 |
| ttaccgagag tcgtttgagc aaccttcttg gtatcagaaa aaaacagcca tttcaagagg  | 14520 |
| gttttaagat tttgtatgaa gatttagaag gtggtaatat tccggccctc ttggatgtag  | 14580 |
| atgcctatga gaacagtaag aaagaacaaa aagccaaaat agaagctgct acagctgctg  | 14640 |
| cagaagctaa ggcaaacata gttgccagcg actctacaag ggttgctaac gctggagagg  | 14700 |
| tcagaggaga caattttgcg ccaacacctg ttccgactgc agaatcatta ttggccgatg  | 14760 |
| tgtctgaagg aacggacgtg aaactcacta ttcaacctgt agaaaaagat agtaagaata  | 14820 |
| gaagctataa tgtgttgga gacaaaatca acacagccta tcgcagttgg tatctttcgt   | 14880 |
| acaattatgg cgatcccgaa aaaggagtgc gttcctggac attgctcacc acctcagatg  | 14940 |

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|                                   |                                   |       |
|-----------------------------------|-----------------------------------|-------|
| tcacctgcgg agcagagcag gtctactggg  | cgcttccaga catgatgaag gatcctgtca  | 15000 |
| ctttccgctc cactagacaa gtcagtaact  | accctgtggg ggggtgcagag cttatgccc  | 15060 |
| tcttctcaaa gagcttctac aacgaacaag  | ctgtgtactc ccagcagctc cgccagtcca  | 15120 |
| cctcgcttac gcacgtcttc aaccgctttc  | ctgagaacca gattttaatc cgtccgccgg  | 15180 |
| cgcccacat taccaccgtc agtgaanaac   | ttcctgtctt cacagatcac gggaccctgc  | 15240 |
| cggtgcgcag cagtatccgg ggagtccaac  | gtgtgaccgt tactgacgcc agacgccgca  | 15300 |
| cctgtcccta cgtgtacaag gcactgggca  | tagtcgcacc gcgcgtcctt tcaagccgca  | 15360 |
| ctttctaanaa aaaaaaaaaa tgtccattct | tatctcgccc agtaataaca ccggttgggg  | 15420 |
| tctgcgcgct ccaagcaaga tgtacggagg  | cgcacgcaaa cgcttctaccc aacatcctgt | 15480 |
| ccgtgttcgc ggacattttc gcgctccatg  | gggcgcccctc aagggccgca ctcgcgttcg | 15540 |
| aaccaccgtc gatgatgtaa tcgatcaggt  | gggtgccgac gcccgtaatt atactcctac  | 15600 |
| tgcgcttaca tctactgtgg atgcagttat  | tgacagtgtg gtggctgacg ctcgcaacta  | 15660 |
| tgctcgacgt aagagccggc gaaggcgc    | atgccagacgc caccgagcta ccactgccat | 15720 |
| gcgagccgca agagctctgc tacgaagagc  | tagacgcgtg gggcgaagag ccatgcttag  | 15780 |
| ggcggccaga cgtgcagctt cgggcgccag  | cgccggcagg tcccgaggc aagcagccgc   | 15840 |
| tgctgcagcg gcgactattg ccgacatggc  | ccaatcgca agaggcaatg tatactgggt   | 15900 |
| gcgtgacgct gccaccggc aacgtgtacc   | cgtgcgcacc cgtccccctc gcacttagaa  | 15960 |
| gatactgagc agtctccgat gttgtgtccc  | agcggcgagg atgtccaagc gcaaatacaa  | 16020 |
| ggaagaaatg ctgcaggtta tcgcacctga  | agtctacggc caaccgttga aggatgaaaa  | 16080 |
| aaaacccgc aaaatcaagc ggggttaaaaa  | ggacaaaaaa gaagaggaag atggcgatga  | 16140 |
| tgggctggcg gagtttgtgc gcgagtttgc  | cccacggcga cgcgtgcaat ggcgtggg    | 16200 |
| caaagttcga catgtgttga gacctggaac  | ttcgggtggc ttacacccg gcgagcgctc   | 16260 |
| aagcgctact ttttaagcgtt cctatgatga | gggtgtacggg gatgatgata ttcttgagca | 16320 |
| ggcggctgac cgattaggcg agtttgctta  | tggcaagcgt agtagaataa cttccaagga  | 16380 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| tgagacagtg tcgataccct tggatcatgg aaatcccacc ctagtctta aaccggtcac   | 16440 |
| tttgcagcaa gtgttaccg taactccgcg aacagggtgtt aaacgcgaag gtgaagattt  | 16500 |
| gtatcccact atgcaactga tggtagccaa acgccagaag ttggaggacg ttttggagaa  | 16560 |
| agtaaaagtg gatccagata ttcaacctga ggtaaagt agaccatta agcaggtagc     | 16620 |
| gcctgggtctg ggggtacaaa ctgtagacat taagattccc actgaaagta tggaagtgc  | 16680 |
| aactgaaccc gcaaagccta ctgccacct cactgaagtg caaacggatc catggatgcc   | 16740 |
| catgcctatt acaactgacg ccgccggtcc cactcgaaga tcccgcgaa agtacgggtcc  | 16800 |
| agcaagtctg ttgatgcca attatgttgt acacccatct attattccta ctcttggtta   | 16860 |
| ccgaggcact cgctactatc gcagccgaaa cagtacctcc cgccgtcgcc gcaagacacc  | 16920 |
| tgcaaactgc agtcgtcgcc gtagacgcac aagcaaaccg actcccggcg ccctgggtgcg | 16980 |
| gcaagtgtac cgcaatggta gtgcggaacc tttagactg ccgctgctgc gttaccatcc   | 17040 |
| gagtatcatc acttaatcaa tgttgccgct gcctccttgc agatatggcc ctacttgtc   | 17100 |
| gccttcgctg tcccatcact ggttaccgag gaagaaactc gcgccgtaga agagggatgt  | 17160 |
| tgggacgcgg aatgcgacgc tacaggcgac ggcgtgctat ccgcaagcaa ttgcggggtg  | 17220 |
| gttttttacc agccttaatt ccaattatcg ctgctgcaat tggcgcgata ccaggcatag  | 17280 |
| cttccgtggc gggttcaggcc tcgcaacgac attgacattg gaaaaaacg tataaataaa  | 17340 |
| aaaaaaaaa tacaatggac tctgacactc ctggtcctgt gactatgttt tcttagagat   | 17400 |
| ggaagacatc aatttttcat ccttggctcc gcgacacggc acgaagccgt acatgggcac  | 17460 |
| ctggagcgac atcggcacga gccaaactgaa cgggggcgcc ttcaattgga gcagtatctg | 17520 |
| gagcgggctt aaaaattttg gctcaaccat aaaaacatac gggaacaaag cttggaacag  | 17580 |
| cagtacagga caggcgctta gaaataaact taaagaccag aacttccaac aaaaagtagt  | 17640 |
| cgatgggata gcttccggca tcaatggagt ggtagatttg gctaaccagg ctgtgcagaa  | 17700 |
| aaagataaac agtcgttttg acccgccgcc agcaaccca ggtgaaatgc aagtggagga   | 17760 |
| agaaattcct ccgccagaaa aacgaggcga caagcgtccg cgtcccgtt tggaagagac   | 17820 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| gctggtgacg cgcgtagatg aaccgccttc ttatgaggaa gcaacgaagc ttggaatgcc  | 17880 |
| caccactaga ccgatagccc caatggccac cggggtgatg aaaccttctc agttgcatcg  | 17940 |
| acccgtcacc ttggatttgc cccctcccc tgctgctact gctgtacccg cttctaagcc   | 18000 |
| tgtcgctgcc ccgaaaccag tcgccgtagc caggtcacgt cccgggggcg ctcctcgtcc  | 18060 |
| aaatgcgcac tggcaaaaata ctctgaacag catcgtgggt ctaggcgtgc aaagtgtaaa | 18120 |
| acgccgtcgc tgcttttaat taaatatgga gtagcgctta acttgcctat ctgtgtatat  | 18180 |
| gtgtcattac acgccgtcac agcagcagag gaaaaaagga agaggtcgtg cgtcgacgct  | 18240 |
| gagttacttt caagatggcc accccatcga tgctgcccc atgggcatac atgcacatcg   | 18300 |
| ccggacagga tgcttcggag tacctgagtc cgggtctggt gcagttcgcc cgcgccacag  | 18360 |
| acacctactt caatctggga aataagtta gaaatccac cgtagcgccg acccacgatg    | 18420 |
| tgaccaccga ccgtagccag cggctcatgt tgcgcttcgt gcccgttgac cgggaggaca  | 18480 |
| atacatactc ttacaaaagt cggtacaccc tggccgtggg cgacaacaga gtgctggata  | 18540 |
| tggccagcac gttctttgac attaggggtg tgttggacag aggtcccagt ttcaaaccct  | 18600 |
| attctggtac ggcttacaac tccctggctc ctaaaggcgc tccaaataca tctcagtgga  | 18660 |
| ttgcagaagg tgtaaaaaat acaactgggt aggaacacgt aacagaagag gaaaccaata  | 18720 |
| ctactactta cacttttggc aatgctcctg taaaagctga agctgaaatt acaaaagaag  | 18780 |
| gactcccagt aggttttgaa gtttcagatg aagaaagtaa accgatttat gctgataaaa  | 18840 |
| catatcagcc agaacctcag ctgggagatg aaacttggac tgaccttgat ggaaaaaccg  | 18900 |
| aaaagtatgg aggcagggt ctcaaaccg atactaagat gaaaccatgc tacgggtcct    | 18960 |
| ttgccaaacc tactaatgtg aaaggcggtc aggcaaaaca aaaaacaacg gagcagccaa  | 19020 |
| atcagaaagt cgaatatgat atcgacatgg agttttttga tgcggcatcg cagaaaacaa  | 19080 |
| acttaagtcc taaaattgtc atgtatgcag aaaatgtaaa tttggaaact ccagacactc  | 19140 |
| atgtagtgta caaacctgga acagaagaca caagttccga agctaatttg ggacaacaat  | 19200 |
| ctatgccccaa cagacccaac tacattggct tcagagataa ctttattgga cttatgtact | 19260 |

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|            |            |            |            |            |            |       |
|------------|------------|------------|------------|------------|------------|-------|
| ataacagtac | tggtaacatg | ggggtgctgg | ctggtcaagc | gtctcagtta | aatgcagtgg | 19320 |
| ttgacttgca | ggacagaaac | acagaacttt | cttaccaact | cttgcttgac | tctctgggcg | 19380 |
| acagaaccag | atactttagc | atgtggaatc | aggctgtgga | cagttatgat | cctgatgtac | 19440 |
| gtgttattga | aaatcatggt | gtggaagatg | aacttcccaa | ctactgtttt | ccactggacg | 19500 |
| gcataggtgt | tccaacaacc | agttacaaat | caatagttcc | aaatggagac | aatgcgcta  | 19560 |
| attggaagga | acctgaagta | aatggaacaa | gtgagatcgg | acagggtaat | ttgtttgcca | 19620 |
| tggaaattaa | ccttcaagcc | aatctatggc | gaagtttcct | ttattccaat | gtggctctat | 19680 |
| atctcccaga | ctcgtacaaa | tacaccccg  | ccaatgtcac | tcttccagaa | aacaaaaaca | 19740 |
| cctacgacta | catgaacggg | cgggtggtgc | cgccatctct | agtagacacc | tatgtgaaca | 19800 |
| ttggtgccag | gtggtctctg | gatgccatgg | acaatgtcaa | cccattcaac | caccaccgta | 19860 |
| acgctggcct | gcgttaccga | tccatgcttc | tgggtaacgg | acgttatgtg | cctttccaca | 19920 |
| tacaagtgcc | tcaaaaattc | ttcgtgttta | aaaacctgct | gcttctccca | ggctcctaca | 19980 |
| cttatgagtg | gaactttagg | aaggatgtga | acatggttct | acagagttcc | ctcggtaacg | 20040 |
| acctgcgggt | agatggcgcc | agcatcagtt | tcacgagcat | caacctctat | gctacttttt | 20100 |
| tccccatggc | tcacaacacc | gcttccaccc | ttgaagccat | gctgcggaat | gacaccaatg | 20160 |
| atcagtcatt | caacgactac | ctatctgcag | ctaacatgct | ctacccatt  | cctgccaatg | 20220 |
| caaccaatat | tcccatttcc | attccttctc | gcaactgggc | ggctttcaga | ggctggtcac | 20280 |
| ttaccagact | gaaaacaaa  | gaaactccct | ctttggggtc | tggatttgac | ccctactttg | 20340 |
| tctattctgg | ttctattccc | tacctggatg | gtaccttcta | cctgaaccac | acttttaaga | 20400 |
| aggtttccat | catgtttgac | tcttcagtga | gctggcctgg | aaatgacagg | ttactatctc | 20460 |
| ctaacgaatt | tgaaataaag | cgcactgtgg | atggcgaagg | ctacaacgta | gcccattgca | 20520 |
| acatgaccaa | agactgggtc | ttggtacaga | tgctcgccaa | ctacaacatc | ggctatcagg | 20580 |
| gcttctacat | tccagaagga | tacaaagatc | gcatgtattc | atttttcaga | aacttccagc | 20640 |
| ccatgagcag | gcagggtggt | gatgaggtca | attacaaaga | cttcaaggcc | gtcgccatac | 20700 |

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|            |            |             |            |            |             |       |
|------------|------------|-------------|------------|------------|-------------|-------|
| cctaccaaca | caacaactct | ggctttgtgg  | gttacatggc | tccgaccatg | cgccaaggtc  | 20760 |
| aaccctatcc | cgctaactat | ccctatccac  | tcattggaac | aactgccgta | aatagtgtta  | 20820 |
| cgcagaaaaa | gttcttgtgt | gacagaacca  | tgtggcgcac | accgttctcg | agcaacttca  | 20880 |
| tgtctatggg | ggcccttaca | gacttgggac  | agaatatgct | ctatgccaac | tcagctcatg  | 20940 |
| ctctggacat | gacctttgag | gtggatccca  | tggatgagcc | caccctgctt | tatcttctct  | 21000 |
| tcgaagtttt | cgacgtggtc | agagtgcac   | agccacaccg | cggcacatc  | gaggcagtct  | 21060 |
| acctgcgtac | accgttctcg | gccggtaacg  | ctaccacgta | agaagcttct | tgcttcttgc  | 21120 |
| aaatagcagc | tgcaaccatg | gcctgcggat  | cccaaaacgg | ctccagcgag | caagagctca  | 21180 |
| gagccattgt | ccaagacctg | ggttgccggac | cctatTTTTT | gggaacctac | gataagcgct  | 21240 |
| tcccgggggt | catggcccc  | gataagctcg  | cctgtgccat | tgtaaatacg | gccggacgtg  | 21300 |
| agacgggggg | agagcactgg | ttggctttcg  | gttggaaacc | acgttctaac | acctgctacc  | 21360 |
| tttttgatcc | ttttggattc | tcggatgatc  | gtctcaaaca | gatttaccag | tttgaatatg  | 21420 |
| agggtctcct | gcgccgcagc | gctcttgcta  | ccaaggaccg | ctgtattacg | ctggaaaaat  | 21480 |
| ctaccagac  | cgtgcagggt | ccccgttctg  | ccgcctgcgg | acttttctgc | tgcatgttcc  | 21540 |
| ttcacgcctt | tgtgcactgg | cctgaccgtc  | ccatggacgg | aaaccccacc | atgaaattgc  | 21600 |
| taactggagt | gccaaacaac | atgcttcatt  | ctcctaaagt | ccagcccacc | ctgtgtgaca  | 21660 |
| atcaaaaagc | actctaccat | tttcttaata  | ccatttcgcc | ttattttcgc | tcccatcgta  | 21720 |
| cacacatcga | aagggccact | gcgttcgacc  | gtatggatgt | tcaataatga | ctcatgtaaa  | 21780 |
| caacgtgttc | aataaacatc | actttatTTT  | tttacatgta | tcaaggctct | gcattactta  | 21840 |
| tttatttaca | agtcgaatgg | gttctgacga  | gaatcagaat | gacccgcagg | cagtgatacg  | 21900 |
| ttgcggaact | gatacttggg | ttgccacttg  | aattcgggaa | tcaccaactt | gggaaccggt  | 21960 |
| atatcgggca | ggatgtcact | ccacagcttt  | ctggtcagct | gcaaagctcc | aagcagggtca | 22020 |
| ggagccgaaa | tcttgaaaac | acaattagga  | ccagtgcttt | gagcgcgaga | gttgcggtac  | 22080 |
| accggattgc | agcactgaaa | caccatcagc  | gacggatgtc | tcacgcttgc | cagcacgggtg | 22140 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| ggatctgcaa tcatgcccac atccagatct tcagcattgg caatgctgaa cggggtcatc  | 22200 |
| ttgcagggtct gcctacccat ggcgggcacc caattaggct tgtggttgca atcgcagtgc | 22260 |
| aggggggatca gtatcatctt ggcctgatcc tgtctgattc ctggatacac ggctctcatg | 22320 |
| aaagcatcat attgcttgaa agcctgctgg gctttactac cctcggtata aaacatcccg  | 22380 |
| caggacctgc tcgaaaactg gttagctgca cagccggcat cattcacaca gcagcgggcg  | 22440 |
| tcattgttag ctatttgcac cacacttctg cccagcgggt tttgggtgat tttggttcgc  | 22500 |
| tcgggattct cctttaaggc tcgttgtccg ttctcgctgg ccacatccat ctcgataatc  | 22560 |
| tgctccttct gaatcataat attgccatgc aggcacttca gcttgccctc ataatcattg  | 22620 |
| cagccatgag gccacaacgc acagcctgta cattcccaat tatggtgggc gatctgagaa  | 22680 |
| aaagaatgta tcattccctg cagaaatctt cccatcatcg tgctcagtgt cttgtgacta  | 22740 |
| gtgaaagtta actggatgcc tcggtgctcc tcgtttacgt actggtgaca gatgcgcttg  | 22800 |
| tattgttcgt gttgctcagg cattagttaa aaagagggtc taagttcggt atccagcctg  | 22860 |
| tacttctcca tcagcagaca catcacttcc atgcctttct cccaagcaga caccaggggc  | 22920 |
| aagctaatacg gattcttaac agtgcaggca gcagctcctt tagccagagg gtcattctta | 22980 |
| gcgatcttct caatgcttct tttgccatcc ttctcaacga tgcgcacggg cgggtagctg  | 23040 |
| aaaccactg ctacaagttg cgcctcttct ctttcttctt cgctgtcttg actgatgtct   | 23100 |
| tgcatgggga tatgtttggt cttccttggtc ttcttttttg ggggtatcgg aggaggagga | 23160 |
| ctgtcgctcc gttccggaga caggaggat tgtgacgttt cgctcacat taccaactga    | 23220 |
| ctgtcggtag aagaacctga cccacacagg cgacagggtt ttctcttcgg gggcagaggt  | 23280 |
| ggaggcgatt gcgaagggtc gcggtccgac ctggaaggcg gatgactggc agaaccctt   | 23340 |
| ccgcgttcgg ggggtgtgctc cctgtggcgg tcgcttaact gatttccttc gcggctggcc | 23400 |
| attgtgttct cctaggcaga gaaacaacag acatggaaac tcagccattg ctgtcaacat  | 23460 |
| cgccacgagt gccatcacat ctgctcctca gcgacgagga aaaggagcag agcttaagca  | 23520 |
| ttccaccgcc cagtcctgcc accacctcta ccctagaaga taaggagggtc gacgcatctc | 23580 |



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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| atgacatgca gaataaaaaa gcgaaagagt ctgagacaga catcgagcaa gaccgggct    | 23640 |
| atgtgacacc ggtggaacac gaggaagagt tgaaacgctt tctagagaga gaggatgaaa   | 23700 |
| actgccccaa acaacgagca gataactatc accaagatgc tggaaatagg gatcagaaca   | 23760 |
| ccgactacct catagggctt gacggggaag acgcgctcct taaacatcta gcaagacagt   | 23820 |
| cgctcatagt caaggatgca ttattggaca gaactgaagt gcccacatcagt gtggaagagc | 23880 |
| tcagccgcgc ctacgagctt aacctctttt cacctcgtac tccccccaaa cgtcagccaa   | 23940 |
| acggcacctg cgagccaaat cctcgcttaa acttttatcc agcttttgct gtgccagaag   | 24000 |
| tactggctac ctatcacatc ttttttaaaa atcaaaaaat tccagtctcc tgccgcgcta   | 24060 |
| atcgcacccg cgccgatgcc ctactcaatc tgggacctgg ttcacgctta cctgatatag   | 24120 |
| cttccttgga agaggttcca aagatcttcg agggctctggg caataatgag actcgggccg  | 24180 |
| caaatgctct gcaaaaggga gaaaatggca tggatgagca tcacagcggt ctggtggaat   | 24240 |
| tggaaggcga taatgccaga ctcgcagtac tcaagcgaag catcgaggtc acacacttcg   | 24300 |
| catatccgc tgtcaacctg cccctaaag tcatgacggc ggtcatggac cagttactca     | 24360 |
| ttaagcgcgc aagtccccct tcagaagaca tgcatgaccc agatgcctgt gatgagggtta  | 24420 |
| aaccagtggc cagtgatgag cagctaacc gatggctggg caccgactct cccagggtt     | 24480 |
| tggaagagcg tcgcaagctt atgatggccg tgggtgctggc taccgtagaa ctagagtgtc  | 24540 |
| tccgacgttt ctttaccgat tcagaaacct tgcgcaaact cgaagagaat ctgcactaca   | 24600 |
| cttttagaca cggctttgtg cggcaggcat gcaagatatc taacgtggaa ctcaccaacc   | 24660 |
| tggtttccta catgggtatt ctgcatgaga atcgccatagg acaaagcgtg ctgcacagca  | 24720 |
| ccctgaaggg ggaagccgc cgtgattaca tccgcgattg tgtctatctg tacctgtgcc    | 24780 |
| acacgtggca aaccggcatg ggtgtatggc agcaatgttt agaagaacag aacttgaaag   | 24840 |
| agcttgacaa gctcttacag aaatctctta aggttctgtg gacagggttc gacgagcgca   | 24900 |
| ccgtcgcttc cgacctggca gacctcatct tcccagagcg tctcagggtt actttgcgaa   | 24960 |
| acggattgcc tgactttatg agccagagca tgcttaacaa ttttcgctct ttcacctgg    | 25020 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| aacgctccgg tatcctgccc gccacctgct gcgcactgcc ctccgacttt gtgcctctca  | 25080 |
| cctaccgcga gtgccccccg ccgctatgga gtcactgcta cctgttccgt ctggccaact  | 25140 |
| atctctccta ccactcggat gtgatcgagg atgtgagcgg agacggcttg ctggagtgtc  | 25200 |
| actgccgctg caatctgtgc acgccccacc ggtccctagc ttgcaacccc cagttgatga  | 25260 |
| gcgaaaccca gataataggc acctttgaat tgcaaggccc cagcagccaa ggcgatgggt  | 25320 |
| cttctcctgg gcaaagttaa aaactgaccc cgggactgtg gacctccgcc tacttgcgca  | 25380 |
| agtttgctcc ggaagattac caccctatg aaatcaagtt ctatgaggac caatcacagc   | 25440 |
| ctccaaaggc cgaactttcg gcctgcgtca tcaccaggg ggcaattctg gccaattgc    | 25500 |
| aagccatcca aaaatcccgc caagaatttc tactgaaaaa gggtaagggg gtctaccttg  | 25560 |
| acccccagac cggcgaggaa ctcaacacaa gggtccctca ggatgtccca acgacgagaa  | 25620 |
| aacaagaagt tgaagggtgca gccgccgccc ccagaagata tggaggaaga ttgggacagt | 25680 |
| caggcagagg aggcggagga ggacagtctg gaggacagtc tggaggaaga cagtttgag   | 25740 |
| gaggaaaacg aggaggcaga ggaggtggaa gaagtaaccg ccgacaaaca gttatcctcg  | 25800 |
| gctgcggaga caagcaacag cgctaccatc tccgctccga gtcgaggaac ccggcggcgt  | 25860 |
| cccagcagta gatgggacga gaccggacgc ttcccgaacc caaccagcgc ttccaagacc  | 25920 |
| ggtaagaagg atcggcaggg atacaagtcc tggcgggggc ataagaatgc catcatctcc  | 25980 |
| tgcttgcatg agtgcggggg caacatatcc ttcacgcggc gctacttgct attccaccat  | 26040 |
| ggggtgaact ttccgcgcaa tgttttgcat tactaccgtc acctccacag cccctactat  | 26100 |
| agccagcaaa tcccggcagt ctcgacagat aaagacagcg gcggcgacct ccaacagaaa  | 26160 |
| accagcagcg gcagttagaa aatacacaac aagtgcagca acaggaggat taaagattac  | 26220 |
| agccaacgag ccagcgcaaa cccgagagtt aagaaatcgg atctttccaa ccctgtatgc  | 26280 |
| catcttccag cagagtcggg gtcaagagca ggaactgaaa ataaaaaacc gatctctgcg  | 26340 |
| ttcgctcacc agaagttggt tgtatcacia gagcgaagat caacttcagc gcactctcga  | 26400 |
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|                                                                     |       |
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| tacgcgcta ccgaaaccaa atacttttgg aacagtcagc tcttaccacc acgccccgcc    | 26700 |
| aacaccttaa tcccagaaat tggcccgccg ccctagtgtgta ccaggaaagt cccgctccca | 26760 |
| ccactgtatt acttcctcga gacgcccagg ccgaagtcca aatgactaat gcagggtcgc   | 26820 |
| agttagctgg cggctccacc ctatgtcgtc acaggcctcg gcataatata aaacgcctga   | 26880 |
| tgatcagagg ccgaggatc cagctcaacg acgagtcggt gagctctccg cttggtctac    | 26940 |
| gaccagacgg aatctttcag attgccggct gcgggagatc ttccttcacc cctcgtcagg   | 27000 |
| ctgttctgac tttggaaagt tcgtcttcgc aaccccgctc gggcggaatc gggaccgttc   | 27060 |
| aatttgtgga ggagtttact ccctctgtct acttcaaccc cttctccgga tctcctgggc   | 27120 |
| attacccgga cgagttcata ccgaacttcg acgcgattag cgagtcagtg gacggctacg   | 27180 |
| attgatgtct ggtgacgcgg ctgagctatc tcggctgcga catctagacc actgccgccg   | 27240 |
| ctttcgctgc tttgcccggg aactcattga gttcatctac ttcgaactcc ccaaggatca   | 27300 |
| ccctcaaggt ccggcccacg gagtgcggat ttctatcgaa ggcaaaatag actctgcct    | 27360 |
| gcaacgaatt ttctcccagc ggcccgtgct gatcgagcga gaccagggaa acaccacgg    | 27420 |
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| ttcctactca caaactagaa gctcaacgac tacaccgctt ttccagaagc attttccta    | 27660 |
| ctaatactac tttcaaaacc ggaggtgagc tccaaggtct tcctacagaa aacccttggg   | 27720 |
| tggaagcggg cttttagtg ctaggaattc ttgcgggtgg gcttgtgatt attctttgct    | 27780 |
| acctatacac accttgcttc actttcttag tgggtgtgtg gtattgggtt aaaaaatggg   | 27840 |
| gcccatacta gtcttgcttg ttttactttc gcttttggaa ccgggttctg ccaattacga   | 27900 |

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|                                                                    |       |
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| tcactgctcc tgcgattcca tcgagtgcac ctacaccctg ctgaagaccc tatgcggcct  | 28140 |
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| tcttacttta aaatgtttaa cccactaac aaccacaggc ggatctctac agctaaaagt   | 28560 |
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| cacaccactc gttaagactg gtcactctat aggtttacca ctaggagccg gattgggaac  | 28680 |
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| tcgcactgct tttcccattg acatatctgt catgcttaac cgaagagcaa taaatgacga  | 29220 |
| gacatcatat tgtattcgta taacttggtc ctggaacaca ggagatgccc cagaggtgca  | 29280 |
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|                                                                     |       |
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| cctggtcgca actgctaccg gagtccattc ggacatcgtc atgacccaaa gccctgactc   | 29460 |
| gctcgctgtg tcaactgggag agcgggcgac tatcaactgc aaatcatccc agagcctgct  | 29520 |
| gtattcacgc aatcagaaaa actacctggc ctggatatcag cagaagccgg gccagcctcc  | 29580 |
| caagctgctg atcttctggg cctccacccg cgaaagcggc gtgccggacc gcttcagcgg   | 29640 |
| aagcggattc ggaactgact ttactctgac cattagctcc ttgcaggcgg aggacgtggc   | 29700 |
| cgtctactac tgccagcagt atttctccta tccgctcacc tttgggcaag gcaccaaggt   | 29760 |
| ggagattaag ggagggggcg gcagcggggg aggcggcagc ggccggcggg gatcgcaggt   | 29820 |
| ccagctcgtc caatccggag ccgaagtcaa gaagccggga gcgtcgggtca aggtcagctg  | 29880 |
| caaaacttcg cgctacacct tcaactgagta cacgatccac tgggtccgcc aggcgcccgg  | 29940 |
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|                                                                     |       |
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| ggggacaaag ttggaaataa accggtaggc tagcttgact gactgagata cagcgtacct   | 30960 |
| tcagctcaca gacatgataa gatacattga tgagtttgga caaaccacaa ctagaatgca   | 31020 |
| gtgaaaaaaaa tgctttatct gtgaaatttg tgatgctatt gctttatctg taaccattat  | 31080 |
| aagctgcaat aaacaagtta acaacaacaa ttgcattcat tttatgtttc aggttcaggg   | 31140 |
| ggagggtgtgg gaggtttttt aaagcaagta aaacctctac aaatgtggta gtcgtcagct  | 31200 |
| atcctgcagg aacttgctta tttgaaaatc aattcacaaa atccgagtag ttatcttgcc   | 31260 |
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| tcataccaaa gtttaatatata aattaaatga cgttccctca aaaacacact acccacatac | 31860 |
| atgatctctt ttggcatgtg catattaaca atctgtctgt accatggaca acgttggtta   | 31920 |
| atcatgcaac ccaatataac cttccggaac cacactgcca acaccgctcc cccagccatg   | 31980 |
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| aaacgcggcc ctggcagaac acactcttct tcgccttcta tcctgccgct tagcgtgttc  | 32460 |
| cgtgtgatag ttcaagtaca accacactct taagttggtc aaaagaatgc tggcttcagt  | 32520 |
| tgtaatcaaa actccatcgc atctaactgt tctgaggaaa tcatccaagc aatgcaactg  | 32580 |
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| ccaaacgata tcgcagtact tcaaattgta gatcgcgcag atggcatctc tcgccccac   | 32700 |
| tgtgttggtg aaaaagcaca gctagatcaa aagaaatgcg attttcaagg tgctcaacgg  | 32760 |
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|                                                                    |       |
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| gttaacccca cagccaatca ccacacgac cacacttttt aaaatcacct catttacata   | 34140 |
| ttggcaccat tccatctata aggtatatata tatagataga                       | 34180 |

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<220>  
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|                                                                    |     |
|--------------------------------------------------------------------|-----|
| <400> 101                                                          |     |
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| ccgtgggaaa atgacgtttt gtgggggtgg agtttttttg caagttgtcg cgggaaatgt  | 180 |
| gacgcataaa aaggcttttt tctcacggaa ctacttagtt tttccacggg atttaacagg  | 240 |
| aaatgaggta gttttgaccg gatgcaagtg aaaattgttg attttcgcgc gaaaactgaa  | 300 |
| tgaggaagtg tttttctgaa taatgtggta tttatggcag ggtggagtat ttgttcaggg  | 360 |
| ccaggtagac tttgacccat tacgtggagg tttcgattac cgtgtttttt acctgaattt  | 420 |
| ccgcgtaccg tgtcaaagtc ttctgttttt acgtagggtg cagctgatcg ctagggtatt  | 480 |
| tataacctcag ggtttgtgtc aagaggccac tcttgagtgc cagcgagaag agttttctcc | 540 |
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|                                                                     |      |
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| agaggtagag ggatcggagg attctaata gaagagctgta aatggctttt ttaccgattc   | 780  |
| tatgctttta gctgctaata aagggttaga attagatccg cttttggaca cttttgatac   | 840  |
| tccaggggta attgtggaaa gcggtacagg tgtaagaaaa ttacctgatt tgagttccgt   | 900  |
| ggactgtgat ttgcactgct atgaagacgg gtttcctccg agtgatgagg aggaccatga   | 960  |
| aaaggagcag tccatgcaga ctgcagcggg tgagggagtg aaggctgcca atgttggttt   | 1020 |
| tcagttggat tgcccggagc ttcctggaca tggctgtaag tcttgatgaat ttcacaggaa  | 1080 |
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| tatttacagt aagtgtgttt aagttaaaat tttaaaggaat atgctgtttt tcacatgtat  | 1200 |
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| ctcttaattt gggccatcag gttcacttta aagaaaaagt tttatcagtt ttagactttt   | 1860 |
| caaccccagg tagaactgct gctgctgtgg cttttcttac ttttatatta gataaatgga   | 1920 |
| tcccgcagac tcatttcagc aggggatacg ttttggtttt catagccaca gcattgtgga   | 1980 |
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|                                                                     |      |
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| taagagggag agggcatcta gtggtactga tgctagatct gagttggctt taagtttaat   | 2280 |
| gagtcgcaga cgtcctgaaa ccatttggtg gcatgagggt cagaaagagg gaagggatga   | 2340 |
| agtttctgta ttgcaggaga aatattcact ggaacagggtg aaaacatgtt ggttggagcc  | 2400 |
| tgaggatgat tgggaggtgg ccattaaaaa ttatgccaag atagctttga ggcctgataa   | 2460 |
| acagtataag attactagac ggattaatat ccggaatgct tgttacatat ctggaaatgg   | 2520 |
| ggctgagggtg gtaatagata ctcaagacaa ggcagttatt agatgctgca tgatggatat  | 2580 |
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| tggttataat ggaatagtgt ttatggccaa taccaaactt atattgcatg gttgtagctt   | 2700 |
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| atgcatattt caaagatgta acctgggcat tctgaatgaa ggcgaagcaa ggggtccgcca  | 2880 |
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|                                                                     |      |
|---------------------------------------------------------------------|------|
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| ctccccatcct gggcaggagt tcgtcagaat gttatgggat ctactgtgga tggaagaccc  | 3600 |
| gtccaacccg ccaattcttc aacgctgacc tatgctactt taagtcttct acctttggac   | 3660 |
| gcagctgcag ctgccgccgc cgcttctgtt gccgctaaca ctgtgcttgg aatgggttac   | 3720 |
| tatggaagca tcatggctaa ttccacttcc tctaataacc cttctaccct gactcaggac   | 3780 |
| aagttacttg tccttttggc ccagctggag gctttgaccc aacgtctggg tgaactttct   | 3840 |
| cagcaggtgg tcgagttgcg agtacaaact gagtctgctg tcggcacggc aaagtctaaa   | 3900 |
| taaaaaaaaatc ccagaatcaa tgaataaata aacaagcttg ttgttgattt aaaatcaagt | 3960 |
| gttttttattt catttttcgc gcacggtatg ccctagacca ccgatctcta tcattgagaa  | 4020 |
| ctcgggtggat tttttccagg atcctataga ggtgggattg aatgtttaga tacatgggca  | 4080 |
| ttaggccgtc tttgggggtg agatagctcc attgaaggga ttcattgctcc ggggtagtgt  | 4140 |
| tgtaaatcac ccagtcataa caaggctgca gtgcatgggt ttgcacaata tcttttagaa   | 4200 |
| gtaggctgat tgccacagat aagcccttgg tgtaggtgtt tacaaccgg ttgagctggg    | 4260 |
| atgggtgcat tcgggggtgaa attatgtgca ttttggattg gatttttaag ttggcaatat  | 4320 |
| tgccgccaag atcccgtctt gggttcatgt tatgaaggac caccaagacg gtgtatccgg   | 4380 |
| tacatttagg aaatttatcg tgcagcttgg atggaaaagc gtggaaaaat ttggagacac   | 4440 |
| ccttgtgtcc tccaagattt tccatgcact catccatgat aatagcaatg gggccgtggg   | 4500 |
| cagcggcgcg ggcaaacacg ttccgtgggt ctgacacatc atagttatgt tcctgagtta   | 4560 |
| aatcatcata agccatttta atgaatttgg ggcggagagt accagattgg ggtatgaatg   | 4620 |
| ttccttcggg ccccgagca tagttcccct cacagatttg catttcccaa gctttcagtt    | 4680 |
| ccgagggtgg aatcatgtcc acctgggggg ctatgaaaaa caccgtttct ggggcggggg   | 4740 |
| tgattaattg tgatgatagc aaatttctga gcaattgaga tttgccacat ccggtggggc   | 4800 |
| cataaatgat tccgattacg ggttgcaggt ggtagtttag ggaacggcaa ctgccgtctt   | 4860 |
| ctcgaagcaa gggggccacc tcgttcatca tttcccttac atgcatattt tcccgcacca   | 4920 |

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| aatccattag gaggcgctct cctcctagtg atagaagttc ttgtagtgag gaaaagtttt  | 4980 |
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| tcgcgggttt ggacggctcc tggaataggg tatgagacga tgggcgtcca gcgctgccag  | 5160 |
| ggttcgggtcc ttccagggtc tcagtgttcg agtcagggtt gtttccgtca cagtgaaggg | 5220 |
| gtgtgcgcct gcttgggcgc ttgccagggt gcgcttcaga ctcatcctgc tggtcgaaaa  | 5280 |
| cttctgtcgc ttggcgccct gtatgtcggc caagtagcag tttacatga gttcgtagtt   | 5340 |
| gagcgccctcg gctgcgtggc ctttggcgcg gagcttacct ttggaagttt tcttgcatat | 5400 |
| cgggcagtat aggcatttca gcgcatacaa cttgggcgca aggaaaacgg attctggggga | 5460 |
| gtatgcatct gcgccgcagg aggcgcaaac agtttcacat tccaccagcc aggttaaadc  | 5520 |
| cggttcattg ggggtcaaaaa caagttttcc gccatatatt ttgatgcgtt tcttaccttt | 5580 |
| ggtctccatg agttcgtgtc ctcgttgagt gacaaacagg ctgtccgtgt ccccgtagac  | 5640 |
| tgattttaca ggccctcttct ccagtggagt gcctcgggtc tcttcgtaca ggaactctga | 5700 |
| ccactctgat acaaaggcgc gcgtccaggc cagcacaaag gaggctatgt gggaggggta  | 5760 |
| gcgatcgttg tcaaccaggg ggtccacctt ttccaaagta tgcaaacaca tgtcacctc   | 5820 |
| ttcaacatcc aggaatgtga ttggcttgta ggtgtatttc acgtgacctg ggggtccccgc | 5880 |
| tgggggggta taaaaggggg cggttctttg ctcttcctca ctgtcttccg gatcgtgtc   | 5940 |
| caggaacgtc agctgttggg gtaggtattc cctctcgaag gcgggcatga cctctgcact  | 6000 |
| caggttgtca gtttctaaga acgaggagga tttgatattg acagtgccgg ttgagatgcc  | 6060 |
| tttcatgagg ttttcgtcca tctggtcaga aaacacaatt tttttattgt caagtttggt  | 6120 |
| ggcaaatgat ccatacaggg cggttgataa aagtttggca atggatcgca tggtttggtt  | 6180 |
| cttttccttg tccgcgcgct ctttggcggc gatgttgagt tggacatact cgcgtgccag  | 6240 |
| gcacttccat tcggggaaga tagttgttaa ttcactctggc acgattctca cttgccaccc | 6300 |
| tcgattatgc aaggtaatta aatccacact ggtggccacc tcgcctcgaa ggggttcatt  | 6360 |

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| gaagaactgg atctcctgcc accagttgga ggaatggctg ttgatgtgat ggaagtagaa | 7920 |
| ctccctgcga cgcgccgagc attcatgctt gtgcttgtag agacggccgc agtagtcgca | 7980 |
| gcgttgcacg gggtgtatct cgtgaatgag ttgtacctgg cttcccttga cgagaaatth | 8040 |
| cagtgggaag ccgaggcctg gcgattgtat ctcgtgctth actatgttgt ctgcatcggc | 8100 |
| ctgttcatct tctgtctcga tgggtggcat gctgacgagc cctcgcgga ggcaagtcca  | 8160 |
| gacctcggcg cggcaggggc ggagctcgag gacgagagcg cgcaggctgg agctgtccag | 8220 |
| ggtcctgaga cgctgcggac tcaggttagt aggcagtgtc aggagattaa cttgcatgat | 8280 |
| cttttgagg gcgtgcggga gggtcagata gtacttgatc tcaacgggtc cgttggtgga  | 8340 |
| gatgtcgatg gcttgacagg ttccgtgtcc cttgggcgct accaccgtgc ccttgthth  | 8400 |
| cattthggac ggcggtggct ctgttgcttc ttgcatgtth agaagcggtg tcgaggcg   | 8460 |
| gcaccgggcg gcaggggcgg ctcgggaccc ggcgcatgg ctggcagtgg tacgtcggcg  | 8520 |
| ccgcgcgcgg gtaggttctg gtactgcgcc ctgagaagac tcgcatgcgc gacgacgcgg | 8580 |
| cggttgacat cctggatctg acgcctctgg gtgaaagcta ccggccccgt gagcttgaac | 8640 |
| ctgaaagaga gttcaacaga atcaatctcg gtatcgthga cggcggttg cctaaggatt  | 8700 |
| tcttgcacgt caccagagtt gtcctggtag gcgatctccg ccatgaactg ctcgatctct | 8760 |
| tcctcttgaa gatctccgcg gcccgctctc tcgacgggtg ccgcgaggtc gttggagatg | 8820 |
| cgcccaatga gttgagagaa tgcattcatg cccgcctcgt tccagacgcg gctgtagacc | 8880 |
| acggcccca cgggatctct cgcgcgcag accacctggg cgaggthgag ctccacgtgg   | 8940 |
| cgggtgaaga ccgcatagtt gcataggcg tggaagaggt agthgagth ggtggcgatg   | 9000 |
| tgctcggtga cgaagaaata catgatccat cgtctcagcg gcatctcgct gacatcgccc | 9060 |
| agagctthca agcgctccat ggctctgtag aagtccacgg caaaattaaa aaactgggag | 9120 |
| tttcgcgcgg acacggtcaa ctctctthcc agaagacgga taagthcggc gatggthgth | 9180 |
| cgcacctcg gctcgaaagc ccctgggatt tcttctcaa tctctctthc thccactaac   | 9240 |

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|                                                                     |       |
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| gtgacggcgc ggccgttctc gcgcggctgc agagtaaaaa caccgccgcg catctcctta   | 9420  |
| aagtggtgac tgggaggttc tccgtttggg agggagaggg cgctgattat acattttatt   | 9480  |
| aattggcccc tagggactgc acgcagagat ctgatcgtgt caagatccac gggatctgaa   | 9540  |
| aacctttcga cgaaagcgtc taaccagtca cagtcacaag gtaggctgag tacggcttct   | 9600  |
| tgtgggcggg ggtggttatg tggtcggctc gggtcttctg tttcttcttc atctcgggaa   | 9660  |
| ggtgagacga tgctgctggt gatgaaatta aagtaggcag ttctaagacg gcggatgggt   | 9720  |
| gcgaggagca ccaggtcttt ggggccggct tgctggatac gcaggcgatt ggccattccc   | 9780  |
| caagcattat cctgacatct agcaagatct ttgtagtagt cttgcatgag ccgttctacg   | 9840  |
| ggcacttctt cctcaccctg tctgccatgc atacgtgtga gtccaaatcc gcgcattgggt  | 9900  |
| tgtaccagtg ccaagtcagc tacgactctt tcggcgagga tggcttgctg tacttgggta   | 9960  |
| agggtggctt gaaagtcatc aaaatccaca aagcgggtgt aagctcctgt attaatgggtg  | 10020 |
| taagcacagt tggccatgac tgaccagtta actgtctggt gaccagggcg cacgagctcg   | 10080 |
| gtgtatttaa ggcggaata ggcgcggtg tcaaagatgt aatcgttgca ggtgcgcacc     | 10140 |
| agatactggt accctataag aaaatgcggc ggtggttggc ggtagagagg ccatcgttct   | 10200 |
| gtagctggag cgccaggggc gaggtcttcc aacataaggc ggtgatagcc gtagatgtac   | 10260 |
| ctggacatcc aggtgattcc tgcggcggtg gtagaagccc gaggaaactc gcgtacgcgg   | 10320 |
| ttccaaatgt tgcgtagcgg catgaagtag ttcattgtag gcacggtttg accagtgagg   | 10380 |
| cgcgcgagc cattgatgct ctatagacac ggagaaaaatg aaagcgttca gcgactcgac   | 10440 |
| tccgtagcct ggaggaacgt gaacgggttg ggtcgcgggtg taccgccggtt cgagacttgt | 10500 |
| actcgagccg gccggagccg cggctaactg ggtattggca ctcccgtctc gaccagcct    | 10560 |
| acaaaaatcc aggatacggg atcgagtcgt tttgctgggt tccgaatggc aggggaagtga  | 10620 |
| gtcctatttt ttttttttgc cgctcagatg catcccgtgc tgcgacagat gcgcccccaa   | 10680 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| caacagcccc cctcgagca gcagcagcag caatcacaaa aggctgtccc tgcaactact    | 10740 |
| gcaactgccg ccgtgagcgg tgcgggacag cccgcctatg atctggactt ggaagagggc   | 10800 |
| gaaggactgg cacgtctagg tgcgccttca cccgagcggc atccgcgagt tcaactgaaa   | 10860 |
| aaagattctc gcgaggcgta tgtgccccaa cagaacctat ttagagacag aagcggcgag   | 10920 |
| gagccggagg agatgcgagc ttcccgtttt aacgcgggtc gtgagctgcg tcacggtttg   | 10980 |
| gaccgaagac gagtgttgcg ggacgaggat ttcgaagttg atgaaatgac agggatcagt   | 11040 |
| cctgccaggg cacacgtggc tgcagccaac cttgtatcgg cttacgagca gacagtaaag   | 11100 |
| gaagagcgta acttccaaaa gtcttttaaat aatcatgtgc gaacctgat tgccgcgaa    | 11160 |
| gaagttaccc ttggtttgat gcatttgtgg gatttgatgg aagctatcat tcagaacctt   | 11220 |
| actagcaaac ctctgaccgc ccagctgttt ctggtgggtc aacacagcag agacaatgag   | 11280 |
| gctttcagag aggcgctgct gaacatcacc gaacccgagg ggagatgggt gtatgatctt   | 11340 |
| atcaacattc tacagagtat catagtgcag gagcggagcc tgggcctggc cgagaagggtg  | 11400 |
| gctgccatca attactcgggt tttagacttg ggaaaatatt acgctcgcaa aatctacaag  | 11460 |
| actccatacg ttcccataga caaggagggtg aagatagatg gggttctacat gcgcatgacg | 11520 |
| ctcaaggctt tgacctgag cgatgatctt ggggtgtatc gcaatgacag aatgcatcgc    | 11580 |
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| gcagagccag ccgtccggca ttaactcctc ggacgattgg acccaggcca tgcaacgtat   | 11940 |
| catggcgttg acgactcgca accccgaagc ctttagacag caaccccagg ccaaccgtct   | 12000 |
| atcggccatc atggaagctg tagtgccttc ccgctctaata cccactcatg agaaggtcct  | 12060 |
| ggccatcgtg aacgcgttgg tggagaacaa agctattcgt ccagatgagg ccggactgggt  | 12120 |



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|                                                                    |       |
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| atacaacgct ctcttagaac gcgtggctcg ctacaacagt agcaatgtgc aaaccaat    | 12180 |
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| tgccaacctg ggttcgctgg tggcggttaa tgctttcttg agtactcagc ctgcta      | 12300 |
| gccgcgtggt caacaggatt atactaactt ttttaagtgt ttgagactga tgg         | 12360 |
| agtacctcag agcgaagtgt atcagtcagg tcctgattac ttctttcaga ctagcagaca  | 12420 |
| gggcttgtag acggtaaatc tgagccaagc ttttaaaaac cttaaagggtt tgtggggagt | 12480 |
| gcatgccccg gtaggagaaa gagcaaccgt gtctagcttg ttaactccga actccccct   | 12540 |
| attattactg ttggtagctc ctttcaccga cagcggtagc atcgaccgta attcctat    | 12600 |
| gggttaccta ctaaacctgt atcgcggaagc catagggcaa agtcaggtgg acgagcagac | 12660 |
| ctatcaagaa attaccaag tcagtcgagc tttgggacag gaagacactg gcagtttga    | 12720 |
| agccactctg aacttcttgc ttaccaatcg gtctcaaaag atccctcctc aatatgctct  | 12780 |
| tactgcggag gaggagagga tccttagata tgtgcagcag agcgtgggat tgtttctgat  | 12840 |
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| aatgagtaga tggaagactt atgctcagga tcacagagac gagcctggga tcatggggat  | 13440 |
| tacaagtaga gcgagccgta gacgccagcg ccatgacaga cagaggggtc ttgtgtggga  | 13500 |
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|                                                                     |       |
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| taatgaggcg agtcgtgcta ggccggagcgg tgggtgtatcc ggagggtcct cctccttcgt | 13740 |
| acgagagcgt gatgcagcag cagcaggcga cggcgggtgat gcaatcccca ctggaggctc  | 13800 |
| cctttgtgcc tccgcgatac ctggcaccta cggagggcag aaacagcatt cgttattcgg   | 13860 |
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| gaagctataa tgtgttgga gacaaaatca acacagccta tcgcagttgg tatctttcgt    | 14880 |
| acaattatgg cgatcccgaa aaaggagtgc gttcctggac attgctcacc acctcagatg   | 14940 |
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|                                                                    |       |
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| cctcgcttac gcacgtcttc aaccgctttc ctgagaacca gattttaatc cgtccgccgg  | 15180 |
| cgcccacccat taccaccgtc agtgaaaacg ttcctgctct cacagatcac gggaccctgc | 15240 |
| cgttgcgag cagtatccgg ggagtccaac gtgtgaccgt tactgacgcc agacgccgca   | 15300 |
| cctgtcccta cgtgtacaag gcactgggca tagtcgcacc gcgcgtcctt tcaagccgca  | 15360 |
| ctttctaaaa aaaaaaaaaa tgtccattct tatctcgccc agtaataaca ccggttgggg  | 15420 |
| tctgcgcgt ccaagcaaga tgtacggagg cgcacgcaaa cgttctaccc aacatcctgt   | 15480 |
| ccgtgttcgc ggacattttc gcgctccatg gggcgccctc aagggccgca ctgcggttcg  | 15540 |
| aaccaccgtc gatgatgtaa tcgatcaggt ggttgccgac gcccgtaatt atactcctac  | 15600 |
| tgcgcttaca tctactgtgg atgcagttat tgacagtgtg gtggctgacg ctgcaacta   | 15660 |
| tgctcgacgt aagagccggc gaaggcgcgt tgccagacgc caccgagcta cactgccat   | 15720 |
| gcgagccgca agagctctgc tacgaagagc tagacgcgtg gggcgaagag ccatgcttag  | 15780 |
| ggcggccaga cgtgcagctt cgggcgccag gcccgccagg tcccgaggc aagcagccgc   | 15840 |
| tgctgcagcg gcgactattg ccgacatggc ccaatcgca agaggcaatg tatactgggt   | 15900 |
| gcgtgacgt gccaccggc aacgtgtacc cgtgcgcacc cgtccccctc gcacttagaa    | 15960 |
| gatactgagc agtctccgat gttgtgtccc agcggcgagg atgtccaagc gcaaatacaa  | 16020 |
| ggaagaaatg ctgcaggcta tcgcacctga agtctacggc caaccgttga aggatgaaaa  | 16080 |
| aaaaccccg ccaatcaagc ggggttaaaaa ggacaaaaaa gaagaggaag atggcgatga  | 16140 |
| tgggctggcg gagtttgtgc gcgagtttgc cccacggcga cgcgtgcaat ggctgggcg   | 16200 |
| caaagttcga catgtgttga gacctggaac ttcggtggtc ttacacccg gcgagcggtc   | 16260 |
| aagcgctact tttaagcgtt cctatgatga ggtgtacggg gatgatgata ttcttgagca  | 16320 |
| ggcggctgac cgattaggcg agtttgctta tggcaagcgt agtagaataa cttccaagga  | 16380 |
| tgagacagtg tcgataccct tggatcatgg aaatcccacc ctagtctta aaccggtcac   | 16440 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| tttgagcaa gtgttaccg taactccg aacagggtt aaacgcgaag gtgaagattt        | 16500 |
| gtatcccact atgcaactga tggtagccaa acgccagaag ttggaggacg ttttggagaa   | 16560 |
| agtaaaagtg gatccagata ttcaacctga ggttaaagt agacccatta agcaggtagc    | 16620 |
| gcctgggtctg ggggtacaaa ctgtagacat taagattccc actgaaagta tggaagtgca  | 16680 |
| aactgaaccc gcaaagccta ctgccacctc cactgaagt caaacggatc catggatgcc    | 16740 |
| catgcctatt acaactgacg ccgccgggtcc cactcgaaga tcccgcgaa agtacgggtcc  | 16800 |
| agcaagtctg ttgatgcca attatgttgt acacccatct attattccta ctcttggtta    | 16860 |
| ccgaggcact cgctactatc gcagccgaaa cagtacctcc cgccgtcgcc gcaagacacc   | 16920 |
| tgcaaatacg agtcgtcgcc gtagacgcac aagcaaaccg actcccggcg ccctgggtgcg  | 16980 |
| gcaagtgtac cgcaatggta gtgcggaacc tttagactg ccgcgtgcgc gttaccatcc    | 17040 |
| gagtatcatc acttaataca tgttgccgct gcctccttgc agatatggcc ctacttgtc    | 17100 |
| gccttcgctg tcccatcact ggttaccgag gaagaaactc gcgccgtaga agagggatgt   | 17160 |
| tgggacgcgg aatgcgacgc tacaggcgac ggcgtgctat ccgcaagcaa ttgcgggggtg  | 17220 |
| gttttttacc agccttaatt ccaattatcg ctgctgcaat tggcgcgata ccaggcatag   | 17280 |
| cttccgtggc gggtcaggcc tcgcaacgac attgacattg gaaaaaacg tataaataaa    | 17340 |
| aaaaaaaaaa tacaatggac tctgacactc ctggtcctgt gactatgttt tcttagagat   | 17400 |
| ggaagacatc aatttttcat ccttggctcc gcgacacggc acgaagccgt acatgggcac   | 17460 |
| ctggagcgac atcggcacga gccaaactgaa cggggggcgcc ttcaattgga gcagtatctg | 17520 |
| gagcgggctt aaaaattttg gctcaaccat aaaaacatac gggaacaaag cttggaacag   | 17580 |
| cagtacagga caggcgctta gaaataaaact taaagaccag aacttccaac aaaaagtagt  | 17640 |
| cgatgggata gcttccggca tcaatggagt ggtagatttg gctaaccagg ctgtgcagaa   | 17700 |
| aaagataaac agtcgtttgg acccgccgcc agcaaccca ggtgaaatgc aagtggagga    | 17760 |
| agaaaattcct ccgccagaaa aacgaggcga caagcgtccg cgtcccatt tggaagagac   | 17820 |
| gctggtgacg cgcgtagatg aaccgccttc ttatgaggaa gcaacgaagc ttggaatgcc   | 17880 |

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|             |            |            |            |            |            |       |
|-------------|------------|------------|------------|------------|------------|-------|
| caccactaga  | ccgatagccc | caatggccac | cggggtgatg | aaaccttctc | agttgcatcg | 17940 |
| acccgtcacc  | ttggatttgc | cccctcccc  | tgctgctact | gctgtacccg | cttctaagcc | 18000 |
| tgctgctgcc  | ccgaaaccag | tcgccgtagc | caggtcacgt | cccgggggcg | ctcctcgtcc | 18060 |
| aaatgcgcac  | tggcaaaata | ctctgaacag | catcgtgggt | ctaggcgtgc | aaagtgtaaa | 18120 |
| acgccgtcgc  | tgcttttaat | taaatatgga | gtagcgctta | acttgcctat | ctgtgtatat | 18180 |
| gtgtcattac  | acgccgtcac | agcagcagag | gaaaaaagga | agaggtcgtg | cgtcgacgct | 18240 |
| gagttacttt  | caagatggcc | accccatcga | tgctgcccc  | atgggcatac | atgcacatcg | 18300 |
| ccggacagga  | tgcttcggag | tacctgagtc | cgggtctggt | gcagttcgcc | cgcgccacag | 18360 |
| acacctactt  | caatctggga | aataagttta | gaaatcccac | cgtagcgccg | acccacgatg | 18420 |
| tgaccaccga  | ccgtagccag | cggctcatgt | tgcgcttcgt | gcccgttgac | cgggaggaca | 18480 |
| atacatactc  | ttacaaagtg | cggtagaccc | tggccgtggg | cgacaacaga | gtgctggata | 18540 |
| tggccagcac  | gttctttgac | attaggggtg | tgttggacag | aggtcccagt | ttcaaaccct | 18600 |
| attctggtac  | ggcttacaac | tccctggctc | ctaaaggcgc | tccaaataca | tctcagtgga | 18660 |
| ttgcagaagg  | tgtaaaaaat | acaactggtg | aggaacacgt | aacagaagag | gaaaccaata | 18720 |
| ctactactta  | cacttttggc | aatgctcctg | taaaagctga | agctgaaatt | acaaaagaag | 18780 |
| gactcccagt  | aggtttggaa | gtttcagatg | aagaaaagta | accgatttat | gctgataaaa | 18840 |
| catatcagcc  | agaacctcag | ctgggagatg | aaacttggac | tgaccttgat | ggaaaaaccg | 18900 |
| aaaagtatgg  | aggcagggct | ctcaaaccgc | atactaagat | gaaaccatgc | tacgggtcct | 18960 |
| ttgccaaacc  | tactaatgtg | aaaggcggtc | aggcaaaaca | aaaaacaacg | gagcagccaa | 19020 |
| atcagaaaagt | cgaatatgat | atcgacatgg | agttttttga | tgcggcacgc | cagaaaaaca | 19080 |
| acttaagtcc  | taaaattgtc | atgtatgcag | aaaatgtaaa | tttggaaact | ccagacactc | 19140 |
| atgtagtgta  | caaacctgga | acagaagaca | caagttccga | agctaatttg | ggacaacaat | 19200 |
| ctatgcccc   | cagacccaac | tacattggct | tcagagataa | ctttattgga | cttatgtact | 19260 |
| ataacagtac  | tggtaacatg | ggggtgctgg | ctggtcaagc | gtctcagtta | aatgcagtgg | 19320 |

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|            |            |             |            |            |             |       |
|------------|------------|-------------|------------|------------|-------------|-------|
| ttgacttgca | ggacagaaac | acagaacttt  | cttaccaact | cttgcttgac | tctctgggcg  | 19380 |
| acagaaccag | atactttagc | atgtggaatc  | aggctgtgga | cagttatgat | cctgatgtac  | 19440 |
| gtgttattga | aaatcatggg | gtggaagatg  | aacttcccaa | ctactgtttt | ccactggacg  | 19500 |
| gcataggtgt | tccaacaacc | agttacaaat  | caatagttcc | aaatggagac | aatgcgcta   | 19560 |
| attggaagga | acctgaagta | aatggaacaa  | gtgagatcgg | acagggtaat | ttgtttgcca  | 19620 |
| tggaaattaa | ccttcaagcc | aatctatggc  | gaagtttcct | ttattccaat | gtggctctat  | 19680 |
| atctcccaga | ctcgtacaaa | tacaccccg   | ccaatgtcac | tcttccagaa | aacaaaaaca  | 19740 |
| cctacgacta | catgaacggg | cgggtgggtc  | cgccatctct | agtagacacc | tatgtgaaca  | 19800 |
| ttggtgccag | gtggtctctg | gatgccatgg  | acaatgtcaa | cccattcaac | caccaccgta  | 19860 |
| acgctggctt | gcgttaccga | tccatgcttc  | tgggtaacgg | acgttatgtg | cctttccaca  | 19920 |
| tacaagtgcc | tcaaaaattc | ttcgtgttta  | aaaacctgct | gcttctccca | ggctcctaca  | 19980 |
| cttatgagtg | gaactttagg | aaggatgtga  | acatggttct | acagagttcc | ctcggtaacg  | 20040 |
| acctgcgggt | agatggcgcc | agcatcagtt  | tcacgagcat | caacctctat | gctacttttt  | 20100 |
| tccccatggc | tcacaacacc | gcttccaccc  | ttgaagccat | gctgcggaat | gacaccaatg  | 20160 |
| atcagtcatt | caacgactac | ctatctgcag  | ctaacatgct | ctacccatt  | cctgccaatg  | 20220 |
| caaccaatat | tcccatttcc | attccttctc  | gcaactgggc | ggctttcaga | ggctgggtcat | 20280 |
| ttaccagact | gaaaacaaa  | gaaactccct  | ctttggggtc | tggatttgac | ccctactttg  | 20340 |
| tctattctgg | ttctattccc | tacctggatg  | gtaccttcta | cctgaaccac | acttttaaga  | 20400 |
| aggtttccat | catgtttgac | tcttcagtga  | gctggcctgg | aaatgacagg | ttactatctc  | 20460 |
| ctaacgaatt | tgaaataaag | cgcaactgtg  | atggcgaagg | ctacaacgta | gcccaatgca  | 20520 |
| acatgaccaa | agactgggtc | ttggtacaga  | tgctcgccaa | ctacaacatc | ggctatcagg  | 20580 |
| gcttctacat | tccagaagga | tacaaagatc  | gcatgtattc | atttttcaga | aacttccagc  | 20640 |
| ccatgagcag | gcagggtggt | gatgagggtca | attacaaaga | cttcaaggcc | gtcgccatac  | 20700 |
| cctaccaaca | caacaactct | ggctttgtgg  | gttacatggc | tccgaccatg | cgccaaggtc  | 20760 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| aaccctatcc cgctaactat ccctatccac tcattggaac aactgccgta aatagtgtta  | 20820 |
| cgcagaaaaa gttcttgtgt gacagaacca tgtggcgcat accgttctcg agcaacttca  | 20880 |
| tgtctatggg ggcccttaca gacttgggac agaatatgct ctatgccaac tcagctcatg  | 20940 |
| ctctggacat gacctttgag gtggatccca tggatgagcc caccctgctt tatcttctct  | 21000 |
| tcgaagtttt cgacgtggtc agagtgcac agccacaccg cggcatcatc gaggcagtct   | 21060 |
| acctgcgtac accgttctcg gccggtaacg ctaccacgta agaagcttct tgcttcttgc  | 21120 |
| aaatagcagc tgcaaccatg gcctgcggat cccaaaacgg ctccagcgag caagagctca  | 21180 |
| gagccattgt ccaagacctg ggttgcggac cctatTTTTT gggaacctac gataagcgct  | 21240 |
| tcccggggtt catggcccc gataagctcg cctgtgccat tgtaaatacg gccggacgtg   | 21300 |
| agacgggggg agagcactgg ttggctttcg gttggaacc acgttctaac acctgctacc   | 21360 |
| tttttgatcc ttttggattc tcggatgatc gtctcaaaca gatttaccag tttgaatatg  | 21420 |
| agggtctcct gcgccgcagc gctcttgcta ccaaggaccg ctgtattacg ctggaaaaat  | 21480 |
| ctaccagac cgtgcagggt ccccgttctg ccgcctgcgg acttttctgc tgcatgttcc   | 21540 |
| ttcacgcctt tgtgcactgg cctgaccgtc ccatggacgg aaaccccacc atgaaattgc  | 21600 |
| taactggagt gccaaacaac atgcttcatt ctctaaagt ccagcccacc ctgtgtgaca   | 21660 |
| atcaaaaagc actctaccat tttcttaata cccattcgcc ttatTTTtcgc tcccatcgta | 21720 |
| cacacatcga aagggccact gcgttcgacc gtatggatgt tcaataatga ctcatgtaaa  | 21780 |
| caacgtgttc aataaacatc actttatTTT tttacatgta tcaaggctct gcattactta  | 21840 |
| tttatTTTaca agtcgaatgg gttctgacga gaatcagaat gaccgcagg cagtgatacg  | 21900 |
| ttgcggaact gatacttggg ttgccacttg aattcgggaa tcaccaactt gggaaccggt  | 21960 |
| atatcgggca ggatgtcact ccacagcttt ctggtcagct gcaaagctcc aagcagggtca | 22020 |
| ggagccgaaa tcttgaaatc acaattagga ccagtgttt gagcgcgaga gttgcggtac   | 22080 |
| accggattgc agcactgaaa caccatcagc gacggatgtc tcacgcttgc cagcacggtg  | 22140 |
| ggatctgcaa tcatgcccac atccagatct tcagcattgg caatgctgaa cgggggtcatc | 22200 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| ttgcagggtct gcctacccat ggcgggcacc caattaggct tgtggttgca atcgcagtgc  | 22260 |
| aggggggatca gtatcatctt ggcctgatcc tgtctgattc ctggatacac ggctctcatg  | 22320 |
| aaagcatcat attgcttgaa agcctgctgg gctttactac cctcgggtata aaacatccccg | 22380 |
| caggacctgc tcgaaaactg gttagctgca cagccggcat cattcacaca gcagcgggcg   | 22440 |
| tcattgttag ctatttgac cacacttctg cccagcggt tttgggtgat tttggttcgc     | 22500 |
| tcgggattct cctttaaggc tcgttgctcc ttctcgctgg ccacatccat ctcgataatc   | 22560 |
| tgctccttct gaatcataat attgccatgc aggcacttca gcttgccctc ataatcattg   | 22620 |
| cagccatgag gccacaacgc acagcctgta cattcccaat tatggtgggc gatctgagaa   | 22680 |
| aaagaatgta tcattccctg cagaaatctt cccatcatcg tgctcagtgt cttgtgacta   | 22740 |
| gtgaaagtta actggatgcc tcggtgctcc tcgtttacgt actggtgaca gatgcgcttg   | 22800 |
| tattgttcgt gttgctcagg cattagttta aaagagggtc taagtctgtt atccagcctg   | 22860 |
| tacttctcca tcagcagaca catcacttcc atgcctttct cccaagcaga caccaggggc   | 22920 |
| aagctaatacg gattcttaac agtgcaggca gcagctcctt tagccagagg gtcattctta  | 22980 |
| gcgatcttct caatgcttct tttgccatcc ttctcaacga tgcgcacggg cgggtagctg   | 23040 |
| aaaccactg ctacaagttg cgcctcttct ctttcttctt cgctgtcttg actgatgtct    | 23100 |
| tgcatgggga tatgtttggt cttccttggc ttctttttgg ggggtatcgg aggaggagga   | 23160 |
| ctgtcgctcc gttccggaga caggaggat tgtgacgttt cgctcaccat taccaactga    | 23220 |
| ctgtcggtag aagaacctga cccacacgg cgacagggtg ttctcttcgg gggcagaggt    | 23280 |
| ggaggcgatt gcgaagggt gcggtccgac ctggaaggcg gatgactggc agaaccctt     | 23340 |
| ccgcgttcgg ggggtgtgct cctgtggcgg tcgcttaact gatttccttc gcggctggcc   | 23400 |
| attgtgttct cctaggcaga gaaacaacag acatggaaac tcagccattg ctgtcaacat   | 23460 |
| cgccacgagt gccatcacat ctcgtcctca gcgacgagga aaaggagcag agcttaagca   | 23520 |
| ttccaccgcc cagtcctgcc accacctcta ccctagaaga taaggaggtc gacgcatctc   | 23580 |
| atgacatgca gaataaaaaa gcgaaagagt ctgagacaga catcgagcaa gaccgggct    | 23640 |



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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| atgtgacacc ggtggaacac gaggaagagt tgaaacgctt tctagagaga gaggatgaaa   | 23700 |
| actgccccaaa acaacgagca gataactatc accaagatgc tggaaatagg gatcagaaca  | 23760 |
| ccgactacct catagggcctt gacgggggaag acgcgctcct taaacatcta gcaagacagt | 23820 |
| cgctcatagt caaggatgca ttattggaca gaactgaagt gcccacagcgt gtggaagagc  | 23880 |
| tcagccgcgc ctacgagcctt aacctctttt cacctcgtac tccccccaaa cgtcagccaa  | 23940 |
| acggcacctg cgagccaaat cctcgcttaa acttttatcc agcttttgct gtgccagaag   | 24000 |
| tactggctac ctatcacatc ttttttaaaa atcaaaaaat tccagtctcc tgccgcgcta   | 24060 |
| atcgcacccg cgccgatgcc ctactcaatc tgggacctgg ttcacgctta cctgatatag   | 24120 |
| cttccttgga agagggtcca aagatcttcg agggctctggg caataatgag actcggggccg | 24180 |
| caaagtctct gcaaaaggga gaaaatggca tggatgagca tcacagcggt ctggtggaat   | 24240 |
| tggaaggcga taatgccaga ctgcagtagc tcaagcgaag catcgagggtc acacacttcg  | 24300 |
| catatcccg tgtcaacctg cccctaaag tcatgacggc ggtcatggac cagttactca     | 24360 |
| ttaagcgcg aagtccccct tcagaagaca tgcatgaccc agatgcctgt gatgagggtta   | 24420 |
| aaccagtggc cagtgatgag cagctaacc gatggctggg caccgactct cccagggtt     | 24480 |
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| tccgacgttt ctttaccgat tcagaaacct tgcgcaaact cgaagagaat ctgcactaca   | 24600 |
| cttttagaca cggctttgtg cggcaggcat gcaagatata taactgggaa ctcaccaacc   | 24660 |
| tggtttccta catgggtatt ctgcatgaga atcgccatagg acaaagcgtg ctgcacagca  | 24720 |
| ccctgaaggg ggaagcccg cgtgattaca tccgcgattg tgtctatctg tacctgtgcc    | 24780 |
| acacgtggca aaccggcatg ggtgtatggc agcaatgttt agaagaacag aacttgaaag   | 24840 |
| agcttgacaa gctcttacag aaatctctta aggttctgtg gacagggttc gacgagcgca   | 24900 |
| ccgtcgcttc cgacctggca gacctcatct tcccagagcg tctcagggtt actttgcgaa   | 24960 |
| acggattgcc tgactttatg agccagagca tgcttaacaa ttttcgctct ttcacctgg    | 25020 |
| aacgctccgg tatcctgccc gccacctgct gcgcactgcc ctccgacttt gtgcctctca   | 25080 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| cctaccgcga gtgcccccg ccgctatgga gtcactgcta cctgttccgt ctggccaact   | 25140 |
| atctctccta ccactcggat gtgatcgagg atgtgagcgg agacggcttg ctggagtgtc  | 25200 |
| actgccgctg caatctgtgc acgccccacc ggtccctagc ttgcaacccc cagttgatga  | 25260 |
| gcgaaacca gataataggc acctttgaat tgcaaggccc cagcagccaa ggcgatgggt   | 25320 |
| cttctcctgg gcaaagtta aaactgaccc cgggactgtg gacctccgcc tacttgcgca   | 25380 |
| agtttgctcc ggaagattac caccctatg aaatcaagtt ctatgaggac caatcacagc   | 25440 |
| ctccaaaggc cgaactttcg gcctgcgtca tcaccagggg ggcaattctg gccaattgc   | 25500 |
| aagccatcca aaaatcccg caagaatttc tactgaaaaa gggttaagggg gtctaccttg  | 25560 |
| acccccagac cggcgaggaa ctcaacacaa ggttccctca ggatgtccca acgacgagaa  | 25620 |
| aacaagaagt tgaagggtgca gccgccgccc ccagaagata tggaggaaga ttgggacagt | 25680 |
| caggcagagg aggcggagga ggacagtctg gaggacagtc tggaggaaga cagtttggag  | 25740 |
| gaggaaaaacg aggaggcaga ggaggtggaa gaagtaaccg ccgacaaaca gttatcctcg | 25800 |
| gctgcggaga caagcaacag cgctaccatc tccgctccga gtcgaggaac ccggcggcgt  | 25860 |
| cccagcagta gatgggacga gaccggacgc ttcccgaacc caaccagcgc ttccaagacc  | 25920 |
| ggtaagaagg atcggcaggg atacaagtcc tggcgggggc ataagaatgc catcatctcc  | 25980 |
| tgcttgcatg agtgcggggg caacatatcc ttcacgcggc gctacttgct attccaccat  | 26040 |
| ggggtgaact ttccgcgcaa tgttttgcat tactaccgtc acctccacag cccctactat  | 26100 |
| agccagcaaa tcccggcagt ctcgacagat aaagacagcg gcggcgacct ccaacagaaa  | 26160 |
| accagcagcg gcagttagaa aatacacaa aagtgcagca acaggaggat taaagattac   | 26220 |
| agccaacgag ccagcgcaaa ccgagagtt aagaaatcgg atctttccaa ccctgtatgc   | 26280 |
| catcttccag cagagtcggg gtcaagagca ggaactgaaa ataaaaaacc gatctctgcg  | 26340 |
| ttcgctcacc agaagttgtt tgtatcacia gagcgaagat caacttcagc gcactctcga  | 26400 |
| ggacgccgag gctctcttca acaagtactg cgcgctgact cttaaagagt aggcagcgac  | 26460 |
| cgcgcttatt caaaaaaggc gggaattaca tcacctcga catgagtaaa gaaattccca   | 26520 |

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cgccttacat gtggagttat caacccccaaa tgggattggc ggcaggcgcc tcccaggact 26580  
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|                                                                    |       |
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| tcactgctcc tgcgattcca tcgagtgcac ctacaccctg ctgaagaccc tatgcggcct  | 28140 |
| aagagacctg ctaccaatga attaaaaaat gattaataaa aaatcactta cttgaaatca  | 28200 |
| gcaataaggt ctctgttgaa attttctccc agcagcacct cacttccctc ttcccaactc  | 28260 |
| tggtattcta aaccccgttc agcggcatac tttctccata ctttaaaggg gatgtcaa    | 28320 |
| tttagctcct ctctgtacc cacaatcttc atgtctttct tcccagatga ccaagagagt   | 28380 |
| ccggctcagt gactccttca accctgtcta cccctatgaa gatgaaagca cctcccaaca  | 28440 |
| cccctttata aacccagggt ttatttcccc aaatggcttc acacaaagcc caaacggagt  | 28500 |
| tcttacttta aaatgtttaa cccactaac aaccacaggc ggatctctac agctaaaagt   | 28560 |
| gggaggggga cttacagtgg atgacaccaa cggttttttg aaagaaaaca taagtgccac  | 28620 |
| cacaccactc gttaagactg gtcactctat aggtttacca ctaggagccg gattgggaac  | 28680 |
| gaatgaaaat aaactttgta tcaaattagg acaaggactt acattcaatt caaacaacat  | 28740 |
| ttgcattgat gacaatatta acaccttatg gacaggagtc aacccaccg aagccaactg   | 28800 |
| tcaaatcatg aactccagt aatctaataa ttgcaaatta attctaacac tagttaaaac   | 28860 |
| tggagcacta gtcactgcat ttgtttatgt tataggagta tctaacaatt ttaatatgct  | 28920 |
| aactacacac agaaatataa attttactgc agagctgttt ttcgattcta ctggtaattt  | 28980 |
| actaactaga ctctcatccc tcaaaactcc acttaatcat aaatcaggac aaaacatggc  | 29040 |
| tactggtgcc attactaatg ctaaagggtt catgcccagc acgactgcct atcctttcaa  | 29100 |
| tgataattct agagaaaaag aaaactacat ttacggaact tgttactaca cagctagtga  | 29160 |
| tcgcactgct tttcccattg acatatctgt catgcttaac cgaagagcaa taaatgacga  | 29220 |
| gacatcatat tgtattcgta taacttgggtc ctggaacaca ggagatgccc cagaggtgca | 29280 |
| aacctctgct acaaccctag tcacctcccc atttaccttt tactacatca gagaagacga  | 29340 |
| ctgacaaata aagtttgcga tcgccaggcc caccatgggc tggagctgca tcatcttggt  | 29400 |

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|                                                                     |       |
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| gtattcacgc aatcagaaaa actacctggc ctggatatcag cagaagccgg gccagcctcc  | 29580 |
| caagctgctg atcttctggg cctccacccg cgaaagcggc gtgccggacc gcttcagcgg   | 29640 |
| aagcggattc ggaactgact ttactctgac cattagctcc ttgcaggcgg aggacgtggc   | 29700 |
| cgtctactac tgccagcagt atttctccta tccgctcacc tttgggcaag gcaccaaggt   | 29760 |
| ggagattaag ggagggggcg gcagcggggg aggcggcagc ggccggcggg gatcgcaggt   | 29820 |
| ccagctcgtc caatccggag ccgaagtcaa gaagccggga gcgtcggta aggtcagctg    | 29880 |
| caaaacttcg cgctacacct tcaactgagta cacgatccac tgggtccgcc aggcgcccgg  | 29940 |
| ccagcggctg gagtggatcg gcgggatcaa cccaaacaac ggaatcccaa attacaatca   | 30000 |
| gaaatttaaa gggcgggtga ctatcacctg ggatacctcg gcctccacgg cgtacatgga   | 30060 |
| gctctcatca ctcatgacgg aggacaccgc ggtctattac tgcgcccgcc gccggatcgc   | 30120 |
| ttatggatac gatgaaggac atgcgatgga ttactggggc cagggcaccc tcgtcacggt   | 30180 |
| gtcgtcagga ggccggcggtt cacagggtgca gctgcagcag tctggggctg aactggcaag | 30240 |
| acctggggcc tcagtgaaga tgtcctgcaa ggcttctggc tacaccttta ctaggtacac   | 30300 |
| gatgcactgg gtaaaacaga ggcctggaca gggctctggaa tggattggat acattaatcc  | 30360 |
| tagccgtggg tataactaatt acaatcagaa gttcaaggac aaggccacat tgactacaga  | 30420 |
| caaatcctcc agcacagcct acatgcaact gagcagcctg acatctgagg actctgcagt   | 30480 |
| ctattactgt gcaagatatt atgatgatca ttactgcctt gactactggg gccaaggcac   | 30540 |
| cactctcaca gtctcctcag gtggcgggtg ctcgggcggg ggtggatctg gtggcggcgg   | 30600 |
| atctgatatc gtgctcactc agtctccagc aatcatgtct gcatctccag gggagaaggt   | 30660 |
| caccatgacc tgcagtgcc a gctcaagtgt aagttacatg aactgggtacc agcagaagtc | 30720 |
| aggcacctcc cccaaaagat ggatttatga cacatccaaa ctggcttctg gagtccctgc   | 30780 |
| tcacttcagg ggcagtgggt ctgggacctc ttactctctc acaatcagcg gcatggaggc   | 30840 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
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| ggggacaaag ttggaaataa accggggaag cggacagtgt actaattatg ctctcttgaa  | 30960 |
| attggctgga gatgttgaga gcaaccctgg acctacagtg ctggcgccag cctggagccc  | 31020 |
| aacaacctat ctctcctgc tgctgctgct gagctcggga ctcagtggga cccaggactg   | 31080 |
| ctccttccaa cacagcccca tctcctccga cttcgctgtc aaaatccgtg agctgtctga  | 31140 |
| ctacctgctt caagattacc cagtcaccgt ggccccaac ctccaggacg aggagctctg   | 31200 |
| cgggggcctc tggcggctgg tcctggcaca gcgctggatg gagcggctca agactgtcgc  | 31260 |
| tgggtccaag atgcaaggct tgctggagcg cgtgaacacg gagatacact ttgtcaccaa  | 31320 |
| atgtgccttt cagccccccc ccagctgtct tcgcttcgtc cagaccaaca tctccgcct   | 31380 |
| cctacaggag acctccgagc agctgggtggc gctgaagccc tggatcactc gccagaactt | 31440 |
| ctcccgggtc ctggagctgc agtgtcagcc cgactcctca accctgccac ccccatggag  | 31500 |
| tccccggccc ctggaggcca cagccccggg aagcggagct actaacttca gcctgctgaa  | 31560 |
| gcaggctgga gacgtggagg agaaccctgg acctcaggtc tccactgctg cccttgccgt  | 31620 |
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| gccgaccgcc tgctgcttca gctacacctc ccgacagatt ccacagaatt tcatagctga  | 31740 |
| ctactttgag acgagcagcc agtgctccaa gcccagtgct atcttcctaa ccaagagagg  | 31800 |
| ccggcaggtc tgtgctgacc ccagtgagga gtgggtccag aaatacgtca gtgacctgga  | 31860 |
| gctgagtgcc ggaagcggag agggcagagg aagtctgcta acatgcggtg acgtcgagga  | 31920 |
| gaatcctgga cctgccttga cttttgcttt actggtggcc ctcttggtgc tcagctgcaa  | 31980 |
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|                                                                     |       |
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| atacagccct tgtgcctggg aggttgtcag agcagaaatc atgagatctt tttctttgtc   | 32460 |
| aacaaacttg caagaaagtt taagaagtaa ggaataagct agcttgactg actgagatac   | 32520 |
| agcgtacctt cagctcacag acatgataag atacattgat gagtttggac aaaccacaac   | 32580 |
| tagaatgcag tgaaaaaaat gctttatttg tgaaatttgt gatgctattg ctttatttgt   | 32640 |
| aaccattata agctgcaata aacaagttaa caacaacaat tgcattcatt ttatgtttca   | 32700 |
| ggttcagggg gaggtgtggg aggtttttta aagcaagtaa aacctctaca aatgtggtag   | 32760 |
| tcgtcagcta tcctgcagga acttgtttat ttgaaaatca attcacaaaa tccgagtagt   | 32820 |
| tattttgcct ccccttccc atttaacaga atacaccaat ctctccccac gcacagcttt    | 32880 |
| aaacatttgg ataccattag atatagacat ggtttttagat tccacattcc aaacagtttc  | 32940 |
| agagcgagcc aatctggggg cagtgataga taaaaatcca tcgggatagt cttttaaagc   | 33000 |
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| cccacataca tgatctcttt tggcatgtgc atattaacaa tctgtctgta ccatggacaa   | 33480 |
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| ccagccatgc attgaagtga accctgctga ttacaatgac aatgaagaac ccaattctct   | 33600 |
| cgaccgtgaa tcacttgaga atgaaaaata tctatagtgg cacaacatag acataaatgc   | 33660 |
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|                                                                   |       |
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| atgcaactgg attgtgtttc aagcaggaga ggagaggga gagacggaag aaccatgtta  | 34200 |
| atTTTTattc caaacgatct cgcagtactt caaattgtag atcgcgcaga tggcatctct | 34260 |
| cgccccact gtgttggtga aaaagcacag ctagatcaaa agaaatgcga ttttcaaggt  | 34320 |
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|                                                                    |       |
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| ataaaaaata taattatttc tctgctgctg ttcaggcaac gtcgcccccg gtccctctaa  | 35340 |
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| gcacaagctc taaagtgact ctccaacctc tccacaatat atatatacac aagccctaaa  | 35460 |
| ctgacgtaat gggagtaaag tgtaaaaaat cccgccaaac ccaacacaca ccccgaaact  | 35520 |
| gcgtcaccag ggaaaagtac agtttctactt ccgcaatccc aacaggcgta acttcctctt | 35580 |
| tctcacggta cgtgatatcc cactaacttg caacgtcatt ttcccacggc cgcaccgccc  | 35640 |
| cttttagccg ttaacccac agccaatcac cacacgatcc acacttttta aaatcacctc   | 35700 |
| atttacatat tggcaccatt ccatctataa ggtatattat atagataga              | 35749 |

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 <211> 34972  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> NG-640 Genome

|                                                                     |     |
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| <400> 102                                                           |     |
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| aaaaagtgtg gatcgtgtgg tgattggctg tgggggttaac ggctaaaagg ggcgggtgcga | 120 |
| ccgtgggaaa atgacgtttt gtgggggtgg agtttttttg caagttgtcg cgggaaatgt   | 180 |
| gacgcataaa aaggcttttt tctcacggaa ctacttagtt ttcccacggc atttaacagg   | 240 |
| aaatgaggta gttttgaccg gatgcaagtg aaaattgttg attttcgcgc gaaaactgaa   | 300 |
| tgaggaagtg tttttctgaa taatgtggta tttatggcag ggtggagtat ttgttcaggg   | 360 |
| ccaggtagac ttgacccat tacgtggagg tttcgattac cgtgtttttt acctgaattt    | 420 |
| ccgcgtaccg tgtcaaagtc ttctgttttt acgtagggtg cagctgatcg ctagggattt   | 480 |
| tataacctcag ggtttgtgtc aagaggccac tcttgagtgc cagcgagaag agttttctcc  | 540 |

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| aatctctgct  | gagactggaa | atgaaatatt  | ggagcttggtg | gtgcacgccc | tgatgggaga | 660  |
| cgatccggag  | ccacctgtgc | agctttttga  | gcctcctacg  | cttcaggaac | tgtatgattt | 720  |
| agaggtagag  | ggatcggagg | attctaata   | ggaagctgta  | aatggctttt | ttaccgattc | 780  |
| tatgctttta  | gctgctaata | aagggttaga  | attagatccg  | cctttggaca | cttttgatac | 840  |
| tccaggggta  | attgtggaaa | gcggtacagg  | tgtaagaaaa  | ttacctgatt | tgagttccgt | 900  |
| ggactgtgat  | ttgcactgct | atgaagacgg  | gtttcctccg  | agtgatgagg | aggaccatga | 960  |
| aaaggagcag  | tccatgcaga | ctgcagcggg  | tgagggagtg  | aaggctgcca | atgttggttt | 1020 |
| tcagttggat  | tgcccggagc | ttcctggaca  | tggctgtaag  | tcttgtgaat | ttcacaggaa | 1080 |
| aaatactgga  | gtaaaggaac | tgttatgttc  | gctttgttat  | atgagaacgc | actgccactt | 1140 |
| tatttacagt  | aagtgtgttt | aagttaaaat  | ttaaaggaat  | atgctgtttt | tcacatgtat | 1200 |
| attgagtgtg  | agttttgtgc | ttcttattat  | aggtcctgtg  | tctgatgctg | atgaatcacc | 1260 |
| atctcctgat  | tctactacct | cacctcctga  | gattcaagca  | cctgttcctg | tggacgtgcg | 1320 |
| caagcccatt  | cctgtgaagc | ttaagcctgg  | gaaacgtcca  | gcagtggaaa | aacttgagga | 1380 |
| cttgttacag  | ggtggggacg | gacctttgga  | cttgagtaca  | cggaaacgtc | caagacaata | 1440 |
| agtgttccat  | atccgtgttt | acttaagggtg | acgtcaatat  | ttgtgtgaca | gtgcaatgta | 1500 |
| ataaaaaatat | gttaactggt | cactgggtttt | tattgctttt  | tgggcgggga | ctcaggtata | 1560 |
| taagtagaag  | cagacctgtg | tggtagctc   | ataggagctg  | gctttcatcc | atggagggtt | 1620 |
| gggccatttt  | ggaagacctt | aggaagacta  | ggcaactggt  | agagaacgct | tcggacggag | 1680 |
| tctccggttt  | ttggagattc | tggttcgcta  | gtgaattagc  | tagggtagtt | tttaggataa | 1740 |
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| ctcttaattt  | gggccatcag | gttcacttta  | aagaaaaagt  | tttatcagtt | ttagactttt | 1860 |
| caaccccagg  | tagaactgct | gctgctgtgg  | cttttcttac  | ttttatatta | gataaatgga | 1920 |
| tcccgacagac | tcatttcagc | aggggatacg  | ttttggattt  | catagccaca | gcattgtgga | 1980 |

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|                                                                     |      |
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| aagaggacaa cccgagagcc ggccctggacc ctccagtgga ggaggcggag tagctgactt  | 2160 |
| gtctcctgaa ctgcaacggg tgcttactgg atctacgtcc actggacggg ataggggcgt   | 2220 |
| taagaggagagg agggcatcta gtggtactga tgctagatct gagttggctt taagtttaat | 2280 |
| gagtcgcaga cgtcctgaaa ccattttggtg gcatgagggtt cagaaagagg gaagggatga | 2340 |
| agtttctgta ttgcaggaga aatattcact ggaacagggtg aaaacatggtt ggttggagcc | 2400 |
| tgaggatgat tgggagggtg ccattaaaaa ttatgccaa atagctttga ggctgataa     | 2460 |
| acagtataag attactagac ggattaatat ccggaatgct tgttacatat ctggaaatgg   | 2520 |
| ggctgagggtg gtaatagata ctcaagacaa ggcagttatt agatgctgca tgatggatat  | 2580 |
| gtggcctggg gtagtcggta tggaagcagt aacttttgta aatgttaagt ttaggggaga   | 2640 |
| tggttataat ggaatagtgt ttatggccaa taccaaactt atattgcatg gttgtagctt   | 2700 |
| ttttggtttc aacaatacct gtgtagatgc ctggggacag gttagtgtac ggggatgtag   | 2760 |
| tttctatgcg tgttggattg ccacagctgg cagaaccaag agtcaattgt ctctgaagaa   | 2820 |
| atgcatattt caaagatgta acctgggcat tctgaatgaa ggcgaagcaa ggggccgcca   | 2880 |
| ctgcgcttct acagatactg gatgttttat tttgattaag ggaaatgcca gcgtaaagca   | 2940 |
| taacatgatt tgcggtgctt ccgatgagag gccttatcaa atgctcactt gtgctgggtg   | 3000 |
| gcattgtaat atgctggcta ctgtgcatat tgtttcccat caacgcaaaa aatggcctgt   | 3060 |
| ttttgatcac aatgtgatga cgaagtgtac catgcatgca ggtgggcgta gaggaatggt   | 3120 |
| tatgccttac cagtgtaaaca tgaatcatgt gaaagtgttg ttggaaccag atgccttttc  | 3180 |
| cagaatgagc ctaacaggaa tttttgacat gaacatgcaa atctggaaga tcctgaggta   | 3240 |
| tgatgatacg agatcgaggg tacgcgcatg cgaatgcgga ggcaagcatg ccaggttcca   | 3300 |
| gccggtgtgt gtagatgtga ctgaagatct cagaccggat catttggtta ttgcccgcac   | 3360 |
| tggagcagag ttcggatcca gtggagaaga aactgactaa ggtgagtatt gggaaaactt   | 3420 |

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| tggggtggga ttttcagatg gacagattga gtaaaaaattt gttttttctg tcttgagct  | 3480 |
| gtcatgagtg gaaacgcttc ttttaagggg ggagtcttca gcccttatct gacagggcgt  | 3540 |
| ctcccatcct gggcaggagt tcgtcagaat gttatgggat ctactgtgga tggaagaccc  | 3600 |
| gtccaacccg ccaattcttc aacgctgacc tatgctactt taagttcttc acctttggac  | 3660 |
| gcagctgcag ctgccgccgc cgcttctgtt gccgctaaca ctgtgcttgg aatgggttac  | 3720 |
| tatggaagca tcatggctaa ttccacttcc tctaataacc cttctaccct gactcaggac  | 3780 |
| aagttacttg tccttttggc ccagctggag gctttgaccc aacgtctggg tgaactttct  | 3840 |
| cagcaggtgg tcgagttgcg agtacaaact gagtctgctg tcggcacggc aaagtctaaa  | 3900 |
| taaaaaaatc ccagaatcaa tgaataaata aacaagcttg ttgttgattt aaaatcaagt  | 3960 |
| gtttttattt catttttcgc gcacgggatg ccctagacca ccgatctcta tcattgagaa  | 4020 |
| ctcgggtgat tttttccagg atcctataga ggtgggattg aatgtttaga tacatgggca  | 4080 |
| ttaggccgtc tttggggtgg agatagctcc attgaaggga ttcattgctcc ggggtagtgt | 4140 |
| tgtaaatcac ccagtcataa caaggctgca gtgcatgggtg ttgcacaata tcttttagaa | 4200 |
| gtaggctgat tgccacagat aagcccttgg tgtagggtgtt taaaaaccgg ttgagctggg | 4260 |
| atgggtgcat tcggggtgaa attatgtgca ttttggattg gatttttaag ttggcaatat  | 4320 |
| tgccgccaag atcccgctctt gggttcatgt tatgaaggac caccaagacg gtgtatccgg | 4380 |
| tacatttagg aaatttatcg tgcagcttgg atggaaaagc gtggaaaaat ttggagacac  | 4440 |
| ccttgtgtcc tccaagattt tccatgcact catccatgat aatagcaatg gggccgtggg  | 4500 |
| cagcggcgcg ggcaaacacg ttccgtgggt ctgacacatc atagttatgt tcctgagtta  | 4560 |
| aatcatcata agccatttta atgaatttgg ggcggagagt accagattgg ggtatgaatg  | 4620 |
| ttccttcggg ccccgagca tagttcccct cacagatttg catttcccaa gctttcagtt   | 4680 |
| ccgagggtgg aatcatgtcc acctgggggg ctatgaaaaa caccgtttct ggggcggggg  | 4740 |
| tgattaattg tgatgatagc aaatttctga gcaattgaga tttgccacat ccggtggggc  | 4800 |
| cataaatgat tccgattacg ggttgcaggt ggtagtttag ggaacggcaa ctgccgtctt  | 4860 |

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| ctcgaagcaa gggggccacc tcgttcatca tttcccttac atgcatatth tcccgcacca  | 4920 |
| aatccattag gaggcgctct cctcctagtg atagaagttc ttgtagtgag gaaaagtttt  | 4980 |
| tcagcggttt cagaccgtca gccatgggca ttttggagag agtttgctgc aaaagttcta  | 5040 |
| gtctgttcca cagttcagtg atgtgttcta tggcatctcg atccagcaga cctcctcggt  | 5100 |
| tcgcgggttt ggacggctcc tggaataggg tatgagacga tgggcgtcca gcgctgccag  | 5160 |
| ggttcgggtcc ttccagggtc tcagtgttcg agtcagggtt gtttccgtca cagtgaaggg | 5220 |
| gtgtgcgctt gcttgggcgc ttgccagggt gcgcttcaga ctcatcctgc tggtcgaaaa  | 5280 |
| cttctgtcgc ttggcgccct gtatgtcggc caagtagcag tttacatga gttcgtagtt   | 5340 |
| gagcgctcgc gctgcgtggc ctttggcgcg gagcttacct ttggaagttt tcttgcatat  | 5400 |
| cgggcagtat aggcatttca gcgcatacaa cttgggcgca aggaaaacgg attctggggga | 5460 |
| gtatgcatct gcgccgcagg aggcgcaaac agtttcacat tccaccagcc aggttaaadc  | 5520 |
| cggttcattg ggggtcaaaaa caagttttcc gccatattht ttgatgcgtt tcttaccttt | 5580 |
| ggctctccatg agttcgtgtc ctggttgagt gacaaacagg ctgtccgtgt ccccgtagac | 5640 |
| tgatthttaca ggctctttct ccagtggagt gcctcgggtt tcttcgtaca ggaactctga | 5700 |
| ccactctgat acaaaggcgc gcgtccaggc cagcacaaag gaggctatgt gggaggggta  | 5760 |
| gcgatcgttg tcaaccaggg ggtccacctt ttccaaagta tgcaaacaca tgtcacctc   | 5820 |
| ttcaacatcc aggaatgtga ttggcttgta ggtgtatthc acgtgacctg ggggtccccgc | 5880 |
| tgggggggta taaaaggggg cggttctttg ctcttcctca ctgtcttccg gatcgtgtc   | 5940 |
| caggaacgtc agctgttggg gtaggtatth cctctcgaag gcgggcatga cctctgcact  | 6000 |
| caggttgtca gtttctaaga acgaggagga tttgatattg acagtgccgg ttgagatgcc  | 6060 |
| tttcatgagg ttttcgtcca tctggtcaga aaacacaatt tttttattgt caagtttggt  | 6120 |
| ggcaaatgat ccatacaggg cgttggataa aagtttggca atggatcgca tggtttggtt  | 6180 |
| cttttccttg tccgcgcgct ctttggcggc gatgttgagt tggacatact cgcgtgccag  | 6240 |
| gcacttccat tcggggaaga tagttgttaa ttcactctggc acgattctca cttgccaccc | 6300 |

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|                                                                     |      |
|---------------------------------------------------------------------|------|
| tcgattatgc aaggtaatta aatccacact ggtggccacc tcgcctcgaa ggggttcatt   | 6360 |
| ggtccaacag agcctacctc ctttcctaga acagaaaagg ggaagtgggt ctagcataag   | 6420 |
| ttcatcggga gggctctgcat ccatggtaaa gattcccgga agtaaattcct tatcaaaata | 6480 |
| gctgatggga gtgggggtcat ctaaggccat ttgccattct cgagctgcca gtgcgcgctc  | 6540 |
| atatgggtta aggggactgc cccatggcat gggatgggtg agtgcagagg catacatgcc   | 6600 |
| acagatgtca tagacgtaga tgggatcctc aaagatgcct atgtaggttg gatagcatcg   | 6660 |
| ccccctctg atacttgctc gcacatagtc atatagttca tgtgatggcg ctagcagccc    | 6720 |
| cggacccaag ttggtgcgat tgggtttttc tgttctgtag acgatctggc gaaagatggc   | 6780 |
| gtgagaattg gaagagatgg tgggtctttg aaaaatgttg aaatgggcat gaggtagacc   | 6840 |
| tacagagtct ctgacaaagt gggcataaga ttcttgaagc ttggttacca gttcggcggt   | 6900 |
| gacaagtacg tctagggcgc agtagtcaag tgtttcttga atgatgtcat aacctggttg   | 6960 |
| gtttttcttt tcccacagtt cgcggttgag aaggatttct tcgcgatcct tccagtactc   | 7020 |
| ttctagcgga aaccctgtctt tgtctgcacg gtaagatcct agcatgtaga actgattaac  | 7080 |
| tgctttgtaa gggcagcagc ctttctctac gggtagagag tatgcttgag cagcttttcg   | 7140 |
| tagcgaagcg tgagtaaggg caaagggtgc tctgaccatg actttgagga attggtattt   | 7200 |
| gaagtcgatg tcgtcacagg ctccctgttc ccagagttgg aagtctaccc gtttcttgta   | 7260 |
| ggcgggggttg ggcaaagcga aagtaacatc attgaagaga atcttgccgg ccctgggcat  | 7320 |
| gaaattgcga gtgatgcgaa aaggctgtgg tacttccgct cggttattga taacctgggc   | 7380 |
| agctaggacg atctcgtcga aaccgttgat gttgtgtcct acgatgtata attctatgaa   | 7440 |
| acgcggcgtg cctctgacgt gaggtagctt actgagctca tcaaaggtta ggtctgtggg   | 7500 |
| gtcagataag gcgtagtggt cgagagccca ttcgtgcagg tgaggattcg ctttaaggaa   | 7560 |
| ggaggaccag aggtccactg ccagtgtgtt ttgtaactgg tcccgggtact gacgaaaatg  | 7620 |
| ccgtccgact gccatTTTTT ctgggggtgac gcaatagaag gtttgggggt cctgccgcca  | 7680 |
| gcgatccac ttgagtttta tggcgaggtc ataggcgatg ttgacgagcc gctggtctcc    | 7740 |

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| agagagtttc atgaccagca tgaaggggat tagctgcttg ccaaaggacc ccatccaggt  | 7800 |
| gtaggtttcc acatcgtagg tgagaaagag cttttctgtg cgaggatgag agccaatcgg  | 7860 |
| gaagaactgg atctcctgcc accagttgga ggaatggctg ttgatgtgat ggaagtagaa  | 7920 |
| ctccctgcga cgcgccgagc attcatgctt gtgcttgtag agacggccgc agtagtcgca  | 7980 |
| gcgttgcacg ggttgatatc cgtgaatgag ttgtacctgg cttcccttga cgagaaattt  | 8040 |
| cagtgggaag ccgaggcctg gcgattgtat ctcgtgcttt actatgttgt ctgcatcggc  | 8100 |
| ctgttcatct tctgtctcga tgggtggcat gctgacgagc cctcgcggga ggcaagtcca  | 8160 |
| gacctcggcg cggcaggggc ggagctcgag gacgagagcg cgcaggctgg agctgtccag  | 8220 |
| ggtcctgaga cgctgcggac tcaggtagt aggcagtgct aggagattaa cttgcatgat   | 8280 |
| cttttgagg gcgtgcggga ggttcagata gtacttgatc tcaacgggtc cgttggtgga   | 8340 |
| gatgtcgatg gcttgcaagg ttccgtgtcc cttgggcgct accaccgtgc cttgttttt   | 8400 |
| cattttggac ggcggtggct ctgttgcttc ttgcatgttt agaagcgggtg tcgaggcg   | 8460 |
| gcaccgggcg gcagggcg ctcgggaccc ggcgcatgg ctggcagtgg tacgtcggcg     | 8520 |
| ccgcgcgcgg gtaggttctg gtactgcgcc ctgagaagac tcgcatgcgc gacgacgcgg  | 8580 |
| cggttgacat cctggatctg acgcctctgg gtgaaagcta ccggccccgt gagcttgaac  | 8640 |
| ctgaaagaga gttcaacaga atcaatctcg gtatcgttga cggcggcttg cctaaggatt  | 8700 |
| tcttgcacgt caccagagtt gtcctggtag gcgatctccg ccatgaactg ctcgatctct  | 8760 |
| tcctcttgaa gatctccgcg gcccgctctc tcgacgggtg ccgcgaggtc gttggagatg  | 8820 |
| cgcccaatga gttgagagaa tgcattcatg cccgcctcgt tccagacgcg gctgtagacc  | 8880 |
| acggccccc cgggatctct cgcgcgcatg accacctggg cgaggttgag ctccacgtgg   | 8940 |
| cgggtgaaga ccgcatagtt gcataggcgc tggaaaaggt agttgagtgt ggtggcgatg  | 9000 |
| tgctcggatga cgaagaaata catgatccat cgtctcagcg gcatctcgct gacatcgccc | 9060 |
| agagcttcca agcgctccat ggccctcgtag aagtccacgg caaaattaaa aaactgggag | 9120 |
| tttcgcgcgg acacggtcaa ctctcttcc agaagacgga taagttcggc gatgggtggtg  | 9180 |

## eolf-othd-000005

|                                                                    |       |
|--------------------------------------------------------------------|-------|
| cgcacctcgc gctcgaaagc ccctgggatt tcttcctcaa tctcttcttc ttccactaac  | 9240  |
| atctcttcct cttcaggtgg ggctgcagga ggagggggaa cgcggcgacg ccggcggcgc  | 9300  |
| acgggcagac ggtcgatgaa tctttcaatg acctctccgc ggccggcgcg catggtttca  | 9360  |
| gtgacggcgc ggccgttctc gcgcggctgc agagtaaaaa caccgccgcg catctcctta  | 9420  |
| aagtggtgac tgggaggttc tccgtttggg agggagaggg cgctgattat acattttatt  | 9480  |
| aattggcccc tagggactgc acgcagagat ctgatcgtgt caagatccac gggatctgaa  | 9540  |
| aacctttcga cgaaagcgtc taaccagtca cagtcacaag gtaggctgag tacggcttct  | 9600  |
| tgtgggcggg ggtggttatg tggtcggctt gggtcttctg tttcttcttc atctcgggaa  | 9660  |
| ggtgagacga tgctgctggt gatgaaatta aagtaggcag ttctaagacg gcggatggtg  | 9720  |
| gcgaggagca ccaggtcttt gggctccggct tgctggatac gcaggcgatt ggccattccc | 9780  |
| caagcattat cctgacatct agcaagatct ttgtagtagt cttgcatgag ccgttctacg  | 9840  |
| ggcacttctt cctcaccctg tctgccatgc atacgtgtga gtccaaatcc gcgcattggt  | 9900  |
| tgtaccagtg ccaagtcagc tacgactctt tcggcgagga tggcttgctg tacttgggta  | 9960  |
| agggtggctt gaaagtcatc aaaatccaca aagcggtggt aagctcctgt attaatggtg  | 10020 |
| taagcacagt tggccatgac tgaccagtta actgtctggt gaccagggcg cacgagctcg  | 10080 |
| gtgtatttaa ggcgcaata ggcgcggtg tcaaagatgt aatcgttgca ggtgcgcacc    | 10140 |
| agatactggt accctataag aaaatgcggc ggtggttggc ggtagagagg ccatcgttct  | 10200 |
| gtagctggag cgccaggggc gaggtcttcc aacataaggc ggtgatagcc gtagatgtac  | 10260 |
| ctggacatcc aggtgattcc tgcggcggtg gtagaagccc gaggaactc gcgtacgcgg   | 10320 |
| ttccaaatgt tgcgtagcgg catgaagtag ttcattgtag gcacggtttg accagtgagg  | 10380 |
| cgcgcgcagt cattgatgct ctatagacac ggagaaaatg aaagcgttca gcgactcgac  | 10440 |
| tccgtagcct ggaggaacgt gaacgggttg ggtcgcggtg taccgggtt cgagacttgt   | 10500 |
| actcgagccg gccggagccg cggctaacgt ggtattggca ctcccgcttc gaccagcct   | 10560 |
| acaaaaatcc aggatacggg atcgagtcgt tttgctgggt tccgaatggc aggggaagtga | 10620 |



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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| gtcctatttt ttttttttgc cgctcagatg catcccgtgc tgcgacagat gcgcccccaa   | 10680 |
| caacagcccc cctcgcagca gcagcagcag caatcacaaa aggctgtccc tgcaactact   | 10740 |
| gcaactgccg ccgtgagcgg tgcgggacag cccgcctatg atctggactt ggaagagggc   | 10800 |
| gaaggactgg cacgtctagg tgcgccttca cccgagcggc atccgcgagt tcaactgaaa   | 10860 |
| aaagattctc gcgaggcgta tgtgccccaa cagaacctat ttagagacag aagcggcgag   | 10920 |
| gagccggagg agatgcgagc ttcccgtttt aacgcgggtc gtgagctgcg tcacggtttg   | 10980 |
| gaccgaagac gagtgttgcg ggacgaggat ttcgaagttg atgaaatgac agggatcagt   | 11040 |
| cctgccaggg cacacgtggc tgcagccaac cttgtatcgg cttacgagca gacagtaaag   | 11100 |
| gaagagcgta acttccaaaa gtcttttaaat aatcatgtgc gaaccctgat tgcccgcgaa  | 11160 |
| gaagttaccc ttggtttgat gcatttgtgg gatttgcgag aagctatcat tcagaaccct   | 11220 |
| actagcaaac ctctgaccgc ccagctgttt ctggtggtgc aacacagcag agacaatgag   | 11280 |
| gctttcagag aggcgctgct gaacatcacc gaacccgagg ggagatgggt gtatgatctt   | 11340 |
| atcaacattc tacagagtat catagtgcag gagcggagcc tgggcctggc cgagaagggtg  | 11400 |
| gctgccatca attactcggg tttagagcttg ggaaaatatt acgctcgcaa aatctacaag  | 11460 |
| actccatacg ttcccataga caaggagggtg aagatagatg gggttctacat gcgcatgacg | 11520 |
| ctcaaggctc tgacctgag cgatgatctt ggggtgtatc gcaatgacag aatgcatcgc    | 11580 |
| gcggttagcg ccagcaggag gcgcgagtta agcgacaggg aactgatgca cagtttgcaa   | 11640 |
| agagctctga ctggagctgg aaccgagggg gagaattact tcgacatggg agctgacttg   | 11700 |
| cagtggcagc ctagtcgcag ggctctgagc gccgcgacgg caggatgtga gcttccttac   | 11760 |
| atagaagagg cggatgaagg cgaggaggaa gagggcgagt acttggaaga ctgatggcac   | 11820 |
| aacccgtgtt ttttgctaga tggaacagca agcaccggat cccgcaatgc gggcggcgct   | 11880 |
| gcagagccag ccgtccggca ttaactcctc ggacgattgg acccaggcca tgcaacgtat   | 11940 |
| catggcggtg acgactcgca accccgaagc ctttagacag caaccccagg ccaaccgtct   | 12000 |
| atcggccatc atggaagctg tagtgccttc ccgctctaata cccactcatg agaaggctct  | 12060 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| ggccatcgtg aacgcgttgg tggagaacaa agctattcgt ccagatgagg ccggactggt   | 12120 |
| atacaacgct ctcttagaac gcgtggctcg ctacaacagt agcaatgtgc aaaccaatth   | 12180 |
| ggaccgtatg ataacagatg tacgcgaagc cgtgtctcag cgcgaaaggt tccagcgtga   | 12240 |
| tgccaacctg ggttcgctgg tggcgtaaaa tgctttcttg agtactcagc ctgctaattgt  | 12300 |
| gccgcgtggt caacaggatt atactaactt ttttaagtgt ttgagactga tggatatcaga  | 12360 |
| agtacctcag agcgaagtgt atcagtccgg tcctgattac ttctttcaga ctagcagaca   | 12420 |
| gggcttgtag acggtaaatc tgagccaagc ttttaaaaaac cttaaagggtt tgtggggagt | 12480 |
| gcatgccccg gtaggagaaa gagcaaccgt gtctagcttg ttaactccga actccgcct    | 12540 |
| attattactg ttggtagctc ctttcaccga cagcggtagc atcgaccgta attcctatth   | 12600 |
| gggttaccta ctaaacctgt atcgcggaagc catagggcaa agtcagggtgg acgagcagac | 12660 |
| ctatcaagaa attaccaag tcagtcgcgc tttgggacag gaagacactg gcagtttgga    | 12720 |
| agccactctg aacttcttgc ttaccaatcg gtctcaaaag atccctcctc aatatgctct   | 12780 |
| tactgcggag gaggagagga tccttagata tgtgcagcag agcgtgggat tgtttctgat   | 12840 |
| gcaagagggg gcaactccga ctgcagcact ggacatgaca gcgcgaaata tggagcccag   | 12900 |
| catgtatgcc agtaaccgac ctttcattaa caaactgctg gactacttgc acagagctgc   | 12960 |
| cgctatgaac tctgattatt tcaccaatgc catcttaaac ccgcactggc tgccccacc    | 13020 |
| tggtttctac acgggcgaat atgacatgcc cgaccctaag gacggatttc tgtgggacga   | 13080 |
| cgtggacagc gatgtttttt cacctctttc tgatcatcgc acgtggaaaa aggaaggcgg   | 13140 |
| cgatagaatg cattcttctg catcgctgtc cggggctcatg ggtgctaccg cggctgagcc  | 13200 |
| cgagtctgca agtccttttc ctagtctacc cttttctcta cacagtgtac gtagcagcga   | 13260 |
| agtgggtaga ataagtcgcc cgagtttaat gggcgaagag gagtatctaa acgattcctt   | 13320 |
| gctcagaccg gcaagagaaa aaaattttccc aaacaatgga atagaaagtt tggtaggataa | 13380 |
| aatgagtaga tggaagactt atgctcagga tcacagagac gagcctggga tcatggggat   | 13440 |
| tacaagtaga gcgagccgta gacgccagcg ccatgacaga cagaggggtc ttgtgtggga   | 13500 |

## eolf-othd-000005

|             |            |            |            |             |            |       |
|-------------|------------|------------|------------|-------------|------------|-------|
| cgatgaggat  | tcggccgatg | atagcagcgt | gctggacttg | ggtgggagag  | gaaggggcaa | 13560 |
| cccgtttgct  | catttgcgcc | ctcgttggg  | tggtatgttg | taaaaaaaa   | taaaaaaaa  | 13620 |
| actcaccaag  | gccatggcga | cgagcgtacg | ttcgttcttc | tttattatct  | gtgtctagta | 13680 |
| taatgaggcg  | agtcgtgcta | ggcggagcgg | tggtgtatcc | ggagggtcct  | cctccttcgt | 13740 |
| acgagagcgt  | gatgcagcag | cagcaggcga | cggcggtgat | gcaatcccca  | ctggaggctc | 13800 |
| cctttgtgcc  | tccgcgatac | ctggcaccta | cggagggcag | aaacagcatt  | cgttattcgg | 13860 |
| aactggcacc  | tcagtacgat | accaccaggt | tgtatctggt | ggacaacaag  | tcggcggaca | 13920 |
| ttgcttctct  | gaactatcag | aatgaccaca | gcaacttctt | gaccacgggtg | gtgcaaaaca | 13980 |
| atgactttac  | ccctacggaa | gccagcaccc | agaccattaa | ctttgatgaa  | cgatcgcggt | 14040 |
| ggggcgggtca | gctaaagacc | atcatgcata | ctaacatgcc | aaacgtgaac  | gagtatatgt | 14100 |
| ttagtaacaa  | gttcaaagcg | cgtgtgatgg | tgtccagaaa | acctcccgac  | ggtgctgcag | 14160 |
| ttggggatac  | ttatgatcac | aagcaggata | ttttgaaata | tgagtggttc  | gagtttactt | 14220 |
| tgccagaagg  | caacttttca | gttactatga | ctattgattt | gatgaacaat  | gccatcatag | 14280 |
| ataattactt  | gaaagtgggt | agacagaatg | gagtgcctga | aagtgacatt  | ggtgttaagt | 14340 |
| tcgacaccag  | gaacttcaag | ctgggatggg | atcccgaac  | caagttgatc  | atgcctggag | 14400 |
| tgtatacgta  | tgaagccttc | catcctgaca | ttgtcttact | gcctggctgc  | ggagtggatt | 14460 |
| ttaccgagag  | tcgtttgagc | aaccttcttg | gtatcagaaa | aaaacagcca  | tttcaagagg | 14520 |
| gttttaagat  | tttgtatgaa | gatttagaag | gtggtaatat | tccggccctc  | ttggatgtag | 14580 |
| atgcctatga  | gaacagtaag | aaagaacaaa | aagccaaaat | agaagctgct  | acagctgctg | 14640 |
| cagaagctaa  | ggcaaacata | gttgccagcg | actctacaag | ggttgctaac  | gctggagagg | 14700 |
| tcagaggaga  | caattttgcg | ccaacacctg | ttccgactgc | agaatcatta  | ttggccgatg | 14760 |
| tgtctgaagg  | aacggacgtg | aaactcacta | ttcaacctgt | agaaaaagat  | agtaagaata | 14820 |
| gaagctataa  | tgtgttgga  | gacaaaatca | acacagccta | tcgcagttgg  | tatctttcgt | 14880 |
| acaattatgg  | cgatcccgaa | aaaggagtgc | gttcctggac | attgctcacc  | acctcagatg | 14940 |

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|                                     |                                   |       |
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| tcacctgcgg agcagagcag gtctactggg    | cgcttccaga catgatgaag gatcctgtca  | 15000 |
| ctttccgctc cactagacaa gtcagtaact    | accctgtggg ggggtgcagag cttatgccc  | 15060 |
| tcttctcaaa gagcttctac aacgaacaag    | ctgtgtactc ccagcagctc cgccagtcca  | 15120 |
| cctcgcttac gcacgtcttc aaccgctttc    | ctgagaacca gattttaatc cgtccgccgg  | 15180 |
| cgcccacat taccaccgtc agtgaaaacg     | ttcctgtctt cacagatcac gggaccctgc  | 15240 |
| cggtgcgcag cagtatccgg ggagtccaac    | gtgtgaccgt tactgacgcc agacgccgca  | 15300 |
| cctgtcccta cgtgtacaag gcactgggca    | tagtcgcacc gcgcgtcctt tcaagccgca  | 15360 |
| ctttctaataa aaaaaaaaaa tgtccattct   | tatctcgccc agtaataaca ccggttgggg  | 15420 |
| tctgcgcgct ccaagcaaga tgtacggagg    | cgcacgcaaa cgcttctaccc aacatcctgt | 15480 |
| ccgtgttcgc ggacattttc gcgctccatg    | ggggcgccctc aagggccgca ctcgcgttcg | 15540 |
| aaccaccgtc gatgatgtaa tcgatcagg     | ggttgccgac gcccgttaatt atactcctac | 15600 |
| tgcgcttaca tctactgtgg atgcagttat    | tgacagtgtg gtggctgacg ctcgcaacta  | 15660 |
| tgctcgacgt aagagccggc gaaggcgc      | atgccagacgc caccgagcta ccactgccat | 15720 |
| gcgagccgca agagctctgc tacgaagagc    | tagacgcgtg gggcgaagag ccatgcttag  | 15780 |
| ggcggccaga cgtgcagctt cgggcgccag    | cgccggcagg tcccgcaggc aagcagccgc  | 15840 |
| tgctgcagcg gcgactattg ccgacatggc    | ccaatcgcgga agaggcaatg tatactgggt | 15900 |
| gcgtgacgct gccaccggtc aacgtgtacc    | cgtgcgcacc cgtccccctc gcacttagaa  | 15960 |
| gatactgagc agtctccgat gttgtgtccc    | agcggcgagg atgtccaagc gcaaatacaa  | 16020 |
| ggaagaaatg ctgcaggtta tcgcacctga    | agtctacggc caaccgttga aggatgaaaa  | 16080 |
| aaaaccccg c aaaaatcaagc ggggttaaaaa | ggacaaaaaa gaagaggaag atggcgatga  | 16140 |
| tgggctggcg gagtttgtgc gcgagtttgc    | cccacggcga cgcgtgcaat ggcgtggg    | 16200 |
| caaagttcga catgtgttga gacctggaac    | ttcgggtggc tttacacccg gcgagcggtc  | 16260 |
| aagcgctact ttttaagcgtt cctatgatga   | ggtgtacggg gatgatgata ttcttgagca  | 16320 |
| ggcggctgac cgattaggcg agtttgctta    | tggcaagcgt agtagaataa cttccaagga  | 16380 |

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|             |            |            |            |            |             |       |
|-------------|------------|------------|------------|------------|-------------|-------|
| tgagacagtg  | tcgataccct | tggatcatgg | aaatcccacc | cctagtctta | aaccggtcac  | 16440 |
| tttgcagcaa  | gtgttaccg  | taactccg   | aacaggtgtt | aaacgcgaag | gtgaagattt  | 16500 |
| gtatcccact  | atgcaactga | tggtagccaa | acgccagaag | ttggaggacg | ttttggagaa  | 16560 |
| agtaaaagtg  | gatccagata | ttcaacctga | ggttaaagtg | agacccatta | agcaggtagc  | 16620 |
| gcctgggtctg | ggggtacaaa | ctgtagacat | taagattccc | actgaaagta | tggaagtgc   | 16680 |
| aactgaaccc  | gcaaagccta | ctgccacctc | cactgaagtg | caaacggatc | catggatgcc  | 16740 |
| catgcctatt  | acaactgacg | ccgccggtcc | cactcgaaga | tcccgcgaa  | agtacgggtcc | 16800 |
| agcaagtctg  | ttgatgccc  | attatgttgt | acacccatct | attattccta | ctcctgggtta | 16860 |
| ccgaggcact  | cgctactatc | gcagccgaaa | cagtacctcc | cgccgtcgcc | gcaagacacc  | 16920 |
| tgcaaatacg  | agtcgtcgcc | gtagacgcac | aagcaaaccg | actcccggcg | ccctgggtgcg | 16980 |
| gcaagtgtac  | cgcaatggta | gtgcggaacc | tttgacactg | ccgcgtgcgc | gttaccatcc  | 17040 |
| gagtatcatc  | acttaataca | tgttgccgct | gcctccttgc | agatatggcc | ctcacttgtc  | 17100 |
| gccttcgcgt  | tcccatcact | ggttaccgag | gaagaaactc | gcgccgtaga | agagggatgt  | 17160 |
| tgggacgcgg  | aatgcgacgc | tacaggcgac | ggcgtgctat | ccgcaagcaa | ttgcgggggtg | 17220 |
| gttttttacc  | agccttaatt | ccaattatcg | ctgctgcaat | tggcgcgata | ccaggcatag  | 17280 |
| cttccgtggc  | ggttcaggcc | tcgcaacgac | attgacattg | gaaaaaaacg | tataaataaa  | 17340 |
| aaaaaaaaaa  | tacaatggac | tctgacactc | ctggtcctgt | gactatgttt | tcttagagat  | 17400 |
| ggaagacatc  | aatttttcat | ccttggctcc | gcgacacggc | acgaagccgt | acatgggcac  | 17460 |
| ctggagcgac  | atcggcacga | gccaactgaa | cgggggcgcc | ttcaattgga | gcagtatctg  | 17520 |
| gagcgggctt  | aaaaattttg | gctcaaccat | aaaaacatac | gggaacaaag | cttggaacag  | 17580 |
| cagtacagga  | caggcgctta | gaaataaact | taaagaccag | aacttccaac | aaaaagtagt  | 17640 |
| cgatgggata  | gcttccggca | tcaatggagt | ggtagatttg | gctaaccagg | ctgtgcagaa  | 17700 |
| aaagataaac  | agtcgttttg | acccgccgcc | agcaacccca | ggtgaaatgc | aagtggagga  | 17760 |
| agaaattcct  | ccgccagaaa | aacgaggcga | caagcgtccg | cgtcccgttt | tggaagagac  | 17820 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| gctggtgacg cgcgtagatg aaccgccttc ttatgaggaa gcaacgaagc ttggaatgcc  | 17880 |
| caccactaga ccgatagccc caatggccac cggggtgatg aaaccttctc agttgcatcg  | 17940 |
| acccgtcacc ttggatttgc cccctcccc tgctgctact gctgtacccg cttctaagcc   | 18000 |
| tgctgctgcc ccgaaaccag tcgccgtagc caggtcacgt cccgggggcg ctcctcgtcc  | 18060 |
| aaatgcgcac tggcaaaaata ctctgaacag catcgtgggt ctaggcgtgc aaagtgtaaa | 18120 |
| acgccgtcgc tgcttttaat taaatatgga gtagcgctta acttgcctat ctgtgtatat  | 18180 |
| gtgtcattac acgccgtcac agcagcagag gaaaaaagga agaggtcgtg cgtcgacgct  | 18240 |
| gagttacttt caagatggcc accccatcga tgctgcccc atgggcatac atgcacatcg   | 18300 |
| ccggacagga tgcttcggag tacctgagtc cgggtctggt gcagttcgcc cgcgccacag  | 18360 |
| acacctactt caatctggga aataagtta gaaatccac cgtagcgccg acccacgatg    | 18420 |
| tgaccaccga ccgtagccag cggctcatgt tgcgcttcgt gcccgttgac cgggaggaca  | 18480 |
| atacatactc ttacaaaagt cggtacaccc tggccgtggg cgacaacaga gtgctggata  | 18540 |
| tggccagcac gttctttgac attaggggtg tgttggacag aggtcccagt ttcaaaccct  | 18600 |
| attctggtac ggcttacaac tccctggctc ctaaaggcgc tccaaataca tctcagtgga  | 18660 |
| ttgcagaagg tgtaaaaaat acaactgggt aggaacacgt aacagaagag gaaaccaata  | 18720 |
| ctactactta cacttttggc aatgctcctg taaaagctga agctgaaatt acaaaagaag  | 18780 |
| gactcccagt aggttttgaa gtttcagatg aagaaagtaa accgatttat gctgataaaa  | 18840 |
| catatcagcc agaacctcag ctgggagatg aaacttggac tgaccttgat ggaaaaaccg  | 18900 |
| aaaagtatgg aggcagggt ctcaaaccg atactaagat gaaaccatgc tacgggtcct    | 18960 |
| ttgccaaacc tactaatgtg aaaggcggtc aggcaaaaca aaaaacaacg gagcagccaa  | 19020 |
| atcagaaagt cgaatatgat atcgacatgg agttttttga tgcggcatcg cagaaaacaa  | 19080 |
| acttaagtcc taaaattgtc atgtatgcag aaaatgtaaa tttggaaact ccagacactc  | 19140 |
| atgtagtgta caaacctgga acagaagaca caagttccga agctaatttg ggacaacaat  | 19200 |
| ctatgccccaa cagacccaac tacattggct tcagagataa ctttattgga cttatgtact | 19260 |

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|            |            |            |            |            |             |       |
|------------|------------|------------|------------|------------|-------------|-------|
| ataacagtac | tggtaacatg | ggggtgctgg | ctggtcaagc | gtctcagtta | aatgcagtgg  | 19320 |
| ttgacttgca | ggacagaaac | acagaacttt | cttaccaact | cttgcttgac | tctctgggcg  | 19380 |
| acagaaccag | atactttagc | atgtggaatc | aggctgtgga | cagttatgat | cctgatgtac  | 19440 |
| gtgttattga | aaatcatggt | gtggaagatg | aacttcccaa | ctactgtttt | ccactggacg  | 19500 |
| gcataggtgt | tccaacaacc | agttacaaat | caatagttcc | aaatggagac | aatgcgcta   | 19560 |
| attggaagga | acctgaagta | aatggaacaa | gtgagatcgg | acagggtaat | ttgtttgcca  | 19620 |
| tggaaattaa | ccttcaagcc | aatctatggc | gaagtttcct | ttattccaat | gtggctctat  | 19680 |
| atctcccaga | ctcgtacaaa | tacaccccg  | ccaatgtcac | tcttccagaa | aacaaaaaca  | 19740 |
| cctacgacta | catgaacggg | cgggtggtgc | cgccatctct | agtagacacc | tatgtgaaca  | 19800 |
| ttggtgccag | gtggtctctg | gatgccatgg | acaatgtcaa | cccattcaac | caccaccgta  | 19860 |
| acgctggcct | gcgttaccga | tccatgcttc | tgggtaacgg | acgttatgtg | cctttccaca  | 19920 |
| tacaagtgcc | tcaaaaattc | ttcgtgttta | aaaacctgct | gcttctccca | ggctcctaca  | 19980 |
| cttatgagtg | gaactttagg | aaggatgtga | acatggttct | acagagttcc | ctcggtaacg  | 20040 |
| acctgcgggt | agatggcgcc | agcatcagtt | tcacgagcat | caacctctat | gctacttttt  | 20100 |
| tccccatggc | tcacaacacc | gcttccaccc | ttgaagccat | gctgcggaat | gacaccaatg  | 20160 |
| atcagtcatt | caacgactac | ctatctgcag | ctaacatgct | ctacccatt  | cctgccaatg  | 20220 |
| caaccaatat | tcccatttcc | attccttctc | gcaactgggc | ggctttcaga | ggctggtcac  | 20280 |
| ttaccagact | gaaaacaaa  | gaaactccct | ctttggggtc | tggatttgac | ccctactttg  | 20340 |
| tctattctgg | ttctattccc | tacctggatg | gtaccttcta | cctgaaccac | acttttaaga  | 20400 |
| aggtttccat | catgtttgac | tcttcagtga | gctggcctgg | aaatgacagg | ttactatctc  | 20460 |
| ctaacgaatt | tgaaataaag | cgcactgtgg | atggcgaagg | ctacaacgta | gcccgaatgca | 20520 |
| acatgaccaa | agactgggtc | ttggtacaga | tgctcgccaa | ctacaacatc | ggctatcagg  | 20580 |
| gcttctacat | tccagaagga | tacaaagatc | gcatgtattc | atttttcaga | aacttccagc  | 20640 |
| ccatgagcag | gcagggtggt | gatgaggtca | attacaaaga | cttcaaggcc | gtcgccatac  | 20700 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| cctaccaaca caacaactct ggctttgtgg gttacatggc tccgaccatg cgccaaggtc  | 20760 |
| aaccctatcc cgctaactat ccctatccac tcattggaac aactgccgta aatagtgtta  | 20820 |
| cgcagaaaaa gttcttgtgt gacagaacca tgtggcgcat accgttctcg agcaacttca  | 20880 |
| tgtctatggg ggcccttaca gacttgggac agaatatgct ctatgccaac tcagctcatg  | 20940 |
| ctctggacat gacctttgag gtggatccca tggatgagcc caccctgctt tatcttctct  | 21000 |
| tcgaagtttt cgacgtggtc agagtgcac agccacaccg cggcatcatc gaggcagtct   | 21060 |
| acctgcgtac accgttctcg gccggtaacg ctaccacgta agaagcttct tgcttcttgc  | 21120 |
| aaatagcagc tgcaaccatg gcctgcggat cccaaaacgg ctccagcgag caagagctca  | 21180 |
| gagccattgt ccaagacctg ggttgccggac cctatTTTTT gggaacctac gataagcgct | 21240 |
| tcccgggggt catggcccc gataagctcg cctgtgccat tgtaaatacg gccggacgtg   | 21300 |
| agacgggggg agagcactgg ttggctttcg gttggaaccc acgttctaac acctgctacc  | 21360 |
| TTTTTgatcc TTTTggattc tcggatgatc gtctcaaaca gatttaccag tttgaatatg  | 21420 |
| agggtctcct gcgccgcagc gctcttgcta ccaaggaccg ctgtattacg ctggaaaaat  | 21480 |
| ctaccagac cgtgcagggt ccccgttctg ccgcctgcgg acttttctgc tgcattgtcc   | 21540 |
| ttcacgcctt tgtgcactgg cctgaccgtc ccatggacgg aaaccccacc atgaaattgc  | 21600 |
| taactggagt gccaaacaac atgcttcatt ctctaaagt ccagcccacc ctgtgtgaca   | 21660 |
| atcaaaaagc actctaccat tttcttaata cccattcgcc ttatttttcgc tcccatcgta | 21720 |
| cacacatcga aagggccact gcgttcgacc gtatggatgt tcaataatga ctcatgtaaa  | 21780 |
| caacgtgttc aataaacatc actttatTTT ttacatgta tcaaggctct gcattactta   | 21840 |
| tttatttaca agtcgaatgg gttctgacga gaatcagaat gacccgcagg cagtgatacg  | 21900 |
| ttgcggaact gatacttggg ttgccacttg aattcgggaa tcaccaactt gggaaccggt  | 21960 |
| atatcgggca ggatgtcact ccacagcttt ctggtcagct gcaaagctcc aagcagggtca | 22020 |
| ggagccgaaa tcttgaaatc acaattagga ccagtgttt gagcgcgaga gttgcggtac   | 22080 |
| accggattgc agcactgaaa caccatcagc gacggatgtc tcacgcttgc cagcacgggtg | 22140 |



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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| ggatctgcaa tcatgcccac atccagatct tcagcattgg caatgctgaa cggggtcatc  | 22200 |
| ttgcagggtct gcctacccat ggcgggcacc caattaggct tgtggttgca atcgcagtgc | 22260 |
| aggggggatca gtatcatctt ggcctgatcc tgtctgattc ctggatacac ggctctcatg | 22320 |
| aaagcatcat attgcttgaa agcctgctgg gctttactac cctcggtata aaacatcccg  | 22380 |
| caggacctgc tcgaaaactg gttagctgca cagccggcat cattcacaca gcagcgggcg  | 22440 |
| tcattgttag ctatttgcac cacacttctg cccagcgggt tttgggtgat tttggttcgc  | 22500 |
| tcgggattct cctttaaggc tcgttgtccg ttctcgctgg ccacatccat ctcgataatc  | 22560 |
| tgctccttct gaatcataat attgccatgc aggcacttca gcttgccctc ataatcattg  | 22620 |
| cagccatgag gccacaacgc acagcctgta cattcccaat tatggtgggc gatctgagaa  | 22680 |
| aaagaatgta tcattccctg cagaaatctt cccatcatcg tgctcagtgt cttgtgacta  | 22740 |
| gtgaaagtta actggatgcc tcggtgctcc tcgtttacgt actggtgaca gatgcgcttg  | 22800 |
| tattgttcgt gttgctcagg cattagttaa aaagagggtc taagtctgtt atccagcctg  | 22860 |
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| aagctaatacg gattcttaac agtgcaggca gcagctcctt tagccagagg gtcattctta | 22980 |
| gcgatcttct caatgcttct tttgccatcc ttctcaacga tgcgcacggg cgggtagctg  | 23040 |
| aaacccactg ctacaagttg cgcctcttct ctttcttctt cgctgtcttg actgatgtct  | 23100 |
| tgcatgggga tatgtttggt cttccttggtc ttcttttttg ggggtatcgg aggaggagga | 23160 |
| ctgtcgctcc gttccggaga caggaggat tgtgacgttt cgctcaccat taccaactga   | 23220 |
| ctgtcggtag aagaacctga cccacacagg cgacagggtt ttctcttcgg gggcagaggt  | 23280 |
| ggaggcgatt gcgaagggtc gcggtccgac ctggaaggcg gatgactggc agaaccctt   | 23340 |
| ccgcgttcgg ggggtgtgctc cctgtggcgg tcgcttaact gatttccttc gcggctggcc | 23400 |
| attgtgttct cctaggcaga gaaacaacag acatggaaac tcagccattg ctgtcaacat  | 23460 |
| cgccacgagt gccatcacat ctgctcctca gcgacgagga aaaggagcag agcttaagca  | 23520 |
| ttccaccgcc cagtcctgcc accacctcta ccctagaaga taaggaggtc gacgcatctc  | 23580 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| atgacatgca gaataaaaaa gcgaaagagt ctgagacaga catcgagcaa gaccgggct    | 23640 |
| atgtgacacc ggtggaacac gaggaagagt tgaaacgctt tctagagaga gaggatgaaa   | 23700 |
| actgccccaa acaacgagca gataactatc accaagatgc tggaaatagg gatcagaaca   | 23760 |
| ccgactacct catagggctt gacggggaag acgcgctcct taaacatcta gcaagacagt   | 23820 |
| cgctcatagt caaggatgca ttattggaca gaactgaagt gcccacatcagt gtggaagagc | 23880 |
| tcagccgcgc ctacgagctt aacctctttt cacctcgtac tccccccaaa cgtcagccaa   | 23940 |
| acggcacctg cgagccaaat cctcgcttaa acttttatcc agcttttgct gtgccagaag   | 24000 |
| tactggctac ctatcacatc ttttttaaaa atcaaaaaat tccagtctcc tgccgcgcta   | 24060 |
| atcgcacccg cgccgatgcc ctactcaatc tgggacctgg ttcacgctta cctgatatag   | 24120 |
| cttccttgga agaggttcca aagatcttcg agggctctggg caataatgag actcgggccg  | 24180 |
| caaatgctct gcaaaaggga gaaaatggca tggatgagca tcacagcggt ctggtggaat   | 24240 |
| tggaaggcga taatgccaga ctcgcagtac tcaagcgaag catcgaggtc acacacttcg   | 24300 |
| catatccgc tgtcaacctg cccctaaag tcatgacggc ggtcatggac cagttactca     | 24360 |
| ttaagcgcgc aagtccccct tcagaagaca tgcatgaccc agatgcctgt gatgagggtta  | 24420 |
| aaccagtggc cagtgatgag cagctaacc gatggctggg caccgactct cccagggtt     | 24480 |
| tggaagagcg tcgcaagctt atgatggccg tgggtgctggc taccgtagaa ctagagtgtc  | 24540 |
| tccgacgttt ctttaccgat tcagaaacct tgcgcaaact cgaagagaat ctgcactaca   | 24600 |
| cttttagaca cggctttgtg cggcaggcat gcaagatatc taacgtggaa ctcaccaacc   | 24660 |
| tggtttccta catgggtatt ctgcatgaga atcgccatagg acaaagcgtg ctgcacagca  | 24720 |
| ccctgaaggg ggaagccgc cgtgattaca tccgcgattg tgtctatctg tacctgtgcc    | 24780 |
| acacgtggca aaccggcatg ggtgtatggc agcaatgttt agaagaacag aacttgaaag   | 24840 |
| agcttgacaa gctcttacag aaatctctta aggttctgtg gacagggttc gacgagcgca   | 24900 |
| ccgtcgcttc cgacctggca gacctcatct tcccagagcg tctcagggtt actttgcgaa   | 24960 |
| acggattgcc tgactttatg agccagagca tgcttaacaa ttttcgctct ttcacctgg    | 25020 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| aacgctccgg tatcctgccc gccacctgct gcgcactgcc ctccgacttt gtgcctctca  | 25080 |
| cctaccgcga gtgccccccg ccgctatgga gtcactgcta cctgttccgt ctggccaact  | 25140 |
| atctctccta ccactcggat gtgatcgagg atgtgagcgg agacggcttg ctggagtgtc  | 25200 |
| actgccgctg caatctgtgc acgccccacc ggtccctagc ttgcaacccc cagttgatga  | 25260 |
| gcgaaaccca gataataggc acctttgaat tgcaaggccc cagcagccaa ggcgatgggt  | 25320 |
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| agtttgctcc ggaagattac caccctatg aaatcaagtt ctatgaggac caatcacagc   | 25440 |
| ctccaaaggc cgaactttcg gcctgcgtca tcaccaggg ggcaattctg gccaattgc    | 25500 |
| aagccatcca aaaatcccgc caagaatttc tactgaaaaa gggtaagggg gtctaccttg  | 25560 |
| acccccagac cggcgaggaa ctcaacacaa ggttccctca ggatgtccca acgacgagaa  | 25620 |
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| caggcagagg aggcggagga ggacagtctg gaggacagtc tggaggaaga cagtttgag   | 25740 |
| gaggaaaacg aggaggcaga ggaggtggaa gaagtaaccg ccgacaaaca gttatcctcg  | 25800 |
| gctgcggaga caagcaacag cgctaccatc tccgctccga gtcgaggaac ccggcggcgt  | 25860 |
| cccagcagta gatgggacga gaccggacgc ttcccgaacc caaccagcgc ttccaagacc  | 25920 |
| ggtaagaagg atcggcaggg atacaagtcc tggcgggggc ataagaatgc catcatctcc  | 25980 |
| tgcttgcatg agtgcggggg caacatatcc ttcacgcggc gctacttgct attccaccat  | 26040 |
| gggggtgaact ttccgcgcaa tgttttgcat tactaccgtc acctccacag cccctactat | 26100 |
| agccagcaaa tcccggcagt ctgcacagat aaagacagcg gcggcgacct ccaacagaaa  | 26160 |
| accagcagcg gcagttagaa aatacacaac aagtgcagca acaggaggat taaagattac  | 26220 |
| agccaacgag ccagcgcaaa cccgagagtt aagaaatcgg atctttccaa ccctgtatgc  | 26280 |
| catcttccag cagagtcggg gtcaagagca ggaactgaaa ataaaaaacc gatctctgcg  | 26340 |
| ttcgctcacc agaagttggt tgtatcacia gagcgaagat caacttcagc gcactctcga  | 26400 |
| ggacgccgag gctctcttca acaagtactg cgcgctgact cttaaagagt aggcagcgac  | 26460 |

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|                                                                     |       |
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| actccacccg catgaattgg ctcagcgccg ggcccttctat gatttctcga gttaatgata  | 26640 |
| tacgcgccta ccgaaaccaa atacttttgg aacagtcagc tcttaccacc acgccccgcc   | 26700 |
| aacaccttaa tcccagaaat tggcccgccg ccctagtgtgta ccaggaaagt cccgctccca | 26760 |
| ccactgtatt acttcctcga gacgcccagg ccgaagtcca aatgactaat gcagggtgcgc  | 26820 |
| agttagctgg cggctccacc ctatgtcgtc acaggcctcg gcataatata aaacgcctga   | 26880 |
| tgatcagagg ccgaggatc cagctcaacg acgagtcggt gagctctccg cttgggtctac   | 26940 |
| gaccagacgg aatctttcag attgccggct gcgggagatc ttccttcacc cctcgtcagg   | 27000 |
| ctgttctgac tttggaaagt tcgtcttcgc aaccccgctc gggcggaatc gggaccgttc   | 27060 |
| aatttgtgga ggagtttact ccctctgtct acttcaaccc cttctccgga tctcctgggc   | 27120 |
| attacccgga cgagttcata ccgaacttcg acgcgattag cgagtcagtg gacggctacg   | 27180 |
| attgatgtct ggtgacgcgg ctgagctatc tcggctgcga catctagacc actgccgccg   | 27240 |
| ctttcgctgc tttgcccggg aactcattga gttcatctac ttcgaactcc ccaaggatca   | 27300 |
| ccctcaaggt ccggcccacg gagtgcggat ttctatcgaa ggcaaaatag actctgcct    | 27360 |
| gcaacgaatt ttctcccagc ggcccgtgct gatcgagcga gaccagggaa acaccacggc   | 27420 |
| ttccatctac tgcatttgta atcaccgccg attgcatgaa agcctttgct gtcttatgtg   | 27480 |
| tactgagttt aataaaaact gaattaagac tctcctacgg actgccgctt cttcaacccg   | 27540 |
| gattttacaa ccagaagaac gaaacttttc ctgtcgtcca ggactctgtt aacttcacct   | 27600 |
| ttcctactca caaactagaa gctcaacgac tacaccgctt ttccagaagc attttcccta   | 27660 |
| ctaatactac tttcaaaacc ggaggtgagc tccaaggtct tcctacagaa aacccttggg   | 27720 |
| tggaagcggg ctttgtagtg ctaggaattc ttgcgggtgg gcttggtgatt attctttgct  | 27780 |
| acctatacac accttgcttc actttcttag tgggtgtgtg gtattgggtt aaaaaatggg   | 27840 |
| gcccatacta gtcttgcttg ttttactttc gcttttggaa ccgggttctg ccaattacga   | 27900 |

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|                                                                   |       |
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| catggtggga atcaacccca tagttatcac ccagcaaagt ggagatacta agggttgcat | 28080 |
| tcactgctcc tgcgattcca tcgagtgcac ctacaccctg ctgaagaccc tatgcggcct | 28140 |
| aagagacctg ctaccaatga attaaaaaat gattaataaa aaatcactta cttgaaatca | 28200 |
| gcaataaggt ctctgttgaa attttctccc agcagcacct cacttccctc ttcccaactc | 28260 |
| tggtattcta aaccccgttc agcggcatac tttctccata ctttaaaggg gatgtcaa   | 28320 |
| tttagctcct ctctgtacc cacaatcttc atgtctttct tcccagatga ccaagagagt  | 28380 |
| ccggctcagt gactccttca accctgtcta cccctatgaa gatgaaagca cctcccaaca | 28440 |
| cccctttata aacccagggt ttatttcccc aaatggcttc acacaaagcc caaacggagt | 28500 |
| tcttacttta aaatgtttaa cccactaac aaccacaggc ggatctctac agctaaaagt  | 28560 |
| gggaggggga cttacagtgg atgacaccaa cggttttttg aaagaaaaca taagtgccac | 28620 |
| cacaccactc gttaagactg gtcactctat aggtttacca ctaggagccg gattgggaac | 28680 |
| gaatgaaaat aaactttgta tcaaattagg acaaggactt acattcaatt caaacaacat | 28740 |
| ttgcattgat gacaatatta acaccttatg gacaggagtc aacccaccg aagccaactg  | 28800 |
| tcaaatcatg aactccagt aatctaataa ttgcaaatta attctaacac tagttaa     | 28860 |
| tgagacta gtcactgcat ttgtttatgt tataggagta tctaacaatt ttaatatgct   | 28920 |
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| actaactaga ctctcatccc tcaaaactcc acttaatcat aaatcaggac aaaacatggc | 29040 |
| tactggtgcc attactaatg ctaaagggtt catgcccagc acgactgcct atcctttcaa | 29100 |
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| tcgcactgct tttccattg acatatctgt catgcttaac cgaagagcaa taaatgacga  | 29220 |
| gacatcatat tgtattcgta taacttggtc ctggaacaca ggagatgccc cagaggtgca | 29280 |
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|                                                                     |       |
|---------------------------------------------------------------------|-------|
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| cctggtcgca actgctaccg gagtccattc ggacatcgtc atgacccaaa gccctgactc   | 29460 |
| gctcgctgtg tcaactgggag agcgggcgac tatcaactgc aaatcatccc agagcctgct  | 29520 |
| gtattcacgc aatcagaaaa actacctggc ctggtatcag cagaagccgg gccagcctcc   | 29580 |
| caagctgctg atcttctggg cctccacccg cgaaagcggc gtgccggacc gcttcagcgg   | 29640 |
| aagcggattc ggaactgact ttactctgac cattagctcc ttgcaggcgg aggacgtggc   | 29700 |
| cgtctactac tgccagcagt atttctccta tccgctcacc tttgggcaag gcaccaaggt   | 29760 |
| ggagattaag ggagggggcg gcagcggggg aggcggcagc ggccggcggg gatcgcaggt   | 29820 |
| ccagctcgtc caatccggag ccgaagtcaa gaagccggga gcgtcgggtca aggtcagctg  | 29880 |
| caaaacttcg cgctacacct tcaactgagta cacgatccac tgggtccgcc aggcgcccgg  | 29940 |
| ccagcggctg gagtggatcg gcgggatcaa cccaaacaac ggaatcccaa attacaatca   | 30000 |
| gaaatttaaa gggcgggtga ctatcacctg ggatacctcg gcctccacgg cgtacatgga   | 30060 |
| gctctcatca ctcagatcgg aggacaccgc ggtctattac tgcgcccgcc gccggatcgc   | 30120 |
| ttatggatac gatgaaggac atgcgatgga ttactggggc cagggcaccc tcgtcacggt   | 30180 |
| gtcgtcagga ggccggcggtt cacagggtgca gctgcagcag tctggggctg aactggcaag | 30240 |
| acctggggcc tcagtgaaga tgtcctgcaa ggcttctggc tacaccttta ctaggtacac   | 30300 |
| gatgcactgg gtaaaacaga ggcctggaca gggctctggaa tggattggat acattaatcc  | 30360 |
| tagccgtggt tatactaatt acaatcagaa gttcaaggac aaggccacat tgactacaga   | 30420 |
| caaatcctcc agcacagcct acatgcaact gagcagcctg acatctgagg actctgcagt   | 30480 |
| ctattactgt gcaagatatt atgatgatca ttactgcctt gactactggg gccaaggcac   | 30540 |
| cactctcaca gtctcctcag gtggcggtgg ctcgggcggg ggtggatctg gtggcggcgg   | 30600 |
| atctgatatc gtgctcactc agtctccagc aatcatgtct gcatctccag gggagaaggt   | 30660 |
| caccatgacc tgcagtgcca gctcaagtgt aagttacatg aactgggtacc agcagaagtc  | 30720 |
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|                                                                     |       |
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| ggggacaaaag ttggaaataa accggggaag cggagctact aacttcagcc tgctgaagca  | 30960 |
| ggctggagac gtggaggaga accctggacc taatcaaact gccattctga tttgctgcct   | 31020 |
| tatctttctg actctaagtg gcattcaagg agtacctctc tctagaactg tacgctgtac   | 31080 |
| ctgcatcagc attagtaatc aacctgttaa tccaaggctc ttagaaaaac ttgaaattat   | 31140 |
| tcctgcaagc caattttgtc cacgtgttga gatcattgct acaatgaaaa agaagggtga   | 31200 |
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| tgacgtcgag gagaatcctg gacctaagaa aagtgggtgt cttttcctct tgggcatcat   | 31380 |
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| catcagcacc aaccaaggga ctatccacct acaatccttg aaagacctta aacaatttgc   | 31500 |
| cccaagccct tcctgcgaga aaattgaaat cattgctaca ctgaagaatg gagttcaaac   | 31560 |
| atgtctaaac ccagattcag cagatgtgaa ggaactgatt aaaaagtggg agaaacaggt   | 31620 |
| cagccaaaag aaaaagcaaa agaatgggaa aaaacatcaa aaaaagaaag ttctgaaagt   | 31680 |
| tcgaaaaatct caacgttctc gtcaaaaagaa gactacataa gctagcttga ctgactgaga | 31740 |
| tacagcgtac cttcagctca cagacatgat aagatacatt gatgagtttg gacaaaccac   | 31800 |
| aactagaatg cagtgaaaaa aatgctttat ttgtgaaatt tgtgatgcta ttgctttatt   | 31860 |
| tgtaaccatt ataagctgca ataaacaagt taacaacaac aattgcattc attttatgtt   | 31920 |
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| tagtcgtcag ctatcctgca ggaacttggt tatttgaaaa tcaattcaca aaatccgagt   | 32040 |
| agttattttg cctccccctt cccatttaac agaatacacc aatctctccc cacgcacagc   | 32100 |
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|                                                                     |       |
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| cccacaagca gccgctgtct gcgtcgctcc gtgcgactgc tgtttatggg atcagggtcc   | 32400 |
| acagtgtcct gaagcatgat tttaatagcc cttaacatca actttctggt gcgatgcgcg   | 32460 |
| cagcaacgca ttctgatttc actcaaactt ttgcagtagg tacaacacat tattacaata   | 32520 |
| ttgtttaata aaccataatt aaaagcgctc cagccaaaac tcatatctga tataatcgcc   | 32580 |
| cctgcatgac catcatacca aagtttaata taaattaaat gacgttcctt caaaaacaca   | 32640 |
| ctaccacat acatgatctc ttttggcatg tgcatattaa caatctgtct gtaccatgga    | 32700 |
| caacgttggg taatcatgca acccaatata accttccgga accacactgc caacaccgct   | 32760 |
| ccccagcca tgcattgaag tgaaccctgc tgattacaat gacaatgaag aaccaattc     | 32820 |
| tctcgaccgt gaatcacttg agaatgaaaa atatctatag tggcacaaca tagacataaa   | 32880 |
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|                                                                   |       |
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| ccccttttag ccgttaaccc cacagccaat caccacacga tccacacttt ttaaaatcac | 34920 |
| ctcatttaca tattggcacc attccatcta taaggatat tatatagata ga          | 34972 |

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 <211> 35602  
 <212> DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; NG-641 Genome

&lt;400&gt; 103

|                                                                      |      |
|----------------------------------------------------------------------|------|
| tctatctata taatataacct tatagatgga atggtgccaa tatgtaaatg aggtgatttt   | 60   |
| aaaaagtgtg gatcgtgtgg tgattggctg tgggggtaac ggctaaaagg ggcgggtcga    | 120  |
| ccgtgggaaa atgacgtttt gtgggggtgg agtttttttg caagttgtcg cgggaaatgt    | 180  |
| gacgcataaa aaggcttttt tctcacggaa ctacttagtt ttcccacggt atttaacagg    | 240  |
| aaatgaggta gttttgaccg gatgcaagtg aaaattgttg attttcgcgc gaaaactgaa    | 300  |
| tgaggaagtg tttttctgaa taatgtggta tttatggcag ggtggagtat ttgttcaggg    | 360  |
| ccaggtagac tttgacccat tacgtggagg tttcgattac cgtgtttttt acctgaattt    | 420  |
| ccgcgtaccg tgtcaaagtc ttctgttttt acgtagggtg cagctgatcg ctagggattt    | 480  |
| tatacctcag ggtttggtgc aagaggccac tcttgagtgc cagcgagaag agttttctcc    | 540  |
| tctgcgccgg cagtttaata ataaaaaaaaat gagagatttg cgattttctgc ctcaggaaat | 600  |
| aatctctgct gagactggaa atgaaatatt ggagcttggt gtgcacgccc tgatgggaga    | 660  |
| cgatccggag ccacctgtgc agctttttga gcctcctacg cttcaggaac tgtatgattt    | 720  |
| agaggtagag ggatcggagg attctaataa ggaagctgta aatggctttt ttaccgattc    | 780  |
| tatgctttta gctgctaata aagggtaga attagatccg cttttggaca cttttgatac     | 840  |
| tccaggggta attgtggaaa gcggtacagg tgtaagaaaa ttacctgatt tgagttccgt    | 900  |
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| aaaggagcag tccatgcaga ctgcagcggg tgagggagtg aaggctgcca atgttggttt    | 1020 |
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| tatttacagt aagtgtgttt aagttaaaaa ttaaaggaat atgctgtttt tcacatgtat    | 1200 |
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|                                                                     |      |
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| cttgttacag ggtggggacg gacctttgga cttgagtaca cggaaacgtc caagacaata   | 1440 |
| agtgttccat atccgtgttt acttaagggtg acgtcaatat ttgtgtgaca gtgcaatgta  | 1500 |
| ataaaaaatat gttaactgtt cactgggtttt tattgctttt tgggcgggga ctcaggtata | 1560 |
| taagtagaag cagacctgtg tggtttagctc ataggagctg gctttcatcc atggaggttt  | 1620 |
| gggccattttt ggaagacctt aggaagacta ggcaactgtt agagaacgct tcggacggag  | 1680 |
| tctccggttt ttggagattc tggttcgcta gtgaattagc tagggtagtt tttaggataa   | 1740 |
| aacaggacta taaacaagaa tttgaaaagt tgttggtaga ttgccagga ctttttgaag    | 1800 |
| ctcttaattt gggccatcag gttcacttta aagaaaaagt tttatcagtt ttagactttt   | 1860 |
| caaccccagg tagaactgct gctgctgtgg cttttcttac ttttatatta gataaatgga   | 1920 |
| tcccgagac tcatttcagc aggggatacg ttttggttt catagccaca gcattgtgga     | 1980 |
| gaacatggaa ggttcgcaag atgaggacaa tcttaggtta ctggccagtg cagcctttgg   | 2040 |
| gtgtagcggg aatcctgagg catccaccgg tcatgccagc ggttctggag gaggaacagc   | 2100 |
| aagaggacaa cccgagagcc ggcctggacc ctccagtgga ggaggcggag tagctgactt   | 2160 |
| gtctcctgaa ctgcaacggg tgcttactgg atctacgtcc actggacggg ataggggcgt   | 2220 |
| taagaggggag agggcatcta gtggtactga tgctagatct gagttggctt taagtttaat  | 2280 |
| gagtcgcaga cgtcctgaaa ccatttggtg gcatgagggt cagaaagagg gaagggatga   | 2340 |
| agtttctgta ttgcaggaga aatattcact ggaacagggtg aaaacatgtt ggttggagcc  | 2400 |
| tgaggatgat tgggaggtgg ccattaaaaa ttatgccaag atagctttga ggcctgataa   | 2460 |
| acagtataag attactagac ggattaatat ccggaatgct tgttacatat ctggaaatgg   | 2520 |
| ggctgagggtg gtaatagata ctcaagacaa ggcagttatt agatgctgca tgatggatat  | 2580 |
| gtggcctggg gtagtcggta tggaagcagt aacttttgta aatgttaagt ttaggggaga   | 2640 |
| tggttataat ggaatagtgt ttatggccaa taccaaactt atattgcatg gttgtagctt   | 2700 |

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|                                                                     |      |
|---------------------------------------------------------------------|------|
| ttttggtttc aacaatacct gtgtagatgc ctggggacag gttagtgtac ggggatgtag   | 2760 |
| tttctatgcg tgttggattg ccacagctgg cagaaccaag agtcaattgt ctctgaagaa   | 2820 |
| atgcatatTTT caaagatgta acctgggcat tctgaatgaa ggcgaagcaa ggggtccgcca | 2880 |
| ctgcgcttct acagatactg gatgttttat tttgattaag ggaaatgcca gcgtaaagca   | 2940 |
| taacatgatt tgcggtgctt ccgatgagag gccttatcaa atgctcactt gtgctggtgg   | 3000 |
| gcattgtaat atgctggcta ctgtgcatat tgtttcccat caacgcaaaa aatggcctgt   | 3060 |
| ttttgatcac aatgtgatga cgaagtgtac catgcatgca ggtgggcgta gaggaatgtt   | 3120 |
| tatgccttac cagtgaaca tgaatcatgt gaaagtgttg ttggaaccag atgccttttc    | 3180 |
| cagaatgagc ctaacaggaa tttttgacat gaacatgcaa atctggaaga tcctgaggta   | 3240 |
| tgatgatacg agatcgaggg tacgcgcatg cgaatgcgga ggcaagcatg ccaggttcca   | 3300 |
| gccggtgtgt gtagatgtga ctgaagatct cagaccggat catttggtta ttgcccgcac   | 3360 |
| tggagcagag ttcggatcca gtggagaaga aactgactaa ggtgagtatt gggaaaactt   | 3420 |
| tgggggtggga ttttcagatg gacagattga gtaaaaaattt gttttttctg tcttgcagct | 3480 |
| gtcatgagtg gaaacgcttc ttttaagggg ggagtcttca gcccttatct gacagggcgt   | 3540 |
| ctcccatcct gggcaggagt tcgtcagaat gttatgggat ctactgtgga tggaagaccc   | 3600 |
| gtccaacccg ccaattcttc aacgctgacc tatgctactt taagtcttc acctttggac    | 3660 |
| gcagctgcag ctgccgccgc cgcttctgtt gccgctaaca ctgtgcttgg aatgggttac   | 3720 |
| tatggaagca tcatggctaa ttccacttcc tctaataacc cttctaccct gactcaggac   | 3780 |
| aagttacttg tccttttggc ccagctggag gctttgaccc aacgtctggg tgaactttct   | 3840 |
| cagcaggtgg tcgagttgcg agtacaaact gagtctgctg tcggcacggc aaagtctaaa   | 3900 |
| taaaaaaatc ccagaatcaa tgaataaata aacaagcttg ttgttgattt aaaatcaagt   | 3960 |
| gtttttatTTT catTTTTcgc gcacggtatg ccctagacca ccgatctcta tcattgagaa  | 4020 |
| ctcgggtggat tttttccagg atcctataga ggtgggattg aatgtttaga tacatgggca  | 4080 |
| ttaggccgtc tttgggggtgg agatagctcc attgaaggga ttcatgctcc ggggtagtgt  | 4140 |

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|                                                                     |      |
|---------------------------------------------------------------------|------|
| tgtaaatacac ccagtcataa caaggtcgca gtgcatgggtg ttgcacaata tcttttagaa | 4200 |
| gtaggctgat tgccacagat aagcccttgg tgtaggtgtt taaaaaccgg ttgagctggg   | 4260 |
| atgggtgcat tcggggtgaa attatgtgca ttttggattg gatttttaag ttggcaatat   | 4320 |
| tgccgccaag atcccgctctt gggttcatgt tatgaaggac caccaagacg gtgtatccgg  | 4380 |
| tacatttagg aaatttatcg tgcagcttgg atggaaaagc gtggaaaaat ttggagacac   | 4440 |
| ccttgtgtcc tccaagatth tccatgcact catccatgat aatagcaatg gggccgtggg   | 4500 |
| cagcggcgcg ggcaaacacg ttccgtgggt ctgacacatc atagtattgt tcctgagtta   | 4560 |
| aatcatcata agccatttta atgaatttgg ggcggagagt accagattgg ggtatgaatg   | 4620 |
| ttccttcggg ccccgagca tagttccct cacagatttg catttccaa gctttcagtt      | 4680 |
| ccgaggggtg aatcatgtcc acctgggggg ctatgaaaaa caccgtttct ggggcggggg   | 4740 |
| tgattaattg tgatgatagc aaatttctga gcaattgaga ttgcccacat ccggtggggc   | 4800 |
| cataaatgat tccgattacg ggttgcaggt ggtagtttag ggaacggcaa ctgccgtctt   | 4860 |
| ctcgaagcaa gggggccacc tcgttcatca tttcccttac atgcatattt tcccgcacca   | 4920 |
| aatccattag gaggcgctct cctcctagt atagaagttc ttgtagtgag gaaaagtttt    | 4980 |
| tcagcggttt cagaccgtca gccatgggca ttttggagag agtttgctgc aaaagttcta   | 5040 |
| gtctgttcca cagttcagtg atgtgttcta tggcatctcg atccagcaga cctcctcgtt   | 5100 |
| tcgcgggttt ggacggctcc tggaataggg tatgagacga tgggcgtcca gcgctgccag   | 5160 |
| ggttcggtcc ttccagggtc tcagtgttcg agtcagggtt gtttccgtca cagtgaaggg   | 5220 |
| gtgtgcgctt gcttgggcgc ttgccagggt gcgcttcaga ctcatcctgc tggtcgaaaa   | 5280 |
| cttctgtcgc ttggcgccct gtatgtcggc caagtagcag ttaccatga gttcgtagtt    | 5340 |
| gagcgcctcg gctgcgtggc ctttggcgcg gagcttacct ttggaagttt tcttgcatat   | 5400 |
| cgggcagtat aggcatttca gcgcatacaa cttgggcgca aggaaaacgg attctgggga   | 5460 |
| gtatgcatct gcgccgagg aggcgcaaac agtttcacat tccaccagcc aggttaaatc    | 5520 |
| cggttcattg ggggtcaaaaa caagttttcc gccatatttt ttgatgcgtt tcttaccttt  | 5580 |

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ggtctccatg agttcgtgtc ctcgttgagt gacaaacagg ctgtccgtgt ccccgtagac 5640  
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 ccactctgat acaaaggcgc gcgtccaggc cagcacaaag gaggctatgt gggaggggta 5760  
 gcgatcgttg tcaaccaggg ggtccacctt ttccaaagta tgcaaacaca tgtcacccctc 5820  
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 gacaagtacg tctagggcgc agtagtcaag tgtttcttga atgatgtcat aacctggttg 6960  
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|                                                                    |      |
|--------------------------------------------------------------------|------|
| ttctagcgga aacccgtctt tgtctgcacg gtaagatcct agcatgtaga actgattaac  | 7080 |
| tgccttgtaa gggcagcagc ccttctctac gggtagagag tatgcttgag cagcttttcg  | 7140 |
| tagcgaagcg tgagtaaggg caaagggtgtc tctgaccatg actttgagga attgggtat  | 7200 |
| gaagtcgatg tcgtcacagg ctccctgttc ccagagttgg aagtctaccc gtttcttgta  | 7260 |
| ggcgggggtg ggcaaagcga aagtaacatc attgaagaga atcttgccgg ccctgggcat  | 7320 |
| gaaattgcga gtgatgcgaa aaggctgtgg tacttccgct cggttattga taacctgggc  | 7380 |
| agctaggacg atctcgtcga aaccgttgat gttgtgtcct acgatgtata attctatgaa  | 7440 |
| acgcggcgtg cctctgacgt gaggtagctt actgagctca tcaaaggtta ggtctgtggg  | 7500 |
| gtcagataag gcgtagtggt cgagagccca ttcgtgcagg tgaggattcg ctttaaggaa  | 7560 |
| ggaggaccag aggtccactg ccagtgtgtt ttgtaactgg tcccgggtact gacgaaaatg | 7620 |
| ccgtccgact gccatTTTTT ctgggggtgac gcaatagaag gtttgggggt cctgccgcca | 7680 |
| gcgatccac ttgagtttta tggcgagggtc ataggcgatg ttgacgagcc gctgggtctcc | 7740 |
| agagagtttc atgaccagca tgaaggggat tagctgcttg ccaaaggacc ccatccaggt  | 7800 |
| gtaggtttcc acatcgtagg tgagaaagag cttttctgtg cgaggatgag agccaatcgg  | 7860 |
| gaagaactgg atctcctgcc accagttgga ggaatggctg ttgatgtgat ggaagtagaa  | 7920 |
| ctccctgcga cgcgccgagc attcatgctt gtgcttgtag agacggccgc agtagtcgca  | 7980 |
| gcgttgcacg gggtgtatct cgtgaatgag ttgtacctgg cttcccttga cgagaaattt  | 8040 |
| cagtgggaag ccgaggcctg gcgattgtat ctcgtgcttt actatgttgt ctgcatcggc  | 8100 |
| ctgttcatct tctgtctcga tgggtggtcat gctgacgagc cctcgcggga ggcaagtcca | 8160 |
| gacctcggcg cggcaggggc ggagctcgag gacgagagcg cgcaggctgg agctgtccag  | 8220 |
| ggtcctgaga cgctgcggac tcaggttagt aggcagtgtc aggagattaa cttgcatgat  | 8280 |
| cttttgagg gcgtgcggga gggtcagata gtacttgatc tcaacgggtc cgttggtgga   | 8340 |
| gatgtcgatg gcttgagggt ttccgtgtcc cttgggcgct accaccgtgc cttgttttt   | 8400 |
| cattttggac ggcggtggct ctgttgcttc ttgcatgttt agaagcgggtg tcgagggcgc | 8460 |

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| gcaccgggcg gcaggggagg ctcgggagcc ggcgcatgg ctggcagtgg tacgtcggcg   | 8520 |
| ccgcgcgcgg gtaggttctg gtactgcgcc ctgagaagac tcgcatgcgc gacgacgcgg  | 8580 |
| cggttgacat cctggatctg acgcctctgg gtgaaagcta ccggccccgt gagcttgaac  | 8640 |
| ctgaaagaga gttcaacaga atcaatctcg gtatcgttga cggcggcttg cctaaggatt  | 8700 |
| tcttgacgt caccagagtt gtcctggtag gcgatctccg ccatgaactg ctcgatctct   | 8760 |
| tcctcttgaa gatctccgcg gcccgctctc tcgacgggtg ccgcgaggtc gttggagatg  | 8820 |
| cgcccaatga gttgagagaa tgcattcatg cccgcctcgt tccagacgcg gctgtagacc  | 8880 |
| acggccccca cgggatctct cgcgcgcag accacctggg cgaggttgag ctccacgtgg   | 8940 |
| cgggtgaaga ccgcatagtt gcataggcgc tggaaaaggt agttgagtgt ggtggcgaatg | 9000 |
| tgctcgggtga cgaagaaata catgatccat cgtctcagcg gcatctcgt gacatcgccc  | 9060 |
| agagcttcca agcgtccat ggcctcgtag aagtccacgg caaaattaaa aaactgggag   | 9120 |
| tttcgcgcgg acacgggtcaa ctctcttcc agaagacgga taagttcggc gatggtggtg  | 9180 |
| cgcacctcgc gctcgaaagc ccctgggatt tcttcctcaa tctcttctt ttccactaac   | 9240 |
| atctcttcct cttcagggtg ggctgcagga ggagggggaa cgcggcgacg ccggcggcgc  | 9300 |
| acgggcagac ggtcgaatga tctttcaatg acctctccgc ggcgggcgcg catggtttca  | 9360 |
| gtgacggcgc ggccgttctc gcgcggctgc agagtaaaaa caccgccgcg catctcctta  | 9420 |
| aagtgggtgac tgggaggttc tccgtttggg agggagaggg cgctgattat acattttatt | 9480 |
| aattggcccc tagggactgc acgcagagat ctgatcgtgt caagatccac gggatctgaa  | 9540 |
| aacctttcga cgaaagcgtc taaccagtca cagtcacaag gtaggctgag tacggcttct  | 9600 |
| tgtgggcggg ggtggttatg tggtcggctt gggctctctg tttcttctt atctcgggaa   | 9660 |
| ggtgagacga tgctgctggt gatgaaatta aagtaggcag ttctaagacg gcggatggtg  | 9720 |
| gcgaggagca ccaggctttt gggctccggct tgctggatac gcaggcgatt ggccattccc | 9780 |
| caagcattat cctgacatct agcaagatct ttgtagtagt cttgcatgag ccgttctacg  | 9840 |
| ggcacttctt cctcaccgct tctgccatgc atacgtgtga gtccaaatcc gcgcattggt  | 9900 |



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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| tgtaccagtg ccaagtcagc tacgactctt tcggcgagga tggcttgctg tacttgggta  | 9960  |
| agggtggctt gaaagtcacg aaaatccaca aagcgggtgg aagctcctgt attaatgggtg | 10020 |
| taagcacagt tggccatgac tgaccagtta actgtctggt gaccagggcg cacgagctcg  | 10080 |
| gtgtatttaa ggcggaata ggcgcggggtg tcaaagatgt aatcgttgca ggtgcgcacc  | 10140 |
| agatactggt accctataag aaaatgcggc ggtgggtggc ggtagagagg ccatcgttct  | 10200 |
| gtagctggag cgccaggggc gaggtcttcc aacataaggc ggtgatagcc gtagatgtac  | 10260 |
| ctggacatcc aggtgattcc tgcggcggtg gtagaagccc gaggaaactc gcgtacgcgg  | 10320 |
| ttccaaatgt tgcgtagcgg catgaagtag ttcatgtag gcacggtttg accagtgagg   | 10380 |
| cgcgcgagc cattgatgct ctatagacac ggagaaaatg aaagcggttca gcgactcgac  | 10440 |
| tccgtagcct ggaggaacgt gaacgggttg ggtcgcggtg taccgccggtt cgagacttgt | 10500 |
| actcgagccg gccggagccg cggctaacgt ggtattggca ctcccgtctc gaccagcct   | 10560 |
| acaaaaatcc aggatacggg atcgagtcgt tttgctggtt tccgaatggc aggggaagtga | 10620 |
| gtcctatttt ttttttttgc cgctcagatg catcccgtgc tgcgacagat gcgcccccaa  | 10680 |
| caacagcccc cctcgcagca gcagcagcag caatcacaaa aggctgtccc tgcaactact  | 10740 |
| gcaactgccg ccgtgagcgg tgcgggacag cccgcctatg atctggactt ggaagagggc  | 10800 |
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| aaagattctc gcgaggcgta tgtgccccaa cagaacctat ttagagacag aagcggcgag  | 10920 |
| gagccggagg agatgcgagc ttcccgtttt aacgcgggtc gtgagctgcg tcacggtttg  | 10980 |
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| cctgccaggg cacacgtggc tgcagccaac cttgtatcgg cttacgagca gacagtaaag  | 11100 |
| gaagagcgta acttccaaaa gtcttttaaat aatcatgtgc gaaccctgat tgcccgcgaa | 11160 |
| gaagttaccc ttggtttgat gcatttgtgg gatttgatgg aagctatcat tcagaaccct  | 11220 |
| actagcaaac ctctgaccgc ccagctgttt ctggtgggtgc aacacagcag agacaatgag | 11280 |
| gctttcagag aggcgtgct gaacatcacc gaacccgagg ggagatgggtt gtatgatctt  | 11340 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| atcaacattc tacagagtat catagtgcag gagcggagcc tgggcctggc cgagaagggtg  | 11400 |
| gctgccatca attactcgggt tttagacttg ggaaaaatatt acgctcgcaa aatctacaag | 11460 |
| actccatacg ttcccataga caaggagggtg aagatagatg ggttctacat gcgcatgacg  | 11520 |
| ctcaagggtct tgaccctgag cgatgatctt ggggtgtatc gcaatgacag aatgcatcgc  | 11580 |
| gcggttagcg ccagcaggag gcgcgagtta agcgacaggg aactgatgca cagtttgcaa   | 11640 |
| agagctctga ctggagctgg aaccgaggggt gagaattact tcgacatggg agctgacttg  | 11700 |
| cagtggcagc ctagtcgcag ggctctgagc gccgcgacgg caggatgtga gcttccttac   | 11760 |
| atagaagagg cggatgaagg cgaggaggaa gagggcgagt acttgaaga ctgatggcac    | 11820 |
| aacccgtgtt ttttgctaga tggaacagca agcaccggat cccgcaatgc gggcggcgct   | 11880 |
| gcagagccag ccgtccggca ttaactcctc ggacgattgg acccaggcca tgcaacgtat   | 11940 |
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| atcggccatc atggaagctg tagtgccttc ccgctctaata cccactcatg agaaggctct  | 12060 |
| ggccatcgtg aacgcgttgg tggagaacaa agctattcgt ccagatgagg ccggactggt   | 12120 |
| atacaacgct ctcttagaac gcgtggctcg ctacaacagt agcaatgtgc aaaccaatth   | 12180 |
| ggaccgtatg ataacagatg tacgcgaagc cgtgtctcag cgcgaaagggt tccagcgtga  | 12240 |
| tgccaacctg ggctcgctgg tggcgtaaaa tgctttcttg agtactcagc ctgctaattg   | 12300 |
| gccgcgtggt caacaggatt atactaactt ttttaagtgt ttgagactga tggatatcaga  | 12360 |
| agtacctcag agcgaagtgt atcagtccgg tcctgattac ttctttcaga ctagcagaca   | 12420 |
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| attattactg ttggtagctc ctttcaccga cagcggtagc atcgaccgta attcctatth   | 12600 |
| gggttaccta ctaaacctgt atcgcgaagc catagggcaa agtcagggtgg acgagcagac  | 12660 |
| ctatcaagaa attacccaag tcagtcgcgc tttgggacag gaagacactg gcagtttgga   | 12720 |
| agccactctg aacttcttgc ttaccaatcg gtctcaaaag atccctcctc aatatgctct   | 12780 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
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| gcaagagggg gcaactccga ctgcagcact ggacatgaca gcgcgaaata tggagcccag  | 12900 |
| catgtatgcc agtaaccgac ctttcattaa caaactgctg gactacttgc acagagctgc  | 12960 |
| cgctatgaac tctgattatt tcaccaatgc catcttaaac ccgcactggc tgccccacc   | 13020 |
| tggtttctac acgggcgaat atgacatgcc cgaccctaata gacggatttc tgtgggacga | 13080 |
| cgtggacagc gatgtttttt cacctctttc tgatcatcgc acgtggaaaa aggaaggcgg  | 13140 |
| cgatagaatg cattcttctg catcgctgtc cggggctcatg ggtgctaccg cggctgagcc | 13200 |
| cgagtctgca agtccttttc ctagtctacc cttttctcta cacagtgtac gtagcagcga  | 13260 |
| agtgggtaga ataagtcgcc cgagttaaat gggcgaagag gagtatctaa acgattcctt  | 13320 |
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| aatgagtaga tggaagactt atgctcagga tcacagagac gagcctggga tcatggggat  | 13440 |
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| actcaccaag gccatggcga cgagcgtacg ttcgttcttc tttattatct gtgtctagta  | 13680 |
| taatgaggcg agtcgtgcta ggcgagcgg tgggtgtatcc ggagggtcct cctccttcgt  | 13740 |
| acgagagcgt gatgcagcag cagcaggcga cggcgggtgat gcaatcccca ctggaggctc | 13800 |
| cctttgtgcc tccgcgatac ctggcaccta cggagggcag aaacagcatt cgttattcgg  | 13860 |
| aactggcacc tcagtacgat accaccagggt tgtatctggt ggacaacaag tcggcggaca | 13920 |
| ttgcttctct gaactatcag aatgaccaca gcaacttctt gaccacggtg gtgcaaaaca  | 13980 |
| atgactttac ccctacggaa gccagcacc agaccattaa ctttgatgaa cgatcgcggt   | 14040 |
| ggggcgggtca gctaaagacc atcatgcata ctaacatgcc aaacgtgaac gagtatatgt | 14100 |
| ttagtaacaa gttcaaagcg cgtgtgatgg tgtccagaaa acctcccgac ggtgctgcag  | 14160 |
| ttggggatac ttatgatcac aagcaggata ttttgaaata tgagtggttc gagtttactt  | 14220 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| tgccagaagg caacttttca gttactatga ctattgattt gatgaacaat gccatcatag  | 14280 |
| ataattactt gaaagtgggt agacagaatg gagtgcttga aagtgacatt ggtgttaagt  | 14340 |
| tcgacaccag gaacttcaag ctgggatggg atcccgaac caagttgatc atgcctggag   | 14400 |
| tgtatacgta tgaagccttc catcctgaca ttgtcttact gcctggctgc ggagtggatt  | 14460 |
| ttaccgagag tcgtttgagc aaccttcttg gtatcagaaa aaaacagcca tttcaagagg  | 14520 |
| gttttaagat tttgtatgaa gatttagaag gtggtaatat tccggccctc ttggatgtag  | 14580 |
| atgcctatga gaacagtaag aaagaacaaa aagccaaaat agaagctgct acagctgctg  | 14640 |
| cagaagctaa ggcaaacata gttgccagcg actctacaag ggttgctaac gctggagagg  | 14700 |
| tcagaggaga caattttgcg ccaacacctg ttccgactgc agaatcatta ttggccgatg  | 14760 |
| tgtctgaagg aacggacgtg aaactcacta ttcaacctgt agaaaaagat agtaagaata  | 14820 |
| gaagctataa tgtgttgga gacaaaatca acacagccta tcgcagttgg tatctttcgt   | 14880 |
| acaattatgg cgatcccgaa aaaggagtc gttcctggac attgctcacc acctcagatg   | 14940 |
| tcacctgcgg agcagagcag gtctactggg cgcttccaga catgatgaag gatcctgtca  | 15000 |
| ctttccgctc cactagacaa gtcagtaact accctgtggg gggcgcagag cttatgccc   | 15060 |
| tcttctcaaa gagcttctac aacgaacaag ctgtgtactc ccagcagctc cgccagtcca  | 15120 |
| cctcgcttac gcacgtcttc aaccgctttc ctgagaacca gattttaatc cgtccgccgg  | 15180 |
| cgcccaccat taccaccgtc agtgaaaacg ttcctgctct cacagatcac gggaccctgc  | 15240 |
| cgttgcgcag cagtatccgg ggagtccaac gtgtgaccgt tactgacgcc agacgccgca  | 15300 |
| cctgtcccta cgtgtacaag gcactgggca tagtcgcacc gcgcgtcctt tcaagccgca  | 15360 |
| ctttctaaaa aaaaaaaaaa tgtccattct tatctcgccc agtaataaca ccggttgggg  | 15420 |
| tctgcgcgct ccaagcaaga tgtacggagg cgacgcgaaa cgcttctaccc aacatcctgt | 15480 |
| ccgtgttcgc ggacattttc gcgctccatg gggcgccctc aagggccgca ctcgcgttcg  | 15540 |
| aaccaccgtc gatgatgtaa tcgatcaggt ggttgccgac gcccgtaatt atactcctac  | 15600 |
| tgcgcctaca tctactgtgg atgcagttat tgacagtgtg gtggctgacg ctcgcaacta  | 15660 |

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|                                   |                                    |       |
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| ggcggccaga cgtgcagctt cgggcgccag  | cgccggcagg tcccgcaggc aagcagccgc   | 15840 |
| tgctgcagcg gcgactattg ccgacatggc  | ccaatcgcga agaggcaatg tatactgggt   | 15900 |
| gcgtgacgct gccaccggtc aacgtgtacc  | cgtgcgcacc cgtccccctc gcacttagaa   | 15960 |
| gatactgagc agtctccgat gttgtgtccc  | agcggcgagg atgtccaagc gcaaatacaa   | 16020 |
| ggaagaaatg ctgcaggtta tcgcacctga  | agtctacggc caaccgttga aggatgaaaa   | 16080 |
| aaaacccccgc aaaatcaagc gggttaaaaa | ggacaaaaaa gaagaggaag atggcgatga   | 16140 |
| tgggctggcg gagtttgtgc gcgagtttgc  | cccacggcga cgcggtgcaat ggcgtagggcg | 16200 |
| caaagttcga catgtgttga gacctggaac  | ttcgggtggtc ttacacccg gcgagcgttc   | 16260 |
| aagcgctact ttttaagcgtt cctatgatga | ggtgtacggg gatgatgata ttcttgagca   | 16320 |
| ggcggctgac cgattaggcg agtttgctta  | tggcaagcgt agtagaataa cttccaagga   | 16380 |
| tgagacagtg tcgataccct tggatcatgg  | aaatcccacc cctagtctta aaccggtcac   | 16440 |
| tttgcagcaa gtgttaccgc taactccgcg  | aacaggtggt aaacgcgaag gtgaagattt   | 16500 |
| gtatcccact atgcaactga tggtaaccaa  | acgccagaag ttggaggacg ttttggagaa   | 16560 |
| agtaaaaagt gatccagata ttcaacctga  | ggttaaagt agacccatta agcaggtagc    | 16620 |
| gcctgggtctg ggggtacaaa ctgtagacat | taagattccc actgaaagta tgggaagtga   | 16680 |
| aactgaaccc gcaaagccta ctgccacctc  | cactgaagtg caaacggatc catggatgcc   | 16740 |
| catgcctatt acaactgacg ccgccggtcc  | cactcgaaga tcccgcgaa agtacggtcc    | 16800 |
| agcaagtctg ttgatgcca attatgttgt   | acacccatct attattccta ctcttggtta   | 16860 |
| ccgaggcact cgctactatc gcagccgaaa  | cagtacctcc cgccgtcgcc gcaagacacc   | 16920 |
| tgcaaatacgc agtcgtcgcc gtagacgcac | aagcaaaccg actcccggcg ccctgggtgcg  | 16980 |
| gcaagtgtac cgcaatggta gtgcggaacc  | tttgacactg ccgctgcgc gttaccatcc    | 17040 |
| gagtatcatc acttaataca tgttgccgct  | gcctccttgc agatatggcc ctacttgtc    | 17100 |

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|                                                                     |       |
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| gccttcgcgt tcccatcact ggttaccgag gaagaaactc gcgccgtaga agagggatgt   | 17160 |
| tgggacgcgg aatgcgacgc tacaggcgac ggcgtagctat ccgcaagcaa ttgcgggggtg | 17220 |
| gttttttacc agccttaatt ccaattatcg ctgctgcaat tggcgcgata ccaggcatag   | 17280 |
| cttccgtggc ggttcaggcc tcgcaacgac attgacattg gaaaaaaacg tataaataaa   | 17340 |
| aaaaaaaaaa tacaatggac tctgacactc ctggctcctgt gactatgttt tcttagagat  | 17400 |
| ggaagacatc aatttttcat ccttggctcc gcgacacggc acgaagccgt acatgggcac   | 17460 |
| ctggagcgac atcggcacga gcccaactgaa cggggggcgcc ttcaattgga gcagtatctg | 17520 |
| gagcgggctt aaaaattttg gctcaaccat aaaaacatac gggaacaaag cttggaacag   | 17580 |
| cagtacagga caggcgctta gaaataaaact taaagaccag aacttccaac aaaaagtagt  | 17640 |
| cgatgggata gcttccggca tcaatggagt ggtagatttg gctaaccagg ctgtgcagaa   | 17700 |
| aaagataaac agtcgttttg acccgccgcc agcaacccca ggtgaaatgc aagtggagga   | 17760 |
| agaaaattcct ccgccagaaa aacgaggcga caagcgtccg cgtcccgatt tggaagagac  | 17820 |
| gctggtgacg cgcgtagatg aaccgccttc ttatgaggaa gcaacgaagc ttggaatgcc   | 17880 |
| caccactaga ccgatagccc caatggccac cgggggtgatg aaaccttctc agttgcatcg  | 17940 |
| acccgtcacc ttggatttgc cccctcccc tgctgtact gctgtacccg cttctaagcc     | 18000 |
| tgtcgctgcc ccgaaaccag tcgccgtagc caggtcacgt cccggggggcg ctcctcgtcc  | 18060 |
| aaatgcgcac tggcaaaaata ctctgaacag catcgtgggt ctaggcgtgc aaagtgtaaa  | 18120 |
| acgccgtcgc tgcttttaat taaatatgga gtagcgctta acttgccat ctgtgtatat    | 18180 |
| gtgtcattac acgccgtcac agcagcagag gaaaaaagga agaggtcgtg cgtcgacgct   | 18240 |
| gagttacttt caagatggcc accccatcga tgctgcccc atgggcatac atgcacatcg    | 18300 |
| ccggacagga tgcttcggag tacctgagtc cgggtctgggt gcagttcgcc cgcgccacag  | 18360 |
| acacctactt caatctggga aataagttaa gaaatcccac cgtagcgccg acccacgatg   | 18420 |
| tgaccaccga ccgtagccag cggctcatgt tgcgcttcgt gcccgttgac cgggaggaca   | 18480 |
| atacatactc ttacaaagtg cgggtacaccc tggccgtggg cgacaacaga gtgctggata  | 18540 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| tggccagcac gttctttgac attaggggtg tgttggacag aggtcccagt ttcaaaccct  | 18600 |
| attctggtac ggcttacaac tccctggctc cttaaaggcg tccaaataca tctcagtgga  | 18660 |
| ttgcagaagg tgtaaaaaat acaactgggtg aggaacacgt aacagaagag gaaaccaata | 18720 |
| ctactactta cacttttggc aatgctcctg taaaagctga agctgaaatt acaaaagaag  | 18780 |
| gactcccagt aggtttggaa gtttcagatg aagaaagtaa accgatttat gctgataaaa  | 18840 |
| catatcagcc agaacctcag ctgggagatg aaacttggac tgaccttgat ggaaaaaccg  | 18900 |
| aaaagtatgg aggcagggtc ctcaaaccgc atactaagat gaaacatgc tacgggtcct   | 18960 |
| ttgccaacc tactaatgtg aaaggcggtc aggcaaaaca aaaaacaacg gagcagccaa   | 19020 |
| atcagaaaagt cgaatatgat atcgacatgg agttttttga tgcggcatcg cagaaaacaa | 19080 |
| acttaagtcc taaaattgtc atgtatgcag aaaatgtaaa tttggaaact ccagacactc  | 19140 |
| atgtagtgt caaacctgga acagaagaca caagttccga agctaatttg ggacaacaat   | 19200 |
| ctatgccccaa cagacccaac tacattggct tcagagataa ctttattgga cttatgtact | 19260 |
| ataacagtac tggtaacatg ggggtgctgg ctggtcaagc gtctcagtta aatgcagtgg  | 19320 |
| ttgacttgca ggacagaaac acagaacttt cttaccaact cttgcttgac tctctgggcg  | 19380 |
| acagaaccag atacttttagc atgtggaatc aggctgtgga cagttatgat cctgatgtac | 19440 |
| gtgttattga aaatcatggt gtggaagatg aacttcccaa ctactgtttt ccactggacg  | 19500 |
| gcataggtgt tccaacaacc agttacaaat caatagttcc aaatggagac aatgcgccta  | 19560 |
| attggaagga acctgaagta aatggaacaa gtgagatcgg acagggtaat ttgtttgcca  | 19620 |
| tggaaattaa ctttcaagcc aatctatggc gaagtttcct ttattccaat gtggctctat  | 19680 |
| atctcccaga ctcgtacaaa tacaccccg ccaatgtcac tcttccagaa aacaaaaaca   | 19740 |
| cctacgacta catgaacggg cgggtgggtg cgccatctct agtagacacc tatgtgaaca  | 19800 |
| ttggtgccag gtggtctctg gatgccatgg acaatgtcaa cccattcaac caccaccgta  | 19860 |
| acgctggctt gcgttaccga tccatgcttc tgggtaacgg acgttatgtg cttttccaca  | 19920 |
| tacaagtgcc tcaaaaattc ttcgctgtta aaaacctgct gcttctccca ggctcctaca  | 19980 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| cttatgagtg gaactttagg aaggatgtga acatggttct acagagttcc ctcggtaacg  | 20040 |
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| tcccatggc tcacaacacc gcttccaccc ttgaagccat gctgcggaat gacaccaatg   | 20160 |
| atcagtcatt caacgactac ctatctgcag ctaacatgct ctacccatt cctgccaatg   | 20220 |
| caaccaatat tccattttcc attccttctc gcaactgggc ggctttcaga ggctgggtcat | 20280 |
| ttaccagact gaaaaccaa gaaactccct ctttggggtc tggatttgac ccctactttg   | 20340 |
| tctattctgg ttctattccc tacctggatg gtaccttcta cctgaaccac acttttaaga  | 20400 |
| aggtttccat catgtttgac tcttcagtga gctggcctgg aaatgacagg ttactatctc  | 20460 |
| ctaacgaatt tgaaataaag cgactgtgg atggcgaagg ctacaacgta gcccaatgca   | 20520 |
| acatgaccaa agactgggtc ttggtacaga tgctcgccaa ctacaacatc ggctatcagg  | 20580 |
| gcttctacat tccagaagga taaaagatc gcatgtattc atttttcaga aacttccagc   | 20640 |
| ccatgagcag gcaggtggtt gatgaggtca attacaaaga cttcaaggcc gtcgccatac  | 20700 |
| cctaccaaca caacaactct ggctttgtgg gttacatggc tccgaccatg cgccaaggtc  | 20760 |
| aaccctatcc cgctaactat ccctatccac tcattggaac aactgccgta aatagtgtta  | 20820 |
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| tgtctatggg ggcccttaca gacttgggac agaatatgct ctatgccaac tcagctcatg  | 20940 |
| ctctggacat gacctttgag gtggatccca tggatgagcc caccctgctt tatcttctct  | 21000 |
| tcgaagtttt cgacgtggtc agagtgcac agccacaccg cggcatcatc gaggcagtct   | 21060 |
| acctgcgtac accgttctcg gccggtaacg ctaccacgta agaagcttct tgcttcttgc  | 21120 |
| aaatagcagc tgcaaccatg gcctgcggat cccaaaacgg ctccagcgag caagagctca  | 21180 |
| gagccattgt ccaagacctg gggtgcggac cctatttttt gggaacctac gataagcgct  | 21240 |
| tccgggggtt catggcccc gataagctcg cctgtgccat tgtaaatacg gccggacgtg   | 21300 |
| agacgggggg agagcactgg ttggctttcg gttggaaccc acgttctaac acctgctacc  | 21360 |
| tttttgatcc ttttggattc tcggatgatc gtctcaaaca gatttaccag tttgaatatg  | 21420 |



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|                                                                    |       |
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| gcgatcttct caatgcttct tttgccatcc ttctcaacga tgcgcacggg cgggtagctg  | 23040 |
| aaaccactg ctacaagttg cgcctcttct ctttcttctt cgctgtcttg actgatgtct   | 23100 |
| tgcatgggga tatgtttggt cttccttggc ttcttttttg ggggtatcgg aggaggagga  | 23160 |
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| ctgtcggtag aagaacctga cccacacagg cgacagggtgt ttctcttcgg gggcagaggt | 23280 |
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| cttccttga agaggttcca aagatcttcg agggctctggg caataatgag actcgggccg  | 24180 |
| caaatgctct gcaaaaaggga gaaaatggca tggatgagca tcacagcgtt ctggtggaat | 24240 |
| tggaaggcga taatgccaga ctcgcagtac tcaagcgaag catcgaggtc acacacttcg  | 24300 |

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|            |             |            |             |             |            |       |
|------------|-------------|------------|-------------|-------------|------------|-------|
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| ttaagcgcg  | aagtccccctt | tcagaagaca | tgcatgaccc  | agatgcctgt  | gatgagggtg | 24420 |
| aaccagtgg  | cagtgatgag  | cagctaacc  | gatggctggg  | caccgactct  | cccagggatt | 24480 |
| tggaagagc  | tcgcaagctt  | atgatggccg | tggtgctgg   | taccgtagaa  | ctagagtgtc | 24540 |
| tccgacgtt  | ctttaccgat  | tcagaaacct | tgcgcaaaact | cgaagagaat  | ctgcactaca | 24600 |
| cttttagaca | cggctttgtg  | cggcaggcat | gcaagatatc  | taacgtggaa  | ctcaccaacc | 24660 |
| tggtttccta | catgggtatt  | ctgcatgaga | atcgcttagg  | acaaagcgtg  | ctgcacagca | 24720 |
| ccctgaagg  | ggaagcccg   | cgtgattaca | tccgcgattg  | tgtctatctg  | tacctgtgcc | 24780 |
| acacgtggc  | aaccggcatg  | ggtgtatgg  | agcaatgttt  | agaagaacag  | aacttgaaag | 24840 |
| agcttgacaa | gctcttacag  | aaatctctta | aggttctgtg  | gacagggttc  | gacgagcgca | 24900 |
| ccgtcgctt  | cgaactggc   | gacctcatct | tcccagagcg  | tctcagggtt  | actttgcgaa | 24960 |
| acggattgcc | tgactttatg  | agccagagca | tgcttaacaa  | ttttcgctct  | ttcatcctgg | 25020 |
| aacgctccg  | tatcctgccc  | gccacctgct | gcgcactgcc  | ctccgacttt  | gtgcctctca | 25080 |
| cctaccgcga | gtgccccccg  | ccgctatgga | gtcactgcta  | cctgttccgt  | ctggccaact | 25140 |
| atctctccta | ccactcggat  | gtgatcgagg | atgtgagcgg  | agacggcttg  | ctggagtgtc | 25200 |
| actgccgctg | caatctgtgc  | acgccccacc | ggtccctagc  | ttgcaacccc  | cagttgatga | 25260 |
| gcgaaaccca | gataataggc  | acctttgaat | tgcaaggccc  | cagcagccaa  | ggcgatgggt | 25320 |
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| aagccatcca | aaaatcccg   | caagaatttc | tactgaaaaa  | gggtaagggg  | gtctaccttg | 25560 |
| accccagac  | cggcgaggaa  | ctcaacacaa | ggttcctca   | ggatgtcca   | acgacgagaa | 25620 |
| aacaagaagt | tgaagggtga  | gccgccgccc | ccagaagata  | tggaggaaga  | ttgggacagt | 25680 |
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| ccctcaaggt ccggcccacg gaggcgcat ttctatcgaa ggcaaaatag actctcgcct   | 27360 |
| gcaacgaatt ttctcccagc ggcccgtgct gatcgagcga gaccaggga acaccacggt   | 27420 |
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| tactgagttt aataaaaact gaattaagac tctcctacgg actgccgctt cttcaaccgc  | 27540 |
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| ttcctactca caaactagaa gctcaacgac tacaccgctt ttccagaagc attttccta   | 27660 |
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| catggtggga atcaaccca tagttatcac ccagcaaagt ggagatacta agggttgcat   | 28080 |
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| ccggctcagt gactccttca accctgtcta cccctatgaa gatgaaagca cctcccaaca  | 28440 |
| cccctttata aaccagggt ttatttcccc aaatggcttc acacaaagcc caaacggagt   | 28500 |
| tcttacttta aaatgttta cccactaac aaccacaggc ggatctctac agctaaaagt    | 28560 |
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| gaatgaaaat  | aaactttgta | tcaaattagg  | acaaggactt  | acattcaatt  | caaacaacat | 28740 |
| ttgcattgat  | gacaatatta | acaccttatg  | gacaggagtc  | aaccccaccg  | aagccaactg | 28800 |
| tcaaatacatg | aactccagtg | aatctaata   | ttgcaaatta  | attctaacac  | tagttaaaac | 28860 |
| tggagcacta  | gtcactgcat | ttgtttatgt  | tataggagta  | tctaacaatt  | ttaatatgct | 28920 |
| aactacacac  | agaaatataa | atctttactgc | agagctgttt  | ttcgattcta  | ctggtaattt | 28980 |
| actaactaga  | ctctcatccc | tcaaaactcc  | acttaatcat  | aaatcaggac  | aaaacatggc | 29040 |
| tactggtgcc  | attactaatg | ctaaaggttt  | catgcccagc  | acgactgcct  | atcctttcaa | 29100 |
| tgataattct  | agagaaaaag | aaaactacat  | ttacggaact  | tggttactaca | cagctagtga | 29160 |
| tcgcactgct  | tttcccattg | acatatctgt  | catgcttaac  | cgaagagcaa  | taaatgacga | 29220 |
| gacatcatat  | tgtattcgta | taacttggtc  | ctggaacaca  | ggagatgccc  | cagaggtgca | 29280 |
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| cgtctactac  | tgccagcagt | atcttctcta  | tccgctcacc  | tttgggcaag  | gcaccaaggt | 29760 |
| ggagattaag  | ggagggggcg | gcagcggggg  | aggcggcagc  | ggcggcgggg  | gatcgcaggt | 29820 |
| ccagctcgtc  | caatccggag | ccgaagtcaa  | gaagccggga  | gcgtcgggtca | aggtcagctg | 29880 |
| caaaacttcg  | cgctacacct | tcactgagta  | cacgatccac  | tgggtccgcc  | aggcggccgg | 29940 |
| ccagcggctg  | gagtggatcg | gcgggatcaa  | cccaaacaac  | ggaatcccaa  | attacaatca | 30000 |
| gaaatttaaa  | gggcgggtga | ctatcacctg  | ggatacctcg  | gcctccacgg  | cgtacatgga | 30060 |

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|                                                                    |       |
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| ctattactgt gcaagatatt atgatgatca ttactgcctt gactactggg gccaaggcac  | 30540 |
| cactctcaca gtctcctcag gtggcgggtg ctcgggcggg ggtggatctg gtggcggcgg  | 30600 |
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| cttgctgggt ctgattggag tgcaaggaac cccagtagtg agaaagggtc gctgttcctg  | 31440 |
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| agaatacacc  | aatctctccc | cacgcacagc  | tttaaacatt | tggataccat | tagatataga  | 32760 |
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| ttgcagtagg tacaacacat tattacaata ttgtttaata aaccataatt aaaagcgctc   | 33180 |
| cagccaaaac tcatatctga tataatcgcc cctgcatgac catcatacca aagtttaata   | 33240 |
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|                                                                    |       |
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<220>  
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Ser Leu

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ctggcacaga tgaggagaat ctctcttttc tcctgcttga aggacagaca tgactttgga 180  
tttccccagg aggagtttgg caaccagttc caaaaggctg aaaccatccc tgcctccat 240  
gagatgatcc agcagatctt caatctcttc agcaciaagg actcatctgc tgcttgggat 300  
gagaccctcc tagacaaatt ctacactgaa ctctaccagc agctgaatga cctggaagcc 360  
tgtgtgatac aggggggtggg ggtgacagag actcccctga tgaaggagga ctccattctg 420  
gctgtgagga aatacttcca aagaatcact ctctatctga aagagaagaa atacagccct 480

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tgtgcctggg aggttgtcag agcagaaatc atgagatctt tttctttgtc aacaaacttg 540  
caagaaaagtt taagaagtaa ggaa 564

<210> 110  
<211> 294  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> CXCL10 nucleic acid sequence

<400> 110  
atgaatcaaa ctgccattct gatttgctgc cttatctttc tgactctaag tggcattcaa 60  
ggagtacctc tctctagaac tgtacgtgt acctgcatca gcattagtaa tcaacctgtt 120  
aatccaaggt ctttagaaaa acttgaaatt attcctgcaa gccaatTTTg tccacgtgtt 180  
gagatcattg ctacaatgaa aaagaagggt gagaagagat gtctgaatcc agaatcgaag 240  
gccatcaaga atttactgaa agcagttagc aaggaaaagg ctaaaagatc tcct 294

<210> 111  
<211> 372  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> CXCL9 nucleic acid sequence

<400> 111  
aagaaaagtg gtgttctttt cctcttgggc atcatcttgc tggttctgat tggagtgcaa 60  
ggaacccag tagtgagaaa gggtcgtgt tcctgcatca gcaccaacca agggactatc 120  
cacctacaat ccttgaaaaga ccttaaaca tttgccccaa gcccttcctg cgagaaaatt 180  
gaaatcattg ctacactgaa gaatggagt caaacatgtc taaaccaga ttcagcagat 240  
gtgaaggaac tgattaaaaa gtgggagaaa caggtcagcc aaaagaaaaa gcaaaagaat 300  
gggaaaaaac atcaaaaaaa gaaagtcttg aaagtctgaa aatctcaacg ttctcgtaa 360  
aagaagacta ca 372

<210> 112  
 <211> 3407  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> NG-615 Transgene cassette

<400> 112  
 caggccccacc atgggctgga gctgcatcat cttgttcctg gtcgcaactg ctaccggagt 60  
 ccattcggac atcgtcatga cccaaagccc tgactcgctc gctgtgtcac tgggagagcg 120  
 ggcgactatc aactgcaa atccccagag cctgctgtat tcacgcaatc agaaaaacta 180  
 cctggcctgg tatcagcaga agccggggcca gcctcccaag ctgctgatct tctgggcctc 240  
 caccgcgaa agcggcgtgc cggaccgctt cagcgggaagc ggattcggaa ctgactttac 300  
 tctgaccatt agctccttgc aggcggagga cgtggccgtc tactactgcc agcagtattt 360  
 ctctatccg ctacaccttg ggcaaggcac caagggtggag attaaggag ggggcggcag 420  
 cgggggaggc ggcagcggcg gcgggggatc gcagggtccag ctcggtccaat ccggagccga 480  
 agtcaagaag ccgggagcgt cgggtcaaggc cagctgcaaa acttcgcgct acaccttcac 540  
 tgagtacacg atccactggg tccgccaggc gcccgccag cggctggagt ggatcggcgg 600  
 gatcaaccca aacaacggaa tcccaaatta caatcagaaa tttaaagggc ggggtgactat 660  
 caccgtggat acctcggcct ccacggcgta catggagctc tcatcactca gatcggagga 720  
 caccgcggtc tattactgcg cccgccgccg gatcgcttat ggatacgatg aaggacatgc 780  
 gatggattac tggggccagg gcaccctcgt cacgggtgtc tcaggaggcg gcggttcaca 840  
 ggtgcagctg cagcagtctg gggctgaact ggcaagacct ggggcctcag tgaagatgtc 900  
 ctgcaaggct tctggctaca cttttactag gtacacgatg cactgggttaa aacagaggcc 960  
 tggacagggt ctggaatgga ttggatacat taatcctagc cgtgggtata ctaattacaa 1020  
 tcagaagttc aaggacaagg ccacattgac tacagacaaa tcctccagca cagcctacat 1080  
 gcaactgagc agcctgacat ctgaggactc tgcagtctat tactgtgcaa gatattatga 1140

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|                                                                     |      |
|---------------------------------------------------------------------|------|
| tgatcattac tgccttgact actggggcca aggcaccact ctcacagtct cctcaggtgg   | 1200 |
| cgggtggctcg ggcggtgggtg gatctgggtg cggcggatct gatatcgtgc tcactcagtc | 1260 |
| tccagcaatc atgtctgcat ctccagggga gaaggtcacc atgacctgca gtgccagctc   | 1320 |
| aagtgtaatg tacatgaact ggtaccagca gaagtcaggc acctcccca aaagatggat    | 1380 |
| ttatgacaca tccaaactgg cttctggagt ccctgctcac ttcaggggca gtgggtctgg   | 1440 |
| gacctcttac tctctcacia tcagcggcat ggaggctgaa gatgctgcca cttattactg   | 1500 |
| ccagcagtgg agtagtaacc cattcacgtt cggctcgggg acaaagttgg aaataaacg    | 1560 |
| gggaagcggg cagtgtacta attatgctct cttgaaattg gctggagatg ttgagagcaa   | 1620 |
| ccctggacct acagtgtggt cgccagcctg gagcccaaca acctatctcc tcctgtgtgt   | 1680 |
| gctgtgtgagc tcgggactca gtgggaccca ggactgtctc ttccaacaca gccccatctc  | 1740 |
| ctccgacttc gctgtcaaaa tccgtgagct gtctgactac ctgcttcaag attaccagct   | 1800 |
| caccgtggcc tccaacctcc aggacgagga gctctgcggg ggcctctggc ggctggtcct   | 1860 |
| ggcacagcgc tggatggagc ggctcaagac tgtcgtggg tccaagatgc aaggcttgct    | 1920 |
| ggagcgcgtg aacacggaga tacactttgt caccaaattg gcctttcagc cccccccag    | 1980 |
| ctgtcttcgc ttcgtccaga ccaacatctc ccgcctccta caggagacct ccgagcagct   | 2040 |
| gggtggcgtg aagccctgga tcactcgcca gaacttctcc cggtgcctgg agctgcagtg   | 2100 |
| tcagcccgac tcctcaacct tgccaccccc atggagtccc cgccccctgg aggccacagc   | 2160 |
| cccgggaagc ggagctacta acttcagcct gctgaagcag gctggagacg tggaggagaa   | 2220 |
| ccctggacct caggtctcca ctgctgccct tgccgtcctc ctctgcacca tggctctctg   | 2280 |
| caaccaggct ctctctgcac cacttgctgc tgacacgccg accgcctgct gcttcagcta   | 2340 |
| cacctcccga cagattccac agaatttcat agctgactac tttgagacga gcagccagtg   | 2400 |
| ctccaagccc agtgtcatct tcctaaccaa gagaggccgg caggtctgtg ctgaccccag   | 2460 |
| tgaggagtgg gtccagaaat acgtcagtga cctggagctg agtgccggaa gcggagaggg   | 2520 |
| cagaggaagt ctgctaacat gcggtgacgt cgaggagaat cctggacctg ccttgacctt   | 2580 |

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| tgctttactg gtggccctcc tgggtgctcag ctgcaagtca agctgctctg tgggctgtga | 2640 |
| tctgcctcaa acccacagcc tgggtagcag gaggaccttg atgctcctgg cacagatgag  | 2700 |
| gagaatctct cttttctcct gcttgaagga cagacatgac tttggatttc cccaggagga  | 2760 |
| gtttggcaac cagttccaaa aggctgaaac catccctgtc ctccatgaga tgatccagca  | 2820 |
| gatcttcaat ctcttcagca caaaggactc atctgctgct tgggatgaga ccctcctaga  | 2880 |
| caaattctac actgaactct accagcagct gaatgacctg gaagcctgtg tgatacaggg  | 2940 |
| gggtgggggtg acagagactc ccctgatgaa ggaggactcc attctggctg tgaggaaata | 3000 |
| cttccaaaga atcactctct atctgaaaga gaagaaatac agcccttggt cctgggaggt  | 3060 |
| tgtcagagca gaaatcatga gatctttttc tttgtcaaca aacttgcaag aaagtttaag  | 3120 |
| aagtaaggaa taagctagct tgactgactg agatacagcg taccttcagc tcacagacat  | 3180 |
| gataagatac attgatgagt ttggacaaac cacaactaga atgcagtga aaaaatgctt   | 3240 |
| tatttgtgaa atttgtgatg ctattgcttt atttgaacc attataagct gcaataaaca   | 3300 |
| agttaacaac aacaattgca ttcattttat gtttcagggt cagggggagg tgtgggaggt  | 3360 |
| tttttaaagc aagtaaaacc tctacaaatg tggtagtcgt cagctat                | 3407 |

<210> 113  
 <211> 2630  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> NG-640 Transgene cassette

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| <400> 113                                                          |     |
| cagggcccacc atgggctgga gctgcatcat cttgttcctg gtcgcaactg ctaccggagt | 60  |
| ccattcggac atcgatcatga cccaaagccc tgactcgctc gctgtgtcac tgggagagcg | 120 |
| ggcgactatc aactgcaa atcatccagag cctgctgtat tcacgcaatc agaaaaacta   | 180 |
| cctggcctgg tatcagcaga agccgggcca gcctcccaag ctgctgatct tctgggcctc  | 240 |
| cacccgcgaa agcggcgtgc cggaccgctt cagcggaagc ggattcggaa ctgactttac  | 300 |



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|                                                                    |      |
|--------------------------------------------------------------------|------|
| tctgaccatt agctccttgc aggcggagga cgtggccgtc tactactgcc agcagtat    | 360  |
| ctcctatccg ctcacctttg ggcaaggcac caaggtggag attaagggag ggggcggcag  | 420  |
| cgggggaggc ggccagcggcg gcgggggatc gcaggtccag ctcgtccaat ccggagccga | 480  |
| agtcaagaag ccgggagcgt cgggtcaaggt cagctgcaaa acttcgcgct acaccttcac | 540  |
| tgagtacacg atccactggg tccgccaggc gcccggccag cggctggagt ggatcggcgg  | 600  |
| gatcaaccca aacaacggaa tcccaaatta caatcagaaa tttaaagggc gggtgactat  | 660  |
| caccgtggat acctcggcct ccacggcgta catggagctc tcatcactca gatcggagga  | 720  |
| caccgcggtc tattactgcg cccgccgccg gatcgcttat ggatacgatg aaggacatgc  | 780  |
| gatggattac tggggccagg gcaccctcgt cacgggtgtcg tcaggaggcg gcggttcaca | 840  |
| ggtgcagctg cagcagtctg gggctgaact ggcaagacct ggggcctcag tgaagatgtc  | 900  |
| ctgcaaggct tctggctaca cttttactag gtacacgatg cactgggtaa aacagaggcc  | 960  |
| tggacagggt ctggaatgga ttggatacat taatcctagc cgtgggtata ctaattacaa  | 1020 |
| tcagaagttc aaggacaagg ccacattgac tacagacaaa tcctccagca cagcctacat  | 1080 |
| gcaactgagc agcctgacat ctgaggactc tgcagtctat tactgtgcaa gatattatga  | 1140 |
| tgatcattac tgccttgact actggggcca aggcaccact ctcacagtct cctcagggtg  | 1200 |
| cgggtggctcg ggccggtggg gatctgggtg cggcggatct gatatcgtgc tcactcagtc | 1260 |
| tccagcaatc atgtctgcat ctccagggga gaaggtcacc atgacctgca gtgccagctc  | 1320 |
| aagtgtaatg tacatgaact ggtaccagca gaagtcaggc acctcccca aaagatggat   | 1380 |
| ttatgacaca tccaaactgg cttctggagt ccctgctcac ttcaggggca gtgggtctgg  | 1440 |
| gacctcttac tctctcacia tcagcggcat ggaggctgaa gatgctgcca cttattactg  | 1500 |
| ccagcagtgg agtagtaacc cattcacgtt cggctcgggg acaaagttgg aaataaaccc  | 1560 |
| gggaagcggg gctactaact tcagcctgct gaagcaggct ggagacgtgg aggagaaccc  | 1620 |
| tggacctaat caaactgcc a ttctgatttg ctgccttatc tttctgactc taagtggcat | 1680 |
| tcaaggagta cctctctcta gaactgtacg ctgtacctgc atcagcatta gtaatcaacc  | 1740 |

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|                                                                                         |      |
|-----------------------------------------------------------------------------------------|------|
| tgттаатсса аггтсттtag аааааааааа аааааааааа аааааааааа аааааааааа аааааааааа аааааааааа | 1800 |
| tgттgagatc attgctacaa tgaaaaagaa ggggtgagaag agatgtctga atccagaatc                      | 1860 |
| gaaggccatc aagaatttac tgaaagcagt tagcaaggaa aggtctaaaa gatctcctgg                       | 1920 |
| aagcggagag ggcagaggaa gtctgctaac atgcggtgac gtcgaggaga atcctggacc                       | 1980 |
| taagaaaaagt ggtgttcttt tcctcttggg catcatcttg ctggttctga ttggagtgca                      | 2040 |
| aggaacccca gtagtgagaa agggctcgctg ttcttgcctc agcaccaacc aagggactat                      | 2100 |
| ccacctacaa tccttgaaag accttaaaaca atttgccccca agcccttcct gcgagaaaaat                    | 2160 |
| tgaaatcatt gctacactga agaattggagt tcaaacaatgt ctaaaccagc attcagcaga                     | 2220 |
| tgtgaaggaa ctgattaaaa agtgggagaa acaggctcagc caaaagaaaa agcaaaagaa                      | 2280 |
| tgggaaaaaaa catcaaaaaa agaaagtctt gaaagtctga aaatctcaac gttctcgtca                      | 2340 |
| aaagaagact acataagcta gcttgactga ctgagataca gcgtaccttc agctcacaga                       | 2400 |
| catgataaga tacattgatg agtttggaca aaccacaact agaattgcagt gaaaaaaatg                      | 2460 |
| ctttattttgt gaaattttgtg atgctattgc tttattttgta accattataa gctgcaataa                    | 2520 |
| acaagttaac aacaacaatt gcattcattt tatgtttcag gttcagggggg aggtgtggga                      | 2580 |
| ggtttttttaa agcaagtaaa acctctacaa atgtggtagt cgtcagctat                                 | 2630 |

<210> 114

<211> 3260

<212> DNA

<213> Artificial Sequence

<220>

<223> NG-641 Transgene cassette

<400> 114

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| caggcccacc atgggctgga gctgcatcat cttgttcctg gtcgcaactg ctaccggagt  | 60  |
| ccattcggac atcgatcatga cccaaagccc tgactcgctc gctgtgtcac tgggagagcg | 120 |
| ggcgactatc aactgcaaat catcccagag cctgctgtat tcacgcaatc agaaaaacta  | 180 |
| cctggcctgg tatcagcaga agccggggcca gcctcccaag ctgctgatct tctgggcctc | 240 |

## eolf-othd-000005

|                                                                     |      |
|---------------------------------------------------------------------|------|
| cacccgcgaa agcggcgtgc cggaccgctt cagcgggaagc ggattcggaa ctgactttac  | 300  |
| tctgaccatt agctccttgc aggcggagga cgtggccgtc tactactgcc agcagtat     | 360  |
| ctcctatccg ctcacctttg ggcaaggcac caaggtggag attaagggag ggggcggcag   | 420  |
| cgggggaggc ggagcggcg gcgggggatc gcaggtccag ctggtccaat ccggagccga    | 480  |
| agtcaagaag ccgggagcgt cgggtcaaggt cagctgcaaa acttcgcgct acaccttcac  | 540  |
| tgagtacacg atccactggg tccgccaggc gcccggccag cggctggagt ggatcggcgg   | 600  |
| gatcaacca aacaacggaa tcccaaatta caatcagaaa tttaaagggc ggggtgactat   | 660  |
| caccgtggat acctcggcct ccacggcgta catggagctc tcatcactca gatcggagga   | 720  |
| caccgcggtc tattactgcg cccgccgccg gatcgcttat ggatacgatg aaggacatgc   | 780  |
| gatggattac tggggccagg gcaccctcgt cacgggtgtcgc tcaggaggcg gcggttcaca | 840  |
| ggtgcagctg cagcagtctg gggctgaact ggcaagacct ggggcctcag tgaagatgtc   | 900  |
| ctgcaaggct tctggctaca cttttactag gtacacgatg cactgggtaa aacagaggcc   | 960  |
| tggacagggt ctggaatgga ttggatacat taatcctagc cgtgggttata ctaattacaa  | 1020 |
| tcagaagttc aaggacaagg ccacattgac tacagacaaa tcctccagca cagcctacat   | 1080 |
| gcaactgagc agcctgacat ctgaggactc tgcagtctat tactgtgcaa gatattatga   | 1140 |
| tgatcattac tgccttgact actggggcca aggcaccact ctcacagtct cctcagggtg   | 1200 |
| cgggtggctcg ggccgggtgg gatctgggtg cgccggatct gatatcgtgc tcactcagtc  | 1260 |
| tccagcaatc atgtctgcat ctccagggga gaaggtcacc atgacctgca gtgccagctc   | 1320 |
| aagtgtaatg tacatgaact ggtaccagca gaagtcaggc acctcccca aaagatggat    | 1380 |
| ttatgacaca tccaaactgg cttctggagt ccctgctcac ttcaggggca gtgggtctgg   | 1440 |
| gacctcttac tctctcacia tcagcggcat ggaggctgaa gatgctgcca cttattactg   | 1500 |
| ccagcagtgg agtagtaacc cattcacgtt cggctcgggg acaaagttgg aaataaaccg   | 1560 |
| gggaagcggg gctactaact tcagcctgct gaagcaggct ggagacgtgg aggagaaccc   | 1620 |
| tggacctaat caaactgcc tttctgatttg ctgccttatc tttctgactc taagtggcat   | 1680 |

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| tcaaggagta cctctctcta gaactgtacg ctgtacctgc atcagcatta gtaatcaacc  | 1740 |
| tgttaatcca aggtcttttag aaaaacttga aattattcct gcaagccaat tttgtccacg | 1800 |
| tgttgagatc attgctacaa tgaaaaagaa ggggtgagaag agatgtctga atccagaatc | 1860 |
| gaaggccatc aagaatttac tgaaagcagt tagcaaggaa aggtctaaaa gatctcctgg  | 1920 |
| aagcggagag ggagaggaa gtctgctaac atgcggtgac gtcgaggaga atcctggacc   | 1980 |
| taagaaaagt ggtgttcttt tcctcttggg catcatcttg ctggttctga ttggagtgc   | 2040 |
| aggaacccca gtagtgagaa agggctgctg ttcctgcac atcagcaccag aagggactat  | 2100 |
| ccacctacaa tccttgaaag accttaaaaca atttgcccc agcccttcct gcgagaaaat  | 2160 |
| tgaaatcatt gctacactga agaattggagt tcaaaccatgt ctaaaccag attcagcaga | 2220 |
| tgtgaaggaa ctgattaaaa agtgggagaa acaggtcagc caaaagaaaa agcaaaagaa  | 2280 |
| tgggaaaaaaa catcaaaaaa agaaagttct gaaagttcga aaatctcaac gttctcgtca | 2340 |
| aaagaagact acaggaagcg gacagtgtac taattatgct ctcttgaaat tggctggaga  | 2400 |
| tgttgagagc aaccctggac ctgccttgac ctttgcttta ctggtggccc tcctggtgct  | 2460 |
| cagctgcaag tcaagctgct ctgtgggctg tgatctgcct caaacccaca gcctgggtag  | 2520 |
| caggaggacc ttgatgctcc tggcacagat gaggagaatc tctcttttct cctgcttgaa  | 2580 |
| ggacagacat gactttggat ttccccagga ggagtgtggc aaccagttcc aaaaggctga  | 2640 |
| aaccatccct gtcctccatg agatgatcca gcagatcttc aatctcttca gcacaaagga  | 2700 |
| ctcatctgct gcttgggatg agaccctcct agacaaattc tacactgaac tctaccagca  | 2760 |
| gctgaatgac ctggaagcct gtgtgataca ggggggtggg gtgacagaga ctcccctgat  | 2820 |
| gaaggaggac tccattctgg ctgtgaggaa atacttccaa agaatcactc tctatctgaa  | 2880 |
| agagaagaaa tacagccctt gtgcctggga ggttgtcaga gcagaaatca tgagatcttt  | 2940 |
| ttctttgtca acaaacttgc aagaaagttt aagaagtaag gaataagcta gcttgactga  | 3000 |
| ctgagataca gcgtaccttc agctcacaga catgataaga tacattgatg agtttggaca  | 3060 |
| aaccacaact agaatgcagt gaaaaaaatg ctttatttgt gaaatttgtg atgctattgc  | 3120 |

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tttattttgta accattataa gctgcaataa acaagttaac aacaacaatt gcattcattt 3180

tatgttttcag gttcaggggg aggtgtggga ggttttttaa agcaagtaaa acctctacaa 3240

atgtggtagt cgtcagctat 3260

<210> 115

<211> 154

<212> PRT

<213> Artificial Sequence

<220>

<223> FLT3L amino acid sequence

<400> 115

Met Thr Gln Asp Cys Ser Phe Gln His Ser Pro Ile Ser Ser Asp Phe  
1 5 10 15

Ala Val Lys Ile Arg Glu Leu Ser Asp Tyr Leu Leu Gln Asp Tyr Pro  
20 25 30

Val Thr Val Ala Ser Asn Leu Gln Asp Glu Glu Leu Cys Gly Gly Leu  
35 40 45

Trp Arg Leu Val Leu Ala Gln Arg Trp Met Glu Arg Leu Lys Thr Val  
50 55 60

Ala Gly Ser Lys Met Gln Gly Leu Leu Glu Arg Val Asn Thr Glu Ile  
65 70 75 80

His Phe Val Thr Lys Cys Ala Phe Gln Pro Pro Pro Ser Cys Leu Arg  
85 90 95

Phe Val Gln Thr Asn Ile Ser Arg Leu Leu Gln Glu Thr Ser Glu Gln  
100 105 110

Leu Val Ala Leu Lys Pro Trp Ile Thr Arg Gln Asn Phe Ser Arg Cys  
115 120 125

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Leu Glu Leu Gln Cys Gln Pro Asp Ser Ser Thr Leu Pro Pro Pro Trp  
 130 135 140

Ser Pro Arg Pro Leu Glu Ala Thr Ala Pro  
 145 150

<210> 116  
 <211> 93  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> MIP1 alpha amino acid sequence

<400> 116

Met Gln Val Ser Thr Ala Ala Leu Ala Val Leu Leu Cys Thr Met Ala  
 1 5 10 15

Leu Cys Asn Gln Val Leu Ser Ala Pro Leu Ala Ala Asp Thr Pro Thr  
 20 25 30

Ala Cys Cys Phe Ser Tyr Thr Ser Arg Gln Ile Pro Gln Asn Phe Ile  
 35 40 45

Ala Asp Tyr Phe Glu Thr Ser Ser Gln Cys Ser Lys Pro Ser Val Ile  
 50 55 60

Phe Leu Thr Lys Arg Gly Arg Gln Val Cys Ala Asp Pro Ser Glu Glu  
 65 70 75 80

Trp Val Gln Lys Tyr Val Ser Asp Leu Glu Leu Ser Ala  
 85 90

<210> 117  
 <211> 188  
 <212> PRT  
 <213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; IFN alpha amino acid sequence

&lt;400&gt; 117

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Leu | Thr | Phe | Ala | Leu | Leu | Val | Ala | Leu | Leu | Val | Leu | Ser | Cys |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Ser | Ser | Cys | Ser | Val | Gly | Cys | Asp | Leu | Pro | Gln | Thr | His | Ser | Leu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ser | Arg | Arg | Thr | Leu | Met | Leu | Leu | Ala | Gln | Met | Arg | Arg | Ile | Ser |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Phe | Ser | Cys | Leu | Lys | Asp | Arg | His | Asp | Phe | Gly | Phe | Pro | Gln | Glu |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Phe | Gly | Asn | Gln | Phe | Gln | Lys | Ala | Glu | Thr | Ile | Pro | Val | Leu | His |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Met | Ile | Gln | Gln | Ile | Phe | Asn | Leu | Phe | Ser | Thr | Lys | Asp | Ser | Ser |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ala | Trp | Asp | Glu | Thr | Leu | Leu | Asp | Lys | Phe | Tyr | Thr | Glu | Leu | Tyr |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Gln | Leu | Asn | Asp | Leu | Glu | Ala | Cys | Val | Ile | Gln | Gly | Val | Gly | Val |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Glu | Thr | Pro | Leu | Met | Lys | Glu | Asp | Ser | Ile | Leu | Ala | Val | Arg | Lys |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Phe | Gln | Arg | Ile | Thr | Leu | Tyr | Leu | Lys | Glu | Lys | Lys | Tyr | Ser | Pro |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Ala | Trp | Glu | Val | Val | Arg | Ala | Glu | Ile | Met | Arg | Ser | Phe | Ser | Leu |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |

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Ser Thr Asn Leu Gln Glu Ser Leu Arg Ser Lys Glu  
180 185

<210> 118  
<211> 125  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> CXCL9 amino acid sequence

<400> 118

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Leu Ile Gly Val Gln Gly Thr Pro Val Val Arg Lys Gly Arg Cys Ser  
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Cys Ile Ser Thr Asn Gln Gly Thr Ile His Leu Gln Ser Leu Lys Asp  
35 40 45

Leu Lys Gln Phe Ala Pro Ser Pro Ser Cys Glu Lys Ile Glu Ile Ile  
50 55 60

Ala Thr Leu Lys Asn Gly Val Gln Thr Cys Leu Asn Pro Asp Ser Ala  
65 70 75 80

Asp Val Lys Glu Leu Ile Lys Lys Trp Glu Lys Gln Val Ser Gln Lys  
85 90 95

Lys Lys Gln Lys Asn Gly Lys Lys His Gln Lys Lys Lys Val Leu Lys  
100 105 110

Val Arg Lys Ser Gln Arg Ser Arg Gln Lys Lys Thr Thr  
115 120 125

<210> 119



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<211> 98  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> CXCL10 amino acid sequence

<400> 119

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1 5 10 15

Ser Gly Ile Gln Gly Val Pro Leu Ser Arg Thr Val Arg Cys Thr Cys  
20 25 30

Ile Ser Ile Ser Asn Gln Pro Val Asn Pro Arg Ser Leu Glu Lys Leu  
35 40 45

Glu Ile Ile Pro Ala Ser Gln Phe Cys Pro Arg Val Glu Ile Ile Ala  
50 55 60

Thr Met Lys Lys Lys Gly Glu Lys Arg Cys Leu Asn Pro Glu Ser Lys  
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Ala Ile Lys Asn Leu Leu Lys Ala Val Ser Lys Glu Arg Ser Lys Arg  
85 90 95

Ser Pro

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<213> Artificial Sequence

<220>  
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<400> 120

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| gacgcataaa aaggcttttt tctcacggaa ctacttagtt ttcccacggg atttaacagg  | 240  |
| aaatgaggta gttttgaccg gatgcaagtg aaaattgttg attttcgcgc gaaaactgaa  | 300  |
| tgaggaagtg tttttctgaa taatgtggta tttatggcag ggtggagtat ttgttcaggg  | 360  |
| ccaggtagac tttgacccat tacgtggagg tttcgattac cgtgtttttt acctgaattt  | 420  |
| ccgcgtaccg tgtcaaagtc ttctgttttt acgtagggtg cagctgatcg ctaggggtatt | 480  |
| tatacctcag ggtttgtgtc aagaggccac tcttgagtgc cagcgagaag agttttctcc  | 540  |
| tctgcgccgg cagtttaata ataaaaaat gagagatttg cgatttctgc ctcaggaaat   | 600  |
| aatctctgct gagactggaa atgaaatatt ggagcttggt gtgcacgccc tgatgggaga  | 660  |
| cgatccggag ccacctgtgc agctttttga gcctcctacg cttcaggaac tgtatgattt  | 720  |
| agaggtagag ggatcggagg attctaata ggaagctgta aatggctttt ttaccgattc   | 780  |
| tatgctttta gctgctaata aagggttaga attagatccg cttttggaca cttttgatac  | 840  |
| tccaggggta attgtggaaa gcggtacagg tgtaagaaaa ttacctgatt tgagttccgt  | 900  |
| ggactgtgat ttgcactgct atgaagacgg gtttcctccg agtgatgagg aggaccatga  | 960  |
| aaaggagcag tccatgcaga ctgcagcggg tgaggggagt aaggctgcca atgttggttt  | 1020 |
| tcagttggat tgcccggagc ttcctggaca tggctgtaag tcttgtgaat ttcacaggaa  | 1080 |
| aaatactgga gtaaaggaac tgttatgttc gctttgttat atgagaacgc actgccactt  | 1140 |
| tatttacagt aagtgtgttt aagttaaaat ttaaaggaat atgctgtttt tcacatgtat  | 1200 |
| attgagtgtg agttttgtgc ttcttattat aggtcctgtg tctgatgctg atgaatcacc  | 1260 |
| atctcctgat tctactacct cacctcctga gattcaagca cctgttcctg tggacgtgcg  | 1320 |
| caagcccatt cctgtgaagc ttaagcctgg gaaacgtcca gcagtggaaa aacttgagga  | 1380 |
| cttgttacag ggtggggacg gacctttgga cttgagtaca cggaacgtc caagacaata   | 1440 |
| agtgttccat atccgtgttt acttaaggtg acgtcaatat ttgtgtgaca gtgcaatgta  | 1500 |

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|                                                                     |      |
|---------------------------------------------------------------------|------|
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| taagtagaag cagacctgtg tggtagctc ataggagctg gctttcatcc atggagggtt    | 1620 |
| gggccatttt ggaagacctt aggaagacta ggcaactgtt agagaacgct tcggacggag   | 1680 |
| tctccggttt ttggagattc tggttcgcta gtgaattagc tagggtagtt tttaggataa   | 1740 |
| aacaggacta taaacaagaa tttgaaaagt tgttggtaga ttgccagga ctttttgaag    | 1800 |
| ctcttaattt ggcccatcag gttcacttta aagaaaaagt tttatcagtt ttagactttt   | 1860 |
| caaccccagg tagaactgct gctgctgtgg cttttcttac ttttatatta gataaatgga   | 1920 |
| tcccgcagac tcatttcagc aggggatacg ttttggttt catagccaca gcattgtgga    | 1980 |
| gaacatggaa ggctcgcaag atgaggacaa tcttaggtta ctggccagtg cagcctttgg   | 2040 |
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| aagaggacaa cccgagagcc ggcctggacc ctccagtgga ggaggcggag tagctgactt   | 2160 |
| gtctcctgaa ctgcaacggg tgcttactgg atctacgtcc actggacggg ataggggcgt   | 2220 |
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| gagtcgcaga cgtcctgaaa ccatttggtg gcatgagggt cagaaagagg gaagggatga   | 2340 |
| agtttctgta ttgcaggaga aatattcact ggaacagggt aaaacatgtt gggtggagcc   | 2400 |
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| acagtataag attactagac ggattaatat ccggaatgct tgttacatat ctggaaatgg   | 2520 |
| ggctgagggtg gtaatagata ctcaagacaa ggcagttatt agatgctgca tgatggatat  | 2580 |
| gtggcctggg gtagtcggta tggaagcagt aacttttgta aatgttaagt ttaggggaga   | 2640 |
| tggttataat ggaatagtgt ttatggccaa taccaaactt atattgcatg gttgtagctt   | 2700 |
| ttttggtttc aacaatacct gtgtagatgc ctggggacag gttagtgtac ggggatgtag   | 2760 |
| tttctatgcg tgttggattg ccacagctgg cagaaccaag agtcaattgt ctctgaagaa   | 2820 |
| atgcatatth caaagatgta acctgggcat tctgaatgaa ggcgaagcaa ggggtccgca   | 2880 |
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|                                                                     |      |
|---------------------------------------------------------------------|------|
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| ttttgatcac aatgtgatga cgaagtgtac catgcatgca ggtgggcgta gaggaatgtt   | 3120 |
| tatgccttac cagtgtaca tgaatcatgt gaaagtgttg ttggaaccag atgccttttc    | 3180 |
| cagaatgagc ctaacaggaa tttttgacat gaacatgcaa atctggaaga tcctgaggta   | 3240 |
| tgatgatacg agatcgaggg tacgcgcatg cgaatgcgga ggcaagcatg ccaggttcca   | 3300 |
| gccggtgtgt gtagatgtga ctgaagatct cagaccggat catttggtta ttgcccgcac   | 3360 |
| tggagcagag ttcggatcca gtggagaaga aactgactaa ggtgagtatt gggaaaactt   | 3420 |
| tgggggtggga ttttcagatg gacagattga gtaaaaaattt gttttttctg tcttgcagct | 3480 |
| gtcatgagtg gaaacgcttc ttttaagggg ggagtcctca gcccttatct gacagggcgt   | 3540 |
| ctcccatcct gggcaggagt tcgtcagaat gttatgggat ctactgtgga tggaagaccc   | 3600 |
| gtccaacccg ccaattcttc aacgctgacc tatgctactt taagtcttc acctttggac    | 3660 |
| gcagctgcag ctgccgccgc cgcttctgtt gccgctaaca ctgtgcttgg aatgggttac   | 3720 |
| tatggaagca tcatggctaa ttccacttcc tctaataacc cttctaccct gactcaggac   | 3780 |
| aagttacttg tccttttggc ccagctggag gctttgaccc aacgtctggg tgaactttct   | 3840 |
| cagcaggtgg tcgagttgag agtacaaact gagtctgctg tcggcacggc aaagtctaaa   | 3900 |
| taaaaaaatc ccagaatcaa tgaataaata aacaagcttg ttgttgattt aaaatcaagt   | 3960 |
| gtttttatatt catTTTTcgc gcacggtatg ccctagacca ccgatctcta tcattgagaa  | 4020 |
| ctcgggtgat tttttccagg atcctataga ggtgggattg aatgtttaga tacatgggca   | 4080 |
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| gtaggctgat tgccacagat aagcccttgg ttaggtgtt tacaacccgg ttgagctggg    | 4260 |
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|                                                                    |      |
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| cagcggcgcg ggcaaacacg ttccgtgggt ctgacacatc atagttatgt tcctgagtta  | 4560 |
| aatcatcata agccatttht atgaatttgg ggcgagagt accagattgg ggtatgaatg   | 4620 |
| ttccttcggg ccccgagca tagttcccct cacagatttg catttcccaa gctttcagtt   | 4680 |
| ccgaggggtg aatcatgtcc acctgggggg ctatgaaaaa caccgtttct ggggcggggg  | 4740 |
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| cataaatgat tccgattacg ggttgcaggt ggtagtttag ggaacggcaa ctgccgtctt  | 4860 |
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| aatccattag gaggcgctct cctcctagtg atagaagttc ttgtagtgag gaaaagtht   | 4980 |
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|                                                                     |      |
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| tagcgaagcg tgagtaaggg caaagggtgtc tctgaccatg actttgagga attgggtattt | 7200 |
| gaagtcgatg tcgtcacagg ctccctgttc ccagagttgg aagtctaccc gtttcttgta   | 7260 |

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|                                                                    |      |
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| agctaggacg atctcgtcga aaccgttgat gttgtgtcct acgatgtata attctatgaa  | 7440 |
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| gtcagataag gcgtagtggt cgagagccca ttcgtgcagg tgaggattcg ctttaaggaa  | 7560 |
| ggaggaccag aggtccactg ccagtgtgtt ttgtaactgg tcccgggtact gacgaaaatg | 7620 |
| ccgtccgact gccatTTTTT ctgggggtgac gcaatagaag gtttgggggt cctgccgcca | 7680 |
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| ctgttcatct tctgtctcga tgggtggtcat gctgacgagc cctcgcgga ggcaagtcca  | 8160 |
| gacctcggcg cggcaggggc ggagctcgag gacgagagcg cgcaggctgg agctgtccag  | 8220 |
| ggctcctgaga cgctgcggac tcaggttagt aggcagtgtc aggagattaa cttgcatgat | 8280 |
| cttttgagg gcgtgcggga ggttcagata gtacttgatc tcaacgggtc cgttggtgga   | 8340 |
| gatgtcgatg gcttgcaggg ttccgtgtcc cttgggcgct accaccgtgc cttgttttt   | 8400 |
| cattttggac ggcggtggct ctgttgcttc ttgcatgttt agaagcgggtg tcgaggcg   | 8460 |
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| ccgcgcgcgg gtaggttctg gtactgcgcc ctgagaagac tcgcatgcgc gacgacgcgg  | 8580 |
| cggttgacat cctggatctg acgcctctgg gtgaaaagcta ccggccccgt gagcttgaac | 8640 |
| ctgaaagaga gttcaacaga atcaatctcg gtatcgttga cggcggcttg cctaaggatt  | 8700 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| tcttgacagt caccagagtt gtcctggtag gcgatctccg ccatgaactg ctcgatctct  | 8760  |
| tcctcttgaa gatctccgcg gcccgctctc tcgacgggtg cgcgagggtc gttggagatg  | 8820  |
| cgcccaatga gttgagagaa tgcattcatg cccgcctcgt tccagacgcg gctgtagacc  | 8880  |
| acggccccc a cgggatctct cgcgcgcatg accacctggg cgagggtgag ctccacgtgg | 8940  |
| cgggtgaaga ccgcatagtt gcataggcgc tggaaaaggt agttgagtgt ggtggcgatg  | 9000  |
| tgctcggatga cgaagaaata catgatccat cgtctcagcg gcatctcgct gacatcgccc | 9060  |
| agagcttcca agcgctccat ggcctcgtag aagtccacgg caaaattaaa aaactgggag  | 9120  |
| tttcgcgcgg acacggtcaa ctctcttcc agaagacgga taagttcggc gatggtggtg   | 9180  |
| cgcacctcgc gctcgaaaagc ccctgggatt tcttctcaa tctcttctt ttccactaac   | 9240  |
| atctcttctt cttcagggtg ggctgcagga ggagggggaa cgcggcgacg ccggcggcgc  | 9300  |
| acgggcagac ggtcgatgaa tctttcaatg acctctccgc ggccggcgcg catggtttca  | 9360  |
| gtgacggcgc ggccgttctc gcgcggctgc agagtaaaaa caccgccgcg catctcctta  | 9420  |
| aagtggtgac tgggaggttc tccgtttggg agggagaggg cgctgattat acattttatt  | 9480  |
| aattggcccc tagggactgc acgcagagat ctgatcgtgt caagatccac gggatctgaa  | 9540  |
| aacctttcga cgaaagcgtc taaccagtca cagtcacaag gtaggctgag tacggcttct  | 9600  |
| tgtgggcggg ggtggttatg tggtcgtct gggtcttctg tttcttctt atctcgggaa    | 9660  |
| ggtgagacga tgctgctggt gatgaaatta aagtaggcag ttctaagacg gcggatggtg  | 9720  |
| gcgaggagca ccaggctctt gggtccggct tgctggatac gcaggcgatt ggccattccc  | 9780  |
| caagcattat cctgacatct agcaagatct ttgtagtagt cttgcatgag ccgttctacg  | 9840  |
| ggcacttctt cctcaccctg tctgccatgc atacgtgtga gtccaaatcc gcgcattggt  | 9900  |
| tgtaccagtg ccaagtcagc tacgactctt tcggcgagga tggcttgctg tacttgggta  | 9960  |
| agggtggctt gaaagtcac aaaatccaca aagcgggtgg aagctcctgt attaatggtg   | 10020 |
| taagcacagt tggccatgac tgaccagtta actgtctggt gaccagggcg cacgagctcg  | 10080 |
| gtgtatttaa ggcgcaata ggcgcggggtg tcaaagatgt aatcgttgca ggtgcgcacc  | 10140 |



## eolf-othd-000005

|             |            |             |             |            |             |       |
|-------------|------------|-------------|-------------|------------|-------------|-------|
| agatactggg  | accctataag | aaaatgcggc  | ggtggttggc  | ggtagagagg | ccatcgttct  | 10200 |
| gtagctggag  | cgccaggggc | gaggtcttcc  | aacataaggc  | ggtgatagcc | gtagatgtac  | 10260 |
| ctggacatcc  | aggtgattcc | tgcggcggta  | gtagaagccc  | gaggaaactc | gcgtacgcgg  | 10320 |
| ttccaaatgt  | tgcgtagcgg | catgaagtag  | ttcattgtag  | gcacggtttg | accagtgagg  | 10380 |
| cgcgcgcagt  | cattgatgct | ctatagacac  | ggagaaaatg  | aaagcgttca | gcgactcgac  | 10440 |
| tccgtagcct  | ggaggaacgt | gaacgggttg  | ggtcgcggtg  | taccccggtt | cgagacttgt  | 10500 |
| actcgagccg  | gccggagccg | cggctaacgt  | ggtattggca  | ctcccgtctc | gacccagcct  | 10560 |
| acaaaaatcc  | aggatacggg | atcgagtcgt  | tttgctgggt  | tccgaatggc | agggaagtga  | 10620 |
| gtcctatttt  | ttttttttgc | cgctcagatg  | catcccgtgc  | tgcgacagat | gcgcccccaa  | 10680 |
| caacagcccc  | cctcgcagca | gcagcagcag  | caatcacaaa  | aggctgtccc | tgcaactact  | 10740 |
| gcaactgccg  | ccgtgagcgg | tgcgggacag  | cccgctatg   | atctggactt | ggaagagggc  | 10800 |
| gaaggactgg  | cacgtctagg | tgcgccttca  | cccgagcggc  | atccgcgagt | tcaactgaaa  | 10860 |
| aaagattctc  | gcgaggcgta | tgtgccccaa  | cagaacctat  | ttagagacag | aagcggcgag  | 10920 |
| gagccggagg  | agatgcgagc | ttcccgtttt  | aacgcgggtc  | gtgagctgcg | tcacggtttg  | 10980 |
| gaccgaagac  | gagtgttgcg | ggacgaggat  | ttcgaagtgt  | atgaaatgac | agggatcagt  | 11040 |
| cctgccaggg  | cacacgtggc | tgcagccaac  | cttgatcgg   | cttacgagca | gacagtaaag  | 11100 |
| gaagagcgta  | acttccaaaa | gtcttttaat  | aatcatgtgc  | gaaccctgat | tgcccgcgaa  | 11160 |
| gaagttaccc  | ttggtttgat | gcatttgtgg  | gatttgatgg  | aagctatcat | tcagaaccct  | 11220 |
| actagcaaac  | ctctgaccgc | ccagctgttt  | ctggtgggtc  | aacacagcag | agacaatgag  | 11280 |
| gctttcagag  | aggcgctgct | gaacatcacc  | gaacccgagg  | ggagatgggt | gtatgatctt  | 11340 |
| atcaacattc  | tacagagtat | catagtgcag  | gagcggagcc  | tgggcctggc | cgagaagggtg | 11400 |
| gctgccatca  | attactcggg | tttgagcttg  | ggaaaatatt  | acgctcgcaa | aatctacaag  | 11460 |
| actccatacg  | ttcccataga | caaggagggtg | aagatagatg  | ggttctacat | gcgcatgacg  | 11520 |
| ctcaagggtct | tgaccctgag | cgatgatctt  | gggggtgtatc | gcaatgacag | aatgcatcgc  | 11580 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| gcggtttagcg ccagcaggag gcgcgagtta agcgacaggg aactgatgca cagtttgcaa | 11640 |
| agagctctga ctggagctgg aaccgaggggt gagaattact tcgacatggg agctgacttg | 11700 |
| cagtggcagc ctagtcgcag ggctctgagc gccgcgacgg caggatgtga gcttccttac  | 11760 |
| atagaagagg cggatgaagg cgaggaggaa gagggcgagt acttggaaga ctgatggcac  | 11820 |
| aacccgtgtt ttttgctaga tggaacagca agcaccggat cccgcaatgc gggcggcgct  | 11880 |
| gcagagccag cagtccggca ttaactcctc ggacgattgg acccaggcca tgcaacgtat  | 11940 |
| catggcgttg acgactcgca acccgaagc ctttagacag caaccccagg ccaaccgtct   | 12000 |
| atcggccatc atggaagctg tagtgccttc ccgctctaata cccactcatg agaaggtcct | 12060 |
| ggccatcgtg aacgcgttgg tggagaacaa agctattcgt ccagatgagg ccggactggg  | 12120 |
| atacaacgct ctcttagaac gcgtggctcg ctacaacagt agcaatgtgc aaaccaattt  | 12180 |
| ggaccgtatg ataacagatg tacgcgaagc cgtgtctcag cgcgaaagggt tccagcgtga | 12240 |
| tgccaacctg ggttcgctgg tggcgtaaaa tgctttcttg agtactcagc ctgctaattg  | 12300 |
| gccgcgtggg caacaggatt atactaactt ttttaagtgt ttgagactga tggatatcaga | 12360 |
| agtacctcag agcgaagtgt atcagtccgg tcctgattac ttctttcaga ctagcagaca  | 12420 |
| gggcttgca acggtaaaac tgagccaagc ttttaaaaac cttaaagggt tgtggggagt   | 12480 |
| gcatgccccg gtaggagaaaa gagcaaccgt gtctagcttg ttaactccga actcccgct  | 12540 |
| attattactg ttggtagctc ctttcaccga cagcggtagc atcgaccgta attcctattt  | 12600 |
| gggttaccta ctaaacctgt atcgcaagc catagggcaa agtcagggtgg acgagcagac  | 12660 |
| ctatcaagaa attaccaag tcagtcgcgc tttgggacag gaagacactg gcagtttgga   | 12720 |
| agccactctg aacttcttgc ttaccaatcg gtctcaaaaag atccctcctc aatatgctct | 12780 |
| tactgcggag gaggagagga tccttagata tgtgcagcag agcgtgggat tgtttctgat  | 12840 |
| gcaagagggg gcaactccga ctgcagcact ggacatgaca gcgcgaaata tggagcccag  | 12900 |
| catgtatgcc agtaaccgac ctttcattaa caaactgtg gactacttgc acagagctgc   | 12960 |
| cgctatgaac tctgattatt tcaccaatgc catcttaaac ccgcactggc tgccccacc   | 13020 |

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|                                              |                                     |       |
|----------------------------------------------|-------------------------------------|-------|
| tggtttctac acgggcgaat atgacatgcc cgacccta    | gacggatttc tgtgggacga               | 13080 |
| cgtggacagc gatgtttttt cacctctttc tgatcatcgc  | acgtggaaaa aggaaggcgg               | 13140 |
| cgatagaatg cattcttctg catcgctgtc cgggggtcatg | ggtgctaccg cggctgagcc               | 13200 |
| cgagtctgca agtccttttc ctagtctacc cttttctcta  | cacagtgtac gtagcagcga               | 13260 |
| agtgggtaga ataagtcgcc cgagttta               | at gggcgaagag gagtatctaa acgattcctt | 13320 |
| gctcagaccg gcaagagaaa aaaattttccc aaacaatgga | atagaaagtt tgggtggataa              | 13380 |
| aatgagtaga tggaagactt atgctcagga tcacagagac  | gagcctggga tcatggggat               | 13440 |
| tacaagtaga gcgagccgta gacgccagcg ccatgacaga  | cagaggggtc ttgtgtggga               | 13500 |
| cgatgaggat tcggccgatg atagcagcgt gctggacttg  | ggtgggagag gaaggggcaa               | 13560 |
| cccgtttgct catttgcgcc ctcgcttggg tggatatgtt  | taaaaaaaaaa taaaaaaaaa              | 13620 |
| actcaccaag gccatggcga cgagcgtacg ttcgttcttc  | tttattatct gtgtctagta               | 13680 |
| taatgaggcg agtcgtgcta ggcgagcgg tgggttatcc   | ggagggtcct cctccttcgt               | 13740 |
| acgagagcgt gatgcagcag cagcaggcga cggcggatg   | gcaatcccca ctggaggctc               | 13800 |
| cctttgtgcc tccgcgatac ctggcaccta cggagggcag  | aaacagcatt cgttattcgg               | 13860 |
| aactggcacc tcagtacgat accaccagg              | tgtatctggg ggacaacaag tcggcggaca    | 13920 |
| ttgcttctct gaactatcag aatgaccaca gcaacttctt  | gaccacgggtg gtgcaaaaca              | 13980 |
| atgactttac ccctacggaa gccagcacc agaccattaa   | ctttgatgaa cgatcgcggt               | 14040 |
| ggggcgggtca gctaaagacc atcatgcata ctaacatgcc | aaacgtgaac gagtatatgt               | 14100 |
| ttagtaacaa gttcaaagcg cgtgtgatgg tgtccagaaa  | acctcccgac ggtgctgcag               | 14160 |
| ttggggatac ttatgatcac aagcaggata ttttgaaata  | tgagtgggtc gagtttactt               | 14220 |
| tgccagaagg caacttttca gttactatga ctattgattt  | gatgaacaat gccatcatag               | 14280 |
| ataattactt gaaagtgggt agacagaatg gagtgcttga  | aagtgacatt ggtgttaagt               | 14340 |
| tcgacaccag gaacttcaag ctgggatggg atcccgaac   | caagttgatc atgcctggag               | 14400 |
| tgtatacgta tgaagccttc catcctgaca ttgtcttact  | gcctggctgc ggagtggatt               | 14460 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| ttaccgagag tcgtttgagc aaccttcttg gtatcagaaa aaaacagcca tttcaagagg  | 14520 |
| gttttaagat tttgtatgaa gatttagaag gtggtaatat tccggccctc ttggatgtag  | 14580 |
| atgcctatga gaacagtaag aaagaacaaa aagccaaaat agaagctgct acagctgctg  | 14640 |
| cagaagctaa ggcaaacata gttgccagcg actctacaag ggttgctaac gctggagagg  | 14700 |
| tcagaggaga caatthttgcg ccaacacctg ttccgactgc agaataatta ttggccgatg | 14760 |
| tgtctgaagg aacggacgtg aaactcacta ttcaacctgt agaaaaagat agtaagaata  | 14820 |
| gaagctataa tgtgttgga gacaaaatca acacagccta tcgcagttgg tatctttcgt   | 14880 |
| acaattatgg cgatcccgaa aaaggagtgc gttcctggac attgctcacc acctcagatg  | 14940 |
| tcacctgcgg agcagagcag gtctactggg cgcttccaga catgatgaag gatcctgtca  | 15000 |
| ctttccgctc cactagacaa gtcagtaact accctgtggg ggggtgcagag cttatgcccc | 15060 |
| tcttctcaaa gagcttctac aacgaacaag ctgtgtactc ccagcagctc cgccagtcca  | 15120 |
| cctcgcttac gcacgtcttc aaccgctttc ctgagaacca gattttaatc cgtccgccgg  | 15180 |
| cgcccaccat taccaccgtc agtgaaaacg ttcctgctct cacagatcac gggaccctgc  | 15240 |
| cggtgcgcag cagtatccgg ggagtccaac gtgtgaccgt tactgacgcc agacgccgca  | 15300 |
| cctgtcccta cgtgtacaag gcactgggca tagtcgcacc gcgcgtcctt tcaagccgca  | 15360 |
| ctttctaaaa aaaaaaaaaa tgtccattct tatctcgccc agtaataaca ccggttgggg  | 15420 |
| tctgcgcgct ccaagcaaga tgtacggagg cgcacgcaaa cgttctaccc aacatcctgt  | 15480 |
| ccgtgttcgc ggacattttc gcgctccatg gggcgccctc aagggccgca ctcgcgttcg  | 15540 |
| aaccaccgtc gatgatgtaa tcgatcaggt ggttgccgac gcccgttaatt atactcctac | 15600 |
| tgcgccctaca tctactgtgg atgcagttat tgacagtgta gtggctgacg ctcgcaacta | 15660 |
| tgctcgacgt aagagccggc gaaggcgcac tgccagacgc caccgagcta cactgccat   | 15720 |
| gcgagccgca agagctctgc tacgaagagc tagacgcgtg gggcgaagag ccatgcttag  | 15780 |
| ggcggccaga cgtgcagctt cgggcgccag cgccggcagg tcccgcaggc aagcagccgc  | 15840 |
| tgtcgcagcg gcgactattg ccgacatggc ccaatcgca agaggcaatg tatactgggt   | 15900 |

## eolf-othd-000005

|                                                                     |       |
|---------------------------------------------------------------------|-------|
| gcgtgacgct gccaccggtc aacgtgtacc cgtgcgcacc cgtccccctc gcacttagaa   | 15960 |
| gatactgagc agtctccgat gttgtgtccc agcggcgagg atgtccaagc gcaaatacaa   | 16020 |
| ggaagaaatg ctgcaggtta tcgcacctga agtctacggc caaccgttga aggatgaaaa   | 16080 |
| aaaacccccgc aaaatcaagc ggggttaaaaa ggacaaaaaa gaagaggaag atggcgatga | 16140 |
| tgggctggcg gagtttgtgc gcgagtttgc cccacggcga cgcgtgcaat ggcggtggcg   | 16200 |
| caaagttcga catgtgttga gacctggaac ttcgggtggtc tttacacccg gcgagcgttc  | 16260 |
| aagcgctact ttttaagcgtt cctatgatga ggtgtacggg gatgatgata ttcttgagca  | 16320 |
| ggcggctgac cgattaggcg agtttgctta tggcaagcgt agtagaataa cttccaagga   | 16380 |
| tgagacagtg tcgataccct tggatcatgg aaatcccacc cctagtctta aaccggtcac   | 16440 |
| tttgcagcaa gtgttaccg taactccgcg aacagggtgtt aaacgcgaag gtgaagattt   | 16500 |
| gtatcccact atgcaactga tggtaaccaa acgccagaag ttggaggacg ttttggagaa   | 16560 |
| agtaaaaagt gatccagata ttcaacctga ggtaaaagt agaccatta agcaggtagc     | 16620 |
| gcctgggtctg ggggtacaaa ctgtagacat taagattccc actgaaagta tggaagtgca  | 16680 |
| aactgaacct gcaaagccta ctgccacct cactgaagtg caaacggatc catggatgcc    | 16740 |
| catgcctatt acaactgacg ccgccggtcc cactcgaaga tcccgacgaa agtacggtcc   | 16800 |
| agcaagtctg ttgatgcca attatgttgt acacccatct attattccta ctcttggtta    | 16860 |
| ccgaggcact cgctactatc gcagccgaaa cagtacctcc cgccgtcgcc gcaagacacc   | 16920 |
| tgcaaatcgc agtcgtcgcc gtagacgcac aagcaaaccg actcccggcg ccctgggtgcg  | 16980 |
| gcaagtgtac cgcaatggta gtgcggaacc tttgacactg ccgcgtcgcc gttaccatcc   | 17040 |
| gagtatcatc acttaataa tgttgccgct gcctccttgc agatatggcc ctacttgtc     | 17100 |
| gccttcgcgt tcccatcact ggttaccgag gaagaaactc gcgccgtaga agagggatgt   | 17160 |
| tgggacgcgg aatgcgacgc tacaggcgac ggcggtgctat ccgcaagcaa ttgcggggtg  | 17220 |
| gttttttacc agccttaatt ccaattatcg ctgctgcaat tggcgcgata ccaggcatag   | 17280 |
| cttccgtggc ggttcaggcc tcgcaacgac attgacattg gaaaaaacg tataaataaa    | 17340 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| aaaaaaaaaa tacaatggac tctgacactc ctggtcctgt gactatgttt tcttagagat   | 17400 |
| ggaagacatc aatttttcat ccttggctcc gcgacacggc acgaagccgt acatgggcac   | 17460 |
| ctggagcgac atcggcacga gccaaactgaa cggggggcgcc ttcaattgga gcagtatctg | 17520 |
| gagcgggctt aaaaattttg gctcaacccat aaaaacatac gggaacaaag cttggaacag  | 17580 |
| cagtacagga caggcgctta gaaataaaact taaagaccag aacttccaac aaaaagtagt  | 17640 |
| cgatgggata gcttccggca tcaatggagt ggtagatttg gctaaccagg ctgtgcagaa   | 17700 |
| aaagataaac agtcgttttg acccgccgcc agcaacccca ggtgaaatgc aagtggagga   | 17760 |
| agaaattcct ccgccagaaa aacgaggcga caagcgctcg cgtcccgatt tggaagagac   | 17820 |
| gctggtgacg cgcgtagatg aaccgccttc ttatgaggaa gcaacgaagc ttggaatgcc   | 17880 |
| caccactaga ccgatagccc caatggccac cgggggtgatg aaaccttctc agttgcatcg  | 17940 |
| acccgtcacc ttggatttgc cccctcccc tgctgtact gctgtacccg cttctaagcc     | 18000 |
| tgctgctgcc ccgaaaccag tcgccgtagc caggtcacgt cccggggggcg ctcctcgtcc  | 18060 |
| aaatgcgcac tggcaaaaata ctctgaacag catcgtgggt ctaggcgtgc aaagtgtaaa  | 18120 |
| acgccgtcgc tgcttttaat taaatatgga gtagcgctta acttgcctat ctgtgtatat   | 18180 |
| gtgtcattac acgccgtcac agcagcagag gaaaaaagga agaggtcgtg cgtcgacgct   | 18240 |
| gagttacttt caagatggcc accccatcga tgctgcccc atgggcatac atgcacatcg    | 18300 |
| ccggacagga tgcttcggag tacctgagtc cgggtctggt gcagttcgcc cgcgccacag   | 18360 |
| acacctactt caatctggga aataagttta gaaatccac cgtagcgccg acccacgatg    | 18420 |
| tgaccaccga ccgtagccag cggctcatgt tgcgcttcgt gcccgttgac cgggaggaca   | 18480 |
| atacatactc ttacaaagtg cggtagacccc tggccgtggg cgacaacaga gtgctggata  | 18540 |
| tggccagcac gttctttgac attaggggtg tgttggacag aggtcccagt ttcaaaccct   | 18600 |
| attctggtac ggcttacaac tccctggctc ctaaaggcgc tccaaataca tctcagtgga   | 18660 |
| ttgcagaagg tgtaaaaaat acaactgggtg aggaacacgt aacagaagag gaaaccaata  | 18720 |
| ctactactta cacttttggc aatgctcctg taaaagctga agctgaaatt acaaaagaag   | 18780 |

## eolf-othd-000005

|                                                                    |       |
|--------------------------------------------------------------------|-------|
| gactcccagt aggttttgaa gtttcagatg aagaaaagtaa accgatttat gctgataaaa | 18840 |
| catatcagcc agaacctcag ctgggagatg aaacttggac tgaccttgat ggaaaaaccg  | 18900 |
| aaaagtatgg aggcagggct ctcaaaccgc atactaagat gaaacccatgc tacgggtcct | 18960 |
| ttgccaaacc tactaatgtg aaaggcggtc aggcaaaaca aaaaacaacg gagcagccaa  | 19020 |
| atcagaaaagt cgaatatgat atcgacatgg agttttttga tgcggcatcg cagaaaacaa | 19080 |
| acttaagtcc taaaattgtc atgtatgcag aaaatgtaaa tttggaaact ccagacactc  | 19140 |
| atgtagtgtg caaacctgga acagaagaca caagttccga agctaatttg ggacaacaat  | 19200 |
| ctatgccccaa cagacccaac tacattggct tcagagataa ctttattgga cttatgtact | 19260 |
| ataacagtac tggtaacatg ggggtgctgg ctggtcaagc gtctcagtta aatgcagtgg  | 19320 |
| ttgacttgca ggacagaaac acagaacttt cttaccaact cttgcttgac tctctgggcg  | 19380 |
| acagaaccag atacttttagc atgtggaatc aggctgtgga cagttatgat cctgatgtac | 19440 |
| gtgttattga aaatcatggt gtggaagatg aacttcccaa ctactgtttt ccactggacg  | 19500 |
| gcataggtgt tccaacaacc agttacaaat caatagttcc aaatggagac aatgcgccta  | 19560 |
| attggaagga acctgaagta aatggaacaa gtgagatcgg acagggtaat ttgtttgcca  | 19620 |
| tggaaattaa ctttcaagcc aatctatggc gaagtttcct ttattccaat gtggctctat  | 19680 |
| atctcccaga ctctgacaaa tacaccccg tccaatgtcac tcttccagaa aacaaaaaca  | 19740 |
| cctacgacta catgaacggg cgggtgggtc cgccatctct agtagacacc tatgtgaaca  | 19800 |
| ttggtgccag gtggtctctg gatgccatgg acaatgtcaa cccattcaac caccaccgta  | 19860 |
| acgctggctt gcgttaccga tccatgcttc tgggtaacgg acgttatgtg cttttccaca  | 19920 |
| tacaagtgcc tcaaaaaattc ttcgctgtta aaaacctgct gcttctccca ggctcctaca | 19980 |
| cttatgagtg gaactttagg aaggatgtga acatggttct acagagttcc ctcggtaacg  | 20040 |
| acctgcgggt agatggcgcc agcatcagtt tcacgagcat caacctctat gctacttttt  | 20100 |
| tccccatggc tcacaacacc gcttccaccc ttgaagccat gctgcggaat gacaccaatg  | 20160 |
| atcagtcatt caacgactac ctatctgcag ctaacatgct ctacccatt cctgccaatg   | 20220 |

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|            |             |            |            |            |            |       |
|------------|-------------|------------|------------|------------|------------|-------|
| caaccaatat | tcccatttcc  | attccttctc | gcaactgggc | ggctttcaga | ggctggcat  | 20280 |
| ttaccagact | gaaaacaaaa  | gaaactccct | ctttggggtc | tggatttgac | ccctactttg | 20340 |
| tctattctgg | ttctattccc  | tacctggatg | gtaccttcta | cctgaaccac | acttttaaga | 20400 |
| aggtttccat | catgtttgac  | tcttcagtga | gctggcctgg | aaatgacagg | ttactatctc | 20460 |
| ctaacgaatt | tgaaataaaag | cgactgtgg  | atggcgaagg | ctacaacgta | gccaatgca  | 20520 |
| acatgaccaa | agactggttc  | ttggtacaga | tgctcgccaa | ctacaacatc | ggctatcagg | 20580 |
| gcttctacat | tccagaagga  | tacaaagatc | gcatgtattc | atttttcaga | aacttccagc | 20640 |
| ccatgagcag | gcagggtggt  | gatgaggatc | attacaaaga | cttcaaggcc | gtcgccatac | 20700 |
| cctaccaaca | caacaactct  | ggctttgtgg | gttacatggc | tccgaccatg | cgccaaggtc | 20760 |
| aaccctatcc | cgctaactat  | ccctatccac | tcattggaac | aactgccgta | aatagtgtta | 20820 |
| cgcagaaaaa | gttcttgtgt  | gacagaacca | tgtggcgcat | accgttctcg | agcaacttca | 20880 |
| tgtctatggg | ggcccttaca  | gacttgggac | agaatatgct | ctatgccaac | tcagctcatg | 20940 |
| ctctggacat | gacctttgag  | gtggatccca | tggatgagcc | caccctgctt | tatcttctct | 21000 |
| tcgaagtttt | cgacgtggtc  | agagtgcac  | agccacaccg | cggcacatc  | gaggcagtct | 21060 |
| acctgcgtac | accgttctcg  | gccggtaacg | ctaccacgta | agaagcttct | tgcttcttgc | 21120 |
| aaatagcagc | tgcaaccatg  | gcctgcggat | cccaaaacgg | ctccagcgag | caagagctca | 21180 |
| gagccattgt | ccaagacctg  | ggttgcgga  | cctatTTTTT | gggaacctac | gataagcgct | 21240 |
| tcccggggtt | catggcccc   | gataagctcg | cctgtgccat | tgtaaatacg | gccggacgtg | 21300 |
| agacgggggg | agagcactgg  | ttggctttcg | gttggaaccc | acgttctaac | acctgctacc | 21360 |
| TTTTTgatcc | TTTTggattc  | tcggatgatc | gtctcaaaca | gatttaccag | tttgaatatg | 21420 |
| agggtctcct | gcgccgcagc  | gctcttgcta | ccaaggaccg | ctgtattacg | ctggaaaaat | 21480 |
| ctaccagac  | cgtgcagggt  | ccccgttctg | ccgcctgcgg | acttttctgc | tgcatgttcc | 21540 |
| ttcacgcctt | tgtgcactgg  | cctgaccgtc | ccatggacgg | aaacccacc  | atgaaattgc | 21600 |
| taactggagt | gccaacaac   | atgcttcatt | ctcctaaagt | ccagcccacc | ctgtgtgaca | 21660 |



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|            |            |            |            |             |             |       |
|------------|------------|------------|------------|-------------|-------------|-------|
| atcaaaaagc | actctaccat | tttcttaata | cccattcgcc | ttattttcgc  | tcccatcgta  | 21720 |
| cacacatcga | aagggccact | gcgttcgacc | gtatggatgt | tcaataatga  | ctcatgtaaa  | 21780 |
| caacgtgttc | aataaacatc | actttatttt | tttacatgta | tcaaggctct  | gcattactta  | 21840 |
| tttatttaca | agtcgaatgg | gttctgacga | gaatcagaat | gacccgcagg  | cagtgatacg  | 21900 |
| ttgcggaact | gatacttggg | ttgccacttg | aattcgggaa | tcaccaactt  | gggaaccggt  | 21960 |
| atatcgggca | ggatgtcact | ccacagcttt | ctggtcagct | gcaaagctcc  | aagcagggtca | 22020 |
| ggagccgaaa | tcttgaaatc | acaattagga | ccagtgcctt | gagcgcgaga  | gttgcggtac  | 22080 |
| accggattgc | agcactgaaa | caccatcagc | gacggatgtc | tcacgcttgc  | cagcacggtg  | 22140 |
| ggatctgcaa | tcatgcccac | atccagatct | tcagcattgg | caatgctgaa  | cgggggtcatc | 22200 |
| ttgcaggctc | gcctacccat | ggcgggcacc | caattaggct | tgtggttgca  | atcgcagtg   | 22260 |
| agggggatca | gtatcatctt | ggcctgatcc | tgtctgattc | ctggatacac  | ggctctcatg  | 22320 |
| aaagcatcat | attgcttgaa | agcctgctgg | gctttactac | cctcgggtata | aaacatccc   | 22380 |
| caggacctgc | tcgaaaactg | gttagctgca | cagccggcat | cattcacaca  | gcagcgggcg  | 22440 |
| tcattgttag | ctatttgcac | cacacttctg | ccccagcgg  | tttgggtgat  | tttggttcgc  | 22500 |
| tcgggattct | cctttaaggc | tcgttgtccg | ttctcgctgg | ccacatccat  | ctcgataatc  | 22560 |
| tgctccttct | gaatcataat | attgccatgc | aggcacttca | gcttgccctc  | ataatcattg  | 22620 |
| cagccatgag | gccacaacgc | acagcctgta | cattcccaat | tatggtgggc  | gatctgagaa  | 22680 |
| aaagaatgta | tcattccctg | cagaaatctt | cccatcatcg | tgctcagtgt  | cttgtgacta  | 22740 |
| gtgaaagtta | actggatgcc | tcggtgctcc | tcgtttacgt | actggtgaca  | gatgcgcttg  | 22800 |
| tattgttcgt | gttgctcagg | cattagttaa | aaagagggtc | taagttcggt  | atccagcctg  | 22860 |
| tacttctcca | tcagcagaca | catcacttcc | atgcctttct | cccaagcaga  | caccaggggc  | 22920 |
| aagctaatac | gattcttaac | agtcgaggca | gcagctcctt | tagccagagg  | gtcatcttta  | 22980 |
| gcgatcttct | caatgcttct | tttgccatcc | ttctcaacga | tgcgcacggg  | cgggtagctg  | 23040 |
| aaaccactg  | ctacaagttg | cgcctcttct | ctttcttctt | cgctgtcttg  | actgatgtct  | 23100 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| tgcatgggga tatgttttggg cttccttggc ttcttttttgg ggggtatcgg aggaggagga | 23160 |
| ctgtcgctcc gttccggaga caggaggagat tgtgacgttt cgctcaccat taccaactga  | 23220 |
| ctgtcggttag aagaacctga cccacacacgg cgacaggtgt ttctcttcgg gggcagaggt | 23280 |
| ggaggcgatt gcgaagggt gcggtccgac ctggaaggcg gatgactggc agaaccctt     | 23340 |
| ccgcgttcgg ggggtgtgctc cctgtggcgg tcgcttaact gatttccttc gcggctggcc  | 23400 |
| attgtgttct cctaggcaga gaaacaacag acatggaaac tcagccattg ctgtcaacat   | 23460 |
| cgccacgagt gccatcacat ctgctcctca gcgacgagga aaaggagcag agcttaagca   | 23520 |
| ttccaccgcc cagtcctgcc accacctcta ccctagaaga taaggaggtc gacgcatctc   | 23580 |
| atgacatgca gaataaaaaa gcgaaagagt ctgagacaga catcgagcaa gaccggggt    | 23640 |
| atgtgacacc ggtggaacac gaggaagagt tgaaacgctt tctagagaga gaggatgaaa   | 23700 |
| actgccccaa acaacgagca gataactatc accaagatgc tggaaatagg gatcagaaca   | 23760 |
| ccgactacct catagggtt gacggggaag acgcgctcct taaacatcta gcaagacagt    | 23820 |
| cgctcatagt caaggatgca ttattggaca gaactgaagt gcccacagc gtggaagagc    | 23880 |
| tcagccgcgc ctacgagctt aacctctttt cacctcgtac tcccccaaa cgtcagccaa    | 23940 |
| acggcacctg cgagccaaat cctcgcttaa acttttatcc agcttttgct gtgccagaag   | 24000 |
| tactgggtac ctatcacatc ttttttaaaa atcaaaaaat tccagtctcc tgccgcgcta   | 24060 |
| atcgcacccg cgccgatgcc ctactcaatc tgggacctgg ttcacgctta cctgatatag   | 24120 |
| cttccttggg agaggttcca aagatcttcg agggctctggg caataatgag actcgggccg  | 24180 |
| caaatgctct gcaaaaggga gaaaatggca tggatgagca tcacagcgtt ctggtggaat   | 24240 |
| tggaaggcga taatgccaga ctgcgagtac tcaagcgaag catcgaggtc acacacttcg   | 24300 |
| catatccgc tgtcaacctg cccctaaag tcatgacggc ggtcatggac cagttactca     | 24360 |
| ttaagcgcgc aagtccccct tcagaagaca tgcacgaccc agatgcctgt gatgagggt    | 24420 |
| aaccagtggg cagtgatgag cagctaaccg gatggctggg caccgactct cccagggtt    | 24480 |
| tggaagagcg tcgcaagctt atgatggccg tgggtgctggt taccgtagaa ctagagtgtc  | 24540 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| tccgacgttt ctttaccgat tcagaaacct tgcgcaaact cgaagagaat ctgcactaca  | 24600 |
| cttttagaca cggctttgtg cggcaggcat gcaagatatc taacgtggaa ctcaccaacc  | 24660 |
| tggtttccta catgggtatt ctgcatgaga atcgccctagg acaaagcgtg ctgcacagca | 24720 |
| ccctgaaggg ggaagcccg cgtgattaca tccgcgattg tgtctatctg tacctgtgcc   | 24780 |
| acacgtggca aaccggcatg ggtgtatggc agcaatgttt agaagaacag aacttgaaag  | 24840 |
| agcttgacaa gctcttacag aaatctctta aggttctgtg gacagggttc gacgagcgca  | 24900 |
| ccgtcgcttc cgacctggca gacctcatct tcccagagcg tctcagggtt actttgcgaa  | 24960 |
| acggattgcc tgactttatg agccagagca tgcttaacaa ttttcgctct ttcacctgg   | 25020 |
| aacgctccgg tatcctgccc gccacctgct gcgcactgcc ctccgacttt gtgcctctca  | 25080 |
| cctaccgcga gtgcccccg ccgctatgga gtcactgcta cctgttccgt ctggccaact   | 25140 |
| atctctccta ccactcggat gtgatcgagg atgtgagcgg agacggcttg ctggagtgtc  | 25200 |
| actgccgctg caatctgtgc acgccccacc ggtccctagc ttgcaacccc cagttgatga  | 25260 |
| gcgaaaccca gataataggc acctttgaat tgcaaggccc cagcagccaa ggcgatgggt  | 25320 |
| cttctcctgg gcaaagtta aaactgacct cgggactgtg gacctccgcc tacttgcgca   | 25380 |
| agtttgctcc ggaagattac caccctatg aaatcaagtt ctatgaggac caatcacagc   | 25440 |
| ctccaaaggc cgaactttcg gcctgcgtca tcaccagggg ggcaattctg gcccaattgc  | 25500 |
| aagccatcca aaaatcccg caagaatttc tactgaaaaa gggtaagggg gtctaccttg   | 25560 |
| acccccagac cggcgaggaa ctcaacacaa ggttccctca ggatgtccca acgacgagaa  | 25620 |
| aacaagaagt tgaagggtgca gccgccgccc ccagaagata tggaggaaga ttgggacagt | 25680 |
| caggcagagg aggcgaggga ggacagtctg gaggacagtc tggaggaaga cagtttgag   | 25740 |
| gaggaaaacg aggaggcaga ggaggtggaa gaagtaaccg ccgacaaaca gttatcctcg  | 25800 |
| gctgcggaga caagcaacag cgctaccatc tccgctccga gtcgaggaac ccggcgcgct  | 25860 |
| cccagcagta gatgggacga gaccggacgc ttcccgaacc caaccagcgc ttccaagacc  | 25920 |
| ggtaagaagg atcggcaggg atacaagtcc tggcgggggc ataagaatgc catcatctcc  | 25980 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| tgcttgcatg agtgcggggg caacatatcc ttcacgcggc gctacttgct attccaccat  | 26040 |
| ggggtgaact ttccgcgcaa tgttttgcat tactaccgtc acctccacag cccctactat  | 26100 |
| agccagcaaa tcccggcagt ctcgacagat aaagacagcg gcggcgacct ccaacagaaa  | 26160 |
| accagcagcg gcagttagaa aatacacaac aagtgcagca acaggaggat taaagattac  | 26220 |
| agccaacgag ccagcgcaaa cccgagagtt aagaaatcgg atctttccaa ccctgtatgc  | 26280 |
| catcttccag cagagtcggg gtcaagagca ggaactgaaa ataaaaaacc gatctctgcg  | 26340 |
| ttcgctcacc agaagttggt tgtatcacia gagcgaagat caacttcagc gcactctcga  | 26400 |
| ggacgccgag gctctcttca acaagtactg cgcgctgact cttaaagagt aggcagcgac  | 26460 |
| cgcgcttatt caaaaaaggc gggaattaca tcatcctcga catgagtaaa gaaattccca  | 26520 |
| cgccttacat gtggagttat caacccccaaa tgggattggc ggcaggcgcc tcccaggact | 26580 |
| actccacccg catgaattgg ctcagcgccg ggcccttctat gatttctcga gttaatgata | 26640 |
| tacgcgccta ccgaaaccaa atacttttgg aacagtcagc tcttaccacc acgccccgcc  | 26700 |
| aacaccttaa tcccagaaat tggcccgccg ccctagtgtg ccaggaaagt cccgctccca  | 26760 |
| ccactgtatt acttcctcga gacgcccagg ccgaagtcca aatgactaat gcagggtcgc  | 26820 |
| agttagctgg cggctccacc ctatgtcgtc acaggcctcg gcataatata aaacgcctga  | 26880 |
| tgatcagagg ccgaggatc cagctcaacg acgagtcggt gagctctccg cttgggtctac  | 26940 |
| gaccagacgg aatctttcag attgccggct gcgggagatc ttccttcacc cctcgtcagg  | 27000 |
| ctgttctgac tttggaaagt tcgtcttcgc aaccccgctc gggcggaatc gggaccgttc  | 27060 |
| aatttgtgga ggagtttact ccctctgtct acttcaaccc cttctccgga tctcctgggc  | 27120 |
| attacccgga cgagttcata ccgaacttcg acgcgattag cgagtcagtg gacggctacg  | 27180 |
| attgatgtct ggtgacgcgg ctgagctatc tcggctgcga catctagacc actgccgccg  | 27240 |
| ctttcgtgc tttgcccggg aactcattga gttcatctac ttcgaactcc ccaaggatca   | 27300 |
| ccctcaaggt ccggcccacg gagtgcggat ttctatcgaa ggcaaaatag actctcgctt  | 27360 |
| gcaacgaatt ttctcccagc ggcccgtgct gatcgagcga gaccaggga acaccacggt   | 27420 |

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|            |             |             |             |            |             |       |
|------------|-------------|-------------|-------------|------------|-------------|-------|
| ttccatctac | tgcatttgta  | atcaccccg   | attgcatgaa  | agcctttgct | gtcttatgtg  | 27480 |
| tactgagttt | aataaaaaact | gaattaagac  | tctcctacgg  | actgccgctt | cttcaacccg  | 27540 |
| gattttacaa | ccagaagaac  | gaaacttttc  | ctgtcgtcca  | ggactctgtt | aacttcacct  | 27600 |
| ttcctactca | caaactagaa  | gctcaacgac  | tacaccgctt  | ttccagaagc | attttcccta  | 27660 |
| ctaatactac | tttcaaaacc  | ggagggtgagc | tccaaggtct  | tcctacagaa | aacccttggg  | 27720 |
| tggaagcggg | ccttgtagtg  | ctaggaattc  | ttgcgggtgg  | gcttgtgatt | attctttgct  | 27780 |
| acctatacac | accttgcttc  | actttcttag  | tggtgttggtg | gtattggttt | aaaaaatggg  | 27840 |
| gcccatacta | gtcttgcttg  | ttttactttc  | gcttttggaa  | ccgggttctg | ccaattacga  | 27900 |
| tccatgtcta | gacttcgacc  | cagaaaactg  | cacacttact  | tttgcacccg | acacaagccg  | 27960 |
| catctgtgga | gttcatcgcc  | tctcttacga  | acttggcccc  | caacgacaaa | aatttacctg  | 28020 |
| catggtggga | atcaaccca   | tagttatcac  | ccagcaaagt  | ggagatacta | agggttgcatt | 28080 |
| tcactgctcc | tgcgattcca  | tcgagtgcac  | ctacaccctg  | ctgaagaccc | tatgcggcct  | 28140 |
| aagagacctg | ctaccaatga  | attaaaaaat  | gattaataaa  | aaatcactta | cttgaaatca  | 28200 |
| gcaataaggt | ctctgttgaa  | attttctccc  | agcagcacct  | cacttccctc | ttcccaactc  | 28260 |
| tggtattcta | aaccccgctc  | agcggcatac  | tttctccata  | ctttaaaggg | gatgtcaaatt | 28320 |
| tttagctcct | ctcctgtacc  | cacaatcttc  | atgtctttct  | tcccagatga | ccaagagagt  | 28380 |
| ccggctcagt | gactccttca  | accctgtcta  | cccctatgaa  | gatgaaagca | cctcccaaca  | 28440 |
| cccctttata | aaccagggt   | ttatttcccc  | aaatggcttc  | acacaaagcc | caaacggagt  | 28500 |
| tcttacttta | aaatgtttaa  | ccccactaac  | aaccacaggc  | ggatctctac | agctaaaagt  | 28560 |
| gggaggggga | cttacagtgg  | atgacaccaa  | cggttttttg  | aaagaaaaca | taagtgccac  | 28620 |
| cacaccactc | gttaagactg  | gtcactctat  | aggttttacca | ctaggagccg | gattgggaac  | 28680 |
| gaatgaaaat | aaactttgta  | tcaaattagg  | acaaggactt  | acattcaatt | caaacaacat  | 28740 |
| ttgcattgat | gacaatatta  | acaccttatg  | gacaggagtc  | aacccaccg  | aagccaactg  | 28800 |
| tcaaatcatg | aactccagt   | aatctaata   | ttgcaaatta  | attctaacac | tagttaaacc  | 28860 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| tggagcacta gtcactgcat ttgtttatgt tataggagta tctaacaatt ttaatatgct  | 28920 |
| aactacacac agaaatataa attttactgc agagctgttt ttcgattcta ctggtaattt  | 28980 |
| actaactaga ctctcatccc tcaaaactcc acttaatcat aaatcaggac aaaacatggc  | 29040 |
| tactggtgcc attactaatg ctaaaggttt catgcccagc acgactgcct atcctttcaa  | 29100 |
| tgataattct agagaaaaag aaaactacat ttacggaact tgttactaca cagctagtga  | 29160 |
| tcgcactgct tttcccattg acatatctgt catgcttaac cgaagagcaa taaatgacga  | 29220 |
| gacatcatat tgtattcgta taacttggtc ctggaacaca ggagatgccc cagaggtgca  | 29280 |
| aacctctgct acaaccctag tcacctcccc atttaccttt tactacatca gagaagacga  | 29340 |
| ctgacaaata aagtttgcga tcgccaggcc caccatgggt tggagctgta ttattctctt  | 29400 |
| cctcgtcgcc accgcgaccg gagtgcattc cgagctcgtg atgaccagc caccatcatc   | 29460 |
| cttgaccgtg actgcgggcg agaaggtcac gatgtcatgc aagtcgtcac aaagcctgct  | 29520 |
| gaactccggc aatcagaaga attacctgac ctggtaccag cagaaaccgg gtcagccgcc  | 29580 |
| aaaactgctg atctactggg catccacccg ggaaagcggg gtccctgacc ggttactgg   | 29640 |
| atcaggatca ggaaccgact ttaccctcac gatctcaagc gtccaagccg aggacttggc  | 29700 |
| tgtgtactac tgccaaaatg actactcgta cccctgact ttcggagctg ggaccaagct   | 29760 |
| ggagatcaaa ggccggcgag ggtccggagg agggggggtc ggaggggggg gaagcgaggt  | 29820 |
| gcagctgctg gaacagagcg gagccgagct ggtgagacca ggcaccagcg tgaaaatctc  | 29880 |
| gtgcaaggcc tcgggggtacg ctttcacgaa ctactggttg ggttgggtga agcagcggcc | 29940 |
| gggtcatgga ctggagtgga tcggagacat ctttcccga agcggaaata tccattacaa   | 30000 |
| cgaaaagttt aaaggcaagg ccacccttac tgcggataag tcaagctcca ccgcttacat  | 30060 |
| gcaactgtcc tctactgactt ttgaagacag cgctgtgtat ttctgcgctc gcctgcgcaa | 30120 |
| ttgggatgaa cctatggact actggggcca aggaaccacc gtgacttgtt cgtcgggagg  | 30180 |
| gggaggctca caagtgcagc tgcagcagtc aggtgcagaa ttggccaggc cgggagccag  | 30240 |
| cgtgaagatg tcgtgcaaag cctccggcta caccttcact cgctacacta tgcattgggt  | 30300 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| gaaacagcgg ccgggacaag ggctggagtg gatcggatac atcaatccat caagaggtta  | 30360 |
| caccaactac aatcagaagt tcaaggacaa ggctaccctg acgactgata agagctcgtc  | 30420 |
| aactgcatac atgcagctgt cgagcctgac cagcgaggat tccgccgtgt actactgcgc  | 30480 |
| gagatactat gatgaccact actgcttgga ttactggggc caagggacca ctctgaccgt  | 30540 |
| gtcctccggc ggagggggct cgggcggcgg gggctcgggg ggccggcgca gcgacatcgt  | 30600 |
| gctgacgcag agccccgcaa tcatgtcagc ctcccctggc gaaaaagtga cgatgacctg  | 30660 |
| ctccgcttcc tcatcagtct cctacatgaa ctggtatcaa cagaagagcg gaacctcgcc  | 30720 |
| gaagcgctgg atctacgata cctccaaact ggccagcggg gtgccggcgc attttcgggg  | 30780 |
| atcgggcagc ggtacctcct actcgctcac catctcagga atggaagccg aagacgccgc  | 30840 |
| cacctactac tgccagcagt ggtcctcaaa cccattcacc ttcggatccg gcactaagct  | 30900 |
| ggaaatcaac cgcgggagcg gagcgactaa cttcagcttg ctcaagcaag ccggagatgt  | 30960 |
| cgaggagaac ccgggacctg gttggtcgtg catcatccta ttccttgctg cgaccgcaac  | 31020 |
| tggcgtccat tccgacatcg tcatgaccca atccccagat tcgctggcgg tgtcgcttgg  | 31080 |
| ggaacgggca accatcaact gcaagagctc gcagtcactg ctatacagcc ggaatcagaa  | 31140 |
| aaactacctg gcgtggtacc agcaaaaagcc gggtcagcct ccgaagctgc tgattttctg | 31200 |
| ggcctcaacc cgggaatccg gagtccctga cagattcagc gggtccggat tcgggaccga  | 31260 |
| cttcactctg actattttcga gcctgcaagc agaagatgtg gcagtgtact attgccaaca | 31320 |
| gtattttttca taccgctga ccttcggcca gggtaggaag gtggagatca agggtaggagg | 31380 |
| gggtagcggc gggggaggca gcggcggggg gggaagccag gtgcagctgg tccaatcagg  | 31440 |
| cgccgaggtc aagaaacctg gagcgtcggg caaggtctcc tgcaagacta gccgctacac  | 31500 |
| ttttaccgaa tacaccatcc actgggtcag acaggcgccc ggtcagcgcc tggagtggat  | 31560 |
| cggcgggatc aaccgaata atggaatccc gaactacaat caaaaattca aaggccgcgt   | 31620 |
| gactatcacc gtggatactt cagcctcaac tgcttacatg gaactgtcat cgctgagatc  | 31680 |
| agaggacact gcggtctact actgtgcgcg cagaagaatc gcttacggat acgacgaggg  | 31740 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| gcacgcaatg gactactggg gacaggggaac cctgggtgacc gtgtcgtcag gcggaggagg | 31800 |
| atcggatgtg cagttgggtgc agtcggggcgc cgaagtgaaa aaaccggggg cctcagtga  | 31860 |
| agtgtcctgc aaggcctccg gatacacctt caccgcgtac actatgcact gggtcaggca   | 31920 |
| ggcgccccggg cagggcctgg agtggatcgg gtatatcaac ccgtcaaggg gatacactaa  | 31980 |
| ctacgccgac tccgtgaagg gaagattcac tatcaccact gacaaatcaa cttcgacggc   | 32040 |
| gtatatggaa ctgtcatcct tgagatcggg agataccgcg acctactact gtgcgcgcta   | 32100 |
| ctacgatgac cattactgcc tcgattactg gggacagggc accacggtga ccgtctcatc   | 32160 |
| aggagaagga acttcaactg gttccggagg ctccggcggc tcaggcggcg ctgacgacat   | 32220 |
| tgtgtgacc cagagcccgg cgaccctgtc actctcgccg ggggaaaagg ctactctgtc    | 32280 |
| atgcagagcg tcacaatcgg tctcatacat gaactggtag cagcagaaac cgggcaaggc   | 32340 |
| tccaaagcgg tggatctacg atacttcgaa ggtggcttca ggagtgccgg ctgcttcag    | 32400 |
| cggatccggc tcgggaaccg attacagctt gaccattaac tcgctggagg cggaggatgc   | 32460 |
| agcgacctac tactgtcaac aatggtcctc gaaccctc acttttgggg gcgggaccaa     | 32520 |
| ggtggagatt aagtaggcta gcttgactga ctgagataca gcgtaccttc agctcacaga   | 32580 |
| catgataaga tacattgatg agtttggaca aaccacaact agaatgcagt gaaaaaatg    | 32640 |
| ctttatttgt gaaatttgtg atgctattgc tttatttgta accattataa gctgcaataa   | 32700 |
| acaagttaac aacaacaatt gcattcattt tatgtttcag gttcaggggg aggtgtggga   | 32760 |
| ggttttttaa agcaagtaaa acctctacaa atgtggtagt cgtcagctat cctgcaggaa   | 32820 |
| cttgtttatt tgaaaaatcaa ttcacaaaat ccgagtagtt attttgcctc ccccttccca  | 32880 |
| tttaacagaa tacaccaatc tctccccacg cacagcttta aacatttgga taccattaga   | 32940 |
| tatagacatg gtttttagatt ccacattcca aacagtttca gagcgagcca atctggggtc  | 33000 |
| agtgatagat aaaaatccat cgggatagtc ttttaaagcg ctttcacagt ccaactgctg   | 33060 |
| cggatgcgac tccggagtct ggatcacggg catctggaag aagaacgatg ggaatcataa   | 33120 |
| tccgaaaacg gtatcggacg attgtgtctc atcaaacca caagcagccg ctgtctgcgt    | 33180 |



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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| cgctccgtgc gactgctgtt tatgggatca ggggccacag tgcctgaag catgatttta   | 33240 |
| atagccctta acatcaactt tctgggtgca tgcgcgcagc aacgcattct gatttcactc  | 33300 |
| aaatctttgc agtaggtaca acacattatt acaatattgt ttaataaacc ataattaaaa  | 33360 |
| gcgctccagc caaaactcat atctgatata atcgcccctg catgaccatc ataccaaagt  | 33420 |
| ttaatataaa ttaaattgacg ttccctcaaa aacacactac ccacatacat gatctctttt | 33480 |
| ggcatgtgca tattaacaat ctgtctgtac catggacaac gttggttaat catgcaaccc  | 33540 |
| aatataacct tccggaacca cactgccaac accgctcccc cagccatgca ttgaagtga   | 33600 |
| ccctgctgat tacaatgaca atgaagaacc caattctctc gaccgtgaat cacttgagaa  | 33660 |
| tgaaaaatat ctatagtggc acaacataga cataaatgca tgcattctct cataattttt  | 33720 |
| aactcctcag gatttagaaa catatcccag ggaataggaa gctcttgagc aacagtaaag  | 33780 |
| ctggcagaac aaggaagacc acgaacacaa cttacactat gcatagtcac agtatcaca   | 33840 |
| tctggcaaca gcgggtggc ttcagtcata gaagctcggg tttcattttc ctcacaacgt   | 33900 |
| ggtaactggg ctctgggtga aggggtgatgt ctggcgcagc atgtcgagcg tgcgcgcaac | 33960 |
| cttgtcataa tggagttgct tcctgacatt ctcgtatttt gtatagcaaa acgcggccct  | 34020 |
| ggcagaacac actcttcttc gccttctatc ctgccgctta gcgtgttccg tgtgatagtt  | 34080 |
| caagtacaac cacactctta agttgggtcaa aagaatgctg gcttcagttg taatcaaaac | 34140 |
| tccatcgcat ctaatcgctt tgaggaaatc atccaagcaa tgcaactgga ttgtgtttca  | 34200 |
| agcaggagag gagagggaag agacggaaga accatgttaa tttttattcc aaacgatctc  | 34260 |
| gcagtacttc aaattgtaga tcgcgcagat ggcatctctc gccccactg tgttggtgaa   | 34320 |
| aaagcacagc tagatcaaaa gaaatgcgat tttcaagggt ctcaacgggt gcttccagca  | 34380 |
| aagcctccac gcgcacatcc aagaacaaaa gaataccaaa agaaggagca ttttctaact  | 34440 |
| cctcaatcat catattacat tcctgcacca ttcccagata attttcagct ttccagcctt  | 34500 |
| gaattattcg tgtcagttct tgtggtaaat ccaatccaca cattacaaac aggtcccgga  | 34560 |
| gggcgcccct caccaccatt cttaaacaca ccctcataat gacaaaatat cttgctcctg  | 34620 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| tgtcacctgt agcgaattga gaatggcaac atcaattgac atgcccttgg ctctaagttc  | 34680 |
| ttctttaagt tctagttgta aaaactctct catattatca ccaaactgct tagccagaag  | 34740 |
| ccccccggga acaagagcag gggacgctac agtgcagtac aagcgcagac ctcccccaatt | 34800 |
| ggctccagca aaaacaagat tggaataagc atattgggaa ccgccagtaa tatcatcgaa  | 34860 |
| gttgctggaa atataatcag gcagagtttc ttgtaaaaat tgaataaaag aaaaatttgc  | 34920 |
| caaaaaaaca ttcaaacct ctgggatgca aatgcaatag gttaccgcg tgcgctccaa    | 34980 |
| cattgttagt tttgaattag tctgcaaaaa taaaaaaaaa aacaagcgtc atatcatagt  | 35040 |
| agcctgacga acagatggat aaatcagtct ttccatcaca agacaagcca cagggtctcc  | 35100 |
| agctcgaccc tcgtaaaacc tgtcatcatg attaaacaac agcaccgaaa gttcctcgcg  | 35160 |
| gtgaccagca tgaataattc ttgatgaagc atacaatcca gacatgttag catcagttaa  | 35220 |
| cgagaaaaaa cagccaacat agcctttggg tataattatg cttaatcgta agtatagcaa  | 35280 |
| agccacccct cgcgataca aagtaaaagg cacaggagaa taaaaaatat aattatttct   | 35340 |
| ctgctgctgt tcaggcaacg tcgccccgg tccctctaaa tacacataca aagcctcatc   | 35400 |
| agccatggct taccagacaa agtacagcgg gcacacaaag cacaagctct aaagtgactc  | 35460 |
| tccaacctct ccacaatata tatatacaca agccctaaac tgacgtaatg ggagtaaagt  | 35520 |
| gtaaaaaatc ccgccaacc caacacacac cccgaaactg cgtcaccagg gaaaagtaca   | 35580 |
| gtttcacttc cgcaatccca acaggcgtaa cttcctcttt ctcacggtag gtgatatccc  | 35640 |
| actaacttgc aacgtcattt tcccacggtc gcaccgcccc ttttagccgt taaccacaca  | 35700 |
| gccaatcacc acacgatcca cactttttta aatcacctca tttacatatt ggcaccattc  | 35760 |
| catctataag gtatattata tagataga                                     | 35788 |

<210> 121

<211> 1540

<212> DNA

<213> Artificial Sequence

<220>

<223> NG-618 EpCam BiTE nucleic acid sequence

&lt;400&gt; 121

|                                                                    |      |
|--------------------------------------------------------------------|------|
| atgggttgga gctgtattat tctcttcctc gtcgccaccg cgaccggagt gcattccgag  | 60   |
| ctcgtgatga cccagtcacc atcatccttg accgtgactg cgggcgagaa ggtcacgatg  | 120  |
| tcatgcaagt cgtcacaaag cctgctgaac tccggcaatc agaagaatta cctgacctgg  | 180  |
| taccagcaga aaccgggtca gccgcaaaaa ctgctgatct actgggcatc caccggggaa  | 240  |
| agcgggggtcc ctgaccggtt cactggatca ggatcaggaa ccgactttac cctcacgatc | 300  |
| tcaagcgtcc aagccgagga cttggctgtg tactactgcc aaaatgacta ctcgtacccc  | 360  |
| ctgactttcg gagctgggac caagctggag atcaaaggcg gcggagggtc cggaggaggg  | 420  |
| gggtcgggag gggggggaag cgaggtgcag ctgctggaac agagcggagc cgagctgggtg | 480  |
| agaccaggca ccagcgtgaa aatctcgtgc aaggcctcgg ggtacgcttt cacgaactac  | 540  |
| tggttgggtt ggggtgaagca gcggccgggt catggactgg agtggatcgg agacatcttt | 600  |
| cccggaagcg gaaatatcca ttacaacgaa aagtttaaag gcaaggccac cttactgcg   | 660  |
| gataagtcaa gctccaccgc ttacatgcaa ctgtcctcac tgacttttga agacagcgct  | 720  |
| gtgtatttct gcgctcgctt gcgcaattgg gatgaacctt tggactactg gggccaagga  | 780  |
| accaccgtga ctgtgtcgtc gggaggggga ggctcacaag tgcagctgca gcagtcaggt  | 840  |
| gcagaattgg ccaggccggg agccagcgtg aagatgtcgt gcaaagcctc cggctacacc  | 900  |
| ttcactcgct acactatgca ttgggtgaaa cagcggccgg gacaagggtt ggagtggatc  | 960  |
| ggatacatca atccatcaag aggttacacc aactacaatc agaagttcaa ggacaaggct  | 1020 |
| accctgacga ctgataagag ctcgtcaact gcatacatgc agctgtcgag cctgaccagc  | 1080 |
| gaggattccg cctgttacta ctgcgcgaga tactatgatg accactactg cttggattac  | 1140 |
| tggggccaag ggaccactct gaccgtgtcc tccggcggag ggggctcggg cggcgggggc  | 1200 |
| tcggggggcg gcggcagcga catcgtgctg acgcagagcc ccgcaatcat gtcagcctcc  | 1260 |
| cctggcgaaa aagtgcgat gacctgtcc gcttcctcat cagtctccta catgaactgg    | 1320 |
| tatcaacaga agagcggaac ctcgccgaag cgctggatct acgatacctc caaactggcc  | 1380 |

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|                                                                    |      |
|--------------------------------------------------------------------|------|
| agcggagtgc cggcgcatTT tcggggatcg ggcagcggta cctcctactc gctcaccatc  | 1440 |
| tcaggaatgg aagccgaaga cgccgccacc tactactgcc agcagtgggtc ctcaaaccCa | 1500 |
| ttcaccttcg gatccggcac taagctggaa atcaaccgCg                        | 1540 |

<210> 122  
 <211> 1557  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> NG-618 FAP BiTE nucleic acid sequence

|                                                                     |     |
|---------------------------------------------------------------------|-----|
| <400> 122                                                           |     |
| atgggttggT cgtgcatcat cctattcctt gtcgcgaccg caactggcgt ccattccgac   | 60  |
| atcgtcatga cccaatcccc agattcgctg gcggtgtcgc ttggggaaCg ggcaaccatc   | 120 |
| aactgcaaga gctcgcagtc actgctatac agccggaatc agaaaaacta cctggcgtgg   | 180 |
| taccagcaaa agccgggtca gcctccgaag ctgctgattt tctgggcctc aaccCgggaa   | 240 |
| tccggagtcc ctgacagatt cagcgggtcc ggattcggga ccgacttcac tctgactatt   | 300 |
| tcgagcctgc aagcagaaga tgtggcagtg tactattgcc aacagtattt ttcatacccg   | 360 |
| ctgaccttcg gccagggtac gaaggtggag atcaagggtg gagggggtag cggcggggga   | 420 |
| ggcagcggcg ggggggggaaG ccaggtgcag ctggtccaat caggcgccga ggtcaagaaa  | 480 |
| cctggagcgt cgggtcaaggt ctcttgcaag actagccgct acactttttac cgaatacacc | 540 |
| atccactggg tcagacaggc gcccggtcag cgcctggagt ggatcggcgg gatcaaccCg   | 600 |
| aataatggaa tcccgaacta caatcaaaaa ttcaaaggcc gcgtgactat caccgtggat   | 660 |
| acttcagcct caactgctta catggaactg tcatcgctga gatcagagga cactgcggtc   | 720 |
| tactactgtg cgcgcagaag aatcgcttac ggatacgacg aggggcacgc aatggactac   | 780 |
| tggggacagg gaaccttggT gaccgtgtcg tcaggcggag gaggatcggg tgtgcagttg   | 840 |
| gtgcagtcgg gcgccgaagt gaaaaaacCg ggggcctcag tgaaaagtgtc ctgcaaggcc  | 900 |
| tccggataca ccttcacccg ctacactatg cactgggtca ggcaggcgcc cgggcagggc   | 960 |

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|                                                                   |      |
|-------------------------------------------------------------------|------|
| ctggagtgga tcgggtatat caaccgtca aggggataca ctaactacgc cgactccgtg  | 1020 |
| aagggaagat tcactatcac cactgacaaa tcaacttcga cggcgtatat ggaactgtca | 1080 |
| tccttgagat cggaagatac cgcgacctac tactgtgcgc gctactacga tgaccattac | 1140 |
| tgccctgatt actggggaca gggcaccacg gtgaccgtct catcaggaga aggaacttca | 1200 |
| actggttccg gaggtccgg cggctcaggc ggcgtgacg acattgtgct gaccagagc    | 1260 |
| ccggcgaccc tgtcactctc gccgggggaa agggctactc tgtcatgcag agcgtcacia | 1320 |
| tcggtctcat acatgaactg gtaccagcag aaaccgggca aggctccaaa gcggtggatc | 1380 |
| tacgatactt cgaaggtggc ttcaggagtg ccggctcgct tcagcggatc cggctcggga | 1440 |
| accgattaca gcttgaccat taactcgctg gaggcggagg atgcagcgac ctactactgt | 1500 |
| caacaatggt cctcgaaccc actcactttt gggggcggga ccaaggtgga gattaag    | 1557 |

<210> 123

<211> 3169

<212> DNA

<213> Artificial Sequence

<220>

<223> NG-618 Transgene cassette

<400> 123

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| cagggcccacc atgggttggg gctgtattat tctcttcctc gtcgccaccg cgaccggagt | 60  |
| gcattccgag ctcgtgatga ccagtcacc atcatccttg accgtgactg cgggcgagaa   | 120 |
| ggtcacgatg tcatgcaagt cgtcaciaag cctgctgaac tccggcaatc agaagaatta  | 180 |
| cctgacctgg taccagcaga aaccgggtca gccgcaaaa ctgctgatct actgggcatc   | 240 |
| cacccgggaa agcggggtcc ctgaccggtt cactggatca ggatcaggaa ccgactttac  | 300 |
| cctcacgatc tcaagcgtcc aagccgagga cttggctgtg tactactgcc aaaatgacta  | 360 |
| ctcgtacccc ctgactttcg gagctgggac caagctggag atcaaaggcg gcggagggtc  | 420 |
| cggaggaggg gggtcgggag gggggggaag cgagggtgcag ctgctggaac agagcggagc | 480 |
| cgagctgggtg agaccaggca ccagcgtgaa aatctcgtgc aaggcctcgg ggtacgcttt | 540 |

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|             |            |            |            |            |            |      |
|-------------|------------|------------|------------|------------|------------|------|
| cacgaactac  | tggttgggtt | gggtgaagca | gcggccgggt | catggactgg | agtggatcgg | 600  |
| agacatcttt  | cccggaagcg | gaaatatcca | ttacaacgaa | aagtttaaag | gcaaggccac | 660  |
| ccttactgcg  | gataagtcaa | gctccaccgc | ttacatgcaa | ctgtcctcac | tgacttttga | 720  |
| agacagcgct  | gtgtatttct | gcgctcgcct | gcgcaattgg | gatgaaccta | tggactactg | 780  |
| gggccaagga  | accaccgtga | ctgtgtcgtc | gggaggggga | ggctcacaag | tgacgtgca  | 840  |
| gcagtcagggt | gcagaattgg | ccaggccggg | agccagcggt | aagatgtcgt | gcaaagcctc | 900  |
| cggctacacc  | ttcactcgct | acactatgca | ttgggtgaaa | cagcggccgg | gacaagggtc | 960  |
| ggagtggatc  | ggatacatca | atccatcaag | aggttacacc | aactacaatc | agaagttcaa | 1020 |
| ggacaagggt  | accctgacga | ctgataagag | ctcgtcaact | gcatacatgc | agctgtcgag | 1080 |
| cctgaccagc  | gaggattccg | ccgtgtacta | ctgcgcgaga | tactatgatg | accactactg | 1140 |
| cttggattac  | tggggccaag | ggaccactct | gaccgtgtcc | tccggcggag | ggggctcggg | 1200 |
| cggcgggggc  | tcggggggcg | gcggcagcga | catcgtgctg | acgcagagcc | ccgcaatcat | 1260 |
| gtcagcctcc  | cctggcgaaa | aagtgacgat | gacctgtctc | gcttcctcat | cagtctccta | 1320 |
| catgaactgg  | tatcaacaga | agagcggaac | ctcgccgaag | cgctggatct | acgatacctc | 1380 |
| caaactggcc  | agcggagtgc | cggcgcattt | tcggggatcg | ggcagcggta | cctcctactc | 1440 |
| gctcaccatc  | tcaggaatgg | aagccgaaga | cgccgccacc | tactactgcc | agcagtggtc | 1500 |
| ctcaaaccga  | ttcaccttcg | gatccggcac | taagctggaa | atcaaccgcg | ggagcggagc | 1560 |
| gactaacttc  | agcttgctca | agcaagccgg | agatgtcgag | gagaacccgg | gacctgggtg | 1620 |
| gtcgtgcatc  | atcctattcc | ttgtcgcgac | cgcaactggc | gtccattccg | acatcgtcat | 1680 |
| gacccaatcc  | ccagattcgc | tggcgggtgc | gcttggggaa | cgggcaacca | tcaactgcaa | 1740 |
| gagctcgag   | tactgctat  | acagccggaa | tcagaaaaac | tacctggcgt | ggtaccagca | 1800 |
| aaagccgggt  | cagcctccga | agctgctgat | tttctggggc | tcaacccggg | aatccggagt | 1860 |
| ccctgacaga  | ttcagcgggt | ccggattcgg | gaccgacttc | actctgacta | tttcgagcct | 1920 |
| gcaagcagaa  | gatgtggcag | tgtactattg | ccaacagtat | ttttcatacc | cgctgacctt | 1980 |

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|                                                                     |      |
|---------------------------------------------------------------------|------|
| cggccagggg acgaaggtgg agatcaaggg tggagggggg agcggcgggg gaggcagcgg   | 2040 |
| cggggggggga agccaggtgc agctgggtcca atcaggcgcc gaggtcaaga aacctggagc | 2100 |
| gtcgggtcaag gtctcctgca agactagccg ctacactttt accgaatata ccatccactg  | 2160 |
| ggtcagacag gcgcccggtc agcgcctgga gtggatcggc gggatcaacc cgaataatgg   | 2220 |
| aatcccgaac tacaatcaaa aattcaaagg ccgcgtgact atcaccgtgg atacttcagc   | 2280 |
| ctcaactgct tacatggaac tgtcatcgct gagatcagag gacactgcgg tctactactg   | 2340 |
| tgcgcgcaga agaatcgctt acggatacga cgaggggcac gcaatggact actggggaca   | 2400 |
| gggaaccctg gtgaccgtgt cgtcaggcgg aggaggatcg gatgtgcagt tgggtgcagtc  | 2460 |
| gggcgccgaa gtgaaaaaac cgggggcctc agtgaaaagt tcctgcaagg cctccggata   | 2520 |
| caccttcacc cgctacacta tgcactgggt caggcaggcg cccgggcagg gcctggagtg   | 2580 |
| gatcgggtat atcaaccctg caaggggata cactaactac gccgactccg tgaagggaag   | 2640 |
| attcactatc accactgaca aatcaacttc gacggcgtat atggaactgt catccttgag   | 2700 |
| atcggaagat accgcgacct actactgtgc gcgctactac gatgaccatt actgcctcga   | 2760 |
| ttactgggga cagggcacca cggtgaccgt ctcatcagga gaaggaaact caactggttc   | 2820 |
| cggaggctcc ggcggtcag gcggcgctga cgacattgtg ctgaccaga gcccggcgac     | 2880 |
| cctgtcactc tcgccggggg aaagggtac tctgtcatgc agagcgtcac aatcggtctc    | 2940 |
| atacatgaac tgggtaccagc agaaaccggg caaggctcca aagcgggtgga tctacgatac | 3000 |
| ttcgaagggtg gcttcaggag tgccggctcg cttcagcgga tccggctcgg gaaccgatta  | 3060 |
| cagcttgacc attaactcgc tggaggcgga ggatgcagcg acctactact gtcaacaatg   | 3120 |
| gtcctcgaac ccactcactt ttgggggcgg gaccaagggt gagattaag               | 3169 |

<210> 124

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Flexible linker sequence

<400> 124

Ser Gly Gly Gly Gly Ser Glu  
1 5

<210> 125

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Flexible linker sequence

<400> 125

Asp Lys Thr His Thr Ser  
1 5

<210> 126

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Flexible linker sequence

<220>

<221> misc\_feature

<222> (1)..(1)

<223> Ser is optional

<400> 126

Ser Gly Gly Gly Gly Ser  
1 5

<210> 127

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Flexible linker sequence



<220>  
 <221> misc\_feature  
 <222> (1)..(1)  
 <223> Ser is optional

<400> 127

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

<210> 128  
 <211> 16  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Flexible linker sequence

<220>  
 <221> misc\_feature  
 <222> (1)..(1)  
 <223> Ser is optional

<400> 128

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 1 5 10 15

<210> 129  
 <211> 21  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Flexible linker sequence

<220>  
 <221> misc\_feature  
 <222> (1)..(1)  
 <223> Ser is optional

<400> 129

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Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
1 5 10 15

Gly Gly Gly Gly Ser  
20

<210> 130  
<211> 26  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Flexible linker sequence

<220>  
<221> misc\_feature  
<222> (1)..(1)  
<223> Ser is optional

<400> 130

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
1 5 10 15

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
20 25

<210> 131  
<211> 11  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Flexible linker sequence

<400> 131

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

<210> 132

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

<220>  
<223> Flexible linker sequence

<220>  
<221> misc\_feature  
<222> (7)..(7)  
<223> Xaa can be any naturally occurring amino acid

<400> 132

Ala Ala Ala Gly Ser Gly Xaa Gly Gly Gly Ser Gly Ala Ser Ala Ser  
1 5 10 15

<210> 133  
<211> 21  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Flexible linker sequence

<220>  
<221> misc\_feature  
<222> (7)..(7)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (12)..(12)  
<223> Xaa can be any naturally occurring amino acid

<400> 133

Ala Ala Ala Gly Ser Gly Xaa Gly Gly Gly Ser Xaa Gly Gly Gly Ser  
1 5 10 15

Gly Ala Ser Ala Ser  
20

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<210> 134  
<211> 26  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Flexible linker sequence

<220>  
<221> misc\_feature  
<222> (7)..(7)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (12)..(12)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (17)..(17)  
<223> Xaa can be any naturally occurring amino acid

<400> 134

Ala Ala Ala Gly Ser Gly Xaa Gly Gly Gly Ser Xaa Gly Gly Gly Ser  
1 5 10 15

Xaa Gly Gly Gly Ser Gly Ala Ser Ala Ser  
20 25

<210> 135  
<211> 31  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Flexible linker sequence

<220>  
<221> misc\_feature  
<222> (7)..(7)  
<223> Xaa can be any naturally occurring amino acid

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<220>  
<221> misc\_feature  
<222> (12)..(12)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (17)..(17)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (22)..(22)  
<223> Xaa can be any naturally occurring amino acid

<400> 135

Ala Ala Ala Gly Ser Gly Xaa Gly Gly Gly Ser Xaa Gly Gly Gly Ser  
1 5 10 15

Xaa Gly Gly Gly Ser Xaa Gly Gly Gly Ser Gly Ala Ser Ala Ser  
20 25 30

<210> 136  
<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Flexible linker sequence

<220>  
<221> misc\_feature  
<222> (7)..(7)  
<223> Xaa can be any naturally occurring amino acid

<400> 136

Ala Ala Ala Gly Ser Gly Xaa Ser Gly Ala Ser Ala Ser  
1 5 10

<210> 137  
<211> 28  
<212> PRT

<213> Artificial Sequence

<220>

<223> Flexible linker sequence

<400> 137

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Gly | Gly | Asn | Arg | Gly | Thr | Thr | Thr | Thr | Arg | Arg | Pro | Ala | Thr | Thr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Gly | Ser | Ser | Pro | Gly | Pro | Thr | Gln | Ser | His | Tyr |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |

<210> 138

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Flexible linker sequence

<400> 138

|     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Thr | Thr | Thr | Gly | Ser | Ser | Pro | Gly | Pro | Thr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |

<210> 139

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Flexible linker sequence

<400> 139

|     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|
| Ala | Thr | Thr | Thr | Gly | Ser |
| 1   |     |     |     | 5   |     |

<210> 140

<211> 18

<212> PRT

<213> Artificial Sequence

eolf-othd-000005

<220>

<223> Flexible linker sequence

<400> 140

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Pro | Ser | Leu | Ser | Gly | Val | Leu | Gln | Val | Arg | Tyr | Leu | Ser | Pro | Pro |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

Asp Leu

<210> 141

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Flexible linker sequence

<400> 141

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Pro | Ser | Gly | Pro | Ile | Ser | Thr | Ile | Asn | Ser | Pro | Pro | Ser | Lys | Glu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

Ser His Lys Ser Pro  
20

<210> 142

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Flexible linker sequence

<400> 142

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Thr | Val | Ala | Ala | Pro | Ser | Val | Phe | Ile | Phe | Pro | Pro | Ser | Asp |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

<210> 143

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Flexible linker sequence

<400> 143

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Gly | Gly | Gly | Ile | Ala | Pro | Ser | Met | Val | Gly | Gly | Gly | Gly | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

<210> 144

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Flexible linker sequence

<400> 144

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Gly | Gly | Gly | Lys | Val | Glu | Gly | Ala | Gly | Gly | Gly | Gly | Gly | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

<210> 145

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Flexible linker sequence

<400> 145

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Gly | Gly | Gly | Ser | Met | Lys | Ser | His | Asp | Gly | Gly | Gly | Gly | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

<210> 146

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Flexible linker sequence

<400> 146



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Gly Gly Gly Gly Asn Leu Ile Thr Ile Val Gly Gly Gly Gly Ser  
1 5 10 15

<210> 147  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Flexible linker sequence

<400> 147

Gly Gly Gly Gly Val Val Pro Ser Leu Pro Gly Gly Gly Gly Ser  
1 5 10 15

<210> 148  
<211> 12  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Flexible linker sequence

<400> 148

Gly Gly Glu Lys Ser Ile Pro Gly Gly Gly Gly Ser  
1 5 10

<210> 149  
<211> 18  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Flexible linker sequence

<400> 149

Arg Pro Leu Ser Tyr Arg Pro Pro Phe Pro Phe Gly Phe Pro Ser Val  
1 5 10 15

Arg Pro

<210> 150  
<211> 18  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Flexible linker sequence

<400> 150

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Pro | Arg | Ser | Ile | Tyr | Ile | Arg | Arg | Arg | His | Pro | Ser | Pro | Ser | Leu |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

Thr Thr

<210> 151  
<211> 18  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Flexible linker sequence

<400> 151

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Pro | Ser | His | Leu | Ser | His | Ile | Leu | Pro | Ser | Phe | Gly | Leu | Pro | Thr |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

Phe Asn

<210> 152  
<211> 18  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Flexible linker sequence

<400> 152

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Arg Pro Val Ser Pro Phe Thr Phe Pro Arg Leu Ser Asn Ser Trp Leu  
1 5 10 15

Pro Ala

<210> 153  
<211> 18  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Flexible linker sequence

<400> 153

Ser Pro Ala Ala His Phe Pro Arg Ser Ile Pro Arg Pro Gly Pro Ile  
1 5 10 15

Arg Thr

<210> 154  
<211> 18  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Flexible linker sequence

<400> 154

Ala Pro Gly Pro Ser Ala Pro Ser His Arg Ser Leu Pro Ser Arg Ala  
1 5 10 15

Phe Gly

<210> 155  
<211> 18  
<212> PRT

<213> Artificial Sequence

<220>

<223> Flexible linker sequence

<400> 155

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Arg | Asn | Ser | Ile | His | Phe | Leu | His | Pro | Leu | Leu | Val | Ala | Pro | Leu |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

Gly Ala

<210> 156

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> Flexible linker sequence

<400> 156

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Pro | Ser | Leu | Asn | Pro | Pro | Ser | Tyr | Leu | His | Arg | Ala | Pro | Ser | Arg |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

Ile Ser

<210> 157

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Flexible linker sequence

<400> 157

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Pro | Trp | Arg | Thr | Ser | Leu | Leu | Pro | Ser | Leu | Pro | Leu | Arg | Arg | Arg |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

Pro

<210> 158  
<211> 18  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Flexible linker sequence

<400> 158

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Pro | Leu | Phe | Ala | Lys | Gly | Pro | Val | Gly | Leu | Leu | Ser | Arg | Ser | Phe |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

Pro Pro

<210> 159  
<211> 18  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Flexible linker sequence

<400> 159

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Pro | Pro | Ala | Pro | Val | Val | Ser | Leu | Arg | Ser | Ala | His | Ala | Arg | Pro |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

Pro Tyr

<210> 160  
<211> 17  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Flexible linker sequence

<400> 160

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Leu Arg Pro Thr Pro Pro Arg Val Arg Ser Tyr Thr Cys Cys Pro Thr  
1 5 10 15

Pro

<210> 161  
<211> 18  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Flexible linker sequence

<400> 161

Pro Asn Val Ala His Val Leu Pro Leu Leu Thr Val Pro Trp Asp Asn  
1 5 10 15

Leu Arg

<210> 162  
<211> 18  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Flexible linker sequence

<400> 162

Cys Asn Pro Leu Leu Pro Leu Cys Ala Arg Ser Pro Ala Val Arg Thr  
1 5 10 15

Phe Pro

<210> 163  
<211> 11  
<212> PRT

<213> Artificial Sequence

<220>

<223> rigid linker

<400> 163

|     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ala | Pro | Ala | Pro | Ala | Ala | Pro | Ala | Pro | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |

<210> 164

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> rigid linker

<400> 164

|     |     |     |     |
|-----|-----|-----|-----|
| Pro | Pro | Pro | Pro |
| 1   |     |     |     |

<210> 165

<400> 165

000

<210> 166

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<220>

<221> misc\_feature

<222> (7)..(7)

<223> Xaa can be any naturally occurring amino acid

<220>

<221> misc\_feature

<222> (8)..(8)

<223> Xaa can be any naturally occurring amino acid

<400> 166

Asp Lys Thr His Thr Cys Xaa Xaa  
1 5

<210> 167

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 167

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala  
1 5 10

<210> 168

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 168

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Thr Cys Pro Pro Cys  
1 5 10 15

Pro Ala

<210> 169

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 169



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Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Thr Cys Pro Pro Cys  
1 5 10 15

Pro Ala Thr Cys Pro Pro Cys Pro Ala  
20 25

<210> 170  
<211> 30  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequences

<400> 170

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Gly Lys Pro Thr Leu  
1 5 10 15

Tyr Asn Ser Leu Val Met Ser Asp Thr Ala Gly Thr Cys Tyr  
20 25 30

<210> 171  
<211> 31  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 171

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Gly Lys Pro Thr His  
1 5 10 15

Val Asn Val Ser Val Val Met Ala Glu Val Asp Gly Thr Cys Tyr  
20 25 30

<210> 172  
<211> 15  
<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 172

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Cys | Val | Glu | Cys | Pro | Pro | Cys | Pro | Ala |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |

<210> 173

<211> 26

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 173

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Arg | Cys | Pro | Glu | Pro | Lys | Ser | Cys | Asp |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Pro | Pro | Pro | Cys | Pro | Arg | Cys | Pro | Ala |
|     |     |     | 20  |     |     |     | 25  |     |     |

<210> 174

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 174

|     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Ser | Cys | Pro | Ala |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |

<210> 175

<211> 8

<212> PRT

<213> Artificial Sequence

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<220>

<223> Linker sequence

<220>

<221> misc\_feature

<222> (7)..(7)

<223> Xaa can be any naturally occurring amino acid

<220>

<221> misc\_feature

<222> (8)..(8)

<223> Xaa can be any naturally occurring amino acid

<400> 175

Asp Lys Thr His Thr Ser Xaa Xaa

1 5

<210> 176

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 176

Asp Lys Thr His Thr Cys Pro Pro Ser Pro Ala

1 5 10

<210> 177

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 177

Asp Lys Thr His Thr Ser Pro Pro Cys Pro Ala

1 5 10

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<210> 178  
<211> 11  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 178

|     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Pro | Ser | Pro | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |

<210> 179  
<211> 18  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 179

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Thr | Cys | Pro | Pro | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

Pro Ala

<210> 180  
<211> 18  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 180

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Thr | Ser | Pro | Pro | Cys |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

Pro Ala

<210> 181  
 <211> 18  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 181

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Ser | Pro | Ala | Thr | Cys | Pro | Pro | Cys |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

Pro Ala

<210> 182  
 <211> 18  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 182

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Pro | Cys | Pro | Ala | Thr | Cys | Pro | Pro | Cys |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

Pro Ala

<210> 183  
 <211> 18  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 183

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Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Thr Ser Pro Pro Ser  
1 5 10 15

Pro Ala

<210> 184  
<211> 18  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 184

Asp Lys Thr His Thr Cys Pro Pro Ser Pro Ala Thr Cys Pro Pro Ser  
1 5 10 15

Pro Ala

<210> 185  
<211> 18  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 185

Asp Lys Thr His Thr Ser Pro Pro Cys Pro Ala Thr Cys Pro Pro Ser  
1 5 10 15

Pro Ala

<210> 186  
<211> 18  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 186

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Pro | Ser | Pro | Ala | Thr | Cys | Pro | Pro | Cys |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

Pro Ala

<210> 187

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 187

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Pro | Cys | Pro | Ala | Thr | Ser | Pro | Pro | Cys |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

Pro Ala

<210> 188

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 188

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Ser | Pro | Ala | Thr | Ser | Pro | Pro | Cys |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

Pro Ala

<210> 189  
 <211> 18  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 189

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Pro | Ser | Pro | Ala | Thr | Ser | Pro | Pro | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

Pro Ala

<210> 190  
 <211> 18  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 190

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Ser | Pro | Ala | Thr | Ser | Pro | Pro | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

Pro Ala

<210> 191  
 <211> 18  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 191



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Asp Lys Thr His Thr Ser Pro Pro Cys Pro Ala Thr Ser Pro Pro Ser  
1 5 10 15

Pro Ala

<210> 192  
<211> 18  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 192

Asp Lys Thr His Thr Ser Pro Pro Ser Pro Ala Thr Cys Pro Pro Ser  
1 5 10 15

Pro Ala

<210> 193  
<211> 18  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 193

Asp Lys Thr His Thr Ser Pro Pro Ser Pro Ala Thr Ser Pro Pro Cys  
1 5 10 15

Pro Ala

<210> 194  
<211> 25  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 194

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Thr | Cys | Pro | Pro | Cys |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Cys | Pro | Pro | Ser | Pro | Ala |
|     |     |     | 20  |     |     |     |     | 25  |

<210> 195

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 195

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Thr | Cys | Pro | Pro | Cys |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Ser | Pro | Pro | Cys | Pro | Ala |
|     |     |     | 20  |     |     |     |     | 25  |

<210> 196

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 196

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Thr | Cys | Pro | Pro | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Cys | Pro | Pro | Cys | Pro | Ala |
|     |     |     | 20  |     |     |     |     | 25  |

<210> 197  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 197

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Thr | Ser | Pro | Pro | Cys |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Cys | Pro | Pro | Cys | Pro | Ala |
|     |     |     | 20  |     |     |     |     | 25  |

<210> 198  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 198

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Ser | Pro | Ala | Thr | Cys | Pro | Pro | Cys |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Cys | Pro | Pro | Cys | Pro | Ala |
|     |     |     | 20  |     |     |     |     | 25  |

<210> 199  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 199

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Asp Lys Thr His Thr Ser Pro Pro Cys Pro Ala Thr Cys Pro Pro Cys  
1 5 10 15

Pro Ala Thr Cys Pro Pro Cys Pro Ala  
20 25

<210> 200  
<211> 25  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 200

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Thr Cys Pro Pro Cys  
1 5 10 15

Pro Ala Thr Ser Pro Pro Ser Pro Ala  
20 25

<210> 201  
<211> 25  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 201

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Thr Cys Pro Pro Ser  
1 5 10 15

Pro Ala Thr Cys Pro Pro Ser Pro Ala  
20 25

<210> 202  
<211> 25  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 202

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Thr | Ser | Pro | Pro | Cys |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Cys | Pro | Pro | Ser | Pro | Ala |
|     |     |     | 20  |     |     |     |     | 25  |

<210> 203

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 203

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Ser | Pro | Ala | Thr | Cys | Pro | Pro | Cys |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Cys | Pro | Pro | Ser | Pro | Ala |
|     |     |     | 20  |     |     |     |     | 25  |

<210> 204

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 204

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Pro | Cys | Pro | Ala | Thr | Cys | Pro | Pro | Cys |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Cys | Pro | Pro | Ser | Pro | Ala |
|     |     |     | 20  |     |     |     |     | 25  |

<210> 205  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 205

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Thr | Cys | Pro | Pro | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Ser | Pro | Pro | Cys | Pro | Ala |
|     |     |     | 20  |     |     |     |     | 25  |

<210> 206  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 206

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Thr | Ser | Pro | Pro | Cys |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Ser | Pro | Pro | Cys | Pro | Ala |
|     |     |     | 20  |     |     |     |     | 25  |

<210> 207  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 207

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Asp Lys Thr His Thr Cys Pro Pro Ser Pro Ala Thr Cys Pro Pro Cys  
1 5 10 15

Pro Ala Thr Ser Pro Pro Cys Pro Ala  
20 25

<210> 208  
<211> 25  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 208

Asp Lys Thr His Thr Ser Pro Pro Cys Pro Ala Thr Cys Pro Pro Cys  
1 5 10 15

Pro Ala Thr Ser Pro Pro Cys Pro Ala  
20 25

<210> 209  
<211> 25  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 209

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Thr Ser Pro Pro Ser  
1 5 10 15

Pro Ala Thr Cys Pro Pro Cys Pro Ala  
20 25

<210> 210  
<211> 25  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 210

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Ser | Pro | Ala | Thr | Cys | Pro | Pro | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Cys | Pro | Pro | Cys | Pro | Ala |
|     |     |     | 20  |     |     |     |     | 25  |

<210> 211

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 211

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Pro | Cys | Pro | Ala | Thr | Cys | Pro | Pro | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Cys | Pro | Pro | Cys | Pro | Ala |
|     |     |     | 20  |     |     |     |     | 25  |

<210> 212

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 212

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Ser | Pro | Ala | Thr | Ser | Pro | Pro | Cys |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Cys | Pro | Pro | Cys | Pro | Ala |
|     |     |     | 20  |     |     |     |     | 25  |



<210> 213  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 213

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Pro | Cys | Pro | Ala | Thr | Ser | Pro | Pro | Cys |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Cys | Pro | Pro | Cys | Pro | Ala |
|     |     |     | 20  |     |     |     | 25  |     |

<210> 214  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 214

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Pro | Ser | Pro | Ala | Thr | Cys | Pro | Pro | Cys |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Cys | Pro | Pro | Cys | Pro | Ala |
|     |     |     | 20  |     |     |     | 25  |     |

<210> 215  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 215

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Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Thr Cys Pro Pro Ser  
1 5 10 15

Pro Ala Thr Ser Pro Pro Ser Pro Ala  
20 25

<210> 216  
<211> 25  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 216

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Thr Ser Pro Pro Cys  
1 5 10 15

Pro Ala Thr Ser Pro Pro Ser Pro Ala  
20 25

<210> 217  
<211> 25  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 217

Asp Lys Thr His Thr Cys Pro Pro Ser Pro Ala Thr Cys Pro Pro Cys  
1 5 10 15

Pro Ala Thr Ser Pro Pro Ser Pro Ala  
20 25

<210> 218  
<211> 25  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 218

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Pro | Cys | Pro | Ala | Thr | Cys | Pro | Pro | Cys |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Ser | Pro | Pro | Ser | Pro | Ala |
|     |     |     | 20  |     |     |     |     | 25  |

<210> 219

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 219

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Thr | Ser | Pro | Pro | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Cys | Pro | Pro | Ser | Pro | Ala |
|     |     |     | 20  |     |     |     |     | 25  |

<210> 220

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 220

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Ser | Pro | Ala | Thr | Cys | Pro | Pro | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Cys | Pro | Pro | Ser | Pro | Ala |
|     |     |     | 20  |     |     |     |     | 25  |

<210> 221  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 221

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Pro | Cys | Pro | Ala | Thr | Cys | Pro | Pro | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Cys | Pro | Pro | Ser | Pro | Ala |
|     |     |     | 20  |     |     |     |     | 25  |

<210> 222  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 222

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Ser | Pro | Ala | Thr | Ser | Pro | Pro | Cys |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Cys | Pro | Pro | Ser | Pro | Ala |
|     |     |     | 20  |     |     |     |     | 25  |

<210> 223  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 223

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Asp Lys Thr His Thr Ser Pro Pro Cys Pro Ala Thr Ser Pro Pro Cys  
1 5 10 15

Pro Ala Thr Cys Pro Pro Ser Pro Ala  
20 25

<210> 224  
<211> 25  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 224

Asp Lys Thr His Thr Ser Pro Pro Ser Pro Ala Thr Ser Pro Pro Cys  
1 5 10 15

Pro Ala Thr Cys Pro Pro Cys Pro Ala  
20 25

<210> 225  
<211> 25  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 225

Asp Lys Thr His Thr Ser Pro Pro Ser Pro Ala Thr Cys Pro Pro Ser  
1 5 10 15

Pro Ala Thr Cys Pro Pro Cys Pro Ala  
20 25

<210> 226  
<211> 25  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 226

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Pro | Ser | Pro | Ala | Thr | Cys | Pro | Pro | Cys |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Ser | Pro | Pro | Cys | Pro | Ala |
|     |     |     | 20  |     |     |     |     | 25  |

<210> 227

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 227

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Pro | Ser | Pro | Ala | Thr | Cys | Pro | Pro | Cys |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Cys | Pro | Pro | Ser | Pro | Ala |
|     |     |     | 20  |     |     |     |     | 25  |

<210> 228

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 228

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Ser | Pro | Ala | Thr | Ser | Pro | Pro | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Cys | Pro | Pro | Cys | Pro | Ala |
|     |     |     | 20  |     |     |     |     | 25  |

<210> 229  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 229

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Ser | Pro | Ala | Thr | Ser | Pro | Pro | Cys |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Ser | Pro | Pro | Cys | Pro | Ala |
|     |     |     | 20  |     |     |     | 25  |     |

<210> 230  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 230

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Ser | Pro | Ala | Thr | Cys | Pro | Pro | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Ser | Pro | Pro | Ser | Pro | Ala |
|     |     |     | 20  |     |     |     | 25  |     |

<210> 231  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 231

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Asp Lys Thr His Thr Cys Pro Pro Ser Pro Ala Thr Ser Pro Pro Ser  
1 5 10 15

Pro Ala Thr Cys Pro Pro Ser Pro Ala  
20 25

<210> 232  
<211> 25  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 232

Asp Lys Thr His Thr Ser Pro Pro Ser Pro Ala Thr Ser Pro Pro Cys  
1 5 10 15

Pro Ala Thr Cys Pro Pro Ser Pro Ala  
20 25

<210> 233  
<211> 25  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 233

Asp Lys Thr His Thr Ser Pro Pro Ser Pro Ala Thr Ser Pro Pro Ser  
1 5 10 15

Pro Ala Thr Cys Pro Pro Cys Pro Ala  
20 25

<210> 234  
<211> 25  
<212> PRT  
<213> Artificial Sequence



<220>

<223> Linker sequence

<400> 234

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Pro | Ser | Pro | Ala | Thr | Ser | Pro | Pro | Cys |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Ser | Pro | Pro | Cys | Pro | Ala |
|     |     |     | 20  |     |     |     | 25  |     |

<210> 235

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 235

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Pro | Ser | Pro | Ala | Thr | Ser | Pro | Pro | Cys |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Cys | Pro | Pro | Ser | Pro | Ala |
|     |     |     | 20  |     |     |     | 25  |     |

<210> 236

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 236

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Ser | Pro | Ala | Thr | Ser | Pro | Pro | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Ser | Pro | Pro | Cys | Pro | Ala |
|     |     |     | 20  |     |     |     | 25  |     |

<210> 237  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 237

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Ser | Pro | Ala | Thr | Ser | Pro | Pro | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Ser | Pro | Pro | Ser | Pro | Ala |
|     |     |     | 20  |     |     |     |     | 25  |

<210> 238  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 238

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Pro | Ser | Pro | Ala | Thr | Ser | Pro | Pro | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Ser | Pro | Pro | Cys | Pro | Ala |
|     |     |     | 20  |     |     |     |     | 25  |

<210> 239  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 239

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Asp Lys Thr His Thr Ser Pro Pro Cys Pro Ala Thr Ser Pro Pro Ser  
1 5 10 15

Pro Ala Thr Ser Pro Pro Ser Pro Ala  
20 25

<210> 240  
<211> 25  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 240

Asp Lys Thr His Thr Ser Pro Pro Ser Pro Ala Thr Cys Pro Pro Ser  
1 5 10 15

Pro Ala Thr Ser Pro Pro Ser Pro Ala  
20 25

<210> 241  
<211> 25  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 241

Asp Lys Thr His Thr Ser Pro Pro Ser Pro Ala Thr Ser Pro Pro Cys  
1 5 10 15

Pro Ala Thr Ser Pro Pro Ser Pro Ala  
20 25

<210> 242  
<211> 25  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 242

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Pro | Ser | Pro | Ala | Thr | Ser | Pro | Pro | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Cys | Pro | Pro | Ser | Pro | Ala |
|     |     | 20  |     |     |     |     | 25  |     |

<210> 243

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 243

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Pro | Ser | Pro | Ala | Thr | Ser | Pro | Pro | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ala | Thr | Ser | Pro | Pro | Ser | Pro | Ala |
|     |     | 20  |     |     |     |     | 25  |     |

<210> 244

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 244

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Gly | Lys | Pro | Thr | Leu |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Asn | Ser | Leu | Val | Met | Ser | Asp | Thr | Ala | Gly | Thr | Ser | Tyr |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |

<210> 245  
 <211> 30  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 245

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Ser | Pro | Ala | Gly | Lys | Pro | Thr | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Asn | Ser | Leu | Val | Met | Ser | Asp | Thr | Ala | Gly | Thr | Cys | Tyr |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |

<210> 246  
 <211> 30  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 246

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Pro | Cys | Pro | Ala | Gly | Lys | Pro | Thr | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Asn | Ser | Leu | Val | Met | Ser | Asp | Thr | Ala | Gly | Thr | Cys | Tyr |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |

<210> 247  
 <211> 30  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 247

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Asp Lys Thr His Thr Cys Pro Pro Ser Pro Ala Gly Lys Pro Thr Leu  
1 5 10 15

Tyr Asn Ser Leu Val Met Ser Asp Thr Ala Gly Thr Ser Tyr  
20 25 30

<210> 248  
<211> 30  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 248

Asp Lys Thr His Thr Ser Pro Pro Ser Pro Ala Gly Lys Pro Thr Leu  
1 5 10 15

Tyr Asn Ser Leu Val Met Ser Asp Thr Ala Gly Thr Cys Tyr  
20 25 30

<210> 249  
<211> 30  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 249

Asp Lys Thr His Thr Ser Pro Pro Cys Pro Ala Gly Lys Pro Thr Leu  
1 5 10 15

Tyr Asn Ser Leu Val Met Ser Asp Thr Ala Gly Thr Ser Tyr  
20 25 30

<210> 250  
<211> 30  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 250

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Pro | Ser | Pro | Ala | Gly | Lys | Pro | Thr | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Asn | Ser | Leu | Val | Met | Ser | Asp | Thr | Ala | Gly | Thr | Ser | Tyr |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |

<210> 251

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 251

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Gly | Lys | Pro | Thr | His |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Asn | Val | Ser | Val | Val | Met | Ala | Glu | Val | Asp | Gly | Thr | Ser | Tyr |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |

<210> 252

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 252

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Ser | Pro | Ala | Gly | Lys | Pro | Thr | His |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Asn | Val | Ser | Val | Val | Met | Ala | Glu | Val | Asp | Gly | Thr | Cys | Tyr |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |

<210> 253  
 <211> 31  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 253

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Pro | Cys | Pro | Ala | Gly | Lys | Pro | Thr | His |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Asn | Val | Ser | Val | Val | Met | Ala | Glu | Val | Asp | Gly | Thr | Cys | Tyr |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |

<210> 254  
 <211> 31  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 254

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Ser | Pro | Ala | Gly | Lys | Pro | Thr | His |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Asn | Val | Ser | Val | Val | Met | Ala | Glu | Val | Asp | Gly | Thr | Ser | Tyr |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |

<210> 255  
 <211> 31  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 255



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Asp Lys Thr His Thr Ser Pro Pro Cys Pro Ala Gly Lys Pro Thr His  
1 5 10 15

Val Asn Val Ser Val Val Met Ala Glu Val Asp Gly Thr Ser Tyr  
20 25 30

<210> 256  
<211> 31  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 256

Asp Lys Thr His Thr Ser Pro Pro Ser Pro Ala Gly Lys Pro Thr His  
1 5 10 15

Val Asn Val Ser Val Val Met Ala Glu Val Asp Gly Thr Cys Tyr  
20 25 30

<210> 257  
<211> 31  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 257

Asp Lys Thr His Thr Ser Pro Pro Ser Pro Ala Gly Lys Pro Thr His  
1 5 10 15

Val Asn Val Ser Val Val Met Ala Glu Val Asp Gly Thr Ser Tyr  
20 25 30

<210> 258  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 258

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Cys | Val | Glu | Cys | Pro | Pro | Ser | Pro | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

<210> 259

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 259

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Cys | Val | Glu | Ser | Pro | Pro | Cys | Pro | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

<210> 260

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 260

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Ser | Val | Glu | Cys | Pro | Pro | Cys | Pro | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

<210> 261

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 261

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Cys | Val | Glu | Cys | Pro | Pro | Cys | Pro | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

<210> 262  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 262

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Cys | Val | Glu | Ser | Pro | Pro | Ser | Pro | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

<210> 263  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 263

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Ser | Val | Glu | Cys | Pro | Pro | Ser | Pro | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

<210> 264  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Linker sequence

<400> 264

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Cys | Val | Glu | Cys | Pro | Pro | Ser | Pro | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

<210> 265  
 <211> 15

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<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 265

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Ser | Val | Glu | Ser | Pro | Pro | Cys | Pro | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

<210> 266  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 266

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Ser | Val | Glu | Cys | Pro | Pro | Cys | Pro | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

<210> 267  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 267

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Ser | Val | Glu | Ser | Pro | Pro | Ser | Pro | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

<210> 268  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

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<400> 268

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Ser | Val | Glu | Cys | Pro | Pro | Ser | Pro | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

<210> 269

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 269

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Ser | Val | Glu | Ser | Pro | Pro | Cys | Pro | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

<210> 270

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 270

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Ser | Val | Glu | Ser | Pro | Pro | Ser | Pro | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

<210> 271

<211> 26

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 271

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Arg | Cys | Pro | Glu | Pro | Lys | Ser | Cys | Asp |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

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Thr Pro Pro Pro Cys Pro Arg Ser Pro Ala  
20 25

<210> 272  
<211> 26  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 272

Asp Lys Thr His Thr Cys Pro Arg Cys Pro Glu Pro Lys Ser Cys Asp  
1 5 10 15

Thr Pro Pro Pro Ser Pro Arg Cys Pro Ala  
20 25

<210> 273  
<211> 26  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 273

Asp Lys Thr His Thr Cys Pro Arg Cys Pro Glu Pro Lys Ser Ser Asp  
1 5 10 15

Thr Pro Pro Pro Cys Pro Arg Cys Pro Ala  
20 25

<210> 274  
<211> 26  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

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<400> 274

Asp Lys Thr His Thr Cys Pro Arg Ser Pro Glu Pro Lys Ser Cys Asp  
1 5 10 15

Thr Pro Pro Pro Cys Pro Arg Cys Pro Ala  
20 25

<210> 275

<211> 26

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 275

Asp Lys Thr His Thr Ser Pro Arg Cys Pro Glu Pro Lys Ser Cys Asp  
1 5 10 15

Thr Pro Pro Pro Cys Pro Arg Cys Pro Ala  
20 25

<210> 276

<211> 26

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 276

Asp Lys Thr His Thr Cys Pro Arg Cys Pro Glu Pro Lys Ser Cys Asp  
1 5 10 15

Thr Pro Pro Pro Ser Pro Arg Ser Pro Ala  
20 25

<210> 277

<211> 26

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<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 277

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Arg | Cys | Pro | Glu | Pro | Lys | Ser | Ser | Asp |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Pro | Pro | Pro | Cys | Pro | Arg | Ser | Pro | Ala |
|     |     |     | 20  |     |     |     | 25  |     |     |

<210> 278  
<211> 26  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 278

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Arg | Ser | Pro | Glu | Pro | Lys | Ser | Cys | Asp |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Pro | Pro | Pro | Cys | Pro | Arg | Ser | Pro | Ala |
|     |     |     | 20  |     |     |     | 25  |     |     |

<210> 279  
<211> 26  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 279

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Arg | Cys | Pro | Glu | Pro | Lys | Ser | Cys | Asp |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |



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Thr Pro Pro Pro Cys Pro Arg Ser Pro Ala  
20 25

<210> 280  
<211> 26  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 280

Asp Lys Thr His Thr Cys Pro Arg Cys Pro Glu Pro Lys Ser Ser Asp  
1 5 10 15

Thr Pro Pro Pro Ser Pro Arg Ser Pro Ala  
20 25

<210> 281  
<211> 26  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 281

Asp Lys Thr His Thr Cys Pro Arg Ser Pro Glu Pro Lys Ser Cys Asp  
1 5 10 15

Thr Pro Pro Pro Ser Pro Arg Ser Pro Ala  
20 25

<210> 282  
<211> 26  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

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<400> 282

Asp Lys Thr His Thr Ser Pro Arg Cys Pro Glu Pro Lys Ser Cys Asp  
1 5 10 15

Thr Pro Pro Pro Ser Pro Arg Ser Pro Ala  
20 25

<210> 283

<211> 26

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 283

Asp Lys Thr His Thr Cys Pro Arg Ser Pro Glu Pro Lys Ser Ser Asp  
1 5 10 15

Thr Pro Pro Pro Cys Pro Arg Ser Pro Ala  
20 25

<210> 284

<211> 26

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 284

Asp Lys Thr His Thr Ser Pro Arg Cys Pro Glu Pro Lys Ser Ser Asp  
1 5 10 15

Thr Pro Pro Pro Cys Pro Arg Ser Pro Ala  
20 25

<210> 285

<211> 26

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<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 285

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Arg | Ser | Pro | Glu | Pro | Lys | Ser | Cys | Asp |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Pro | Pro | Pro | Cys | Pro | Arg | Ser | Pro | Ala |
|     |     |     | 20  |     |     |     | 25  |     |     |

<210> 286  
<211> 26  
<212> PRT  
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<220>  
<223> Linker sequence

<400> 286

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Arg | Ser | Pro | Glu | Pro | Lys | Ser | Ser | Asp |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Pro | Pro | Pro | Ser | Pro | Arg | Cys | Pro | Ala |
|     |     |     | 20  |     |     |     | 25  |     |     |

<210> 287  
<211> 26  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 287

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Arg | Cys | Pro | Glu | Pro | Lys | Ser | Ser | Asp |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

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Thr Pro Pro Pro Ser Pro Arg Cys Pro Ala  
20 25

<210> 288  
<211> 26  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 288

Asp Lys Thr His Thr Ser Pro Arg Ser Pro Glu Pro Lys Ser Ser Asp  
1 5 10 15

Thr Pro Pro Pro Cys Pro Arg Cys Pro Ala  
20 25

<210> 289  
<211> 26  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 289

Asp Lys Thr His Thr Cys Pro Arg Ser Pro Glu Pro Lys Ser Ser Asp  
1 5 10 15

Thr Pro Pro Pro Ser Pro Arg Ser Pro Ala  
20 25

<210> 290  
<211> 26  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

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<400> 290

Asp Lys Thr His Thr Ser Pro Arg Ser Pro Glu Pro Lys Ser Ser Asp  
1 5 10 15

Thr Pro Pro Pro Cys Pro Arg Ser Pro Ala  
20 25

<210> 291

<211> 26

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 291

Asp Lys Thr His Thr Ser Pro Arg Ser Pro Glu Pro Lys Ser Cys Asp  
1 5 10 15

Thr Pro Pro Pro Ser Pro Arg Ser Pro Ala  
20 25

<210> 292

<211> 26

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 292

Asp Lys Thr His Thr Ser Pro Arg Cys Pro Glu Pro Lys Ser Ser Asp  
1 5 10 15

Thr Pro Pro Pro Ser Pro Arg Ser Pro Ala  
20 25

<210> 293

<211> 26

eolf-othd-000005

<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 293

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Arg | Ser | Pro | Glu | Pro | Lys | Ser | Ser | Asp |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Pro | Pro | Pro | Ser | Pro | Arg | Ser | Pro | Ala |
|     |     |     | 20  |     |     |     | 25  |     |     |

<210> 294  
<211> 11  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 294

|     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Cys | Pro | Ser | Ser | Pro | Ala |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |

<210> 295  
<211> 11  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Linker sequence

<400> 295

|     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Thr | His | Thr | Ser | Pro | Ser | Cys | Pro | Ala |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |

<210> 296  
<211> 11  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 296

Asp Lys Thr His Thr Ser Pro Ser Ser Pro Ala  
1 5 10

<210> 297

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Linker sequence

<400> 297

Gly Gly Gly Ser  
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<210> 298

<211> 35759

<212> DNA

<213> Artificial Sequence

<220>

<223> NG-616 genome sequence

<400> 298

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| aaaaagtgtg gatcgtgtgg tgattggctg tgggggttaac ggctaaaagg ggcggtgcga  | 120 |
| ccgtgggaaa atgacgtttt gtgggggtgg agtttttttg caagttgtcg cgggaaatgt   | 180 |
| gacgcataaa aaggcttttt tctcacggaa ctacttagtt ttcccacggt atttaacagg   | 240 |
| aaatgaggta gttttgaccg gatgcaagtg aaaattgttg attttcgcgc gaaaactgaa   | 300 |
| tgaggaagtg tttttctgaa taatgtggta tttatggcag ggtggagtat ttgttcaggg   | 360 |
| ccaggtagac tttgacccat tacgtggagg tttcgattac cgtgtttttt acctgaattt   | 420 |
| ccgcgtaccg tgtcaaagtc ttctgttttt acgtagggtgt cagctgatcg ctaggggtatt | 480 |

|                                                                    |      |
|--------------------------------------------------------------------|------|
| tataacctcag ggtttgtgtc aagaggccac tcttgagtgc cagcgagaag agttttctcc | 540  |
| tctgcgccgg cagtttaata ataaaaaat gagagatttg cgatttctgc ctcaggaaat   | 600  |
| aatctctgct gagactggaa atgaaatatt ggagcttgtg gtgcacgccc tgatgggaga  | 660  |
| cgatccggag ccacctgtgc agctttttga gcctcctacg cttcaggaac tgtatgattt  | 720  |
| agaggtagag ggatcggagg attctaataa ggaagctgta aatggctttt ttaccgattc  | 780  |
| tatgctttta gctgctaata aagggttaga attagatccg cctttggaca cttttgatac  | 840  |
| tccaggggta attgtggaaa gcggtacagg tgtaagaaaa ttacctgatt tgagttccgt  | 900  |
| ggactgtgat ttgcactgct atgaagacgg gtttcctccg agtgatgagg aggaccatga  | 960  |
| aaaggagcag tccatgcaga ctgcagcggg tgaggggagtg aaggctgcca atgttggttt | 1020 |
| tcagttggat tgcccggagc ttcctggaca tggctgtaag tcttgtgaat ttcacaggaa  | 1080 |
| aaatactgga gtaaaggaac tgttatgttc gctttgttat atgagaacgc actgccactt  | 1140 |
| tatttacagt aagtgtgttt aagttaaaat ttaaaggaat atgctgtttt tcacatgtat  | 1200 |
| attgagtgtg agttttgtgc ttcttattat aggtcctgtg tctgatgctg atgaatcacc  | 1260 |
| atctcctgat tctactacct cacctcctga gattcaagca cctgttcctg tggacgtgcg  | 1320 |
| caagcccatt cctgtgaagc ttaagcctgg gaaacgtcca gcagtggaaa aacttgagga  | 1380 |
| cttgttacag ggtggggacg gacctttgga cttgagtaca cggaacgctc caagacaata  | 1440 |
| agtgttccat atccgtgttt acttaagggtg acgtcaatat ttgtgtgaca gtgcaatgta | 1500 |
| ataaaaaatat gttaactgtt cactggtttt tattgctttt tgggcgggga ctcaggata  | 1560 |
| taagtagaag cagacctgtg tggtagctc ataggagctg gctttcatcc atggaggttt   | 1620 |
| gggccatttt ggaagacctt aggaagacta ggcaactgtt agagaacgct tcggacggag  | 1680 |
| tctccggttt ttggagattc tggttcgcta gtgaattagc tagggtagtt tttaggataa  | 1740 |
| aacaggacta taaacaagaa tttgaaaagt tgttggtaga ttgccagga ctttttgaag   | 1800 |
| ctcttaattt gggccatcag gttcacttta aagaaaaagt tttatcagtt ttagactttt  | 1860 |
| caaccccagg tagaactgct gctgctgtgg cttttcttac ttttatatta gataaatgga  | 1920 |



|                                                                    |      |
|--------------------------------------------------------------------|------|
| tccccgagac tcatttcagc aggggatacg ttttggattt catagccaca gcattgtgga  | 1980 |
| gaacatggaa ggttcgcaag atgaggacaa tcttaggtta ctggccagtg cagcctttgg  | 2040 |
| gtgtagcggg aatcctgagg catccaccgg tcatgccagc ggttctggag gaggaacagc  | 2100 |
| aagaggacaa cccgagagcc ggcttgacc ctccagtgga ggaggcggag tagctgactt   | 2160 |
| gtctcctgaa ctgcaacggg tgcttactgg atctacgtcc actggacggg ataggggcgt  | 2220 |
| taagaggggag agggcatcta gtggtactga tgctagatct gagttggctt taagtttaat | 2280 |
| gagtcgcaga cgtcctgaaa ccatttgggtg gcatgagggt cagaaagagg gaagggatga | 2340 |
| agtttctgta ttgcaggaga aatattcact ggaacagggt aaaacatgtt ggttggagcc  | 2400 |
| tgaggatgat tgggagggtg ccattaaaaa ttatgccaaag atagctttga ggctgataa  | 2460 |
| acagtataag attactagac ggattaatat ccggaatgct tgttacatat ctggaaatgg  | 2520 |
| ggctgagggtg gtaatagata ctcaagacaa ggagttatt agatgctgca tgatggatat  | 2580 |
| gtggcctggg gtagtcggta tggaagcagt aacttttgta aatgttaagt ttaggggaga  | 2640 |
| tggttataat ggaatagtgt ttatggccaa taccaaactt atattgcatg gttgtagctt  | 2700 |
| ttttggtttc aacaatacct gtgtagatgc ctggggacag gttagtgtac ggggatgtag  | 2760 |
| tttctatgcg tgttggattg ccacagctgg cagaaccaag agtcaattgt ctctgaagaa  | 2820 |
| atgcatatth caaagatgta acctgggcat tctgaatgaa ggcgaagcaa ggggtccgcca | 2880 |
| ctgcgcttct acagatactg gatgttttat ttgattaag ggaaatgcca gcgtaaagca   | 2940 |
| taacatgatt tgcggtgctt ccgatgagag gccttatcaa atgctcactt gtgctgggtg  | 3000 |
| gcattgtaat atgctggcta ctgtgcatat tgtttcccat caacgcaaaa aatggcctgt  | 3060 |
| ttttgatcac aatgtgatga cgaagtgtac catgcatgca ggtgggcgta gaggaatgtt  | 3120 |
| tatgccttac cagtgtaca tgaatcatgt gaaagtgttg ttggaaccag atgccttttc   | 3180 |
| cagaatgagc ctaacaggaa tttttgacat gaacatgcaa atctggaaga tcctgaggta  | 3240 |
| tgatgatacg agatcgaggg tacgcgcatg cgaatgcgga ggcaagcatg ccaggttcca  | 3300 |
| gccggtgtgt gtagatgtga ctgaagatct cagaccggat catttgggtta ttgcccgcac | 3360 |

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|                                                                     |      |
|---------------------------------------------------------------------|------|
| tggagcagag ttcggatcca gtggagaaga aactgactaa ggtgagtatt gggaaaactt   | 3420 |
| tgggggtggga ttttcagatg gacagattga gtaaaaaattt gttttttctg tcttgcagct | 3480 |
| gtcatgagtg gaaacgcttc ttttaagggg ggagtccttca gcccttatct gacagggcgt  | 3540 |
| ctcccatcct gggcaggagt tcgtcagaat gttatgggat ctactgtgga tggaagaccc   | 3600 |
| gtccaacccg ccaattcttc aacgctgacc tatgctactt taagttcttc acctttggac   | 3660 |
| gcagctgcag ctgccgccgc cgcttctgtt gccgctaaca ctgtgcttgg aatgggttac   | 3720 |
| tatggaagca tcatggctaa ttccacttcc tctaataacc cttctaccct gactcaggac   | 3780 |
| aagttacttg tccttttggc ccagctggag gctttgaccc aacgtctggg tgaactttct   | 3840 |
| cagcaggtgg tcgagttgcg agtacaaact gagtctgctg tcggcacggc aaagtctaaa   | 3900 |
| taaaaaaatc ccagaatcaa tgaataaata aacaagcttg ttgttgattt aaaatcaagt   | 3960 |
| gtttttattt catttttcgc gcacggtatg ccctagacca ccgatctcta tcattgagaa   | 4020 |
| ctcgggtggat tttttccagg atcctataga ggtgggattg aatgtttaga tacatgggca  | 4080 |
| ttaggccgctc tttgggggtgg agatagctcc attgaaggga ttcatgctcc ggggtagtgt | 4140 |
| tgtaaatcac ccagtcataa caaggctgca gtgcatgggtg ttgcacaata tcttttagaa  | 4200 |
| gtaggctgat tgccacagat aagcccttgg tgtaggtgtt tacaacccgg ttgagctggg   | 4260 |
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| tgccgccaag atcccgctctt gggttcatgt tatgaaggac caccaagacg gtgtatccgg  | 4380 |
| tacatttagg aaatttatcg tgcagcttgg atggaaaagc gtggaaaaat ttggagacac   | 4440 |
| ccttgtgtcc tccaagattt tccatgcact catccatgat aatagcaatg gggccgtggg   | 4500 |
| cagcggcgcg ggcaaacacg ttccgtgggt ctgacacatc atagttatgt tcctgagtta   | 4560 |
| aatcatcata agccatttta atgaatttgg ggcggagagt accagattgg ggtatgaatg   | 4620 |
| ttccttcggg ccccgagca tagttcccct cacagatttg catttcccaa gctttcagtt    | 4680 |
| ccgaggggtg aatcatgtcc acctgggggg ctatgaaaaa caccgtttct ggggcggggg   | 4740 |
| tgattaattg tgatgatagc aaatttctga gcaattgaga tttgccacat ccggtggggc   | 4800 |

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| aatccattag gaggcgctct cctcctagtg atagaagttc ttgtagtgag gaaaagtttt  | 4980 |
| tcagcggttt cagaccgtca gccatgggca ttttggagag agtttgctgc aaaagttcta  | 5040 |
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| cgggcagtat aggcatattca gcgcatacaa cttgggcgca aggaaaacgg attctgggga | 5460 |
| gtatgcatct gcgccgcagg aggcgcaaac agtttcacat tccaccagcc aggttaaadc  | 5520 |
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| ggctctccatg agttcgtgtc ctggttgagt gacaaacagg ctgtccgtgt ccccgtagac | 5640 |
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| tgggggggta taaaaggggg cggttctttg ctcttcctca ctgtcttccg gatcgctgtc  | 5940 |
| caggaacgtc agctgttggg gtaggtattc cctctcgaag gcgggcatga cctctgcact  | 6000 |
| caggttgtca gtttctaaga acgaggagga tttgatattg acagtgccgg ttgagatgcc  | 6060 |
| tttcatgagg ttttctcca tctggtcaga aaacacaatt tttttattgt caagtttgg    | 6120 |
| ggcaaatgat ccatacaggg cggttgataa aagtttggca atggatcgca tggtttgggt  | 6180 |
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| gtcagataag gcgtagtgth cgagagccca ttcgtgcagg tgaggattcg ctttaaggaa  | 7560 |
| ggaggaccag aggtccactg ccagtgtgtt ttgtaactgg tcccgggtact gacgaaaatg | 7620 |
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| gatgtcgatg gcttgagggt ttccgtgtcc cttgggcgct accaccgtgc cttgttttt   | 8400 |
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| acggcccca cgggatctct cgcgcgcatg accacctggg cgaggttgag ctccacgtgg   | 8940 |
| cgggtgaaga ccgcatagtt gcataggcgc tggaaaaggt agttgagtgt ggtggcgatg  | 9000 |
| tgctcggatga cgaagaaata catgatccat cgtctcagcg gcatctcgct gacatcgccc | 9060 |
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| atctcttcct cttcaggtgg ggctgcagga ggagggggaa cgcggcgacg ccggcggcgc  | 9300  |
| acgggcagac ggtc gatgaa tctttcaatg acctctccgc ggaggcggcg catggtttca | 9360  |
| gtgacggcgc ggccgttctc gcgcggctgc agagtaaaaa caccgccgcg catctcctta  | 9420  |
| aagtggtgac tgggaggttc tccgtttggg agggagaggg cgctgattat acattttatt  | 9480  |
| aattggcccg tagggactgc acgcagagat ctgatcgtgt caagatccac gggatctgaa  | 9540  |
| aacctttcga cgaaagcgtc taaccagtca cagtcacaag gtaggctgag tacggcttct  | 9600  |
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| ctggacatcc aggtgattcc tgcggcggtg gtagaagccc gaggaaactc gcgtacgcgg  | 10320 |
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| caacagcccc cctcgcagca gcagcagcag caatcacaaa aggctgtccc tgcaactact  | 10740 |
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| gaaggactgg cacgtctagg tgcgccttca cccgagcggc atccgcgagt tcaactgaaa  | 10860 |
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| gaccgaagac gagtgttgcg ggacgaggat ttcgaagtgt atgaaatgac agggatcagt  | 11040 |
| cctgccaggg cacacgtggc tgcagccaac cttgtatcgg cttacgagca gacagtaaag  | 11100 |
| gaagagcgta acttccaaaa gtcttttaaat aatcatgtgc gaaccctgat tgcccgcgaa | 11160 |
| gaagttaccc ttggtttgat gcatttgtgg gatttgatgg aagctatcat tcagaaccct  | 11220 |
| actagcaaac ctctgaccgc ccagctgttt ctggtgggtgc aacacagcag agacaatgag | 11280 |
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| gctgccatca attactcggg tttgagcttg ggaaaaatatt acgctcgcaa aatctacaag | 11460 |
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| ctcaaggctt tgaccctgag cgatgatctt ggggtgtatc gcaatgacag aatgcatcgc  | 11580 |
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| aaccctgttt ttttgctaga tggaacagca agcaccgat cccgcaatgc gggcggcgct   | 11880 |
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| ggaccgtatg ataacagatg tacgcgaagc cgtgtctcag cgcgaaagg tccagcgtga   | 12240 |
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| atcactcag agcgaagtgt atcagtcagg tcctgattac ttctttcaga ctagcagaca   | 12420 |
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| tgctgcagcg gcgactattg ccgacatggc ccaatcgca agaggcaatg tatactgggt    | 15900 |
| gcgtgacgct gccaccggc aacgtgtacc cgtgcgcacc cgtccccctc gcacttagaa    | 15960 |
| gatactgagc agtctccgat gttgtgtccc agcggcgagg atgtccaagc gcaaatacaa   | 16020 |
| ggaagaaatg ctgcaggtta tcgcacctga agtctacggc caaccgttga aggatgaaaa   | 16080 |
| aaaacccgc aaaatcaagc ggggttaaaaa ggacaaaaaa gaagaggaag atggcgatga   | 16140 |
| tgggctggcg gagtttgtgc gcgagtttgc cccacggcga cgcgtgcaat ggcgtgggcg   | 16200 |
| caaagtgcga catgtgttga gacctggaac ttcgggtggtc ttacacccg gcgagcggtc   | 16260 |
| aagcgctact ttaagcgtt cctatgatga ggtgtacggg gatgatgata ttcttgagca    | 16320 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| ggcggctgac cgattaggcg agtttgctta tggcaagcgt agtagaataa cttccaagga   | 16380 |
| tgagacagtg tcgataccct tggatcatgg aaatcccacc cctagtctta aaccgggtcac  | 16440 |
| tttgcagcaa gtgttaccg taactccgag aacagggtgtt aaacgcgaag gtgaagattt   | 16500 |
| gtatcccact atgcaactga tggtagccaa acgccagaag ttggaggacg ttttggagaa   | 16560 |
| agtaaaagtg gatccagata ttcaacctga gggttaaagt agacccatta agcaggtagc   | 16620 |
| gcctgggtctg ggggtacaaa ctgtagacat taagattccc actgaaagta tggaagtgc   | 16680 |
| aactgaacct gcaaagccta ctgccacct cactgaagtg caaacggatc catggatgcc    | 16740 |
| catgcctatt acaactgacg ccgccgggtcc cactcgaaga tcccgcgaa agtacgggtcc  | 16800 |
| agcaagtctg ttgatgccc attatgttgt acacccatct attattccta ctcttggtta    | 16860 |
| ccgaggcact cgctactatc gcagccgaaa cagtacctcc cgccgtcgcc gcaagacacc   | 16920 |
| tgcaaatcgc agtcgtcgcc gtagacgcac aagcaaaccg actcccggcg ccctgggtgcg  | 16980 |
| gcaagtgtac cgcaatggta gtgcggaacc tttgacactg ccgcgtcgcc gttaccatcc   | 17040 |
| gagtatcatc acttaataca tgttgccgct gcctccttgc agatatggcc ctacttgtc    | 17100 |
| gccttcgcgt tcccatcact ggttaccgag gaagaaactc gcgccgtaga agagggatgt   | 17160 |
| tgggacgcgg aatgcgacgc tacaggcgac ggcgtgctat ccgcaagcaa ttgcggggtg   | 17220 |
| gttttttacc agccttaatt ccaattatcg ctgctgcaat tggcgcgata ccaggcatag   | 17280 |
| cttccgtggc gggttcaggcc tcgcaacgac attgacattg gaaaaaacg tataaataaa   | 17340 |
| aaaaaaaaaa tacaatggac tctgacactc ctggtcctgt gactatgttt tcttagagat   | 17400 |
| ggaagacatc aatttttcat ccttgggtcc gcgacacggc acgaagccgt acatgggcac   | 17460 |
| ctggagcgac atcggcacga gccaaactgaa cggggggcgcc ttcaattgga gcagtatctg | 17520 |
| gagcgggctt aaaaattttg gctcaaccat aaaaacatac gggaacaaag cttggaacag   | 17580 |
| cagtacagga caggcgctta gaaataaact taaagaccag aacttccaac aaaaagtagt   | 17640 |
| cgatgggata gcttccggca tcaatggagt ggtagatttg gctaaccagg ctgtgcagaa   | 17700 |
| aaagataaac agtcgttttg acccgccgcc agcaacccca ggtgaaatgc aagtggagga   | 17760 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| agaaattcct cgcgcagaaa aacgaggcga caagcgtccg cgtcccgatt tggaagagac  | 17820 |
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| caccactaga ccgatagccc caatggccac cgggggtgatg aaaccttctc agttgcatcg | 17940 |
| acccgtcacc ttggatttgc cccctcccc tgctgtact gctgtacccg cttctaagcc    | 18000 |
| tgctgctgcc ccgaaaccag tcgccgtagc caggtcacgt cccgggggcg ctcctcgtcc  | 18060 |
| aaatgcgcac tggcaaaata ctctgaacag catcgtgggt ctaggcgtgc aaagtgtaaa  | 18120 |
| acgccgtcgc tgcttttaat taaatatgga gtagcgctta acttgcttat ctgtgtatat  | 18180 |
| gtgtcattac acgccgtcac agcagcagag gaaaaaagga agaggtcgtg cgtcgacgct  | 18240 |
| gagttacttt caagatggcc accccatcga tgctgcccc atgggcatac atgcacatcg   | 18300 |
| ccggacagga tgcttcggag tacctgagtc cgggtctggt gcagttcgcc cgcgccacag  | 18360 |
| acacctactt caatctggga aataagttta gaaatccac cgtagcgccg acccacgatg   | 18420 |
| tgaccaccga ccgtagccag cggctcatgt tgcgcttcgt gcccgttgac cgggaggaca  | 18480 |
| atacatactc ttacaaagtgc cggtagaccc tggccgtggg cgacaacaga gtgctggata | 18540 |
| tggccagcac gttctttgac attaggggtg tgttggacag aggtcccagt ttcaaaccct  | 18600 |
| attctggtac ggcttacaac tccctggctc ctaaaggcgc tccaaataca tctcagtgga  | 18660 |
| ttgcagaagg tgtaaaaaat acaactgggtg aggaacacgt aacagaagag gaaaccaata | 18720 |
| ctactactta cacttttggc aatgctcctg taaaagctga agctgaaatt acaaaagaag  | 18780 |
| gactcccagt aggtttggaa gtttcagatg aagaaagtaa accgatttat gctgataaaa  | 18840 |
| catatcagcc agaacctcag ctgggagatg aaacttggac tgaccttgat ggaaaaaccg  | 18900 |
| aaaagtatgg aggcagggtc ctcaaaccgc atactaagat gaaacctatgc tacgggtcct | 18960 |
| ttgccaaacc tactaatgtg aaaggcggtc aggcaaaaca aaaaacaacg gagcagccaa  | 19020 |
| atcagaaaagt cgaatatgat atcgacatgg agttttttga tgcggcatcg cagaaaacaa | 19080 |
| acttaagtcc taaaattgtc atgtatgcag aaaatgtaaa tttggaaact ccagacactc  | 19140 |
| atgtagtgta caaacctgga acagaagaca caagttccga agctaatttg ggacaacaat  | 19200 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| ctatgccccaa cagacccaac tacattggct tcagagataa ctttattgga cttatgtact | 19260 |
| ataacagtac tggtaacatg ggggtgctgg ctgggtcaagc gtctcagtta aatgcagtgg | 19320 |
| ttgacttgca ggacagaaac acagaacttt cttaccaact cttgcttgac tctctgggcg  | 19380 |
| acagaaccag atacttttagc atgtggaatc aggctgtgga cagttatgat cctgatgtac | 19440 |
| gtgttattga aaatcatggg gtggaagatg aacttcccaa ctactgtttt ccactggacg  | 19500 |
| gcataggtgt tccaacaacc agttacaaat caatagttcc aaatggagac aatgcgccta  | 19560 |
| attggaagga acctgaagta aatggaacaa gtgagatcgg acagggtaat ttgtttgcca  | 19620 |
| tggaaattaa ccttcaagcc aatctatggc gaagtttcct ttattccaat gtggctctat  | 19680 |
| atctcccaga ctctgacaaa tacaccccggt ccaatgtcac tcttccagaa aacaaaaaca | 19740 |
| cctacgacta catgaacggg cgggtgggtgc cgccatctct agtagacacc tatgtgaaca | 19800 |
| ttggtgccag gtggtctctg gatgccatgg acaatgtcaa cccattcaac caccaccgta  | 19860 |
| acgctggctt gcgttaccga tccatgcttc tgggtaacgg acgttatgtg cttttccaca  | 19920 |
| tacaagtgcc tcaaaaattc ttcgctgtta aaaacctgct gcttctccca ggctcctaca  | 19980 |
| cttatgagtg gaactttagg aaggatgtga acatggttct acagagttcc ctcggtaacg  | 20040 |
| acctgcgggt agatggcgcc agcatcagtt tcacgagcat caacctctat gctacttttt  | 20100 |
| tccccatggc tcacaacacc gcttccaccc ttgaagccat gctgcggaat gacaccaatg  | 20160 |
| atcagtcatt caacgactac ctatctgcag ctaacatgct ctacccatt cctgccaatg   | 20220 |
| caaccaatat tcccatttcc attccttctc gcaactgggc ggctttcaga ggctgggtcat | 20280 |
| ttaccagact gaaaacaaaa gaaactccct ctttggggtc tggatttgac ccctactttg  | 20340 |
| tctattctgg ttctattccc tacctggatg gtaccttcta cctgaaccac acttttaaga  | 20400 |
| aggtttccat catgtttgac tcttcagtga gctggcctgg aaatgacagg ttactatctc  | 20460 |
| ctaacgaatt tgaaataaag cgactgtgg atggcgaagg ctacaacgta gcccaatgca   | 20520 |
| acatgaccaa agactgggtt ttggtacaga tgctcgccaa ctacaacatc ggctatcagg  | 20580 |
| gcttctacat tccagaagga taaaagatc gcatgtattc atttttcaga aacttccagc   | 20640 |

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|                                                                     |       |
|---------------------------------------------------------------------|-------|
| ccatgagcag gcaggtggtt gatgaggtca attacaaaga cttcaaggcc gtcgccatac   | 20700 |
| cctaccaaca caacaactct ggctttgtgg gttacatggc tccgaccatg cgccaaggctc  | 20760 |
| aaccctatcc cgctaactat ccctatccac tcattggaac aactgccgta aatagtgtta   | 20820 |
| cgcagaaaaa gttcttgtgt gacagaacca tgtggcgcac accgttctcg agcaacttca   | 20880 |
| tgtctatggg ggcccttaca gacttgggac agaatatgct ctatgccaac tcagctcatg   | 20940 |
| ctctggacat gacctttgag gtggatccca tggatgagcc caccctgctt tatcttctct   | 21000 |
| tcgaagtttt cgacgtggc agagtgcac agccacaccg cggcatcatc gaggcagtct     | 21060 |
| acctgcgtac accgttctcg gccggtaacg ctaccacgta agaagcttct tgcttcttgc   | 21120 |
| aaatagcagc tgcaaccatg gcctgcggat cccaaaacgg ctccagcgag caagagctca   | 21180 |
| gagccattgt ccaagacctg ggttgcggac cctatTTTTT gggaacctac gataagcgct   | 21240 |
| tcccgggggt catggcccc gataagctcg cctgtgccat tgtaaatacg gccggacgtg    | 21300 |
| agacgggggg agagcactgg ttggctttcg gttggaaccc acgttctaac acctgctacc   | 21360 |
| TTTTTgatcc TTTTggattc tcggatgatc gtctcaaaca gatttaccag tttgaatatg   | 21420 |
| agggtctcct gcgccgcagc gctcttgcta ccaaggaccg ctgtattacg ctggaaaaat   | 21480 |
| ctaccagac cgtgcagggt ccccgttctg ccgcctgcgg acttttctgc tgcattgtcc    | 21540 |
| ttcacgcctt tgtgcactgg cctgaccgtc ccatggacgg aaacccacc atgaaattgc    | 21600 |
| taactggagt gccaaacaac atgcttcatt ctctaaagt ccagcccacc ctgtgtgaca    | 21660 |
| atcaaaaaagc actctaccat tttcttaata cccattcgcc ttatTTTtcgc tcccatcgta | 21720 |
| cacacatcga aagggccact gcgttcgacc gtatggatgt tcaataatga ctcatgtaaa   | 21780 |
| caacgtgttc aataaacatc actttatTTT tttacatgta tcaaggctct gcattactta   | 21840 |
| tttatTTTaca agtcgaatgg gttctgacga gaatcagaat gacccgcagg cagtgatacg  | 21900 |
| ttgcggaact gatacttggg ttgccacttg aattcgggaa tcaccaactt gggaaccggt   | 21960 |
| atatcgggca ggatgtcact ccacagcttt ctggtcagct gcaaagctcc aagcagggtca  | 22020 |
| ggagccgaaa tcttgaaatc acaattagga ccagtgttt gagcgcgaga gttgcggtac    | 22080 |

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|                                                                    |       |
|--------------------------------------------------------------------|-------|
| accggattgc agcactgaaa caccatcagc gacggatgtc tcacgcttgc cagcacggtg  | 22140 |
| ggatctgcaa tcatgcccac atccagatct tcagcattgg caatgctgaa cgggggtcatc | 22200 |
| ttgcaggtct gcctacccat ggcgggcacc caattaggct tgtggttgca atcgcagtgc  | 22260 |
| agggggatca gtatcatctt ggcctgatcc tgtctgattc ctggatacac ggctctcatg  | 22320 |
| aaagcatcat attgcttgaa agcctgctgg gctttactac cctcggtata aaacatcccg  | 22380 |
| caggacctgc tcgaaaactg gttagctgca cagccggcat cattcacaca gcagcgggcg  | 22440 |
| tcattgttag ctatttgcac cacacttctg cccagcgggt tttgggtgat tttggttcgc  | 22500 |
| tcgggattct cctttaaggc tcgttgtccg ttctcgctgg ccacatccat ctcgataatc  | 22560 |
| tgctccttct gaatcataat attgccatgc aggcacttca gcttgccctc ataatcattg  | 22620 |
| cagccatgag gccacaacgc acagcctgta cattcccaat tatggtgggc gatctgagaa  | 22680 |
| aaagaatgta tcattccctg cagaaatctt cccatcatcg tgctcagtgt cttgtgacta  | 22740 |
| gtgaaagtta actggatgcc tcggtgctcc tcgtttacgt actggtgaca gatgcgcttg  | 22800 |
| tattgttcgt gttgctcagg cattagttaa aaagagggtc taagtctggt atccagcctg  | 22860 |
| tacttctcca tcagcagaca catcacttcc atgcctttct cccaagcaga caccaggggc  | 22920 |
| aagctaatacg gattcttaac agtgcaggca gcagctcctt tagccagagg gtcacttita | 22980 |
| gcgatcttct caatgcttct tttgccatcc ttctcaacga tgcgcacggg cgggtagctg  | 23040 |
| aaaccactg ctacaagttg cgcctcttct ctttcttctt cgctgtcttg actgatgtct   | 23100 |
| tgcatgggga tatgtttggt cttccttggc ttcttttttg ggggtatcgg aggaggagga  | 23160 |
| ctgtcgctcc gttccggaga caggaggat tgtgacgttt cgctcaccat taccaactga   | 23220 |
| ctgtcggtag aagaacctga cccacacagg cgacagggtt ttctcttcgg gggcagagg   | 23280 |
| ggaggcgatt gcgaagggtc gcggtccgac ctggaaggcg gatgactggc agaaccctt   | 23340 |
| ccgcgttcgg ggggtgtgct cctgtggcgg tcgcttaact gatttccttc gcggctggcc  | 23400 |
| attgtgttct cctaggcaga gaaacaacag acatggaaac tcagccattg ctgtcaacat  | 23460 |
| cgccacgagt gccatcacat ctcgtcctca gcgacgagga aaaggagcag agcttaagca  | 23520 |

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|---------------------------------------------------------------------|-------|
| ttccaccgcc cagtcctgcc accacctcta ccctagaaga taaggagggtc gacgcatctc  | 23580 |
| atgacatgca gaataaaaaa gcgaaagagt ctgagacaga catcgagcaa gacccgggct   | 23640 |
| atgtgacacc ggtggaacac gaggaagagt tgaaacgctt tctagagaga gaggatgaaa   | 23700 |
| actgccccaa acaacgagca gataactatc accaagatgc tggaaatagg gatcagaaca   | 23760 |
| ccgactacct catagggctt gacggggaag acgcgctcct taaacatcta gcaagacagt   | 23820 |
| cgctcatagt caaggatgca ttattggaca gaactgaagt gcccacatcagt gtggaagagc | 23880 |
| tcagccgcgc ctacgagctt aacctctttt cacctcgtac tcccccaaa cgtcagccaa    | 23940 |
| acggcacctg cgagccaaat cctcgcttaa acttttatcc agcttttgct gtgccagaag   | 24000 |
| tactggctac ctatcacatc ttttttaaaa atcaaaaaat tccagtctcc tgccgcgcta   | 24060 |
| atcgcacccg cgccgatgcc ctactcaatc tgggacctgg ttcacgctta cctgatatag   | 24120 |
| cttccttgga agaggttcca aagatcttcg agggctctggg caataatgag actcgggccg  | 24180 |
| caaatgctct gcaaaaaggga gaaaatggca tggatgagca tcacagcggt ctggtggaat  | 24240 |
| tggaaggcga taatgccaga ctgcagtagc tcaagcgaag catcgagggtc acacacttcg  | 24300 |
| catatccgc tgtcaacctg cccctaaag tcatgacggc ggtcatggac cagttactca     | 24360 |
| ttaagcgcg aagtccccct tcagaagaca tgcagaccc agatgcctgt gatgagggtg     | 24420 |
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| tggaagagcg tcgcaagctt atgatggccg tgggtgctggt taccgtagaa ctagagtgtc  | 24540 |
| tccgacgttt ctttaccgat tcagaaacct tgcgcaaact cgaagagaat ctgcactaca   | 24600 |
| cttttagaca cggctttgtg cggcaggcat gcaagatatc taacgtggaa ctcaccaacc   | 24660 |
| tggtttccta catgggtatt ctgcatgaga atcgccctagg acaaagcgtg ctgcacagca  | 24720 |
| ccctgaaggg ggaagccgc cgtgattaca tccgcgattg tgtctatctg tacctgtgcc    | 24780 |
| acacgtggca aaccggcatg ggtgtatggc agcaatgttt agaagaacag aacttgaaag   | 24840 |
| agcttgacaa gctcttacag aaatctctta aggttctgtg gacagggttc gacgagcgca   | 24900 |
| ccgtcgcttc cgacctggca gacctcatct tcccagagcg tctcagggtt actttgcgaa   | 24960 |



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|-------------------------------------------------------------------|-------|
| acggattgcc tgactttatg agccagagca tgcttaacaa ttttcgctct ttcacacctg | 25020 |
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| cctaccgcga gtgccccccg ccgctatgga gtcactgcta cctgttccgt ctggccaact | 25140 |
| atctctccta ccactcggat gtgatcgagg atgtgagcgg agacggcttg ctggagtgtc | 25200 |
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| aagccatcca aaaatccgc caagaatttc tactgaaaaa gggtaagggg gtctaccttg  | 25560 |
| acccccagac cggcgaggaa ctcaacacaa ggttccctca ggatgtcca acgacgagaa  | 25620 |
| aacaagaagt tgaaggtgca gccgccgccc ccagaagata tggaggaaga ttgggacagt | 25680 |
| caggcagagg aggcggagga ggacagtctg gaggacagtc tggaggaaga cagtttgag  | 25740 |
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| agccagcaaa tcccggcagt ctcgacagat aaagacagcg gcggcgacct ccaacagaaa | 26160 |
| accagcagcg gcagttagaa aatacacaac aagtgcagca acaggaggat taaagattac | 26220 |
| agccaacgag ccagcgcaaa cccgagagtt aagaaatcgg atctttccaa ccctgtatgc | 26280 |
| catcttccag cagagtcggg gtcaagagca ggaactgaaa ataaaaaacc gatctctgcg | 26340 |
| ttcgctcacc agaagttggt tgtatcacia gagcgaagat caacttcagc gcactctcga | 26400 |

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|--------------------------------------------------------------------|-------|
| ggacgccgag gctctcttca acaagtactg cgcgctgact cttaaagagt aggcagcgac  | 26460 |
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| cgccttacat gtggagttat caaccccaaa tgggattggc ggcaggcgcc tcccaggact  | 26580 |
| actccacccg catgaattgg ctcagcgccg ggcttctat gatttctcga gttaatgata   | 26640 |
| tacgcgccta ccgaaaccaa atacttttgg aacagtcagc tcttaccacc acgccccgcc  | 26700 |
| aacaccttaa tcccagaaat tggcccgccg ccctagtgtg ccaggaaagt cccgctccca  | 26760 |
| ccactgtatt acttcctcga gacgcccagg ccgaagtcca aatgactaat gcagggtcgc  | 26820 |
| agttagctgg cggctccacc ctatgtcgtc acaggcctcg gcataatata aaacgcctga  | 26880 |
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| ctgttctgac tttggaaagt tcgtcttcgc aaccccgctc gggcggaatc gggaccgttc  | 27060 |
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| tactgagttt aataaaaaact gaattaagac tctcctacgg actgccgctt cttcaacccg | 27540 |
| gattttacaa ccagaagaac gaaacttttc ctgtcgtcca ggactctgtt aacttcacct  | 27600 |
| ttctactca caaactagaa gctcaacgac tacaccgctt ttccagaagc attttccta    | 27660 |
| ctaatactac tttcaaaacc ggaggtgagc tccaaggctt tcctacagaa aacccttggg  | 27720 |
| tggaagcggg cttgtagtgt ctaggaattc ttgcgggtgg gcttgtgatt attctttgct  | 27780 |
| acctatacac accttgcttc actttcttag tgggtgtgtg gtattggttt aaaaaatggg  | 27840 |

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|                                                                     |       |
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| gcccatacta gtcttgcttg ttttactttc gcttttggaa ccgggttctg ccaattacga   | 27900 |
| tccatgtcta gacttcgacc cagaaaactg cacacttact tttgcacccg acacaagccg   | 27960 |
| catctgtgga gttcatcgcc tctcttacga acttggcccc caacgacaaa aatttacctg   | 28020 |
| catggtggga atcaacccca tagttatcac ccagcaaagt ggagatacta agggttgcat   | 28080 |
| tcactgctcc tgcgattcca tcgagtgcac ctacaccctg ctgaagaccc tatgcggcct   | 28140 |
| aagagacctg ctaccaatga attaaaaaat gattaataaa aaatcactta cttgaaatca   | 28200 |
| gcaataagggt ctctgttgaa attttctccc agcagcacct cacttcctc ttcccaactc   | 28260 |
| tggtattcta aaccccgttc agcggcatac tttctccata ctttaaagggt gatgtcaa    | 28320 |
| tttagctcct ctctgtacc cacaatcttc atgtctttct tcccagatga ccaagagagt    | 28380 |
| ccggctcagt gactccttca accctgtcta cccctatgaa gatgaaagca cctcccaaca   | 28440 |
| cccccttata aaccagggt ttatttcccc aaatggcttc acacaaagcc caaacggagt    | 28500 |
| tcttacttta aaatgtttaa cccactaac aaccacaggc ggatctctac agctaaaagt    | 28560 |
| gggaggggga cttacagtgg atgacaccaa cggttttttg aaagaaaaca taagtgccac   | 28620 |
| cacaccactc gttaagactg gtcactctat aggtttacca ctaggagccg gattgggaac   | 28680 |
| gaatgaaaat aaactttgta tcaaattagg acaaggactt acattcaatt caaacaacat   | 28740 |
| ttgcattgat gacaatatta acaccttatg gacaggagtc aacccaccg aagccaactg    | 28800 |
| tcaaactcatg aactccagt aatctaataa ttgcaaatta attctaacac tagttaaac    | 28860 |
| tggagcacta gtcactgcat ttgtttatgt tataggagta tctaacaatt ttaatatgct   | 28920 |
| aactacacac agaaaataaa attttactgc agagctgttt ttcgattcta ctggtaattt   | 28980 |
| actaactaga ctctcatccc tcaaaactcc acttaatcat aaatcaggac aaaacatggc   | 29040 |
| tactggtgcc attactaatg ctaaagggtt catgcccagc acgactgcct atcctttcaa   | 29100 |
| tgataattct agagaaaaag aaaactacat ttacggaact tggtactaca cagctagtga   | 29160 |
| tcgcactgct tttcccattg acatatctgt catgcttaac cgaagagcaa taaatgacga   | 29220 |
| gacatcatat tgtattcgta taacttgggtc ctggaacaca ggagatgccc cagagggtgca | 29280 |

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|            |            |            |            |            |             |       |
|------------|------------|------------|------------|------------|-------------|-------|
| aacctctgct | acaaccctag | tcacctcccc | atttaccttt | tactacatca | gagaagacga  | 29340 |
| ctgacaaata | aagtttgcga | tcgctttctc | tcttcaggcc | caccatgggc | tggagctgca  | 29400 |
| tcatcttggt | cctggctgca | actgctaccg | gagtccattc | ggacatcgtc | atgacccaaa  | 29460 |
| gccctgactc | gctcgctgtg | tcactgggag | agcgggcgac | tatcaactgc | aaatcatccc  | 29520 |
| agagcctgct | gtattcacgc | aatcagaaaa | actacctggc | ctggtatcag | cagaagccgg  | 29580 |
| gccagcctcc | caagctgctg | atcttctggg | cctccacccg | cgaaagcggc | gtgccggacc  | 29640 |
| gcttcagcgg | aagcggattc | ggaactgact | ttactctgac | cattagctcc | ttgcaggcgg  | 29700 |
| aggacgtggc | cgtctactac | tgccagcagt | atttctccta | tccgctcacc | tttgggcaag  | 29760 |
| gcaccaaggt | ggagattaag | ggagggggcg | gcagcggggg | aggcggcagc | ggcggcgggg  | 29820 |
| gatcgcaggt | ccagctcgtc | caatccggag | ccgaagtcaa | gaagccggga | gcgtcgggtca | 29880 |
| aggtcagctg | caaaacttcg | cgctacacct | tcactgagta | cacgatccac | tgggtccgcc  | 29940 |
| aggcgccccg | ccagcggctg | gagtggatcg | gcgggatcaa | cccaaacaac | ggaatcccaa  | 30000 |
| attacaatca | gaaatttaaa | gggcgggtga | ctatcaccgt | ggatacctcg | gcctccacgg  | 30060 |
| cgtacatgga | gctctcatca | ctcagatcgg | aggacaccgc | ggtctattac | tgcgcccgcc  | 30120 |
| gccggatcgc | ttatggatac | gatgaaggac | atgcgatgga | ttactggggc | cagggcaccc  | 30180 |
| tcgtcacggt | gtcgtcagga | ggcggcggtt | cacaggtgca | gctgcagcag | tctggggctg  | 30240 |
| aactggcaag | acctggggcc | tcagtgaaga | tgtcctgcaa | ggcttctggc | tacaccttta  | 30300 |
| ctaggtagac | gatgcactgg | gtaaaacaga | ggcctggaca | gggtctggaa | tggattggat  | 30360 |
| acattaatcc | tagccgtggt | tatactaatt | acaatcagaa | gttcaaggac | aaggccacat  | 30420 |
| tgactacaga | caaatcctcc | agcacagcct | acatgcaact | gagcagcctg | acatctgagg  | 30480 |
| actctgcagt | ctattactgt | gcaagatatt | atgatgatca | ttactgcctt | gactactggg  | 30540 |
| gccaaggcac | cactctcaca | gtctcctcag | gtggcgggtg | ctcgggcggt | ggtggatctg  | 30600 |
| gtggcggcgg | atctgatatc | gtgctcactc | agtctccagc | aatcatgtct | gcatctccag  | 30660 |
| gggagaaggt | caccatgacc | tgcagtgcc  | gctcaagtgt | aagttacatg | aactggtacc  | 30720 |

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|                                                                    |       |
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| gcatggaggc tgaagatgct gccacttatt actgccagca gtggagtagt aacccattca  | 30900 |
| cgttcggctc ggggacaaag ttggaaataa accggggaag cggacagtgt actaattatg  | 30960 |
| ctctcttgaa attggctgga gatgttgaga gcaaccctgg acctacagtg ctggcgccag  | 31020 |
| cctggagccc aacaacctat ctctctctgc tgctgctgct gagctcggga ctcagtggga  | 31080 |
| cccaggactg ctctttccaa cacagcccca tctcctccga cttcgctgtc aaaatccgtg  | 31140 |
| agctgtctga ctacctgctt caagattacc cagtcaccgt ggcctccaac ctccaggacg  | 31200 |
| aggagctctg cgggggcctc tggcggctgg tcctggcaca gcgctggatg gagcggctca  | 31260 |
| agactgtcgc tgggtccaag atgcaaggct tgctggagcg cgtgaacacg gagatacact  | 31320 |
| ttgtcaccaa atgtgccttt cagccccccc ccagctgtct tcgcttcgtc cagaccaaca  | 31380 |
| tctccgcct cctacaggag acctccgagc agctggtggc gctgaagccc tggatcactc   | 31440 |
| gccagaactt ctcccggtgc ctggagctgc agtgtcagcc cgactcctca accctgccac  | 31500 |
| ccccatggag tccccggccc ctggaggcca cagccccggg aagcggagct actaacttca  | 31560 |
| gcctgctgaa gcaggctgga gacgtggagg agaaccctgg acctcaggtc tccactgctg  | 31620 |
| cccttgccgt cctcctctgc accatggctc tctgcaacca ggtcctctct gcaccacttg  | 31680 |
| ctgctgacac gccgaccgcc tgctgcttca gctacacctc ccgacagatt ccacagaatt  | 31740 |
| tcatagctga ctactttgag acgagcagcc agtgctccaa gcccagtgct atcttcctaa  | 31800 |
| ccaagagagg ccggcaggtc tgtgctgacc ccagtgagga gtgggtccag aaatacgtca  | 31860 |
| gtgacctgga gctgagtgcc ggaagcggag agggcagagg aagtctgcta acatgcggtg  | 31920 |
| acgtcgagga gaatcctgga cctgccttga cctttgcttt actggtggcc ctcttggtgc  | 31980 |
| tcagctgcaa gtcaagctgc tctgtgggt gtgatctgcc tcaaaccac agcctgggta    | 32040 |
| gcaggaggac cttgatgctc ctggcacaga tgaggagaat ctctcttttc tcctgcttga  | 32100 |
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| aaaccatccc tgtcctccat gagatgatcc agcagatctt caatctcttc agcacaaagg  | 32220 |
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| agctgaatga cctggaagcc tgtgtgatac aggggggtggg ggtgacagag actcccctga | 32340 |
| tgaaggagga ctccattctg gctgtgagga aatacttcca aagaatcact ctctatctga  | 32400 |
| aagagaagaa atacagccct tgtgcctggg aggttgtcag agcagaaatc atgagatctt  | 32460 |
| tttctttgtc aacaaacttg caagaaagtt taagaagtaa ggaataagct agcttgactg  | 32520 |
| actgagatac agcgtacctt cagctcacag acatgataag atacattgat gagtttggac  | 32580 |
| aaaccacaac tagaatgcag tgaaaaaaat gctttatttg tgaaatttgt gatgctattg  | 32640 |
| ctttatttgt aaccattata agctgcaata aacaagttaa caacaacaat tgcattcatt  | 32700 |
| ttatgtttca gggttcagggg gaggtgtggg aggtttttta aagcaagtaa aacctctaca | 32760 |
| aatgtggtag tcgtcagcta tcctgcagga acttgtttat ttgaaaatca attcacaaaa  | 32820 |
| tccgagtagt tattttgcct ccccttccc atttaacaga atacaccaat ctctccccac   | 32880 |
| gcacagcttt aaacatttgg ataccattag atatagacat ggtttttagat tccacattcc | 32940 |
| aaacagtttc agagcgagcc aatctggggg cagtgataga taaaaatcca tcgggatagt  | 33000 |
| cttttaaagc gctttcacag tccaactgct gcggatgcga ctccggagtc tggatcacgg  | 33060 |
| tcatctggaa gaagaacgat gggaatcata atccgaaaac ggtatcggac gatttgtgtct | 33120 |
| catcaaacc acaagcagcc gctgtctgcg tcgctccgtg cgactgctgt ttatgggatc   | 33180 |
| agggtccaca gtgtcctgaa gcatgatattt aatagccctt aacatcaact ttctggtgcg | 33240 |
| atgcgcgcag caacgcattc tgatttcact caaatctttg cagtaggtac aacacattat  | 33300 |
| tacaatattg tttaataaac cataattaaa agcgctccag ccaaaactca tatctgatat  | 33360 |
| aatcgcccct gcatgaccat cataccaaag tttaatatata attaaatgac gttccctcaa | 33420 |
| aaacacacta cccacataca tgatctcttt tggcatgtgc atattaacaa tctgtctgta  | 33480 |
| ccatggacaa cgttgggttaa tcatgcaacc caatataacc ttccggaacc aactgccaa  | 33540 |
| caccgctccc ccagccatgc attgaagtga accctgctga ttacaatgac aatgaagaac  | 33600 |

|             |            |            |             |            |             |       |
|-------------|------------|------------|-------------|------------|-------------|-------|
| ccaattctct  | cgaccgtgaa | tcacttgaga | atgaaaaata  | tctatagtgg | cacaacatag  | 33660 |
| acataaatgc  | atgcatcttc | tcataatfff | taactcctca  | ggatttagaa | acatatccca  | 33720 |
| gggaatagga  | agctcttgca | gaacagtaaa | gctggcagaa  | caaggaagac | cacgaacaca  | 33780 |
| acttacacta  | tgcatagtca | tagtatcaca | atctggcaac  | agcgggtggg | cttcagtcac  | 33840 |
| agaagctcgg  | gtttcatfff | cctcacaacg | tggtaactgg  | gctctgggtg | aagggtgatg  | 33900 |
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| tctcgtatff  | tgtatagcaa | aacgcggccc | tggcagaaca  | cactcttctt | cgccttctac  | 34020 |
| cctgccgctt  | agcgtgttcc | gtgtgatagt | tcaagtacaa  | ccacactctt | aagttgggtca | 34080 |
| aaagaatgct  | ggcttcagtt | gtaatcaaaa | ctccatcgca  | tctaatacgt | ctgaggaaat  | 34140 |
| catccaagca  | atgcaactgg | attgtgtttc | aagcaggaga  | ggagagggaa | gagacggaag  | 34200 |
| aaccatgtta  | atfffftatt | caaacgatct | cgcagtactt  | caaattgtag | atcgcgcaga  | 34260 |
| tggcatctct  | cgccccact  | gtgttgggtg | aaaagcacag  | ctagatcaaa | agaaatgcga  | 34320 |
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| agaataccaa  | aagaaggagc | atffffttaa | tcctcaatca  | tcatattaca | ttcctgcacc  | 34440 |
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| accctcataa  | tgacaaaata | tcttgctcct | gtgtcacctg  | tagcgaattg | agaatggcaa  | 34620 |
| catcaattga  | catgcccttg | gctctaagtt | cttctttaag  | ttctagttgt | aaaaactctc  | 34680 |
| tcatattatc  | acaaaactgc | ttagccagaa | gcccccgagg  | aacaagagca | ggggacgcta  | 34740 |
| cagtgcagta  | caagcgcaga | cctccccaat | tggctccagc  | aaaaacaaga | ttggaataag  | 34800 |
| catattggga  | accgccagta | atatcatcga | agttgctgga  | aatataatca | ggcagagttt  | 34860 |
| cttgtaaaaa  | ttgaataaaa | gaaaaatffg | ccaaaaaaac  | attcaaaacc | tctgggatgc  | 34920 |
| aaatgcaata  | ggttaccgcg | ctgcgctcca | acattgttag  | ttttgaatta | gtctgcaaaa  | 34980 |
| ataaaaaaaaa | aaacaagcgt | catatcatag | tagcctgacg  | aacagatgga | taaatcagtc  | 35040 |

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| tttccatcac aagacaagcc acaggggtctc cagctcgacc ctcgtaaaac ctgtcatcat | 35100 |
| gattaaacaa cagcaccgaa agttcctcgc ggtgaccagc atgaataatt cttgatgaag  | 35160 |
| catacaatcc agacatgtta gcatcagtta acgagaaaaa acagccaaca tagcctttgg  | 35220 |
| gtataattat gcttaatcgt aagtatagca aagccacccc tcgcggtac aaagtaaaag   | 35280 |
| gcacaggaga ataaaaaata taattatttc tctgctgctg ttcaggcaac gtcgcccccg  | 35340 |
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| ggcacacaaa gcacaagctc taaagtgact ctccaacctc tccacaatat atatatacac  | 35460 |
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| ccccgaaact gcgtcaccag ggaaaagtac agtttcactt ccgcaatccc aacaggcgta  | 35580 |
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| aaatcacctc atttacatat tggcaccatt ccatctataa ggtatattat atagataga   | 35759 |