SEQUENCE LISTING

<110> National University of Singapore

<120> Mitochondrial Delivery of Recombinant Nucleic Acids

<130> 10104SG1156

<160> 87

<170> PatentIn version 3.5

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<212> RNA
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acuuagccgc ccguggccgg gagaagaugg aggagccgag augacaacgg cagucgugga 180

agggucgcca agccccgguc cuucucuucu gucuggucga aucucguuuu cuuuuuucaa 240

ccgcucuuuu uaucaccuuu uuaugugagu uucucuuccg cgucucccgg ccguaccauc 300

cacccaugca gcaugcacgc guguauguau gcaucgucuc uccuccgucc cgacuaccau 360

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uuuuuuuuua uuuuuuaucu ucuccuuucc uuaaucucgg auuaucauuu cccucuccua 540

ccuaccacga aucgcagaug auaaacaaga ggguaaaaag aaaaaagcua cagacauuug 600

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ucgcgauccu cauggcgagg accgcgaucu ccguauaggu agaugaaauu aucccguguc 840

cgguccugau uccccgcaug cccugcacau ccugacgcgu cggucagcag ccaaacaauc 900

auaggaaaug aaccagaaga acaaaaagau caucucucuc gguguauagc aacaccaaca 960

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gaauaauccg ugcgaccgag cuugugcuuc uuuucuuaua aggaggcaaa uauacuaggg 180

aaaacuuaag aauaggaaga aaccgagguu ugggagaaaa gcugagauaa aauagcgcau 240

uuuccauaca gagguuguug uuuuugugga uccuaagagg uuucaagugc gaaucucaaa 300

guucucacga gaauauuguc uucaagaauc gacaacugug guccaagauu uuuuuuuggu 360

cuuuuuaggu ucugcgaggg acaucacgau ggaucguugc gaugaaguca cgcguacgcc 420

ucuggugugg cgcggugucg ugacaggaga guguguuuuc agugcagagc ugucuugauu 480

ccuauauccg aguaucuguu uucucguaag gacgguaauc uucuuuggug uaaguacauc 540

uaaaagcugc aaacuauauu uuaagggcug ucucuaggug uacuuugaug cuggaguuuu 600

ucgcuguguu gaugugaaua aaucuacuac uacuauuaua ugcagaaaga gugauuaugc 660

cgagacaaga uugcauuggc ugaacuguuu caaaaacgcc uacacucuac uuauccguaa 720

accuaaggua auacuaugug uaaguuguuu uuuuuucuuu uuguaguaaa auggugauac 780

gugcaauuaa aacuguauuc cauguuucca uccuuucauu ucaacuuuaa aggcggcuuu 840

gagagcgaag aagugcgagg auaaaaaugg augacuccuu cguguccagg gagucgacua 900

cugcaacgcu gauugauuaa aagauggucu ccgaugauga uguuguuauu gaucgaauca 960

uggugcagaa cggcgacgga gaggagcgug uccgccgccg ggaagguggu cucuuucucu 1020

uuucuuuuuu caagaaaucu uccauguguu uaucguagug aucgaaaucg acugaucucg 1080

gguucuuuuu guugguuucu uuucgguuaa ucauguauug uuuucuuuuu uuacagaaag 1140

auacuuuuuu caugagcaau uccucgcccg gcgccggcau gccgaggugg ggccacugcg 1200

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ucuacauaca gaccgggugg caggagcggu aaggaaucau cgucgucuuu cauucuucga 1320

ugauuauggu aauacuaaau cuuaucuagg agcauauaca ucuaagauug gaguacuagu 1380

agucguuugu gguuucuauu uuuuuuuaua uuuaucuaug acaguuuuuc uguuuuucgu 1440

uuugauaaua auauaauaaa aacucaugga cgugaaaucu ggcuugguug uggugauuuc 1500

auucucauua uuguuguuuu cuuuccgucu ugcggaugaa gauguugcga ugcgguuguu 1560

guugguguug cuauacaccg agagagauga ucuuuuuguu cuucugguuc auuuccuaug 1620

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<211> 438
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<213> Artificial sequence

<220>
<223> Sense domain 1: D1

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gaugacaacg gcagucgugg aagggucgcc aagccccggu ccuucucuuc ugucuggucg 180

aaucucguuu ucuuuuuuca accgcucuuu uuaucaccuu uuuaugugag uuucucuucc 240

gcgucucccg gccguaccau ccacccaugc agcaugcacg cguguaugua ugcaucgucu 300

cuccuccguc ccgacuacca ucagcagcac cacuaccgcc acccccagcg ccaccaccgc 360

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cggucggcuu cugaagcu 438

<210> 4
<211> 117
<212> RNA
<213> Artificial sequence

<220>
<223> Sense domain 2: D2

<400> 4
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ucuccuaccu accacgaauc gcagaugaua aacaagaggg uaaaaagaaa aaaagcu 117

<210> 5
<211> 255
<212> RNA
<213> Artificial sequence

<220>
<223> Sense domain 3: D3

<400> 5
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gaaacaccac caagaauguc aauccgcaag gguguuccug cccccucgac gcgccugucg 120

cgauccucau ggcgaggacc gcgaucuccg uauagguaga ugaaauuauc ccguguccgg 180

uccugauucc ccgcaugccc ugcacauccu gacgcgucgg ucagcagcca aacaaucaua 240

ggaaaugaac aagcu 255

<210> 6
<211> 384
<212> RNA
<213> Artificial sequence

<220>
<223> Sense domain 4: D4

<400> 6
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cgccgggcga ggaauugcuc augaaaaaag uaucuuucug uaaaaaaaga aaacaauaca 120

ugauuaaccg aaaagaaacc aacaaaaaga acccgagauc agucgauuuc gaucacuacg 180

auaaacacau ggaagauuuc uugaaaaaag aaaagagaaa gagaccaccu ucccggcggc 240

ggacacgcuc cucuccgucg ccguucugca ccaugauucg aucaauaaca acaucaucau 300

cggagaccau cuuuuaauca aucagcguug caguagucga cucccuggac acgaaggagu 360

cauccauuuu uauccucgca agcu 384

<210> 7
<211> 438
<212> RNA
<213> Artificial sequence

<220>
<223>  Antisense domain 1: D1AS

<400>  7
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aacggauaac gcgguggcga cggcagcggu gguggcgcug gggguggcgg uaguggugcu  120

gcugauggua gucgggacgg aggagagacg augcauacau acacgcgugc augcugcaug  180

gguggauggu acggccggga gacgcggaag agaaacucac auaaaaaggu gauaaaaaga  240

gcgguugaaa aaagaaaacg agauucgacc agacagaaga gaaggaccgg ggcuuggcga  300

cccuuccacg acugccguug ucaucucggc uccuccaucu ucucccggcc acgggcggcu  360

aagucaccgc cguucucccc auccguccga gcgccgaccg accagccggc cgauucgccc  420

gccggggcuu cuguccgg  438

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<211>  117
<212>  RNA
<213>  Artificial sequence

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<223>  Antisense domain 2: D2AS

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gagagggaaa ugauaauccg agauuaagga aaggagaaga uaaaaaauaa aauccgg  117

<210>  9
<211>  255
<212>  RNA
<213>  Artificial sequence

<220>
<223>  Antisense  domain 3: D3AS

<400>  9
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gcgguccucg ccaugaggau cgcgacaggc gcgucgaggg ggcaggaaca cccuugcgga 180

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aaaaaugacc uccgg 255

<210> 10
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<212> RNA
<213> Artificial sequence

<220>
<223> Antisense domain 4: D4AS

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gugcagaacg gcgacggaga ggagcguguc cgccgccggg aagguggucu cuuucucuuu 180

ucuuuuuuca agaaaucuuc cauguguuua ucguagugau cgaaaucgac ugaucucggg 240

uucuuuuugu ugguuucuuu ucgguuaauc auguauuguu uucuuuuuuu acagaaagau 300

acuuuuuuca ugagcaauuc cucgcccggc gccggcaugc cgaggugggg ccacugcgau 360

cagcggcaug ccgacgccgu ccgg 384

<210> 11
<211> 2091
<212> RNA
<213> Artificial sequence

<220>
<223> Sense domain 1 deletion mutant: deltaD1

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uuuuuuuuau uuuuuaucuu cuccuuuccu uaaucucgga uuaucauuuc ccucuccuac 120

cuaccacgaa ucgcagauga uaaacaagag gguaaaaaga aaaaagcuac agacauuugg 180

guaccucagc uuuccgauaa cucgaagaau ucaaagucga cgauucccaa caagagaaaa 240

cagaacaaaa acaaggucau uuuuauuuau ccucaucguc aacaacaacu accgacaaca 300

acgaaacacc accaagaaug ucaauccgca aggguguucc ugccccccucg acgcgccugu 360

cgcgauccuc auggcgagga ccgcgaucuc cguauaggua gaugaaauua ucccgugucc 420

gguccugauu ccccgcaugc ccugcacauc cugacgcguc ggucagcagc caaacaauca 480

uaggaaauga accagaagaa caaaaagauc aucucucucg guguauagca acaccaacaa 540

caaccgcauc gcaacaucuu cauccgcaag acggaaagaa aacaacaaua augagaauga 600

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gaaaaacaga aaaacuguca uagauaaaua uaaaaaaaaa uagaaaccac aaacgacuac 720

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acggauaagu agaguguagg cguuuuugaa acaguucagc caaugcaauc uugucucggc 1440

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<210> 12
<211> 2412
<212> RNA
<213> Artificial sequence

<220>
<223> Sense domain 2 deletion mutant: deltaD2

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acuuagccgc ccguggccgg gagaagaugg aggagccgag augacaacgg cagucgugga 180

agggucgcca agccccgguc cuucucuucu gucuggucga aucucguuuu cuuuuuucaa 240

ccgcucuuuu uaucaccuuu uuaugugagu uucucuuccg cgucucccgg ccguaccauc 300

cacccaugca gcaugcacgc guguauguau gcaucgucuc uccuccgucc cgacuaccau 360

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acgauuccca acaagagaaa acagaacaaa aacaagguca uuuuuauuua uccucaucgu 600

caacaacaac uaccgacaac aacgaaacac caccaagaau gucaauccgc aaggguguuc 660

cugccccuc gacgcgccug ucgcgauccu cauggcgagg accgcgaucu ccguauaggu 720

agaugaaauu aucccguguc cgguccugau uccccgcaug cccugcacau ccugacgcgu 780

cggucagcag ccaaacaauc auaggaaaug aaccagaaga acaaaaagau caucucucuc 840

gguguauagc aacaccaaca acaaccgcau cgcaacaucu ucauccgcaa gacggaaaga 900

aaacaacaau aaugagaaug aaaucaccac aaccaagcca gauuucacgu ccaugaguuu 960

uuauuauauu auuaucaaaa cgaaaaacag aaaaacuguc auagauaaau auaaaaaaaa 1020

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gauuucuuga aaaaagaaaa gagaaagaga ccaccuuccc ggcggcggac acgcuccucu 1440

ccgucgccgu ucugcaccau gauucgauca auaacaacau caucaucgga gaccaucuuu 1500

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aauacaguuu uaauugcacg uaucaccauu uuacuacaaa aagaaaaaaa aacaacuuac 1680

acauaguauu accuuagguu uacggauaag uagaguguag gcguuuuuga aacaguucag 1740

ccaaugcaau cuugucucgg cauaaucacu cuuucugcau auaauaguag uaguagauuu 1800

auucacauca acacagcgaa aaacuccagc aucaaaguac accuagagac agcccuuaaa 1860

auauaguuug cagcuuuuag auguacuuac accaaagaag auuaccgucc uuacgagaaa 1920

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ccucgcagaa ccuaaaaaga ccaaaaaaaa aucuuggacc acaguugucg auucuugaag 2100

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aacaaccucu guauggaaaa ugcgcuauuu uaucucagcu uuucucccaa accucgguuu 2220

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ucggucgcac ggauuauucc uucugcuaau cuauuauuuu guuccuuuuu uuuuuguuug 2340

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ugcaugcaag cu 2412

<210> 13
<211> 2273
<212> RNA
<213> Artificial sequence

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<223> Sense domain 3 deletion mutant: deltaD3

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acuuagccgc ccguggccgg gagaagaugg aggagccgag augacaacgg cagucgugga 180

agggucgcca agccccgguc cuucucuucu gucuggucga aucucguuuu cuuuuuucaa 240

ccgcucuuuu uaucaccuuu uuaugugagu uucucuuccg cgucucccgg ccguaccauc 300

cacccaugca gcaugcacgc guguauguau gcaucgucuc uccuccgucc cgacuaccau 360

cagcagcacc acuaccgcca cccccagcgc caccaccgcu gccgucgcca ccgcguuauc 420

cguuccucgu aggcuggucc uggggaacgg gucggcggcc ggucggcuuc uguuuuauua 480

uuuuuuuuua uuuuuuaucu ucuccuuucc uuaaucucgg auuaucauuu cccucuccua 540

ccuaccacga aucgcagaug auaaacaaga ggguaaaaag aaaaaagcua cagacauuug 600

gguaccucag cuuuccgaua acucgaagaa uucaaagucg acgauuccca acaagagaaa 660

acagaacaaa aacaaagaag aacaaaaaga ucaucucucu cgguguauag caacaccaac 720

aacaaccgca ucgcaacauc uucauccgca agacggaaag aaaacaacaa uaaugagaau 780

gaaaucacca caaccaagcc agauuucacg uccaugaguu uuuauuauau uauuaucaaa 840

acgaaaaaca gaaaaacugu cauagauaaa uauaaaaaaa aauagaaacc acaaacgacu 900

acuaguacuc caaucuuaga uguauaugcu ccuagauaag auuuaguauu accauaauca 960

ucgaagaaug aaagacgacg augauuccuu accgcuccug ccacccgguc uguauguaga 1020

gagagaagag agaaaacggu gaauccaaga uccccggguc ggcgucggca ugccgcugau 1080

cgcaguggcc ccaccucggc augccggcgc cgggcgagga auugcucaug aaaaaaguau 1140

cuuucuguaa aaaaagaaaa caauacauga uuaaccgaaa agaaaccaac aaaaagaacc 1200

cgagaucagu cgauuucgau cacuacgaua aacacaugga agauuucuug aaaaaagaaa 1260

agagaaagag accaccuucc cggcggcgga cacgcuccuc uccgucgccg uucugcacca 1320

ugauucgauc aauaacaaca ucaucaucgg agaccaucuu uuaaucaauc agcguugcag 1380

uagucgacuc ccuggacacg aaggagucau ccauuuuuau ccucgcacuu cuucgcucuc 1440

aaagccgccu uuaaaguuga aaugaaagga uggaaacaug gaauacaguu uuaauugcac 1500

guaucaccau uuuacuacaa aaagaaaaaa aaacaacuua cacauaguau uaccuuaggu 1560

uuacggauaa guagagugua ggcguuuuug aaacaguuca gccaaugcaa ucuugucucg 1620

gcauaaucac ucuuucugca uauaauagua guaguagauu uauucacauc aacacagcga 1680

aaaacuccag caucaaagua caccuagaga cagcccuuaa aauauaguuu gcagcuuuua 1740

gauguacuua caccaaagaa gauuaccguc cuuacgagaa aacagauacu cggauauagg 1800

aaucaagaca gcucugcacu gaaaacacac ucuccuguca cgacaccgcg ccacaccaga 1860

ggcguacgcg ugacuucauc gcaacgaucc aucgugaugu cccucgcaga accuaaaaag 1920

accaaaaaaa aaucuuggac cacaguuguc gauucuugaa gacaauauuc ucgugagaac 1980

uuugagauuc gcacuugaaa ccucuuagga uccacaaaaa caacaaccuc uguauggaaa 2040

augcgcuauu uuaucucagc uuuucuccca aaccucgguu ucuuccuauu cuuaaguuuu 2100

cccuaguaua uuugccuccu uauaagaaaa gaagcacaag cucggucgca cggauuauuc 2160

cuucugcuaa ucuauuauuu uguuccuuuu uuuuuuguuu gccuucaccc ccuucacucc 2220

cuguagcaac acagaguagu agacacaaua aaugagaagu uugcaugcaa gcu 2273

<210> 14
<211> 2145
<212> RNA
<213> Artificial sequence

<220>
<223> Sense domain 4 deletion mutant: deltaD4

<400> 14
ggcgcuuccg gaagagcuag cuccccagau cgcugcugcc ccggcguucu ccagaagccc 60

cggcgggcga aucggccggc uggucggucg gcgcucggac ggaugggggag aacggcggug 120

acuuagccgc ccguggccgg gagaagaugg aggagccgag augacaacgg cagucgugga 180

agggucgcca agccccgguc cuucucuucu gucuggucga aucucguuuu cuuuuuucaa 240

ccgcucuuuu uaucaccuuu uuaugugagu uucucuuccg cgucucccgg ccguaccauc 300

cacccaugca gcaugcacgc guguauguau gcaucgucuc uccuccgucc cgacuaccau 360

cagcagcacc acuaccgcca cccccagcgc caccaccgcu gccgucgcca ccgcguuauc 420

cguuccucgu aggcuggucc uggggaacgg gucggcggcc ggucggcuuc uguuuuauua 480

uuuuuuuuua uuuuuuaucu ucuccuuucc uuaaucucgg auuaucauuu cccucuccua 540

ccuaccacga aucgcagaug auaaacaaga ggguaaaaag aaaaaagcua cagacauuug 600

gguaccucag cuuuccgaua acucgaagaa uucaaagucg acgauuccca acaagagaaa 660

acagaacaaa aacaagguca uuuuuauuua uccucaucgu caacaacaac uaccgacaac 720

aacgaaacac caccaagaau gucaauccgc aaggguguuc cugcccccuc gacgcgccug 780

ucgcgauccu cauggcgagg accgcgaucu ccguauaggu agaugaaauu aucccguguc 840

cgguccugau uccccgcaug cccugcacau ccugacgcgu cggucagcag ccaaacaauc 900

auaggaaaug aaccagaaga acaaaaagau caucucucuc gguguauagc aacaccaaca 960

acaaccgcau cgcaacaucu ucauccgcaa gacggaaaga aaacaacaau aaugagaaug 1020

aaaucaccac aaccaagcca gauuucacgu ccaugaguuu uuauuauauu auuaucaaaa 1080

cgaaaaacag aaaaacuguc auagauaaau auaaaaaaaa auagaaacca caaacgacua 1140

cuaguacucc aaucuuagau guauaugcuc cuagauaaga uuuaguauua ccauaaucau 1200

cgaagaauga aagacgacga ugauuccuua ccgcuccugc cacccggucu guauguagag 1260

agagaagaga gaaaacggug aauccaagau ccccggguac uucuucgcuc ucaaagccgc 1320

cuuuaaaguu gaaaugaaag gauggaaaca uggaauacag uuuuaauugc acguaucacc 1380

auuuuacuac aaaaagaaaa aaaaacaacu uacacauagu auuaccuuag guuuacggau 1440

aaguagagug uaggcguuuu ugaaacaguu cagccaaugc aaucuugucu cggcauaauc 1500

acucuuucug cauauaauag uaguaguaga uuuauucaca ucaacacagc gaaaaacucc 1560

agcaucaaag uacaccuaga gacagcccuu aaaauauagu uugcagcuuu uagauguacu 1620

uacaccaaag aagauuaccg uccuuacgag aaaacagaua cucggauaua ggaaucaaga 1680

cagcucugca cugaaaacac acucuccugu cacgacaccg cgccacacca gaggcguacg 1740

cgugacuuca ucgcaacgau ccaucgugau gucccucgca gaaccuaaaa agaccaaaaa 1800

aaaaucuugg accacaguug ucgauucuug aagacaauau ucucgugaga acuuugagau 1860

ucgcacuuga aaccucuuag gauccacaaa aacaacaacc ucuguaugga aaaugcgcua 1920

uuuuaucuca gcuuuucucc caaaccucgg uuucuuccua uucuuaaguu uucccuagua 1980

uauuugccuc cuuauaagaa aagaagcaca agcucggucg cacggauuau uccuucugcu 2040

aaucuauuau uuuguuccuu uuuuuuuugu uugccuucac ccccuucacu cccuguagca 2100

acacagagua guagacacaa uaaaugagaa guuugcaugc aagcu 2145

<210> 15
<211> 491
<212> RNA
<213> Artificial sequence

<220>
<223> Multimer sequence D2x4

<400> 15
ggcgcuuccg gaagagcuag cuuuuauuuu uuaucuucuc cuuuccuuaa ucucggauua 60

ucauuucccu cuccuaccua ccacgaaucg cagaugauaa acaagagggu aaaaagaaaa 120

aagcgcgaau uccgaucuuu uauuuuuuau cuucuccuuu ccuuaaucuc ggauuaucau 180

uucccucucc uaccuaccac gaaucgcaga ugauaaacaa gaggguaaaa agaaaaagau 240

cguauccggu accugugguu uuauuuuuua ucuucuccuu uccuuaaucu cggauuauca 300

uuucccucuc cuaccuacca cgaaucgcag augauaaaca agaggguaaa aagaaaaacc 360

acaccuccac cggugggccg uuuuauuuuu uaucuucucc uuuccuuaau cucggauuau 420

cauuucccuc uccuaccuac cacgaaucgc agaugauaaa caagagggua aaaagaaaaa 480

cggcccaagc u 491

<210> 16
<211> 1068
<212> RNA
<213> Artificial sequence

<220>
<223> Multimer sequence D3x4

<400> 16
ggcgcuuccg gaagagcuag cccggcgguc auuuuuauuu auccucaucg ucaacaacaa 60

cuaccgacaa caacgaaaca ccaccaagaa ugucaauccg caaggguguu ccugcccccu 120

cgacgcgccu gucgcgaucc ucauggcgag gaccgcgauc uccguauagg uagaugaaau 180

uaucccgugu ccgguccuga uuccccgcau gcccugcaca uccugacgcg ucggucagca 240

gccaaacaau cauaggaaau gaaccgccgg gaagcgccga auucauaucg aucggucauu 300

uuuauuuauc cucaucguca acaacaacua ccgacaacaa cgaaacacca ccaagaaugu 360

caauccgcaa ggguguuccu gcccccucga cgcgccuguc gcgauccuca uggcgaggac 420

cgcgaucucc guauagguag augaaauuau cccguguccg guccugauuc cccgcaugcc 480

cugcacaucc ugacgcgucg gucagcagcc aaacaaucau aggaaaugaa ccgaucgaau 540

aaagguaccu guggggucau uuuuauuuau ccucaucguc aacaacaacu accgacaaca 600

acgaaacacc accaagaaug ucaauccgca aggguguucc ugcccccucg acgcgccugu 660

cgcgauccuc auggcgagga ccgcgaucuc cguauaggua gaugaaauua ucccgugucc 720

gguccugauu ccccgcaugc ccugcacauc cugacgcguc ggucagcagc caaacaauca 780

uaggaaauga accccacauu uuaccgguaa uaccgggggg ucauuuuuau uuauccucau 840

cgucaacaac aacuaccgac aacaacgaaa caccaccaag aaugucaauc cgcaagggug 900

uuccugcccc cucgacgcgc cugucgcgau ccucauggcg aggaccgcga ucuccguaua 960

gguagaugaa auuaucccgu guccgguccu gauuccccgc augcccugca cauccugacg 1020

cgucggucag cagccaaaca aucauaggaa augaaccccc cggaagcu 1068

<210> 17
<211> 1584
<212> RNA
<213> Artificial sequence

<220>
<223> Multimer sequence D3x4_D2x4

<400> 17
ggcgcuuccg gaagagcuag cccggcgguc auuuuuauuu auccucaucg ucaacaacaa 60

cuaccgacaa caacgaaaca ccaccaagaa ugucaauccg caaggguguu ccugcccccu 120

cgacgcgccu gucgcgaucc ucauggcgag gaccgcgauc uccguauagg uagaugaaau 180

uaucccgugu ccgguccuga uuccccgcau gcccugcaca uccugacgcg ucggucagca 240

gccaaacaau cauaggaaau gaaccgccgg gaagcgccga auucauaucg aucggucauu 300

uuuauuuauc cucaucguca acaacaacua ccgacaacaa cgaaacacca ccaagaaugu 360

caauccgcaa ggguguuccu gcccccucga cgcgccuguc gcgauccuca uggcgaggac 420

cgcgaucucc guauagguag augaaauuau cccguguccg guccugauuc cccgcaugcc 480

cugcacaucc ugacgcgucg gucagcagcc aaacaaucau aggaaaugaa ccgaucgaau 540

aaagguaccu guggggucau uuuuauuuau ccucaucguc aacaacaacu accgacaaca 600

acgaaacacc accaagaaug ucaauccgca aggguguucc ugcccccucg acgcgccugu 660

cgcgauccuc auggcgagga ccgcgaucuc cguauaggua gaugaaauua ucccgugucc 720

gguccugauu ccccgcaugc ccugcacauc cugacgcguc ggucagcagc caaacaauca 780

uaggaaauga accccacauu uuaccgguaa uaccgggggg ucauuuuuau uuauccucau 840

cgucaacaac aacuaccgac aacaacgaaa caccaccaag aaugucaauc cgcaagggug 900

uuccugcccc cucgacgcgc cugucgcgau ccucauggcg aggaccgcga ucuccguaua 960

gguagaugaa auuaucccgu guccgguccu gauuccccgc augcccugca cauccugacg 1020

cgucggucag cagccaaaca aucauaggaa augaaccccc cggaagcuuu ccggaagagc 1080

uagcuuuuau uuuuuaucuu cuccuuuccu uaaucucgga uuaucauuuc ccucuccuac 1140

cuaccacgaa ucgcagauga uaaacaagag gguaaaaaga aaaaagcgcg aauuccgauc 1200

uuuuauuuuu uaucuucucc uuuccuuaau cucggauuau cauuucccuc uccuaccuac 1260

cacgaaucgc agaugauaaa caagagggua aaaagaaaaa gaucguaucc gguaccugug 1320

guuuuauuuu uuaucuucuc cuuuccuuaa ucucggauua ucauuucccu cuccuaccua 1380

ccacgaaucg cagaugauaa acaagagggu aaaaagaaaa accacaccuc caccgguggg 1440

ccguuuuauu uuuuaucuuc uccuuuccuu aaucucggau uaucauuucc cucuccuacc 1500

uaccacgaau cgcagaugau aaacaagagg guaaaaagaa aaacggccca agcuugacuc 1560

cuauaguguc accuaaaugu cuag 1584

<210> 18
<211> 1569
<212> RNA
<213> Artificial seqeunce

<220>
<223> Multimer sequence D2x4_D3x4

<400> 18
ggcgcuuccg gaagagcuag cuuuuauuuu uuaucuucuc cuuuccuuaa ucucggauua 60

ucauuucccu cuccuaccua ccacgaaucg cagaugauaa acaagagggu aaaaagaaaa 120

aagcgcgaau uccgaucuuu uauuuuuuau cuucuccuuu ccuuaaucuc ggauuaucau 180

uucccucucc uaccuaccac gaaucgcaga ugauaaacaa gaggguaaaa agaaaaagau 240

cguauccggu accugugguu uuauuuuuua ucuucuccuu uccuuaaucu cggauuauca 300

uuucccucuc cuaccuacca cgaaucgcag augauaaaca agaggguaaa aagaaaaacc 360

acaccuccac cggugggccg uuuuauuuuu uaucuucucc uuuccuuaau cucggauuau 420

cauuucccuc uccuaccuac cacgaaucgc agaugauaaa caagagggua aaaagaaaaa 480

cggcccaagc uuccggcggu cauuuuuauu uauccucauc gucaacaaca acuaccgaca 540

acaacgaaac accaccaaga augucaaucc gcaagggugu uccugccccc ucgacgcgcc 600

ugucgcgauc cucauggcga ggaccgcgau cuccguauag guagaugaaa uuaucccgug 660

uccgguccug auuccccgca ugcccugcac auccugacgc gucggucagc agccaaacaa 720

ucauaggaaa ugaaccgccg ggaagcgccg aauucauauc gaucggucau uuuuauuuau 780

ccucaucguc aacaacaacu accgacaaca acgaaacacc accaagaaug ucaauccgca 840

aggguguucc ugcccccucg acgcgccugu cgcgauccuc auggcgagga ccgcgaucuc 900

cguauaggua gaugaaauua ucccgugucc gguccugauu ccccgcaugc ccugcacauc 960

cugacgcguc ggucagcagc caaacaauca uaggaaauga accgaucgaa uaaagguacc 1020

ugugggguca uuuuuauuua uccucaucgu caacaacaac uaccgacaac aacgaaacac 1080

caccaagaau gucaauccgc aaggguguuc cugcccccuc gacgcgccug ucgcgauccu 1140

cauggcgagg accgcgaucu ccguauaggu agaugaaauu aucccguguc cgguccugau 1200

uccccgcaug cccugcacau ccugacgcgu cggucagcag ccaaacaauc auaggaaaug 1260

aaccccacau uuuaccggua auaccggggg gucauuuuua uuuauccuca ucgucaacaa 1320

caacuaccga caacaacgaa acaccaccaa gaaugucaau ccgcaagggu guuccugccc 1380

ccucgacgcg ccugucgcga uccucauggc gaggaccgcg aucuccguau agguagauga 1440

aauuaucccg uguccggucc ugauuccccg caugcccugc acauccugac gcgucgguca 1500

gcagccaaac aaucauagga aaugaacccc ccggaagcuu gacuccuaua gugucaccua 1560

aaugucuag 1569

<210> 19
<211> 1587

<212> RNA
<213> Artificial sequence

<220>
<223> Multimer sequence (D3_D2)x4

<400> 19
ggcgcuuccg gaagagcuag cccggcgguc auuuuuauuu auccucaucg ucaacaacaa 60

cuaccgacaa caacgaaaca ccaccaagaa ugucaauccg caaggguguu ccugcccccu 120

cgacgcgccu gucgcgaucc ucauggcgag gaccgcgauc uccguauagg uagaugaaau 180

uaucccgugu ccgguccuga uuccccgcau gcccugcaca uccugacgcg ucggucagca 240

gccaaacaau cauaggaaau gaaccgccgg gaagcgccga auuccgaucu uuuauuuuuu 300

aucuucuccu uuccuuaauc ucggauuauc auuuucccucu ccuaccuacc acgaaucgca 360

gaugauaaac aagaggguaa aaagaaaaag aucguauccg guaccugugg ggucauuuuu 420

auuuauccuc aucgucaaca acaacuaccg acaacaacga aacaccacca agaaugucaa 480

uccgcaaggg uguuccugcc cccucgacgc gccugucgcg auccucaugg cgaggaccgc 540

gaucuccgua uagguagaug aaauuauccc guguccgguc cugauucccc gcaugcccug 600

cacauccuga cgcgucgguc agcagccaaa caaucauagg aaaugaaccc cacauuuuac 660

cggugggccg uuuuauuuuu uaucuucucc uuuccuuaau cucggauuau cauuucccuc 720

uccuaccuac cacgaaucgc agaugauaaa caagagggua aaaagaaaaa cggcccaagc 780

uuuccggaag agcuagcccg gcggucauuu uuauuuaucc ucaucgucaa caacaacuac 840

cgacaacaac gaaacaccac caagaauguc aauccgcaag gguguuccug cccccucgac 900

gcgccugucg cgauccucau ggcgaggacc gcgaucuccg uauagguaga ugaaauuauc 960

ccguguccgg uccugauucc ccgcaugccc ugcacauccu gacgcgucgg ucagcagcca 1020

aacaaucaua ggaaaugaac cgccgggaag cgccgaauuc cgaucuuuua uuuuuuaucu 1080

ucuccuuucc uuaaucucgg auuaucauuu cccucuccua ccuaccacga aucgcagaug 1140

auaaacaaga ggguaaaaag aaaaagaucg uauccgguac cugugggguc auuuuuauuu 1200

auccucaucg ucaacaacaa cuaccgacaa caacgaaaca ccaccaagaa ugucaauccg 1260

caaggguguu ccugcccccu cgacgcgccu gucgcgaucc ucauggcgag gaccgcgauc 1320

uccguauagg uagaugaaau uaucccgugu ccgguccuga uuccccgcau gcccugcaca 1380

uccugacgcg ucggucagca gccaaacaau cauaggaaau gaaccccaca uuuuaccggu 1440

gggccguuuu auuuuuuauc uucuccuuuc cuuaaucucg gauuaucauu ucccucuccu 1500

accuaccacg aaucgcagau gauaaacaag aggguaaaaa gaaaaacggc ccaagcuuga 1560

cuccuauagu gucaccuaaa ugucuag 1587

<210> 20
<211> 3251
<212> RNA
<213> Artificial sequence

<220>
<223> gGFP_ beta2.7

<400> 20
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uucaccgggg uggugcccau ccuggucgag cuggacggcg acguaaacgg ccacaaguuc 120

agcguguccg gcgagggcga gggcgaugcc accuacggca agcugacccu gaaguucauc 180

ugcaccaccg gcaagcugcc cgugcccugg cccacccucg ugaccacccu gaccuacggc 240

gugcagugcu ucagccgcua ccccgaccac augaagcagc acgacuucuu caaguccgcc 300

augcccgaag gcuacgucca ggagcgcacc aucuucuuca aggacgacgg caacuacaag 360

acccgcgccg aggugaaguu cgagggcgac acccugguga accgcaucga gcugaagggc 420

aucgacuuca aggaggacgg caacauccug gggcacaagc uggaguacaa cuacaacagc 480

cacaacgucu auaucauggc cgacaagcag aagaacggca ucaaggugaa cuucaagauc 540

cgccacaaca ucgaggacgg cagcgugcag cucgccgacc acuaccagca gaacaccccc 600

aucggcgacg gccccgugcu gcugcccgac aaccacuacc ugagcaccca guccgcccug 660

agcaaagacc ccaacgagaa gcgcgaucac augguccugc uggaguucgu gaccgccgcc 720

gggaucacuc ucggcaugga cgagcuguac aaguccggau gagcuagcuc cccagaucgc 780

ugcugccccg gcguucucca gaagccccgg cgggcgaauc ggccggcugg ucggucggcg 840

cucggacgga uggggagaac ggcggugacu uagccgcccg uggccgggag aagauggagg 900

agccgagaug acaacggcag ucguggaagg gucgccaagc cccgguccuu cucuucuguc 960

uggucgaauc ucguuuucuu uuuucaaccg cucuuuuuau caccuuuuua ugugaguuuc 1020

ucuuccgcgu cucccggccg uaccauccac ccaugcagca ugcacgcgug uauguaugca 1080

ucgucucucc uccgucccga cuaccaucag cagcaccacu accgccaccc ccagcgccac 1140

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ggcggccggu cggcuucugu uuuauuauuu uuuuuuauuu uuuaucuucu ccuuuccuua 1260

aucucggauu aucauuuccc ucuccuaccu accacgaauc gcagaugaua aacaagaggg 1320

uaaaaagaaa aaagcuacag acauuugggu accucagcuu uccgauaacu cgaagaauuc 1380

aaagucgacg auucccaaca agagaaaaca gaacaaaaac aaggucauuu uuauuuaucc 1440

ucaucgucaa caacaacuac cgacaacaac gaaacaccac caagaauguc aauccgcaag 1500

gguguuccug cccccucgac gcgccugucg cgauccucau ggcgaggacc gcgaucuccg 1560

uauagguaga ugaaauuauc ccguguccgg uccugauucc ccgcaugccc ugcacauccu 1620

gacgcgucgg ucagcagcca aacaaucaua ggaaaugaac cagaagaaca aaaagaucau 1680

cucucucggu guauagcaac accaacaaca accgcaucgc aacaucuuca uccgcaagac 1740

ggaaagaaaa caacaauaau gagaaugaaa ucaccacaac caagccagau uucacgucca 1800

ugaguuuuua uuauauuauu aucaaaacga aaaacagaaa aacugucaua gauaaauaua 1860

aaaaaaaaua gaaaccacaa acgacuacua guacuccaau cuuagaugua uaugcuccua 1920

gauaagauuu aguauuacca uaaucaucga agaaugaaag acgacgauga uuccuuaccg 1980

cuccugccac ccggucugua uguagagaga gaagagagaa aacggugaau ccaagauccc 2040

cgggucggcg ucggcaugcc gcugaucgca guggccccac cucggcaugc cggcgccggg 2100

cgaggaauug cucaugaaaa aaguaucuuu cuguaaaaaa agaaaacaau acaugauuaa 2160

ccgaaaagaa accaacaaaa agaacccgag aucagucgau uucgaucacu acgauaaaca 2220

cauggaagau uucuugaaaa aagaaaagag aaagagacca ccuucccggc ggcggacacg 2280

cuccucuccg ucgccguucu gcaccaugau ucgaucaaua acaacaucau caucggagac 2340

caucuuuuaa ucaaucagcg uugcaguagu cgacucccug gacacgaagg agucauccau 2400

uuuuauccuc gcacuucuuc gcucucaaag ccgccuuuaa aguugaaaug aaaggaugga 2460

aacauggaau acaguuuuaa uugcacguau caccauuuua cuacaaaaag aaaaaaaaac 2520

aacuuacaca uaguauuacc uuagguuuac ggauaaguag aguguaggcg uuuuugaaac 2580

aguucagcca augcaaucuu gucucggcau aaucacucuu ucugcauaua auaguaguag 2640

uagauuuauu cacaucaaca cagcgaaaaa cuccagcauc aaaguacacc uagagacagc 2700

ccuuaaaaua uaguuugcag cuuuuagaug uacuuacacc aaagaagauu accguccuua 2760

cgagaaaaca gauacucgga uauaggaauc aagacagcuc ugcacugaaa acacacucuc 2820

cugucacgac accgcgccac accagaggcg uacgcgugac uucaucgcaa cgauccaucg 2880

ugaugucccu cgcagaaccu aaaaagacca aaaaaaaauc uuggaccaca guugucgauu 2940

cuugaagaca auauucucgu gagaacuuug agauucgcac uugaaaccuc uuaggaucca 3000

caaaaacaac aaccucugua uggaaaaugc gcuauuuuau cucagcuuuu cucccaaacc 3060

ucgguuucuu ccuauucuua aguuuucccu aguauauuug ccuccuuaua agaaaagaag 3120

cacaagcucg gucgcacgga uuauuccuuc ugcuaaucua uuauuuuguu ccuuuuuuuu 3180

uuguuugccu ucacccccuu cacucccugu agcaacacag aguaguagac acaauaaaug 3240

agaaguaagc u 3251

<210> 21
<211> 3275
<212> RNA
<213> Artificial sequence

<220>
<223> gGFP_s_beta2.7

<400> 21
ggagucucag auccgcuagc gcuaccgguc gccaccaugg ugagcaaggg cgaggagcug 60

uucaccgggg uggugcccau ccuggucgag cuggacggcg acguaaacgg ccacaaguuc 120

agcguguccg gcgagggcga gggcgaugcc accuacggca agcugacccu gaaguucauc 180

ugcaccaccg gcaagcugcc cgugcccugg cccacccucg ugaccacccu gaccuacggc 240

gugcagugcu ucagccgcua ccccgaccac augaagcagc acgacuucuu caaguccgcc 300

augcccgaag gcuacgucca ggagcgcacc aucuucuuca aggacgacgg caacuacaag 360

acccgcgccg aggugaaguu cgagggcgac acccugguga accgcaucga gcugaagggc 420

aucgacuuca aggaggacgg caacauccug gggcacaagc uggaguacaa cuacaacagc 480

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ucauuucccu cuccuaccua ccacgaaucg cagaugauaa acaagagggu aaaaagaaaa 1560

accacaccuc caccgguggg ccguuuuauu uuuuaucuuc uccuuuccuu aaucucggau 1620

uaucauuucc cucuccuacc uaccacgaau cgcagaugau aaacaagagg guaaaaagaa 1680

aaacggcccc caugaauaag gcccaagcuu gacuccuaua gugucaccua aaugucuaga 1740

uacuaaggga gucuugc 1757

<210> 27
<211> 5
<212> RNA
<213> Artificial sequence

<220>
<223> S1a

<400> 27
ccggc 5

<210> 28
<211> 5
<212> RNA
<213> Artificial sequence

<220>
<223> S1b

<400> 28
gccgg 5

<210> 29
<211> 5
<212> RNA
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<220>
<223> S2a

<400> 29
cgauc 5

<210> 30
<211> 5

<212> RNA
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<220>
<223> S2b

<400> 30
gaucg 5

<210> 31
<211> 5
<212> RNA
<213> Artificial sequence

<220>
<223> S3a

<400> 31
ugugg 5

<210> 32
<211> 5
<212> RNA
<213> Artificial sequence

<220>
<223> S3b

<400> 32
ccaca 5

<210> 33
<211> 6
<212> RNA
<213> Artificial sequence

<220>
<223> S4a

<400> 33
ccgggg 6

<210> 34
<211> 6

<212> RNA
<213> Artificial sequence

<220>
<223> S4b

<400> 34
ccccgg 6

<210> 35
<211> 23
<212> RNA
<213> Artificial sequence

<220>
<223> S6a

<400> 35
aagcaagggu uauuccgaau ugg 23

<210> 36
<211> 17
<212> RNA
<213> Artificial sequence

<220>
<223> S6b

<400> 36
ccaauucgga auaaccc 17

<210> 37
<211> 13
<212> RNA
<213> Artificial sequence

<220>
<223> S8a

<400> 37
gguuggauug ggg 13

<210> 38
<211> 32

<212> RNA
<213> Artificial sequence

<220>
<223> S8b

<400> 38
ccccaaacca accucuaccg gaagcgccuu uu 32

<210> 39
<211> 24
<212> DNA
<213> Artificial sequence

<220>
<223> Spacer Figure 3a

<400> 39
caccaccccg gagaacagct cctc 24

<210> 40
<211> 2091
<212> RNA
<213> Artificial sequence

<220>
<223> Antisense domain 1 deletion mutant: deltaD1AS

<400> 40
ggagucaagc uugcaugcaa acuucucauu uauugugucu acuacucugu guugcuacag 60

ggagugaagg gggugaaggc aaacaaaaaa aaaaggaaca aaauaauaga uuagcagaag 120

gaauaauccg ugcgaccgag cuugugcuuc uuuucuuaua aggaggcaaa uauacuaggg 180

aaaacuuaag aauaggaaga aaccgagguu ugggagaaaa gcugagauaa aauagcgcau 240

uuuccauaca gagguuguug uuuuugugga uccuaagagg uuucaagugc gaaucucaaa 300

guucucacga gaauauuguc uucaagaauc gacaacugug guccaagauu uuuuuuuggu 360

cuuuuuaggu ucugcgaggg acaucacgau ggaucguugc gaugaaguca cgcguacgcc 420

ucuggugugg cgcggugucg ugacaggaga guguguuuuc agugcagagc ugucuugauu 480

ccuauauccg aguaucuguu uucucguaag gacgguaauc uucuuuggug uaaguacauc 540

uaaaagcugc aaacuauauu uuaagggcug ucucuaggug uacuuugaug cuggaguuuu 600

ucgcuguguu gaugugaaua aaucuacuac uacuauuaua ugcagaaaga gugauuaugc 660

cgagacaaga uugcauuggc ugaacuguuu caaaaacgcc uacacucuac uuauccguaa 720

accuaaggua auacuaugug uaaguuguuu uuuuuucuuu uuguaguaaa auggugauac 780

gugcaauuaa aacuguauuc cauguuucca uccuuucauu ucaacuuuaa aggcggcuuu 840

gagagcgaag aagugcgagg auaaaaaugg augacuccuu cguguccagg gagucgacua 900

cugcaacgcu gauugauuaa aagauggucu ccgaugauga uguuguuauu gaucgaauca 960

uggugcagaa cggcgacgga gaggagcgug uccgccgccg ggaagguggu cucuuucucu 1020

uuucuuuuuu caagaaaucu uccauguguu uaucguagug aucgaaaucg acugaucucg 1080

gguucuuuuu guugguuucu uuucgguuaa ucauguauug uuuucuuuuu uuacagaaag 1140

auacuuuuuu caugagcaau uccucgcccg gcgccggcau gccgaggugg ggccacugcg 1200

aucagcggca ugccgacgcc gacccgggga ucuuggauuc accguuuucu cucuucucuc 1260

ucuacauaca gaccgggugg caggagcggu aaggaaucau cgucgucuuu cauucuucga 1320

ugauuauggu aauacuaaau cuuaucuagg agcauauaca ucuaagauug gaguacuagu 1380

agucguuugu gguuucuauu uuuuuuuaua uuuaucuaug acaguuuuuc uguuuuucgu 1440

uuugauaaua auauaauaaa aacucaugga cgugaaaucu ggcuugguug uggugauuuc 1500

auucucauua uuguuguuuu cuuuccgucu ugcggaugaa gauguugcga ugcgguuguu 1560

guugguguug cuauacaccg agagagauga ucuuuuuguu cuucugguuc auuuccuaug 1620

auuguuuggc ugcugaccga cgcgucagga ugugcagggc augcggggaa ucaggaccgg 1680

acacgggaua auuucaucua ccuauacgga gaucgcgguc cucgccauga ggaucgcgac 1740

aggcgcgucg agggggcagg aacacccuug cggauugaca uucuuggugg uguuucguug 1800

uugucgguag uuguuguuga cgaugaggau aaauaaaaau gaccuuguuu uuguucuguu 1860

uucucuuguu gggaaucguc gacuuugaau ucuucgaguu aucggaaagc ugagguaccc 1920

aaaugucugu agcuuuuuuc uuuuuacccu cuuguuuauc aucugcgauu cgugguaggu 1980

aggagaggga aaugauaauc cgagauuaag gaaaggagaa gauaaaaaau aaaaaaaaau 2040

aauaaaagag aacgccgggg cagcagcgau cuggggaugu gcuagcuccg g 2091

<210> 41
<211> 2412
<212> RNA
<213> Artificial sequence

<220>
<223> Antisense domain 2 deletion mutant: deltaD2AS

<400> 41
ggagucaagc uugcaugcaa acuucucauu uauugugucu acuacucugu guugcuacag 60

ggagugaagg gggugaaggc aaacaaaaaa aaaaggaaca aaauaauaga uuagcagaag 120

gaauaauccg ugcgaccgag cuugugcuuc uuuucuuaua aggaggcaaa uauacuaggg 180

aaaacuuaag aauaggaaga aaccgagguu ugggagaaaa gcugagauaa aauagcgcau 240

uuuccauaca gagguuguug uuuuugugga uccuaagagg uuucaagugc gaaucucaaa 300

guucucacga gaauauuguc uucaagaauc gacaacugug guccaagauu uuuuuuuggu 360

cuuuuuaggu ucugcgaggg acaucacgau ggaucguugc gaugaaguca cgcguacgcc 420

ucuggugugg cgcggugucg ugacaggaga guguguuuuc agugcagagc ugucuugauu 480

ccuauauccg aguaucuguu uucucguaag gacgguaauc uucuuuggug uaaguacauc 540

uaaaagcugc aaacuauauu uuaagggcug ucucuaggug uacuuugaug cuggaguuuu 600

ucgcuguguu gaugugaaua aaucuacuac uacuauuaua ugcagaaaga gugauuaugc 660

cgagacaaga uugcauuggc ugaacuguuu caaaaacgcc uacacucuac uuauccguaa 720

accuaaggua auacuaugug uaaguuguuu uuuuuucuuu uuguaguaaa auggugauac 780

gugcaauuaa aacuguauuc cauguuucca uccuuucauu ucaacuuuaa aggcggcuuu 840

gagagcgaag aagugcgagg auaaaaaugg augacuccuu cguguccagg gagucgacua 900

cugcaacgcu gauugauuaa aagauggucu ccgaugauga uguuguuauu gaucgaauca 960

uggugcagaa cggcgacgga gaggagcgug uccgccgccg ggaagguggu cucuuucucu 1020

uuucuuuuuu caagaaaucu uccauguguu uaucguagug aucgaaaucg acugaucucg 1080

gguucuuuuu guugguuucu uuucgguuaa ucauguauug uuuucuuuuu uuacagaaag 1140

auacuuuuuu caugagcaau uccucgcccg gcgccggcau gccgaggugg ggccacugcg 1200

aucagcggca ugccgacgcc gacccgggga ucuuggauuc accguuuucu cucuucucuc 1260

ucuacauaca gaccgggugg caggagcggu aaggaaucau cgucgucuuu cauucuucga 1320

ugauuauggu aauacuaaau cuuaucuagg agcauauaca ucuaagauug gaguacuagu 1380

agucguuugu gguuucuauu uuuuuuuaua uuuaucuaug acaguuuuuc uguuuuucgu 1440

uuugauaaua auauaauaaa aacucaugga cgugaaaucu ggcuugguug uggugauuuc 1500

auucucauua uuguuguuuu cuuuccgucu ugcggaugaa gauguugcga ugcgguuguu 1560

guugguguug cuauacaccg agagagauga ucuuuuuguu cuucugguuc auuuccuaug 1620

auuguuuggc ugcugaccga cgcgucagga ugugcagggc augcggggaa ucaggaccgg 1680

acacgggaua auuucaucua ccuauacgga gaucgcgguc cucgccauga ggaucgcgac 1740

aggcgcgucg agggggcagg aacacccuug cggauugaca uucuuggugg uguuucguug 1800

uugucgguag uuguuguuga cgaugaggau aaauaaaaau gaccuuguuu uuguucuguu 1860

uucucuuguu gggaaucguc gacuuugaau ucuucgaguu aucggaaagc ugagguaccc 1920

aaaugucugu agcuaaaaau aauaaaacag aagccgaccg gccgccgacc cguuccccag 1980

gaccagccua cgaggaacgg auaacgcggu ggcgacggca gcgguggugg cgcugggggu 2040

ggcgguagug gugcugcuga ugguagucgg gacggaggag agacgaugca uacauacacg 2100

cgugcaugcu gcaugggugg augguacggc cgggagacgc ggaagagaaa cucacauaaa 2160

aaggugauaa aaagagcggu ugaaaaaaga aaacgagauu cgaccagaca gaagagaagg 2220

accggggcuu ggcgacccuu ccacgacugc cguugucauc ucggcuccuc caucuucucc 2280

cggccacggg cggcuaaguc accgccguuc uccccauccg uccgagcgcc gaccgaccag 2340

ccggccgauu cgcccgccgg ggcuucugga gaacgccggg gcagcagcga ucuggggaug 2400

ugcuagcucc gg 2412

<210> 42
<211> 2273
<212> RNA
<213> Artificial sequence

<220>
<223> Antisense domain 3 deletion mutant: deltaD3AS

<400> 42
ggagucaagc uugcaugcaa acuucucauu uauugugucu acuacucugu guugcuacag 60

ggagugaagg gggugaaggc aaacaaaaaa aaaaggaaca aaauaauaga uuagcagaag 120

gaauaauccg ugcgaccgag cuugugcuuc uuuucuuaua aggaggcaaa uauacuaggg 180

aaaacuuaag aauaggaaga aaccgagguu ugggagaaaa gcugagauaa aauagcgcau 240

uuuccauaca gagguuguug uuuuugugga uccuaagagg uuucaagugc gaaucucaaa 300

guucucacga gaauauuguc uucaagaauc gacaacugug guccaagauu uuuuuuuggu 360

cuuuuuaggu ucugcgaggg acaucacgau ggaucguugc gaugaaguca cgcguacgcc 420

ucuggugugg cgcggugucg ugacaggaga guguguuuuc agugcagagc ugucuugauu 480

ccuauauccg aguaucuguu uucucguaag gacgguaauc uucuuuggug uaaguacauc 540

uaaaagcugc aaacuauauu uuaagggcug ucucuaggug uacuuugaug cuggaguuuu 600

ucgcuguguu gaugugaaua aaucuacuac uacuauuaua ugcagaaaga gugauuaugc 660

cgagacaaga uugcauuggc ugaacuguuu caaaaacgcc uacacucuac uuauccguaa 720

accuaaggua auacuaugug uaaguuguuu uuuuuucuuu uuguaguaaa auggugauac 780

gugcaauuaa aacuguauuc cauguuucca uccuuucauu ucaacuuuaa aggcggcuuu 840

gagagcgaag aagugcgagg auaaaaaugg augacuccuu cguguccagg gagucgacua 900

cugcaacgcu gauugauuaa aagauggucu ccgaugauga uguuguuauu gaucgaauca 960

uggugcagaa cggcgacgga gaggagcgug uccgccgccg ggaagguggu cucuuucucu 1020

uuucuuuuuu caagaaaucu uccauguguu uaucguagug aucgaaaucg acugaucucg 1080

gguucuuuuu guugguuucu uuucgguuaa ucauguauug uuuucuuuuu uuacagaaag 1140

auacuuuuuu caugagcaau uccucgcccg gcgccggcau gccgaggugg ggccacugcg 1200

aucagcggca ugccgacgcc gacccgggga ucuuggauuc accguuuucu cucuucucuc 1260

ucuacauaca gaccgggugg caggagcggu aaggaaucau cgucgucuuu cauucuucga 1320

ugauuauggu aauacuaaau cuuaucuagg agcauauaca ucuaagauug gaguacuagu 1380

agucguuugu gguuucuauu uuuuuuuaua uuuaucuaug acaguuuuuc uguuuuucgu 1440

uuugauaaua auauaauaaa aacucaugga cgugaaaucu ggcuugguug uggugauuuc 1500

auucucauua uuguuguuuu cuuuccgucu ugcggaugaa gauguugcga ugcgguuguu 1560

guugguguug cuauacaccg agagagauga ucuuuuuguu cuucuuuguu uuuguucugu 1620

uuucucuugu ugggaaucgu cgacuuugaa uucuucgagu uaucggaaag cugagguacc 1680

caaaugucug uagcuuuuuu cuuuuuaccc ucuuguuuau caucugcgau ucgugguagg 1740

uaggagaggg aaaugauaau ccgagauuaa ggaaaggaga agauaaaaaa uaaaaaaaaa 1800

uaauaaaaca gaagccgacc ggccgccgac ccguucccca ggaccagccu acgaggaacg 1860

gauaacgcgg uggcgacggc agcgguggug gcgcuggggg uggcgguagu ggugcugcug 1920

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gaugguacgg ccgggagacg cggaagagaa acucacauaa aaaggugaua aaaagagcgg 2040

uugaaaaaag aaaacgagau ucgaccagac agaagagaag gaccggggcu uggcgacccu 2100

uccacgacug ccguugucau cucggcuccu ccaucuucuc ccggccacgg gcggcuaagu 2160

caccgccguu cuccccaucc guccgagcgc cgaccgacca gccggccgau ucgcccgccg 2220

gggcuucugg agaacgccgg ggcagcagcg aucuggggau gugcuagcuc cgg 2273

<210> 43
<211> 2145
<212> RNA
<213> Artificial sequence

<220>
<223> Antisense domain 4 deletion mutant: deltaD4AS

<400> 43

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ggagugaagg gggugaaggc aaacaaaaaa aaaaggaaca aaauaauaga uuagcagaag 120

gaauaauccg ugcgaccgag cuugugcuuc uuuucuuaua aggaggcaaa uauacuaggg 180

aaaacuuaag aauaggaaga aaccgagguu ugggagaaaa gcugagauaa aauagcgcau 240

uuuccauaca gagguuguug uuuuugugga uccuaagagg uuucaagugc gaaucucaaa 300

guucucacga gaauauuguc uucaagaauc gacaacugug guccaagauu uuuuuuuggu 360

cuuuuuaggu ucugcgaggg acaucacgau ggaucguugc gaugaaguca cgcguacgcc 420

ucuggugugg cgcggugucg ugacaggaga guguguuuuc agugcagagc ugucuugauu 480

ccuauauccg aguaucuguu uucucguaag gacgguaauc uucuuuggug uaaguacauc 540

uaaaagcugc aaacuauauu uuaagggcug ucucuaggug uacuuugaug cuggaguuuu 600

ucgcuguguu gaugugaaua aaucuacuac uacuauuaua ugcagaaaga gugauuaugc 660

cgagacaaga uugcauuggc ugaacuguuu caaaaacgcc uacacucuac uuauccguaa 720

accuaaggua auacuaugug uaaguuguuu uuuuuucuuu uuguaguaaa auggugauac 780

gugcaauuaa aacuguauuc cauguuucca uccuuucauu ucaacuuuaa aggcggcuuu 840

gagagcgaag aaguacccgg ggaucuugga uucaccguuu ucucucuucu cucucuacau 900

acagaccggg uggcaggagc gguaaggaau caucgucguc uuucauucuu cgaugauuau 960

gguaauacua aaucuuaucu aggagcauau acaucuaaga uuggaguacu aguagucguu 1020

ugugguuucu auuuuuuuuu auauuuaucu augacaguuu uucuguuuuu cguuuugaua 1080

auaauauaau aaaaacucau ggacgugaaa ucuggcuugg uuguggugau uucauucuca 1140

uuauuguugu uuucuuuccg ucuugcggau gaagauguug cgaugcgguu guuguuggug 1200

uugcuauaca ccgagagaga ugaucuuuuu guucuucugg uucauuuccu augauuguuu 1260

ggcugcugac cgacgcguca ggaugugcag ggcaugcggg gaaucaggac cggacacggg 1320

auaauuucau cuaccuauac ggagaucgcg guccucgcca ugaggaucgc gacaggcgcg 1380

ucgagggggc aggaacaccc uugcggauug acauucuugg ugguguuucg uuguugucgg 1440

uaguuguugu ugacgaugag gauaaauaaa aaugaccuug uuuuuguucu guuuucucuu 1500

guugggaauc gucgacuuug aauucuucga guuaucggaa agcugaggua cccaaauguc 1560

uguagcuuuu uucuuuuuac ccucuuguuu aucaucugcg auucguggua gguaggagag 1620

ggaaaugaua auccgagauu aaggaaagga gaagauaaaa aauaaaaaaa aauaauaaaa 1680

cagaagccga ccggccgccg acccguuccc caggaccagc cuacgaggaa cggauaacgc 1740

gguggcgacg gcagcggugg uggcgcuggg gguggcggua guggugcugc ugaugguagu 1800

cgggacggag gagagacgau gcauacauac acgcgugcau gcugcauggg uggaugguac 1860

ggccgggaga cgcggaagag aaacucacau aaaaagguga uaaaaagagc gguugaaaaa 1920

agaaaacgag auucgaccag acagaagaga aggaccgggg cuuggcgacc cuuccacgac 1980

ugccguuguc aucucggcuc cuccaucuuc ucccggccac gggcggcuaa gucaccgccg 2040

uucucccccau ccguccgagc gccgaccgac cagccggccg auucgcccgc cggggcuucu 2100

ggagaacgcc ggggcagcag cgaucugggg augugcuagc uccgg 2145

<210> 44
<211> 3358
<212> RNA
<213> Artificial sequence

<220>
<223> gGFP_beta2.7_endo

<400> 44
ucagaucgcu agcgcuaccg gucgccacca uggugagcaa gggcgaggag cuguucaccg 60

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ccggcgaggg cgagggcgau gccaccuacg gcaagcugac ccugaaguuc aucugcacca 180

ccggcaagcu gcccgugccc uggcccaccc ucgugaccac ccugaccuac ggcgugcagu 240

gcuucagccg cuaccccgac cacaugaagc agcacgacuu cuucaagucc gccaugcccg 300

aaggcuacgu ccaggagcgc accaucuucu ucaaggacga cggcaacuac aagacccgcg 360

ccgaggugaa guucgagggc gacacccugg ugaaccgcau cgagcugaag ggcaucgacu 420

ucaaggagga cggcaacauc cuggggcaca agcuggagua caacuacaac agccacaacg 480

ucuauaucau ggccgacaag cagaagaacg gcaucaaggu gaacuucaag auccgccaca 540

acaucgagga cggcagcgug cagcucgccg accacuacca gcagaacacc cccaucggcg 600

acggccccgu gcugcugccc gacaaccacu accugagcac ccaguccgcc cugagcaaag 660

accccaacga gaagcgcgau cacauggucc ugcuggaguu cgugaccgcc gccgggauca 720

cucucggcau ggacgagcug uacaaguccg gaagagcuag cuccccagau cgcugcugcc 780

ccggcguucu ccagaagccc cggcgggcga aucggccggc uggucggucg gcgcucggac 840

ggaugggggag aacggcggug acuuagccgc ccguggccgg gagaagaugg aggagccgag 900

augacaacgg cagucgugga agggucgcca agccccgguc cuucucuucu gucuggucga 960

aucucguuuu cuuuuuucaa ccgcucuuuu uaucaccuuu uuaugugagu uucucuuccg 1020

cgucucccgg ccguaccauc cacccaugca gcaugcacgc guguauguau gcaucgucuc 1080

uccuccgucc cgacuaccau cagcagcacc acuaccgcca cccccagcgc caccaccgcu 1140

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ggucggcuuc uguuuuauua uuuuuuuuua uuuuuuaucu ucuccuuucc uuaaucucgg 1260

auuaucauuu cccucuccua ccuaccacga aucgcagaug auaaacaaga ggguaaaaag 1320

aaaaaagcua cagacauuug gguaccucag cuuuccgaua acucgaagaa uucaaagucg 1380

acgauuccca acaagagaaa acagaacaaa aacaagguca uuuuuauuua uccucaucgu 1440

caacaacaac uaccgacaac aacgaaacac caccaagaau gucaauccgc aaggguguuc 1500

cugccccuc gacgcgccug ucgcgauccu cauggcgagg accgcgaucu ccguauaggu 1560

agaugaaauu aucccguguc cgguccugau uccccgcaug cccugcacau ccugacgcgu 1620

cggucagcag ccaaacaauc auaggaaaug aaccagaaga acaaaaagau caucucucuc 1680

gguguauagc aacaccaaca acaaccgcau cgcaacaucu ucauccgcaa gacggaaaga 1740

aaacaacaau aaugagaaug aaaucaccac aaccaagcca gauuucacgu ccaugaguuu 1800

uuauuauauu auuaucaaaa cgaaaaacag aaaaacuguc auagauaaau auaaaaaaaa 1860

auagaaacca caaacgacua cuaguacucc aaucuuagau guauaugcuc cuagauaaga 1920

uuuaguauua ccauaaucau cgaagaauga aagacgacga ugauuccuua ccgcuccugc 1980

cacccggucu guauguagag agagaagaga gaaaacggug aauccaagau ccccgggucg 2040

gcgucggcau gccgcugauc gcaguggccc caccucggca ugccggcgcc gggcgaggaa 2100

uugcucauga aaaaaguauc uuucuguaaa aaaagaaaac aauacaugau uaaccgaaaa 2160

gaaaccaaca aaaagaaccc gagaucaguc gauuucgauc acuacgauaa acacauggaa 2220

gauuucuuga aaaaagaaaa gagaaagaga ccaccuuccc ggcggcggac acgcuccucu 2280

ccgucgccgu ucugcaccau gauucgauca auaacaacau caucaucgga gaccaucuuu 2340

uaaucaauca gcguugcagu agucgacucc cuggacacga aggagucauc cauuuuuauc 2400

cucgcacuuc uucgcucuca aagccgccuu uaaaguugaa augaaaggau ggaaacaugg 2460

aauacaguuu uaauugcacg uaucaccauu uuacuacaaa aagaaaaaaa aacaacuuac 2520

acauaguauu accuuagguu uacggauaag uagaguguag gcguuuuuga aacaguucag 2580

ccaaugcaau cuugucucgg cauaaucacu cuuucugcau auaauaguag uaguagauuu 2640

auucacauca acacagcgaa aaacuccagc aucaaaguac accuagagac agcccuuaaa 2700

auauaguuug cagcuuuuag auguacuuac accaaagaag auuaccgucc uuacgagaaa 2760

acagauacuc ggauauagga aucaagacag cucugcacug aaaacacacu cuccugucac 2820

gacaccgcgc cacaccagag gcguacgcgu gacuucaucg caacgaucca ucgugauguc 2880

ccucgcagaa ccuaaaaaga ccaaaaaaaa aucuuggacc acaguugucg auucuugaag 2940

acaauauucu cgugagaacu uugagauucg cacuugaaac cucuuaggau ccacaaaaac 3000

aacaaccucu guauggaaaa ugcgcuauuu uaucucagcu uuucucccaa accucgguuu 3060

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auuuauucac aucaacacag cgaaaaacuc cagcaucaaa guacaccuag agacagcccu 1980

uaaaauauag uuugcagcuu uuagauguac uuacaccaaa gaagauuacc guccuuacga 2040

gaaaacagau acucggauau aggaaucaag acagcucugc acugaaaaca cacucuccug 2100

ucacgacacc gcgccacacc agaggcguac gcgugacuuc aucgcaacga uccaucguga 2160

ugucccucgc agaaccuaaa aagaccaaaa aaaaaucuug gaccacaguu gucgauucuu 2220

gaagacaaua uucucgugag aacuuugaga uucgcacuug aaaccucuua ggauccacaa 2280

aaacaacaac cucuguaugg aaaaugcgcu auuuuaucuc agcuuuucuc ccaaaccucg 2340

guuucuuccu auucuuaagu uuucccuagu auauuugccu ccuuauaaga aaagaagcac 2400

aagcucgguc gcacggauua uuccuucugc uaaucuauua uuuuguuccu uuuuuuuuug 2460

uuugccuuca cccccuucac ucccuguagc aacacagagu aguagacaca auaaaugaga 2520

aguuugcaug cagcuugacu ccuauagugu caccuaaaug ucuagaaacu uguuuauugc 2580

agcuuauaau gguuacaaau aaagcaauag caucacaaau uucacaaaua aagcauuuuu 2640

uucacugca 2649

<210> 50
<211> 264
<212> RNA
<213> Artificial sequence

<220>
<223>  beta2.7 RNA domain 2_endo (sense)

<400>  50
ucagaucuaa uacgacucac uauaggcgcu uccggaagag cuagcuuuua uuuuuuaucu  60

ucuccuuucc uuaaucucgg auuaucauuu cccucuccua ccuaccacga aucgcagaug  120

auaaacaaga ggguaaaaag aaaaaaagcu ugacuccuau agugucaccu aaaugucuag  180

aaacuuguuu auugcagcuu auaaugguua caaauaaagc aauagcauca caaauuucac  240

aaauaaagca uuuuuuucac ugca                                        264


<210>  51
<211>  403
<212>  RNA
<213>  Artificial sequence

<220>
<223>  beta2.7 RNA domain 3_endo (sense)

<400>  51
ucagaucuaa uacgacucac uauaggcgcu uccggaagag cuagcgguca uuuuuauuua  60

uccucaucgu caacaacaac uaccgacaac aacgaaacac caccaagaau gucaauccgc  120

aaggguguuc cugccccuc gacgcgccug ucgcgauccu cauggcgagg accgcgaucu  180

ccguauaggu agaugaaauu aucccguguc cgguccugau uccccgcaug cccugcacau  240

ccugacgcgu cggucagcag ccaaacaauc auaggaaaug aaccaagcuu gacuccuaua  300

gugucaccua aaugucuaga aacuuguuua uugcagcuua uaaugguuac aaauaaagca  360

auagcaucac aaauuucaca aauaaagcau uuuuuucacu gca                    403


<210>  52
<211>  629
<212>  RNA
<213>  Artificial sequence

<220>
<223>  Multimer sequence D2x4_endo

<400> 52
ucagaucuaa uacgacucac uauaggcgcu uccggaagag cuagcuuuua uuuuuuaucu 60

ucuccuuucc uuaaucucgg auuaucauuu cccucuccua ccuaccacga aucgcagaug 120

auaaacaaga ggguaaaaag aaaaaagcgc gaauuccgau cuuuuauuuu uuaucuucuc 180

cuuuccuuaa ucucggauua ucauuucccu cuccuaccua ccacgaaucg cagaugauaa 240

acaagagggu aaaaagaaaa agaucguauc cgguaccugu gguuuuauuu uuuaucuucu 300

ccuuuccuua aucucggauu aucauuuccc ucuccuaccu accacgaauc gcagaugaua 360

aacaagaggg uaaaaagaaa aaccacaccu ccaccggugg gccguuuuau uuuuuaucuu 420

cuccuuuccu uaaucucgga uuaucauuuc ccucuccuac cuaccacgaa ucgcagauga 480

uaaacaagag gguaaaaaga aaaacggccc aagcuugacu ccuauagugu caccuaaaug 540

ucuagaaacu uguuuauugc agcuuauaau gguuacaaau aaagcaauag caucacaaau 600

uucacaaaua aagcauuuuu uucacugca 629

<210> 53
<211> 1206
<212> RNA
<213> Artificial sequence

<220>
<223> Multimer sequence D3x4_endo

<400> 53
ucagaucuaa uacgacucac uauaggcgcu uccggaagag cuagcccggc ggucauuuuu 60

auuuauccuc aucgucaaca acaacuaccg acaacaacga aacaccacca agaaugucaa 120

uccgcaaggg uguuccugcc cccucgacgc gccugucgcg auccucaugg cgaggaccgc 180

gaucuccgua uagguagaug aaauuauccc guguccggUc cugauucccc gcaugcccug 240

cacauccuga cgcgucggUc agcagccaaa caaucauagg aaaugaaccg ccgggaagcg 300

ccgaauucau aucgaucggu cauuuuuauu uauccucauc gucaacaaca acuaccgaca 360

acaacgaaac accaccaaga augucaaucc gcaagggugu uccugccccc ucgacgcgcc 420

ugucgcgauc cucauggcga ggaccgcgau cuccguauag guagaugaaa uuaucccgug 480

uccgguccug auuccccgca ugcccugcac auccugacgc gucggucagc agccaaacaa 540

ucauaggaaa ugaaccgauc gaauaaaggu accuguggggg ucauuuuuau uuauccucau 600

cgucaacaac aacuaccgac aacaacgaaa caccaccaag aaugucaauc cgcaagggug 660

uuccugcccc cucgacgcgc cugucgcgau ccucauggcg aggaccgcga ucuccguaua 720

gguagaugaa auuaucccgu guccgguccu gauuccccgc augcccugca cauccugacg 780

cgucggucag cagccaaaca aucauaggaa augaacccca cauuuuaccg guaauaccgg 840

gggggucauuu uuauuuaucc ucaucgucaa caacaacuac cgacaacaac gaaacaccac 900

caagaauguc aauccgcaag gguguuccug cccccucgac gcgccugucg cgauccucau 960

ggcgaggacc gcgaucuccg uauagguaga ugaaauuauc ccguguccgg uccugauucc 1020

ccgcaugccc ugcacauccu gacgcgucgg ucagcagcca aacaaucaua ggaaaugaac 1080

cccccggaag cuugacuccu auagugucac cuaaaugucu agaaacuugu uuauugcagc 1140

uuauaauggu uacaaauaaa gcaauagcau cacaaauuuc acaaauaaag cauuuuuuuc 1200

acugca 1206

<210> 54
<211> 1692
<212> RNA
<213> Artificial sequence

<220>
<223> Multimer sequence D3x4_D2x4_endo

<400> 54
ucagaucuaa uacgacucac uauaggcgcu uccggaagag cuagcccggc ggucauuuuu 60

auuuauccuc aucgucaaca acaacuaccg acaacaacga aacaccacca agaaugucaa 120

uccgcaaggg uguuccugcc cccucgacgc gccugucgcg auccucaugg cgaggaccgc 180

gaucuccgua uagguagaug aaauuauccc guguccgguc cugauucccc gcaugcccug 240

cacauccuga cgcgucgguc agcagccaaa caaucauagg aaaugaaccg ccgggaagcg 300

ccgaauucau aucgaucggu cauuuuuauu uauccucauc gucaacaaca acuaccgaca 360

acaacgaaac accaccaaga augucaaucc gcaagggugu uccugccccc ucgacgcgcc 420

ugucgcgauc cucauggcga ggaccgcgau cuccguauag guagaugaaa uuaucccgug 480

uccgguccug auuccccgca ugcccugcac auccugacgc gucggucagc agccaaacaa 540

ucauaggaaa ugaaccgauc gaauaaaggu accugugggg ucauuuuuau uuauccucau 600

cgucaacaac aacuaccgac aacaacgaaa caccaccaag aaugucaauc cgcaagggug 660

uuccugcccc cucgacgcgc cugucgcgau ccucauggcg aggaccgcga ucuccguaua 720

gguagaugaa auuaucccgu guccgguccu gauuccccgc augcccugca cauccugacg 780

cgucggucag cagccaaaca aucauaggaa augaacccca cauuuuaccg guaauaccgg 840

ggggucauuu uuauuuaucc ucaucgucaa caacaacuac cgacaacaac gaaacaccac 900

caagaauguc aauccgcaag gguguuccug cccccucgac gcgccugucg cgauccucau 960

ggcgaggacc gcgaucuccg uauagguaga ugaaauuauc ccguguccgg uccugauucc 1020

ccgcaugccc ugcacauccu gacgcgucgg ucagcagcca aacaaucaua ggaaaugaac 1080

cccccggaag cuuuccggaa gagcuagcuu uuauuuuuua ucuucuccuu uccuuaaucu 1140

cggauuauca uuucccucuc cuaccuacca cgaaucgcag augauaaaca agaggguaaa 1200

aagaaaaaag cgcgaauucc gaucuuuuau uuuuuaucuu cuccuuuccu uaaucucgga 1260

uuaucauuuc ccucuccuac cuaccacgaa ucgcagauga uaaacaagag gguaaaaaga 1320

aaaagaucgu auccgguacc ugugguuuua uuuuuuaucu ucuccuuucc uuaaucucgg 1380

auuaucauuu cccucuccua ccuaccacga aucgcagaug auaaacaaga ggguaaaaag 1440

aaaaaccaca ccuccaccgg ugggccguuu uauuuuuuau cuucuccuuu ccuuaaucuc 1500

ggauuaucau uucccucucc uaccuaccac gaaucgcaga ugauaaacaa gaggguaaaa 1560

agaaaaacgg cccaagcuug acuccuauag ugucaccuaa augucuagaa acuuguuuau 1620

ugcagcuuau aaugguuaca aauaaagcaa uagcaucaca aauuucacaa auaaagcauu 1680

uuuuucacug ca 1692

<210> 55
<211> 2486
<212> RNA
<213> Artificial sequence

<220>
<223> beta2.7_core

<400> 55
ucccccagauc gcugcugccc cggcguucuc cagaagcccc ggcgggcgaa ucggccggcu 60

ggucggucgg cgcucggacg gaugggggaga acggcgguga cuuagccgcc cguggccggg 120

agaagaugga ggagccgaga ugacaacggc agucguggaa gggucgccaa gccccggucc 180

uucucuucug ucuggucgaa ucucguuuuc uuuuuucaac cgcucuuuuu aucaccuuuu 240

uaugugaguu ucucuuccgc gucucccggc cguaccaucc acccaugcag caugcacgcg 300

uguauguaug caucgucucu ccuccguccc gacuaccauc agcagcacca cuaccgccac 360

ccccagcgcc accaccgcug ccgucgccac cgcguuaucc guuccucgua ggcugguccu 420

ggggaacggg ucggcggccg gucggcuucu guuuuauuau uuuuuuuuau uuuuuaucuu 480

cuccuuuccu uaaucucgga uuaucauuuc ccucuccuac cuaccacgaa ucgcagauga 540

uaaacaagag gguaaaaaga aaaaagcuac agacauuugg guaccucagc uuuccgauaa 600

cucgaagaau ucaaagucga cgauucccaa caagagaaaa cagaacaaaa acaaggucau 660

uuuuauuuau ccucaucguc aacaacaacu accgacaaca acgaaacacc accaagaaug 720

ucaauccgca aggguguucc ugccccccucg acgcgccugu cgcgauccuc auggcgagga 780

ccgcgaucuc cguauaggua gaugaaauua ucccgugucc gguccugauu ccccgcaugc 840

ccugcacauc cugacgcguc ggucagcagc caaacaauca uaggaaauga accagaagaa 900

caaaaagauc aucucucucg guguauagca acaccaacaa caaccgcauc gcaacaucuu 960

cauccgcaag acggaaagaa aacaacaaua augagaauga aaucaccaca accaagccag 1020

auuucacguc caugaguuuu uauuauauua uuaucaaaac gaaaaacaga aaaacuguca 1080

uagauaaaua uaaaaaaaaa uagaaaccac aaacgacuac uaguacucca aucuuagaug 1140

uauaugcucc uagauaagau uuaguauuac cauaaucauc gaagaaugaa agacgacgau 1200

gauuccuuac cgcuccugcc acccggucug uauguagaga gagaagagag aaaacgguga 1260

auccaagauc cccgggucgg cgucggcaug ccgcugaucg caguggcccc accucggcau 1320

gccggcgccg ggcgaggaau ugcucaugaa aaaaguaucu uucuguaaaa aaagaaaaca 1380

auacaugauu aaccgaaaag aaaccaacaa aaagaacccg agaucagucg auuucgauca 1440

cuacgauaaa cacauggaag auuucuugaa aaaagaaaag agaaagagac caccuucccg 1500

gcggcggaca cgcuccucuc cgucgccguu cugcaccaug auucgaucaa uaacaacauc 1560

aucaucggag accaucuuuu aaucaaucag cguugcagua gucgacuccc uggacacgaa 1620

ggagucaucc auuuuuaucc ucgcacuucu ucgcucucaa agccgccuuu aaaguugaaa 1680

ugaaaggaug gaaacaugga auacaguuuu aauugcacgu aucaccauuu uacuacaaaa 1740

agaaaaaaaa acaacuuaca cauaguauua ccuuagguuu acggauaagu agaguguagg 1800

cguuuuugaa acaguucagc caaugcaauc uugucucggc auaaucacuc uuucugcaua 1860

uaauaguagu aguagauuua uucacaucaa cacagcgaaa aacuccagca ucaaaguaca 1920

ccuagagaca gcccuuaaaa uauaguuugc agcuuuuaga uguacuuaca ccaaagaaga 1980

uuaccguccu uacgagaaaa cagauacucg gauauaggaa ucaagacagc ucugcacuga 2040

aaacacacuc uccugucacg acaccgcgcc acaccagagg cguacgcgug acuucaucgc 2100

aacgauccau cgugaugucc cucgcagaac cuaaaaagac caaaaaaaaa ucuuggacca 2160

caguugucga uucuugaaga caauauucuc gugagaacuu ugagauucgc acuugaaacc 2220

ucuuaggauc cacaaaaaca acaaccucug uauggaaaau gcgcuauuuu aucucagcuu 2280

uucucccaaa ccucgguuuc uuccuauucu uaaguuuucc cuaguauauu ugccuccuua 2340

uaagaaaaga agcacaagcu cggucgcacg gauuauuccu ucugcuaauc uauuauuuug 2400

uuccuuuuuu uuuuguuugc cuucaccccc uucacucccu guagcaacac agaguaguag 2460

acacaauaaa ugagaaguuu gcaugc 2486

<210> 56
<211> 421

<212> RNA
<213> Artificial sequence

<220>
<223> D1_core

<400> 56
cagaagcccc ggcgggcgaa ucggccggcu ggucggucgg cgcucggacg gaugggggaga 60

acggcgguga cuuagccgcc cguggccggg agaagaugga ggagccgaga ugacaacggc 120

agucguggaa gggucgccaa gccccggucc uucucuucug ucuggucgaa ucucguuuuc 180

uuuuuucaac cgcucuuuuu aucaccuuuu uaugugaguu ucucuuccgc gucucccggc 240

cguaccaucc acccaugcag caugcacgcg uguauguaug caucgucucu ccuccguccc 300

gacuaccauc agcagcacca cuaccgccac ccccagcgcc accaccgcug ccgucgccac 360

cgcguuaucc guuccucgua ggcugguccu ggggaacggg ucggcggccg gucggcuucu 420

g 421

<210> 57
<211> 100
<212> RNA
<213> Artificial sequence

<220>
<223> D2_core

<400> 57
uuuuauuuuu uaucuucucc uuuccuuaau cucggauuau cauuucccuc uccuaccuac 60

cacgaaucgc agaugauaaa caagagggua aaaagaaaaa 100

<210> 58
<211> 238
<212> RNA
<213> Artificial sequence

<220>
<223> D3_core

<400> 58
ggucauuuuu auuuauccuc aucgucaaca acaacuaccg acaacaacga aacaccacca 60

agaaugucaa uccgcaaggg uguuccugcc cccucgacgc gccugucgcg auccucaugg 120

cgaggaccgc gaucuccgua uagguagaug aaauuauccc guguccgguc cugauucccc 180

gcaugcccug cacauccuga cgcgucgguc agcagccaaa caaucauagg aaaugaac 238

<210> 59
<211> 367
<212> RNA
<213> Artificial sequence

<220>
<223> D4_core

<400> 59
cggcgucggc augccgcuga ucgcaguggc cccaccucgg caugccggcg ccgggcgagg 60

aauugcucau gaaaaaagua ucuuucugua aaaaaagaaa acaauacaug auuaaccgaa 120

aagaaaccaa caaaaagaac ccgagaucag ucgauuucga ucacuacgau aaacacaugg 180

aagauuucuu gaaaaaagaa aagagaaaga gaccaccuuc ccggcggcgg acacgcuccu 240

cuccgucgcc guucugcacc augauucgau caauaacaac aucaucaucg gagaccaucu 300

uuuaaucaau cagcguugca guagucgacu cccuggacac gaaggaguca uccauuuuua 360

uccucgc 367

<210> 60
<211> 2065
<212> RNA
<213> Artificial sequence

<220>
<223> deltaD1_core

<400> 60
uccccagauc gcugcugccc cggcguucuc uuuuauuauu uuuuuuuauu uuuuaucuuc 60

uccuuuccuu aaucucggau uaucauuucc cucuccuacc uaccacgaau cgcagaugau 120

aaacaagagg guaaaaagaa aaaagcuaca gacauuuggg uaccucagcu uuccgauaac 180

ucgaagaauu caaagucgac gauucccaac aagagaaaac agaacaaaaa caaggucauu 240

uuuauuuauc cucaucguca acaacaacua ccgacaacaa cgaaacacca ccaagaaugu 300

caauccgcaa ggguguuccu gcccccucga cgcgccuguc gcgauccuca uggcgaggac 360

cgcgaucucc guauagguag augaaauuau cccguguccg guccugauuc cccgcaugcc 420

cugcacaucc ugacgcgucg gucagcagcc aaacaaucau aggaaaugaa ccagaagaac 480

aaaaagauca ucucucucgg uguauagcaa caccaacaac aaccgcaucg caacaucuuc 540

auccgcaaga cggaaagaaa acaacaauaa ugagaaugaa aucaccacaa ccaagccaga 600

uuucacgucc augaguuuuu auuauauuau uaucaaaacg aaaaacagaa aaacugucau 660

agauaaauau aaaaaaaaau agaaaccaca aacgacuacu aguacuccaa ucuuagaugu 720

auaugcuccu agauaagauu uaguauuacc auaaucaucg aagaaugaaa gacgacgaug 780

auuccuuacc gcuccugcca cccggucugu auguagagag agaagagaga aaacggugaa 840

uccaagaucc ccggggucggc gucggcaugc cgcugaucgc aguggcccca ccucggcaug 900

ccggcgccgg gcgaggaauu gcucaugaaa aaaguaucuu ucuguaaaaa aagaaaacaa 960

uacaugauua accgaaaaga aaccaacaaa aagaacccga gaucagucga uuucgaucac 1020

uacgauaaac acauggaaga uuucuugaaa aaagaaaaga gaaagagacc accuucccgg 1080

cggcggacac gcuccucucc gucgccguuc ugcaccauga uucgaucaau aacaacauca 1140

ucaucggaga ccaucuuuua aucaaucagc guugcaguag ucgacucccu ggacacgaag 1200

gagucaucca uuuuuauccu cgcacuucuu cgcucucaaa gccgccuuua aaguugaaau 1260

gaaaggaugg aaacauggaa uacaguuuua auugcacgua ucaccauuuu acuacaaaaa 1320

gaaaaaaaaa caacuuacac auaguauuac cuuagguuua cggauaagua gaguguaggc 1380

guuuuugaaa caguucagcc aaugcaaucu ugucucggca uaaucacucu uucugcauau 1440

aauaguagua guagauuuau ucacaucaac acagcgaaaa acuccagcau caaaguacac 1500

cuagagacag cccuuaaaau auaguuugca gcuuuuagau guacuuacac caaagaagau 1560

uaccguccuu acgagaaaac agauacucgg auauaggaau caagacagcu cugcacugaa 1620

aacacacucu ccugucacga caccgcgcca caccagaggc guacgcguga cuucaucgca 1680

acgauccauc gugauguccc ucgcagaacc uaaaaagacc aaaaaaaaau cuuggaccac 1740

aguugucgau ucuugaagac aauauucucg ugagaacuuu gagauucgca cuugaaaccu 1800

cuuaggaucc acaaaaacaa caaccucugu auggaaaaug cgcuauuuua ucucagcuuu 1860

ucucccaaac cucgguuucu uccuauucuu aaguuuuccc uaguauauuu gccuccuuau 1920

aagaaaagaa gcacaagcuc ggucgcacgg auuauuccuu cugcuaaucu auuauuuugu 1980

uccuuuuuuu uuuguuugcc uucacccccu ucacucccug uagcaacaca gaguaguaga 2040

cacaauaaau gagaaguuug caugc 2065

<210> 61
<211> 2386
<212> RNA
<213> Artificial sequence

<220>
<223> deltaD2_core

<400> 61
uccccagauc gcugcugccc cggcguucuc cagaagcccc ggcgggcgaa ucggccggcu 60

ggucggucgg cgcucggacg gaugggggaga acggcgguga cuuagccgcc cguggccggg 120

agaagaugga ggagccgaga ugacaacggc agucguggaa gggucgccaa gccccggucc 180

uucucuucug ucuggucgaa ucucguuuuc uuuuuucaac cgcucuuuuu aucaccuuuu 240

uaugugaguu ucucuuccgc gucucccggc cguaccaucc acccaugcag caugcacgcg 300

uguauguaug caucgucucu ccuccguccc gacuaccauc agcagcacca cuaccgccac 360

ccccagcgcc accaccgcug ccgucgccac cgcguuaucc guuccucgua ggcugguccu 420

ggggaacggg ucggcggccg gucggcuucu guuuuauuau uuuuagcuac agacauuugg 480

guaccucagc uuuccgauaa cucgaagaau ucaaagucga cgauucccaa caagagaaaa 540

cagaacaaaa acaaggucau uuuuauuuau ccucaucguc aacaacaacu accgacaaca 600

acgaaacacc accaagaaug ucaauccgca aggguguucc ugccccccucg acgcgccugu 660

cgcgauccuc auggcgagga ccgcgaucuc cguauaggua gaugaaauua ucccgugucc 720

gguccugauu ccccgcaugc ccugcacauc cugacgcguc ggucagcagc caaacaauca 780

uaggaaauga accagaagaa caaaaagauc aucucucucg guguauagca acaccaacaa 840

caaccgcauc gcaacaucuu cauccgcaag acggaaagaa aacaacaaua augagaauga 900

aaucaccaca accaagccag auuucacguc caugaguuuu uauuauauua uuaucaaaac 960

gaaaaacaga aaaacuguca uagauaaaua uaaaaaaaaa uagaaaccac aaacgacuac 1020

uaguacucca aucuuagaug uauaugcucc uagauaagau uuaguauuac cauaaucauc 1080

gaagaaugaa agacgacgau gauuccuuac cgcuccugcc acccggucug uauguagaga 1140

gagaagagag aaaacgguga auccaagauc cccgggucgg cgucggcaug ccgcugaucg 1200

caguggcccc accucggcau gccggcgccg ggcgaggaau ugcucaugaa aaaaguaucu 1260

uucuguaaaa aaagaaaaca auacaugauu aaccgaaaag aaaccaacaa aaagaacccg 1320

agaucagucg auuucgauca cuacgauaaa cacauggaag auuucuugaa aaaagaaaag 1380

agaaagagac caccuucccg gcggcggaca cgcuccucuc cgucgccguu cugcaccaug 1440

auucgaucaa uaacaacauc aucaucggag accaucuuuu aaucaaucag cguugcagua 1500

gucgacuccc uggacacgaa ggagucaucc auuuuuaucc ucgcacuucu ucgcucucaa 1560

agccgccuuu aaaguugaaa ugaaaggaug gaaacaugga auacaguuuu aauugcacgu 1620

aucaccauuu uacuacaaaa agaaaaaaaa acaacuuaca cauaguauua ccuuagguuu 1680

acggauaagu agaguguagg cguuuuugaa acaguucagc caaugcaauc uugucucggc 1740

auaaucacuc uuucugcaua uaauaguagu aguagauuua uucacaucaa cacagcgaaa 1800

aacuccagca ucaaaguaca ccuagagaca gcccuuaaaa uauaguuugc agcuuuuaga 1860

uguacuuaca ccaaagaaga uuaccguccu uacgagaaaa cagauacucg gauauaggaa 1920

ucaagacagc ucugcacuga aaacacacuc uccugucacg acaccgcgcc acaccagagg 1980

cguacgcgug acuucaucgc aacgauccau cgugaugucc cucgcagaac cuaaaaagac 2040

caaaaaaaaa ucuuggacca caguugucga uucuugaaga caauauucuc gugagaacuu 2100

ugagauucgc acuugaaacc ucuuaggauc cacaaaaaca acaaccucug uauggaaaau 2160

gcgcuauuuu aucucagcuu uucucccaaa ccucgguuuc uuccuauucu uaaguuuucc 2220

cuaguauauu ugccuccuua uaagaaaaga agcacaagcu cggucgcacg gauuauuccu 2280

ucugcuaauc uauuauuuug uuccuuuuuu uuuuguuugc cuucaccccc uucacucccu 2340

guagcaacac agaguaguag acacaauaaa ugagaaguuu gcaugc 2386

<210> 62
<211> 2247
<212> RNA
<213> Artificial sequence

<220>
<223> deltaD3_core

<400> 62
uccccagauc gcugcugccc cggcguucuc cagaagcccc ggcgggcgaa ucggccggcu 60

ggucggucgg cgcucggacg gaugggggaga acggcgguga cuuagccgcc cguggccggg 120

agaagaugga ggagccgaga ugacaacggc agucguggaa gggucgccaa gccccggucc 180

uucucuucug ucuggucgaa ucucguuuuc uuuuuucaac cgcucuuuuu aucaccuuuu 240

uaugugaguu ucucuuccgc gucucccggc cguaccaucc acccaugcag caugcacgcg 300

uguauguaug caucgucucu ccuccguccc gacuaccauc agcagcacca cuaccgccac 360

ccccagcgcc accaccgcug ccgucgccac cgcguuaucc guuccucgua ggcugguccu 420

ggggaacggg ucggcggccg gucggcuucu guuuuauuau uuuuuuuuau uuuuuaucuu 480

cuccuuuccu uaaucucgga uuaucauuuc ccucuccuac cuaccacgaa ucgcagauga 540

uaaacaagag gguaaaaaga aaaaagcuac agacauuugg guaccucagc uuuccgauaa 600

cucgaagaau ucaaagucga cgauucccaa caagagaaaa cagaacaaaa acaaagaaga 660

acaaaaagau caucucucuc gguguauagc aacaccaaca acaaccgcau cgcaacaucu 720

ucauccgcaa gacggaaaga aaacaacaau aaugagaaug aaaucaccac aaccaagcca 780

gauuucacgu ccaugaguuu uuauuauauu auuaucaaaa cgaaaaacag aaaaacuguc 840

auagauaaau auaaaaaaaa auagaaacca caaacgacua cuaguacucc aaucuuagau 900

guauaugcuc cuagauaaga uuuaguauua ccauaaucau cgaagaauga aagacgacga 960

ugauuccuua ccgcuccugc cacccggucu guauguagag agagaagaga gaaaacggug 1020

aauccaagau ccccgggucg gcgucggcau gccgcugauc gcaguggccc caccucggca 1080

ugccggcgcc gggcgaggaa uugcucauga aaaaaguauc uuucuguaaa aaaagaaaac 1140

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aggagucauc cauuuuuauc cucgcacuuc uucgcucuca aagccgccuu uaaaguugaa 1440

augaaaggau ggaaacaugg aauacaguuu uaauugcacg uaucaccauu uuacuacaaa 1500

aagaaaaaaa aacaacuuac acauaguauu accuuagguu uacggauaag uagaguguag 1560

gcguuuuuga aacaguucag ccaaugcaau cuugucucgg cauaaucacu cuuucugcau 1620

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caacgaucca ucgugauguc ccucgcagaa ccuaaaaaga ccaaaaaaaa aucuuggacc 1920

acaguugucg auucuugaag acaauauucu cgugagaacu uugagauucg cacuugaaac 1980

cucuuaggau ccacaaaaac aacaaccucu guauggaaaa ugcgcuauuu uaucucagcu 2040

uuucucccaa accucgguuu cuuccuauuc uuaaguuuuc ccuaguauau uugccuccuu 2100

auaagaaaag aagcacaagc ucggucgcac ggauuauucc uucugcuaau cuauuauuuu 2160

guuccuuuuu uuuuuguuug ccuucacccc cuucacuccc uguagcaaca cagaguagua 2220

gacacaauaa augagaaguu ugcaugc 2247

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<212> RNA
<213> Artificial sequence

<220>
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agaagaugga ggagccgaga ugacaacggc agucguggaa gggucgccaa gccccggucc 180

uucucuucug ucuggucgaa ucucguuuuc uuuuuucaac cgcucuuuuu aucaccuuuu 240

uaugugaguu ucucuuccgc gucucccggc cguaccaucc acccaugcag caugcacgcg 300

uguauguaug caucgucucu ccuccguccc gacuaccauc agcagcacca cuaccgccac 360

ccccagcgcc accaccgcug ccgucgccac cgcguuaucc guuccucgua ggcugguccu 420

ggggaacggg ucggcggccg gucggcuucu guuuuauuau uuuuuuuuau uuuuuaucuu 480

cuccuuuccu uaaucucgga uuaucauuuc ccucuccuac cuaccacgaa ucgcagauga 540

uaaacaagag gguaaaaaga aaaaagcuac agacauuugg guaccucagc uuuccgauaa 600

cucgaagaau ucaaagucga cgauucccaa caagagaaaa cagaacaaaa acaaggucau 660

uuuuauuuau ccucaucguc aacaacaacu accgacaaca acgaaacacc accaagaaug 720

ucaauccgca aggguguucc ugccccucg acgcgccugu cgcgauccuc auggcgagga 780

ccgcgaucuc cguauaggua gaugaaauua ucccgugucc gguccugauu ccccgcaugc 840

ccugcacauc cugacgcguc ggucagcagc caaacaauca uaggaaauga accagaagaa 900

caaaaagauc aucucucucg guguauagca acaccaacaa caaccgcauc gcaacaucuu 960

cauccgcaag acggaaagaa aacaacaaua augagaauga aaucaccaca accaagccag 1020

auuucacguc caugaguuuu uauuauauua uuaucaaaac gaaaaacaga aaaacuguca 1080

uagauaaaua uaaaaaaaaa uagaaaccac aaacgacuac uaguacucca aucuuagaug 1140

uauaugcucc uagauaagau uuaguauuac cauaaucauc gaagaaugaa agacgacgau 1200

gauuccuuac cgcuccugcc acccggucug uauguagaga gagaagagag aaaacgguga 1260

auccaagauc cccggguacu ucuucgcucu caaagccgcc uuuaaaguug aaaugaaagg 1320

auggaaacau ggaauacagu uuuaauugca cguaucacca uuuuacuaca aaaagaaaaa 1380

aaaacaacuu acacauagua uuaccuuagg uuuacggaua aguagagugu aggcguuuuu 1440

gaaacaguuc agccaaugca aucuugucuc ggcauaauca cucuuucugc auauaauagu 1500

aguaguagau uuauucacau caacacagcg aaaaacucca gcaucaaagu acaccuagag 1560

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ccuuacgaga aaacagauac ucggauauag gaaucaagac agcucugcac ugaaaacaca 1680

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cgauucuuga agacaauauu cucgugagaa cuuugagauu cgcacuugaa accucuuagg 1860

auccacaaaa acaacaaccu cuguauggaa aaugcgcuau uuuaucucag cuuuucuccc 1920

aaaccucggu uucuuccuau ucuuaaguuu ucccuaguau auuugccucc uuauaagaaa 1980

agaagcacaa gcucggucgc acggauuauu ccuucugcua aucuauuauu uuguuccuuu 2040

uuuuuuuguu ugccuucacc cccuucacuc ccuguagcaa cacagaguag uagacacaau 2100

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<211> 2486
<212> RNA
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<220>
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<400> 64
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cgaccgagcu ugugcuucuu uucuuauaag gaggcaaaua uacuagggaa aacuuaagaa 180

uaggaagaaa ccgagguuug ggagaaaagc ugagauaaaa uagcgcauuu uccauacaga 240

gguuguuguu uuuguggauc cuaagagguu ucaagugcga aucucaaagu ucucacgaga 300

auauugucuu caagaaucga caacuguggu ccaagauuuu uuuuuggucu uuuuagguuc 360

ugcgagggac aucacgaugg aucguugcga ugaagucacg cguacgccuc ugguguggcg 420

cggugucgug acaggagagu guguuuucag ugcagagcug ucuugauucc uauauccgag 480

uaucuguuuu cucguaagga cgguaaucuu cuuuggugua aguacaucua aaagcugcaa 540

acuauauuuu aagggcuguc ucuaggugua cuuugaugcu ggaguuuuuc gcuguguuga 600

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gcauuggcug aacuguuuca aaaacgccua cacucuacuu auccguaaac cuaagguaau 720

acuaugugua aguuguuuuu uuuucuuuuu guaguaaaau ggugauacgu gcaauuaaaa 780

cuguauucca uguuuccauc cuuucauuuc aacuuuaaag gcggcuuuga gagcgaagaa 840

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gcgacggaga ggagcguguc cgccgccggg aagguggucu cuuucucuuu ucuuuuuuca 1020

agaaaucuuc cauguguuua ucguagugau cgaaaucgac ugaucucggg uucuuuuugu 1080

ugguuucuuu ucgguuaauc auguauuguu uucuuuuuuu acagaaagau acuuuuuuca 1140

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auaauaaaaa cucauggacg ugaaaucugg cuugguugug gugauuucau ucucauuauu 1500

guuguuuucu uuccgucuug cggaugaaga uguugcgaug cgguuguugu ugguguugcu 1560

auacaccgag agagaugauc uuuuuguucu ucugguucau uuccuaugau uguuuggcug 1620

cugaccgacg cgucaggaug ugcagggcau gcggggaauc aggaccggac acgggauaau 1680

uucaucuacc uauacggaga ucgcgguccu cgccaugagg aucgcgacag gcgcgucgag 1740

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gaaucgucga cuuugaauuc uucgaguuau cggaaagcug agguacccaa augucuguag 1920

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ugauaauccg agauuaagga aaggagaaga uaaaaaauaa aaaaaaauaa uaaaacagaa 2040

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cccauccguc cgagcgccga ccgaccagcc ggccgauucg cccgccgggg cuucuggaga 2460

acgccggggc agcagcgauc ugggga 2486

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<211> 421
<212> RNA
<213> Artificial sequence

<220>
<223> D1AS_core

<400> 65
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cgggacggag gagagacgau gcauacauac acgcgugcau gcugcauggg uggaugguac 180

ggccgggaga cgcggaagag aaacucacau aaaaagguga uaaaaagagc gguugaaaaa 240

agaaaacgag auucgaccag acagaagaga aggaccgggg cuuggcgacc cuuccacgac 300

ugccguuguc aucucggcuc cuccaucuuc ucccggccac gggcggcuaa gucaccgccg 360

uucucccccau ccguccgagc gccgaccgac cagccggccg auucgcccgc cggggcuucu 420

g 421

<210> 66
<211> 100
<212> RNA
<213> Artificial sequence

<220>
<223> D2AS_core

<400> 66
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auaauccgag auuaaggaaa ggagaagaua aaaaauaaaa 100

<210> 67
<211> 238
<212> RNA
<213> Artificial sequence

<220>
<223> D3AS_core

<400> 67
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augaggaucg cgacaggcgc gucgaggggg caggaacacc cuugcggauu gacauucuug 180

gugguguuuc guuguugucg guaguuguug uugacgauga ggauaaauaa aaaugacc 238

<210> 68
<211> 367
<212> RNA
<213> Artificial sequence

<220>

<223> D4AS_core

<400> 68
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gauuaaaaga uggucuccga ugaugauguu guuauugauc gaaucauggu gcagaacggc 120

gacggagagg agcguguccg ccgccgggaa gguggucucu uucucuuuuc uuuuuucaag 180

aaaucuucca uguguuuauc guagugaucg aaaucgacug aucucggguu cuuuuuguug 240

guuucuuuuc gguuaaucau guauuguuuu cuuuuuuuac agaaagauac uuuuuucaug 300

agcaauuccu cgcccggcgc cggcaugccg aggugggggcc acugcgauca gcggcaugcc 360

gacgccg 367

<210> 69
<211> 2065
<212> RNA
<213> Artificial sequence

<220>
<223> deltaD1AS_core

<400> 69
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cgaccgagcu ugugcuucuu uucuuauaag gaggcaaaua uacuagggaa aacuuaagaa 180

uaggaagaaa ccgaggguuug ggagaaaagc ugagauaaaa uagcgcauuu uccauacaga 240

gguuguuguu uuuguggauc cuaagagguu ucaagugcga aucucaaagu ucucacgaga 300

auauugucuu caagaaucga caacuguggu ccaagauuuu uuuuuggucu uuuuagguuc 360

ugcgagggac aucacgaugg aucguugcga ugaagucacg cguacgccuc ugguguggcg 420

cggugucgug acaggagagu guguuuucag ugcagagcug ucuugauucc uauauccgag 480

uaucuguuuu cucguaagga cgguaaucuu cuuuggugua aguacaucua aaagcugcaa 540

acuauauuuu aagggcuguc ucuaggugua cuuugaugcu ggaguuuuuc gcuguguuga 600

ugugaauaaa ucuacuacua cuauuauaug cagaaagagu gauuaugccg agacaagauu 660

gcauuggcug aacuguuuca aaaacgccua cacucuacuu auccguaaac cuaagguaau 720

acuaugugua aguuguuuuu uuuucuuuuu guaguaaaau ggugauacgu gcaauuaaaa 780

cuguauucca uguuuccauc cuuucauuuc aacuuuaaag gcggcuuuga gagcgaagaa 840

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uugauuaaaa gauggucucc gaugaugaug uuguuauuga ucgaaucaug gugcagaacg 960

gcgacggaga ggagcguguc cgccgccggg aagguggucu cuuucucuuu ucuuuuuuca 1020

agaaaucuuc cauguguuua ucguagugau cgaaaucgac ugaucucggg uucuuuuugu 1080

ugguuucuuu ucgguuaauc auguauuguu uucuuuuuuu acagaaagau acuuuuuuca 1140

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uacuaaaucu uaucuaggag cauauacauc uaagauugga guacuaguag ucguuugugg 1380

uuucuauuuu uuuuuauauu uaucuaugac aguuuuucug uuuuucguuu ugauaauaau 1440

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guuguuuucu uuccgucuug cggaugaaga uguugcgaug cgguuguugu ugguguugcu 1560

auacaccgag agagaugauc uuuuuguucu ucugguucau uuccuaugau uguuuggcug 1620

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guuguugacg augaggauaa auaaaaauga ccuuguuuuu guucuguuuu cucuuguugg 1860

gaaucgucga cuuugaauuc uucgaguuau cggaaagcug agguacccaa augucuguag 1920

cuuuuuucuu uuuacccucu uguuuaucau cugcgauucg ugguagguag gagagggaaa 1980

ugauaauccg agauuaagga aaggagaaga uaaaaaauaa aaaaaaauaa uaaaagagaa 2040

cgccggggca gcagcgaucu gggga 2065

<210> 70
<211> 2386
<212> RNA
<213> Artificial sequence

<220>
<223> deltaD2AS_core

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gugaaggcaa acaaaaaaaa aaggaacaaa auaauagauu agcagaagga auaauccgug 120

cgaccgagcu ugugcuucuu uucuuauaag gaggcaaaua uacuagggaa aacuuaagaa 180

uaggaagaaa ccgaggguuug ggagaaaagc ugagauaaaa uagcgcauuu uccauacaga 240

gguuguuguu uuuguggauc cuaagagguu ucaagugcga aucucaaagu ucucacgaga 300

auauugucuu caagaaucga caacuguggu ccaagauuuu uuuuuggucu uuuuagguuc 360

ugcgagggac aucacgaugg aucguugcga ugaagucacg cguacgccuc ugguguggcg 420

cggugucgug acaggagagu guguuuucag ugcagagcug ucuugauucc uauauccgag 480

uaucuguuuu cucguaagga cgguaaucuu cuuuggugua aguacaucua aaagcugcaa 540

acuauauuuu aagggcuguc ucuaggugua cuuugaugcu ggaguuuuuc gcuguguuga 600

ugugaauaaa ucuacuacua cuauuauaug cagaaagagu gauuaugccg agacaagauu 660

gcauuggcug aacuguuuca aaaacgccua cacucuacuu auccguaaac cuaagguaau 720

acuaugugua aguuguuuuu uuuucuuuuu guaguaaaau ggugauacgu gcaauuaaaa 780

cuguauucca uguuuccauc cuuucauuuc aacuuuaaag gcggcuuuga gagcgaagaa 840

gugcgaggau aaaaauggau gacuccuucg uguccaggga gucgacuacu gcaacgcuga 900

uugauuaaaa gauggucucc gaugaugaug uuguuauuga ucgaaucaug gugcagaacg 960

gcgacggaga ggagcguguc cgccgccggg aagguggucu cuuucucuuu ucuuuuuuca 1020

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guuguuuucu uuccgucuug cggaugaaga uguugcgaug cgguuguugu ugguguugcu 1560

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ggggcaggaa cacccuugcg gauugacauu cuugguggug uuucguuguu gucgguaguu 1800

guuguugacg augaggauaa auaaaaauga ccuuguuuuu guucuguuuu cucuuguugg 1860

gaaucgucga cuuugaauuc uucgaguuau cggaaagcug agguacccaa augucuguag 1920

cuaaaaauaa uaaaacagaa gccgaccggc cgccgacccg uuccccagga ccagccuacg 1980

aggaacggau aacgcggugg cgacggcagc ggugguggcg cugggggugg cgguaguggu 2040

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agagcgguug aaaaaagaaa acgagauucg accagacaga agagaaggac cggggcuugg 2220

cgacccuucc acgacugccg uugucaucuc ggcuccucca ucuucucccg gccacgggcg 2280

gcuaagucac cgccguucuc cccauccguc cgagcgccga ccgaccagcc ggccgauucg 2340

cccgccgggg cuucuggaga acgccggggc agcagcgauc ugggga 2386

<210> 71
<211> 2247
<212> RNA
<213> Artificial sequence

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<223>  deltaD3AS_core

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cgaccgagcu ugugcuucuu uucuuauaag gaggcaaaua uacuagggaa aacuuaagaa  180

uaggaagaaa ccgaggguuug ggagaaaagc ugagauaaaa uagcgcauuu uccauacaga  240

gguuguuguu uuuguggauc cuaagagguu ucaagugcga aucucaaagu ucucacgaga  300

auauugucuu caagaaucga caacuguggu ccaagauuuu uuuuuggucu uuuuagguuc  360

ugcgagggac aucacgaugg aucguugcga ugaagucacg cguacgccuc ugguguggcg  420

cggugucgug acaggagagu guguuuucag ugcagagcug ucuugauucc uauauccgag  480

uaucuguuuu cucguaagga cgguaaucuu cuuuggugua aguacaucua aaagcugcaa  540

acuauauuuu aagggcuguc ucuaggugua cuuugaugcu ggaguuuuuc gcuguguuga  600

ugugaauaaa ucuacuacua cuauuauaug cagaaagagu gauuaugccg agacaagauu  660

gcauuggcug aacuguuuca aaaacgccua cacucuacuu auccguaaac cuaagguaau  720

acuaugugua aguuguuuuu uuuucuuuuu guaguaaaau ggugauacgu gcaauuaaaa  780

cuguauucca uguuuccauc cuuucauuuc aacuuuaaag gcggcuuuga gagcgaagaa  840

gugcgaggau aaaaauggau gacuccuucg uguccaggga gucgacuacu gcaacgcuga  900

uugauuaaaa gauggucucc gaugaugaug uuguuauuga ucgaaucaug gugcagaacg  960

gcgacggaga ggagcguguc cgccgccggg aagguggucu cuuucucuuu ucuuuuuuca  1020

agaaaucuuc cauguguuua ucguagugau cgaaaucgac ugaucucggg uucuuuuugu  1080

ugguuucuuu ucgguuaauc auguauuguu uucuuuuuuu acagaaagau acuuuuuuca  1140

ugagcaauuc cucgcccggc gccggcaugc cgaggugggg ccacugcgau cagcggcaug  1200

ccgacgccga cccggggauc uuggauucac cguuuucucu cuucucucuc uacauacaga  1260

ccggguggca ggagcgguaa ggaaucaucg ucgucuuuca uucuucgaug auuaugguaa  1320

uacuaaaucu uaucuaggag cauauacauc uaagauugga guacuaguag ucguuugugg 1380

uuucuauuuu uuuuuauauu uaucuaugac aguuuuucug uuuuucguuu ugauaauaau 1440

auaauaaaaa cucauggacg ugaaaucugg cuugguugug gugauuucau ucucauuauu 1500

guuguuuucu uuccgucuug cggaugaaga uguugcgaug cgguuguugu ugguguugcu 1560

auacaccgag agagaugauc uuuuuguucu ucuuuguuuu uguucuguuu ucucuuguug 1620

ggaaucgucg acuuugaauu cuucgaguua ucggaaagcu gagguaccca aaugucugua 1680

gcuuuuuucu uuuuacccuc uuguuuauca ucugcgauuc gugguaggua ggagagggaa 1740

augauaaucc gagauuaagg aaaggagaag auaaaaaaua aaaaaaaaua auaaaacaga 1800

agccgaccgg ccgccgaccc guuccccagg accagccuac gaggaacgga uaacgcggug 1860

gcgacggcag cggugguggc gcuggggggug gcgguagugg ugcugcugau gguagucggg 1920

acggaggaga gacgaugcau acauacacgc gugcaugcug caugggugga ugguacggcc 1980

gggagacgcg gaagagaaac ucacauaaaa aggugauaaa aagagcgguu gaaaaaagaa 2040

aacgagauuc gaccagacag aagagaagga ccggggcuug gcgacccuuc cacgacugcc 2100

guugucaucu cggcuccucc aucuucuccc ggccacgggc ggcuaaguca ccgccguucu 2160

ccccauccgu ccgagcgccg accgaccagc cggccgauuc gcccgccggg gcuucuggag 2220

aacgccgggg cagcagcgau cugggga 2247

<210> 72
<211> 2119
<212> RNA
<213> Artificial sequence

<220>
<223> deltaD4AS_core

<400> 72
gcaugcaaac uucucauuua uuugucuac uacucugugu ugcuacaggg agugaagggg 60

gugaaggcaa acaaaaaaaa aaggaacaaa auaauagauu agcagaagga auaauccgug 120

cgaccgagcu ugugcuucuu uucuuauaag gaggcaaaua uacuagggaa aacuuaagaa 180

uaggaagaaa ccgagguuug ggagaaaagc ugagauaaaa uagcgcauuu uccauacaga 240

gguuguuguu uuuguggauc cuaagagguu ucaagugcga aucucaaagu ucucacgaga 300

auauugucuu caagaaucga caacuguggu ccaagauuuu uuuuuggucu uuuuagguuc 360

ugcgagggac aucacgaugg aucguugcga ugaagucacg cguacgccuc ugguguggcg 420

cggugucgug acaggagagu guguuuucag ugcagagcug ucuugauucc uauauccgag 480

uaucuguuuu cucguaagga cgguaaucuu cuuuggugua aguacaucua aaagcugcaa 540

acuauauuuu aagggcuguc ucuaggugua cuuugaugcu ggaguuuuuc gcuguguuga 600

ugugaauaaa ucuacuacua cuauuauaug cagaaagagu gauuaugccg agacaagauu 660

gcauuggcug aacuguuuca aaaacgccua cacucuacuu auccguaaac cuaagguaau 720

acuaugugua aguuguuuuu uuuucuuuuu guaguaaaau ggugauacgu gcaauuaaaa 780

cuguauucca uguuuccauc cuuucauuuc aacuuuaaag gcggcuuuga gagcgaagaa 840

guacccgggg aucuuggauu caccguuuuc ucucuucucu cucuacauac agaccgggug 900

gcaggagcgg uaaggaauca ucgucgucuu ucauucuucg augauuaugg uaauacuaaa 960

ucuuaucuag gagcauauac aucuaagauu ggaguacuag uagucguuug ugguuucuau 1020

uuuuuuuuau auuuaucuau gacaguuuuu cuguuuuucg uuuugauaau aauauaauaa 1080

aaacucaugg acgugaaauc uggcuugguu guggugauuu cauucucauu auuguuguuu 1140

ucuuuccguc uugcggauga agauguugcg augcgguugu uguugguguu gcuauacacc 1200

gagagagaug aucuuuuugu ucuucugguu cauuuccuau gauuguuugg cugcugaccg 1260

acgcgucagg augugcaggg caugcgggga aucaggaccg gacacgggau aauuucaucu 1320

accuauacgg agaucgcggu ccucgccaug aggaucgcga caggcgcguc gagggggcag 1380

gaacacccuu gcggauugac auucuuggug guguuucguu guugucggua guuguuguug 1440

acgaugagga uaaauaaaaa ugaccuuguu uuuguucugu uuucucuugu ugggaaucgu 1500

cgacuuugaa uucuucgagu uaucggaaag cugagguacc caaaugucug uagcuuuuuu 1560

cuuuuuaccc ucuuguuuau caucugcgau ucgugguagg uaggagaggg aaaugauaau 1620

ccgagauuaa ggaaaggaga agauaaaaaa uaaaaaaaaa uaauaaaaca gaagccgacc 1680

ggccgccgac ccguucccca ggaccagccu acgaggaacg gauaacgcgg uggcgacggc 1740

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gagacgaugc auacauacac gcgugcaugc ugcaugggug gaugguacgg ccgggagacg 1860

cggaagagaa acucacauaa aaaggugaua aaaagagcgg uugaaaaaag aaaacgagau 1920

ucgaccagac agaagagaag gaccggggcu uggcgacccu uccacgacug ccguugucau 1980

cucggcuccu ccaucuucuc ccggccacgg gcggcuaagu caccgccguu cuccccaucc 2040

guccgagcgc cgaccgacca gccggccgau ucgcccgccg gggcuucugg agaacgccgg 2100

ggcagcagcg aucuggggа 2119

<210> 73
<211> 400
<212> RNA
<213> Artificial sequence

<220>
<223> Multimer sequence D2x4_core

<400> 73
uuuuauuuuu uaucuucucc uuuccuuaau cucggauuau cauuucccuc uccuaccuac 60

cacgaaucgc agaugauaaa caagagggua aaaagaaaaa uuuuauuuuu uaucuucucc 120

uuuccuuaau cucggauuau cauuucccuc uccuaccuac cacgaaucgc agaugauaaa 180

caagagggua aaaagaaaaa uuuuauuuuu uaucuucucc uuuccuuaau cucggauuau 240

cauuucccuc uccuaccuac cacgaaucgc agaugauaaa caagagggua aaaagaaaaa 300

uuuuauuuuu uaucuucucc uuuccuuaau cucggauuau cauuucccuc uccuaccuac 360

cacgaaucgc agaugauaaa caagagggua aaaagaaaaa 400

<210> 74
<211> 954
<212> RNA
<213> Artificial sequence

<220>
<223> Multimer sequence D3x4_core

<400> 74
ggucauuuuu auuuauccuc aucgucaaca acaacuaccg acaacaacga aacaccacca 60

agaaugucaa uccgcaaggg uguuccugcc cccucgacgc gccugucgcg auccucaugg 120

cgaggaccgc gaucuccgua uagguagaug aaauuauccc guguccgguc cugauucccc 180

gcaugcccug cacauccuga cgcgucgguc agcagccaaa caaucauagg aaaugaaccg 240

gucauuuuua uuuauccuca ucgucaacaa caacuaccga caacaacgaa acaccaccaa 300

gaaugucaau ccgcaagggu guuccugccc ccucgacgcg ccugucgcga uccucauggc 360

gaggaccgcg aucuccguau agguagauga aauuaucccg uguccggucc ugauuccccg 420

caugcccugc acauccugac gcgucgguca gcagccaaac aaucauagga aaugaagguc 480

auuuuuauuu auccucaucg ucaacaacaa cuaccgacaa caacgaaaca ccaccaagaa 540

ugucaauccg caaggguguu ccugcccccu cgacgcgccu gucgcgaucc ucauggcgag 600

gaccgcgauc uccguauagg uagaugaaau uaucccgugu ccgguccuga uuccccgcau 660

gcccugcaca uccugacgcg ucggucagca gccaaacaau cauaggaaau gaaccgguca 720

uuuuuauuua uccucaucgu caacaacaac uaccgacaac aacgaaacac caccaagaau 780

gucaauccgc aaggguguuc cugcccccuc gacgcgccug ucgcgauccu cauggcgagg 840

accgcgaucu ccguauaggu agaugaaauu aucccguguc cgguccugau uccccgcaug 900

cccugcacau ccugacgcgu cggucagcag ccaaacaauc auaggaaaug aacc 954

<210> 75
<211> 1360
<212> RNA
<213> Artificial sequence

<220>
<223> Multimer sequence D3x4_D2x4_core

<400> 75
ggucauuuuu auuuauccuc aucgucaaca acaacuaccg acaacaacga aacaccacca 60

agaaugucaa uccgcaaggg uguuccugcc cccucgacgc gccugucgcg auccucaugg 120

cgaggaccgc gaucuccgua uagguagaug aaauuauccc guguccgguc cugauucccc 180

gcaugcccug cacauccuga cgcgucgguc agcagccaaa caaucauagg aaaugaaccg 240

gucauuuuua uuuauccuca ucgucaacaa caacuaccga caacaacgaa acaccaccaa 300

gaaugucaau ccgcaagggu guuccugccc ccucgacgcg ccugucgcga uccucauggc 360

gaggaccgcg aucuccguau agguagauga aauuaucccg uguccggucc ugauuccccg 420

caugcccugc acauccugac gcgucgguca gcagccaaac aaucauagga aaugaagguc 480

auuuuuauuu auccucaucg ucaacaacaa cuaccgacaa caacgaaaca ccaccaagaa 540

ugucaauccg caaggguguu ccugcccccu cgacgcgccu gucgcgaucc ucauggcgag 600

gaccgcgauc uccguauagg uagaugaaau uaucccgugu ccgguccuga uuccccgcau 660

gcccugcaca uccugacgcg ucggucagca gccaaacaau cauaggaaau gaaccgguca 720

uuuuuauuua uccucaucgu caacaacaac uaccgacaac aacgaaacac caccaagaau 780

gucaauccgc aaggguguuc cugcccccuc gacgcgccug ucgcgauccu cauggcgagg 840

accgcgaucu ccguauaggu agaugaaauu aucccguguc cgguccugau uccccgcaug 900

cccugcacau ccugacgcgu cggucagcag ccaaacaauc auaggaaaug aaccuuuuau 960

uuuuuaucuu cuccuuuccu uaaucucgga uuaucauuuc ccucuccuac cuaccacgaa 1020

ucgcagauga uaaacaagag gguaaaaaga aaaauuuuau uuuuuaucuu cuccuuuccu 1080

uaaucucgga uuaucauuuc ccucuccuac cuaccacgaa ucgcagauga uaaacaagag 1140

gguaaaaaga aaaauuuuau uuuuuaucuu cuccuuuccu uaaucucgga uuaucauuuc 1200

ccucuccuac cuaccacgaa ucgcagauga uaaacaagag gguaaaaaga aaaauuuuau 1260

uuuuuaucuu cuccuuuccu uaaucucgga uuaucauuuc ccucuccuac cuaccacgaa 1320

ucgcagauga uaaacaagag gguaaaaaga aaaacggccc 1360

<210> 76
<211> 1326

<212> RNA
<213> Artificial sequence

<220>
<223> Multimer sequence D2x4_D3X4_core

<400> 76
uuuuauuuuu uaucuucucc uuuccuuaau cucggauuau cauuucccuc uccuaccuac 60

cacgaaucgc agaugauaaa caagagggua aaaagaaaaa uuuuauuuuu uaucuucucc 120

uuuccuuaau cucggauuau cauuucccuc uccuaccuac cacgaaucgc uuuuauuuuu 180

uaucuucucc uuuccuuaau cucggauuau cauuucccuc uccuaccuac cacgaaucgc 240

agaugauaaa caagagggua aaaagaaaaa uuuuauuuuu uaucuucucc uuuccuuaau 300

cucggauuau cauuucccuc uccuaccuac cacgaaucgc agaugauaaa caagagggua 360

aaaagaaaaa ggucauuuuu auuuauccuc aucgucaaca acaacuaccg acaacaacga 420

aacaccacca agaaugucaa uccgcaaggg uguuccugcc cccucgacgc gccugucgcg 480

auccucaugg cgaggaccgc gaucuccgua uagguagaug aaauuauccc guguccggguc 540

cugauucccc gcaugcccug cacauccuga cgcgucgguc agcagccaaa caaucauagg 600

aaaugaaccg gucauuuuua uuuauccuca ucgucaacaa caacuaccga caacaacgaa 660

acaccaccaa gaaugucaau ccgcaagggu guuccugccc ccucgacgcg ccugucgcga 720

uccucauggc gaggaccgcg aucuccguau agguagauga aauuaucccg uguccggucc 780

ugauuccccg caugcccugc acauccugac gcgucgguca gcagccaaac aaucauagga 840

aaugaaccgg ucauuuuuau uuauccucau cgucaacaac aacuaccgac aacaacgaaa 900

caccaccaag aaugucaauc cgcaagggug uuccugcccc cucgacgcgc cugucgcgau 960

ccucauggcg aggaccgcga ucuccguaua gguagaugaa auuaucccgu guccgguccu 1020

gauuccccgc augcccugca cauccugacg cgucggucag cagccaaaca aucauaggaa 1080

augaaccggu cauuuuuauu uauccucauc gucaacaaca acuaccgaca acaacgaaac 1140

accaccaaga augucaaucc gcaagggugu uccugccccc ucgacgcgcc ugucgcgauc 1200

cucauggcga ggaccgcgau cuccguauag guagaugaaa uuaucccgug uccgguccug 1260

auuccccgca ugcccugcac auccugacgc gucggucagc agccaaacaa ucauaggaaa 1320

ugaacc 1326

<210> 77
<211> 1356
<212> RNA
<213> Artificial sequence

<220>
<223> Multimer sequence (D3_D2)x4_core

<400> 77
ggucauuuuu auuuauccuc aucgucaaca acaacuaccg acaacaacga aacaccacca 60

agaaugucaa uccgcaaggg uguuccugcc cccucgacgc gccugucgcg auccucaugg 120

cgaggaccgc gaucuccgua uagguagaug aaauuauccc guguccgguc cugauucccc 180

gcaugcccug cacauccuga cgcgucgguc agcagccaaa caaucauagg aaaugaaccu 240

uuuauuuuuu aucuucuccu uuccuuaauc ucggauuauc auuucccucu ccuaccuacc 300

acgaaucgca gaugauaaac aagaggguaa aaagaaaaag gucauuuuua uuuauccuca 360

ucgucaacaa caacuaccga caacaacgaa acaccaccaa gaaugucaau ccgcaagggu 420

guuccugccc ccucgacgcg ccugucgcga uccucauggc gaggaccgcg aucuccguau 480

agguagauga aauuaucccg uguccggucc ugauuccccg caugcccugc acauccugac 540

gcgucgguca gcagccaaac aaucauagga aaugaaccuu uuauuuuuua ucuucuccuu 600

uccuuaaucu cggauuauca uuucccucuc cuaccuacca cgaaucgcag augauaaaca 660

agaggguaaa aagaaaaagg ucauuuuuau uuauccucau cgucaacaac aacuaccgac 720

aacaacgaaa caccaccaag aaugucaauc cgcaagggug uuccugcccc cucgacgcgc 780

cugucgcgau ccucauggcg aggaccgcga ucuccguaua gguagaugaa auuaucccgu 840

guccgguccu gauuccccgc augcccugca cauccugacg cgucggucag cagccaaaca 900

aucauaggaa augaaccuuu uauuuuuuau cuucuccuuu ccuuaaucuc ggauuaucau 960

uucccucucc uaccuaccac gaaucgcaga ugauaaacaa gaggguaaaa agaaaaaggu 1020

cauuuuuauu uauccucauc gucaacaaca acuaccgaca acaacgaaac accaccaaga 1080

augucaaucc gcaagggugu uccugccccc ucgacgcgcc ugucgcgauc cucauggcga 1140

ggaccgcgau cuccguauag guagaugaaa uuaucccgug uccgguccug auuccccgca 1200

ugcccugcac auccugacgc gucggucagc agccaaacaa ucauaggaaa ugaaccuuuu 1260

auuuuuuauc uucuccuuuc cuuaaucucg gauuaucauu ucccucuccu accuaccacg 1320

aaucgcagau gauaaacaag aggguaaaaa gaaaaa 1356

<210> 78
<211> 3198
<212> RNA
<213> Artificial sequence

<220>
<223> gGFP_beta2.7_core

<400> 78
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ggcgacguaa acggccacaa guucagcgug uccggcgagg gcgagggcga ugccaccuac 120

ggcaagcuga cccugaaguu caucugcacc accggcaagc ugcccgugcc cuggcccacc 180

cucgugacca cccugaccua cggcgugcag ugcuucagcc gcuaccccga ccacaugaag 240

cagcacgacu ucuucaaguc cgccaugccc gaaggcuacg uccaggagcg caccaucuuc 300

uucaaggacg acggcaacua caagacccgc gccgagguga aguucgaggg cgacacccug 360

gugaaccgca ucgagcugaa gggcaucgac uucaaggagg acggcaacau ccuggggcac 420

aagcuggagu acaacuacaa cagccacaac gucuauauca uggccgacaa gcagaagaac 480

ggcaucaagg ugaacuucaa gauccgccac aacaucgagg acggcagcgu gcagcucgcc 540

gaccacuacc agcagaacac ccccaucggc gacggccccg ugcugcugcc cgacaaccac 600

uaccugagca cccaguccgc ccugagcaaa gaccccaacg agaagcgcga ucacaugguc 660

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agaagaugga ggagccgaga ugacaacggc agucguggaa gggucgccaa gccccggucc 900

uucucuucug ucuggucgaa ucucguuuuc uuuuuucaac cgcucuuuuu aucaccuuuu 960

uaugugaguu ucucuuccgc gucucccggc cguaccaucc acccaugcag caugcacgcg 1020

uguauguaug caucgucucu ccuccguccc gacuaccauc agcagcacca cuaccgccac 1080

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cuccuuuccu uaaucucgga uuaucauuuc ccucuccuac cuaccacgaa ucgcagauga 1260

uaaacaagag gguaaaaaga aaaaagcuac agacauuugg guaccucagc uuuccgauaa 1320

cucgaagaau ucaaagucga cgauucccaa caagagaaaa cagaacaaaa acaaggucau 1380

uuuuauuuau ccucaucguc aacaacaacu accgacaaca acgaaacacc accaagaaug 1440

ucaauccgca aggguguucc ugccccccucg acgcgccugu cgcgauccuc auggcgagga 1500

ccgcgaucuc cguauaggua gaugaaauua ucccgugucc gguccugauu ccccgcaugc 1560

ccugcacauc cugacgcguc ggucagcagc caaacaauca uaggaaauga accagaagaa 1620

caaaaagauc aucucucucg guguauagca acaccaacaa caaccgcauc gcaacaucuu 1680

cauccgcaag acggaaagaa aacaacaaua augagaauga aaucaccaca accaagccag 1740

auuucacguc caugaguuuu uauuauauua uuaucaaaac gaaaaacaga aaaacuguca 1800

uagauaaaua uaaaaaaaaa uagaaaccac aaacgacuac uaguacucca aucuuagaug 1860

uauaugcucc uagauaagau uuaguauuac cauaaucauc gaagaaugaa agacgacgau 1920

gauuccuuac cgcuccugcc acccggucug uauguagaga gagaagagag aaaacgguga 1980

auccaagauc cccgggucgg cgucggcaug ccgcugaucg caguggcccc accucggcau 2040

gccggcgccg ggcgaggaau ugcucaugaa aaaaguaucu uucuguaaaa aaagaaaaca 2100

auacaugauu aaccgaaaag aaaccaacaa aaagaacccg agaucagucg auuucgauca 2160

cuacgauaaa cacauggaag auuucuugaa aaaagaaaag agaaagagac caccuucccg 2220

gcggcggaca cgcuccucuc cgucgccguu cugcaccaug auucgaucaa uaacaacauc 2280

aucaucggag accaucuuuu aaucaaucag cguugcagua gucgacuccc uggacacgaa 2340

ggagucaucc auuuuuaucc ucgcacuucu ucgcucucaa agccgccuuu aaaguugaaa 2400

ugaaaggaug gaaacaugga auacaguuuu aauugcacgu aucaccauuu uacuacaaaa 2460

agaaaaaaaa acaacuuaca cauaguauua ccuuagguuu acggauaagu agaguguagg 2520

cguuuuugaa acaguucagc caaugcaauc uugucucggc auaaucacuc uuucugcaua 2580

uaauaguagu aguagauuua uucacaucaa cacagcgaaa aacuccagca ucaaaguaca 2640

ccuagagaca gcccuuaaaa uauaguuugc agcuuuuaga uguacuuaca ccaaagaaga 2700

uuaccguccu uacgagaaaa cagauacucg gauauaggaa ucaagacagc ucugcacuga 2760

aaacacacuc uccugucacg acaccgcgcc acaccagagg cguacgcgug acuucaucgc 2820

aacgauccau cgugaugucc cucgcagaac cuaaaaagac caaaaaaaaa ucuuggacca 2880

caguugucga uucuugaaga caauauucuc gugagaacuu ugagauucgc acuugaaacc 2940

ucuuaggauc cacaaaaaca acaaccucug uauggaaaau gcgcuauuuu aucucagcuu 3000

uucucccaaa ccucgguuuc uuccuauucu uaaguuuucc cuaguauauu ugccuccuua 3060

uaagaaaaga agcacaagcu cggucgcacg gauuauuccu ucugcuaauc uauuauuuug 3120

uuccuuuuuu uuuuguuugc cuucaccccc uucacucccu guagcaacac agaguaguag 3180

acacaauaaa ugagaagu 3198

<210> 79
<211> 3198
<212> RNA
<213> Artificial sequence

<220>
<223> gGFP_s_beta2.7_core

<400> 79
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ggcaagcuga cccugaaguu caucugcacc accggcaagc ugcccgugcc cuggcccacc 180

cucgugacca cccugaccua cggcgugcag ugcuucagcc gcuaccccga ccacaugaag 240

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aagcuggagu acaacuacaa cagccacaac gucuauauca uggccgacaa gcagaagaac 480

ggcaucaagg ugaacuucaa gauccgccac aacaucgagg acggcagcgu gcagcucgcc 540

gaccacuacc agcagaacac ccccaucggc gacggccccg ugcugcugcc cgacaaccac 600

uaccugagca cccaguccgc ccugagcaaa gaccccaacg agaagcgcga ucacaugguc 660

cugcuggagu ucgugaccgc cgccgggauc acucucggca uggacgagcu guacaaguga 720

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agaagaugga ggagccgaga ugacaacggc agucguggaa gggucgccaa gccccggucc 900

uucucuucug ucuggucgaa ucucguuuuc uuuuuucaac cgcucuuuuu aucaccuuuu 960

uaugugaguu ucucuuccgc gucucccggc cguaccaucc acccaugcag caugcacgcg 1020

uguauguaug caucgucucu ccuccguccc gacuaccauc agcagcacca cuaccgccac 1080

ccccagcgcc accaccgcug ccgucgccac cgcguuaucc guuccucgua ggcugguccu 1140

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cuccuuuccu uaaucucgga uuaucauuuc ccucuccuac cuaccacgaa ucgcagauga 1260

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uuuuauuuau ccucaucguc aacaacaacu accgacaaca acgaaacacc accaagaaug 1440

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uagauaaaua uaaaaaaaaa uagaaaccac aaacgacuac uaguacucca aucuuagaug 1860

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uucucccaaa ccucgguuuc uuccuauucu uaaguuuucc cuaguauauu ugccuccuua 3060

uaagaaaaga agcacaagcu cggucgcacg gauuauuccu ucugcuaauc uauuauuuug 3120

uuccuuuuuu uuuuguuugc cuucaccccc uucacucccu guagcaacac agaguaguag 3180

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<212> RNA
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cucgugacca cccugaccua cggcgugcag ugcuucagcc gcuaccccga ccacaugaag 240

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aagcuggagu acaacuacaa cagccacaac gucuauauca uggccgacaa gcagaagaac 480

ggcaucaagg ugaacuucaa gauccgccac aacaucgagg acggcagcgu gcagcucgcc 540

gaccacuacc agcagaacac ccccaucggc gacggccccg ugcugcugcc cgacaaccac 600

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uuccuuuuuu uuuuguuugc cuucaccccc uucacucccu guagcaacac agaguaguag 3180

acacaauaaa ugagaagu 3198

<210> 81
<211> 720
<212> RNA
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<220>
<223> mtGFP_s_core

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cagcacgacu ucuucaaguc cgccaugccc gaaggcuacg uccaggagcg caccaucuuc 300

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aagcuggagu acaacuacaa cagccacaac gucuauauca uggccgacaa gcagaagaac 480

ggcaucaagg ugaacuucaa gauccgccac aacaucgagg acggcagcgu gcagcucgcc 540

gaccacuacc agcagaacac ccccaucggc gacggccccg ugcugcugcc cgacaaccac 600

uaccugagca cccaguccgc ccugagcaaa gaccccaacg agaagcgcga ucacaugguc 660

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<210> 82
<211> 2589
<212> RNA
<213> Artificial sequence

<220>
<223> asATP6_s6_ beta2.7_core

<400> 82
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cgcugcugcc ccggcguucu ccagaagccc cggcgggcga aucggccggc uggucggucg 180

gcgcucggac ggaugggggag aacggcggug acuuagccgc ccguggccgg gagaagaugg 240

aggagccgag augacaacgg cagucgugga agggucgcca agccccgguc cuucucuucu 300

gucuggucga aucucguuuu cuuuuuucaa ccgcucuuuu uaucaccuuu uuaugugagu 360

uucucuuccg cgucucccgg ccguaccauc cacccaugca gcaugcacgc guguauguau 420

gcaucgucuc uccuccgucc cgacuaccau cagcagcacc acuaccgcca cccccagcgc 480

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gucggcggcc ggucggcuuc uguuuuauua uuuuuuuuua uuuuuuaucu ucuccuuucc 600

uuaaucucgg auuaucauuu cccucuccua ccuaccacga aucgcagaug auaaacaaga 660

ggguaaaaag aaaaaagcua cagacauuug gguaccucag cuuuccgaua acucgaagaa 720

uucaaagucg acgauuccca acaagagaaa acagaacaaa aacaagguca uuuuuauuua 780

uccucaucgu caacaacaac uaccgacaac aacgaaacac caccaagaau gucaauccgc 840

aaggguguuc cugccccuc gacgcgccug ucgcgauccu cauggcgagg accgcgaucu 900

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aagcacaagc ucggucgcac ggauuauucc uucugcuaau cuauuauuuu guuccuuuuu 2520

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augagaagu 2589

<210> 83
<211> 2585
<212> RNA
<213> Artificial sequence

<220>
<223> beta2.7_s8_asATP8_core

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agaagaugga ggagccgaga ugacaacggc agucguggaa gggucgccaa gccccggucc 180

uucucuucug ucuggucgaa ucucguuuuc uuuuuucaac cgcucuuuuu aucaccuuuu 240

uaugugaguu ucucuuccgc gucucccggc cguaccaucc acccaugcag caugcacgcg 300

uguauguaug caucgucucu ccuccguccc gacuaccauc agcagcacca cuaccgccac 360

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cuccuuuccu uaaucucgga uuaucauuuc ccucuccuac cuaccacgaa ucgcagauga 540

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uuuuauuuau ccucaucguc aacaacaacu accgacaaca acgaaacacc accaagaaug 720

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uaauaguagu aguagauuua uucacaucaa cacagcgaaa aacuccagca ucaaaguaca 1920

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gauga 2585

<210> 84
<211> 1466
<212> RNA
<213> Artificial sequence

<220>
<223> ATP6_D34_D24 (core)

<400> 84
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auuuauccuc aucgucaaca acaacuaccg acaacaacga aacaccacca agaaugucaa 180

uccgcaaggg uguuccugcc cccucgacgc gccugucgcg auccucaugg cgaggaccgc 240

gaucuccgua uagguagaug aaauuauccc guguccgguc cugauucccc gcaugcccug 300

cacauccuga cgcgucgguc agcagccaaa caaucauagg aaaugaaccg gucauuuuua 360

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ccgcaagggu guuccugccc ccucgacgcg ccugucgcga uccucauggc gaggaccgcg 480

aucuccguau agguagauga aauuaucccg uguccggucc ugauuccccg caugcccugc 540

acauccugac gcgucgguca gcagccaaac aaucauagga aaugaaccgg ucauuuuuau 600

uuauccucau cgucaacaac aacuaccgac aacaacgaaa caccaccaag aaugucaauc 660

cgcaagggug uuccugcccc cucgacgcgc cugucgcgau ccucauggcg aggaccgcga 720

ucuccguaua gguagaugaa auuaucccgu guccgguccu gauuccccgc augcccugca 780

cauccugacg cgucggucag cagccaaaca aucauaggaa augaaccggu cauuuuuauu 840

uauccucauc gucaacaaca acuaccgaca acaacgaaac accaccaaga augucaaucc 900

gcaagggugu uccugccccc ucgacgcgcc ugucgcgauc cucauggcga ggaccgcgau 960

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auccugacgc gucggucagc agccaaacaa ucauaggaaa ugaaccuuuu auuuuuuauc 1080

uucuccuuuc cuuaaucucg gauuaucauu ucccucuccu accuaccacg aaucgcagau 1140

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accuaccacg aaucgcagau gauaaacaag aggguaaaaa gaaaaauuuu auuuuuuauc 1380

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<210> 85
<211> 1741
<212> RNA
<213> Artificial sequence

<220>
<223> Sequence of the in vitro transcribed ATP6_(D3)4_(D2)4 RNA

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aagguuaaug guugauauug cuagggggc gcuuccaauu aggugcauga guagguggcc 120

ugcaguaaug uuaaagcaag ggccuuauuc augggcuagc ccggcgguca uuuuuauuua 180

uccucaucgu caacaacaac uaccgacaac aacgaaacac caccaagaau gucaauccgc 240

aaggguguuc cugcccccuc gacgcgccug ucgcgauccu cauggcgagg accgcgaucu 300

ccguauaggu agaugaaauu aucccguguc cgguccugau uccccgcaug cccugcacau 360

ccugacgcgu cggucagcag ccaaacaauc auaggaaaug aaccgccggg aagcgccgaa 420

uucauaucga ucggucauuu uuauuuaucc ucaucgucaa caacaacuac cgacaacaac 480

gaaacaccac caagaauguc aauccgcaag gguguuccug cccccucgac gcgccugucg 540

cgauccucau ggcgaggacc gcgaucuccg uauagguaga ugaaauuauc ccguguccgg 600

uccugauucc ccgcaugccc ugcacauccu gacgcgucgg ucagcagcca aacaaucaua 660

ggaaaugaac cgaucgaaua aagguaccug uggggucauu uuuauuuauc cucaucguca 720

acaacaacua ccgacaacaa cgaaacacca ccaagaaugu caauccgcaa ggguguuccu 780

gcccccucga cgcgccuguc gcgauccuca uggcgaggac cgcgaucucc guauagguag 840

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cauuuuuauu uauccucauc gucaacaaca acuaccgaca acaacgaaac accaccaaga 1020

augucaaucc gcaagggugu uccugccccc ucgacgcgcc ugucgcgauc cucauggcga 1080

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ggaagcuuuc cggaagagcu agcuuuuauu uuuuaucuuc uccuuuccuu aaucucggau 1260

uaucauuucc cucuccuacc uaccacgaau cgcagaugau aaacaagagg guaaaaagaa 1320

aaaagcgcga auuccgaucu uuuauuuuuu aucuucuccu uuccuuaauc ucggauuauc 1380

auuucccucu ccuaccuacc acgaaucgca gaugauaaac aagaggguaa aaagaaaaag 1440

aucguauccg guaccugugg uuuuauuuuu uaucuucucc uuuccuuaau cucggauuau 1500

cauuucccuc uccuaccuac cacgaaucgc agaugauaaa caagagggua aaaagaaaaa 1560

ccacaccucc accggugggc cguuuuauuu uuuaucuucu ccuuuccuua aucucggauu 1620

aucauuuccc ucuccuaccu accacgaauc gcagaugaua aacaagaggg uaaaaagaaa 1680

aacggcccaa gcuugacucc uauaguguca ccuaaauguc uagauacuaa gggagucuug 1740

c 1741

<210> 86
<211> 1517
<212> RNA
<213> Artificial sequence

<220>
<223> Multimer (D3)4_(D2)4 RNA including domains D3 and D2 and spacers

<400> 86
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agaaugucaa uccgcaaggg uguuccugcc cccucgacgc gccugucgcg auccucaugg 120

cgaggaccgc gaucuccgua uagguagaug aaauuauccc guguccgguc cugauucccc 180

gcaugcccug cacauccuga cgcgucgguc agcagccaaa caaucauagg aaaugaaccg 240

ccgggaagcg ccgaauucau aucgaucggu cauuuuuauu uauccucauc gucaacaaca 300

acuaccgaca acaacgaaac accaccaaga augucaaucc gcaagggugu uccugccccc 360

ucgacgcgcc ugucgcgauc cucauggcga ggaccgcgau cuccguauag guagaugaaa 420

uuaucccgug uccgguccug auuccccgca ugcccugcac auccugacgc gucggucagc 480

agccaaacaa ucauaggaaa ugaaccgauc gaauaaaggu accuguгggg ucauuuuuau 540

uuauccucau cgucaacaac aacuaccgac aacaacgaaa caccaccaag aaugucaauc 600

cgcaagggug uuccugcccc cucgacgcgc cugucgcgau ccucauggcg aggaccgcga 660

ucuccguaua gguagaugaa auuaucccgu guccgguccu gauuccccgc augcccugca 720

cauccugacg cgucggucag cagccaaaca aucauaggaa augaacccca cauuuuaccg 780

guaauaccgg ggggucauuu uuauuuaucc ucaucgucaa caacaacuac cgacaacaac 840

gaaacaccac caagaauguc aauccgcaag gguguuccug cccccucgac gcgccugucg 900

cgauccucau ggcgaggacc gcgaucuccg uauagguaga ugaaauuauc ccguguccgg 960

uccugauucc ccgcaugccc ugcacauccu gacgcgucgg ucagcagcca aacaaucaua 1020

ggaaaugaac cccccggaag cuuuccggaa gagcuagcuu uuauuuuuua ucuucuccuu 1080

uccuuaaucu cggauuauca uuucccucuc cuaccuacca cgaaucgcag augauaaaca 1140

agaggguaaa aagaaaaaag cgcgaauucc gaucuuuuau uuuuuaucuu cuccuuuccu 1200

uaaucucgga uuaucauuuc ccucuccuac cuaccacgaa ucgcagauga uaaacaagag 1260

gguaaaaaga aaaagaucgu auccgguacc uguggguuua uuuuuuaucu ucuccuuucc 1320

uuaaucucgg auuaucauuu cccucuccua ccuaccacga aucgcagaug auaaacaaga 1380

ggguaaaaag aaaaaccaca ccuccaccgg uggggccguu uauuuuuuau cuucuccuuu 1440

ccuuaaucuc ggauuaucau uucccucucc uaccuaccac gaaucgcaga ugauaaacaa 1500

gaggguaaaa agaaaaa 1517

<210> 87
<211> 1356
<212> RNA
<213> Artificial sequence

<220>
<223> Multimer (D3)4_(D2)4 RNA core only including domains D3 and D2 but without any spacers

<400> 87
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agaaugucaa uccgcaaggg uguuccugcc cccucgacgc gccugucgcg auccucaugg 120

cgaggaccgc gaucuccgua uagguagaug aaauuauccc guguccgguc cugauucccc 180

gcaugcccug cacauccuga cgcgucgguc agcagccaaa caaucauagg aaaugaaccg 240

gucauuuuua uuuauccuca ucgucaacaa caacuaccga caacaacgaa acaccaccaa 300

gaaugucaau ccgcaagggu guuccugccc ccucgacgcg ccugucgcga uccucauggc 360

gaggaccgcg aucuccguau agguagauga aauuaucccg uguccggucc ugauuccccg 420

caugcccugc acauccugac gcgucgguca gcagccaaac aaucauagga aaugaaccgg 480

ucauuuuuau uuauccucau cgucaacaac aacuaccgac aacaacgaaa caccaccaag 540

aaugucaauc cgcaagggug uuccugcccc cucgacgcgc cugucgcgau ccucauggcg 600

aggaccgcga ucuccguaua gguagaugaa auuaucccgu guccgguccu gauuccccgc 660

augcccugca cauccugacg cgucggucag cagccaaaca aucauaggaa augaaccggu 720

cauuuuuauu uauccucauc gucaacaaca acuaccgaca acaacgaaac accaccaaga 780

augucaaucc gcaagggugu uccugcccc ucgacgcgcc ugucgcgauc cucauggcga 840

ggaccgcgau cuccguauag guagaugaaa uuaucccgug uccgguccug auuccccgca 900

ugcccugcac auccugacgc gucggucagc agccaaacaa ucauaggaaa ugaaccuuuu 960

auuuuuuauc uucuccuuuc cuuaaucucg gauuaucauu ucccucuccu accuaccacg 1020

aaucgcagau gauaaacaag aggguaaaaa gaaaaauuuu auuuuuuauc uucuccuuuc 1080

cuuaaucucg gauuaucauu ucccucuccu accuaccacg aaucgcagau gauaaacaag 1140

aggguaaaaa gaaaaauuuu auuuuuuauc uucuccuuuc cuuaaucucg gauuaucauu 1200

ucccucuccu accuaccacg aaucgcagau gauaaacaag aggguaaaaa gaaaaauuuu 1260

auuuuuuauc uucuccuuuc cuuaaucucg gauuaucauu ucccucuccu accuaccacg 1320

aaucgcagau gauaaacaag aggguaaaaa gaaaaa 1356