SEQUENCE LISTING

<110> CureVac GmbH

<120> Methods for enhancing RNA production

<130> CU01P165WO2

<160> 6

<170> PatentIn version 3.5

<210> 1
<211> 589
<212> RNA
<213> Artificial Sequence

<220>
<223> G/C optimized mRNA sequence of R1871 coding for Homo sapiens prostate stem cell antigen (HsPSCA)

<400> 1
gggagaaagc uuaccaugaa ggccgugcug cucgcgcugc ugauggccgg ccuggcccug 60

cagccgggga ccgcccugcu gugcuacagc ugcaaggccc aggucucgaa cgaggacugc 120

cugcaggugg agaacugcac gcagcugggc gagcagugcu ggaccgcccg gauccgcgcc 180

gugggccugc ucaccgugau cagcaagggc ugcagccuga acugcgugga cgacagccag 240

gacuacuacg ugggcaagaa gaacaucacc ugcugcgaca ccgaccugug caacgccagc 300

ggcgcccacg cccugcagcc cgcggccgcc auccuggccc ugcugcccgc ccugggccug 360

cugcucuggg gccccggcca gcugugacca cuaguuauaa gacugacuag cccgaugggc 420

cucccaacgg gcccuccucc ccuccuugca ccgagauuaa uaaaaaaaaa aaaaaaaaaa 480

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaugcau cccccccccc 540

cccccccccc cccccccccc caaaggcucu uuucagagcc accagaauu 589

<210> 2
<211> 1870
<212> RNA
<213> Artificial Sequence

<220>
<223> G/C optimized mRNA sequence of R2988 coding for Photinus pyralis luciferase (PpLuc)

<400> 2

gggagaaagc uuaccaugga ggacgccaag aacaucaaga agggcccggc gcccuucuac 60

ccgcuggagg acgggaccgc cggcgagcag cuccacaagg ccaugaagcg guacgcccug 120

gugccgggca cgaucgccuu caccgacgcc cacaucgagg ucgacaucac cuacgcggag 180

uacuucgaga ugagcgugcg ccuggccgag gccaugaagc gguacggccu gaacaccaac 240

caccggaucg uggugugcuc ggagaacagc cugcaguucu ucaugccggu gcugggcgcc 300

cucuucaucg gcguggccgu cgccccggcg aacgacaucu acaacgagcg ggagcugcug 360

aacagcaugg ggaucagcca gccgaccgug guguucguga gcaagaaggg ccugcagaag 420

auccugaacg ugcagaagaa gcugcccauc auccagaaga ucaucaucau ggacagcaag 480

accgacuacc agggcuucca gucgauguac acguucguga ccagccaccu cccgccgggc 540

uucaacgagu acgacuucgu cccggagagc uucgaccggg acaagaccau cgcccugauc 600

augaacagca gcggcagcac cggccugccg aagggggugg cccugccgca ccggaccgcc 660

ugcgugcgcu ucucgcacgc ccgggacccc aucuucggca accagaucau cccggacacc 720

gccauccuga gcguggugcc guuccaccac ggcuucggca uguucacgac ccugggcuac 780

cucaucugcg gcuuccgggu gguccugaug uaccgguucg aggaggagcu guuccugcgg 840

agccugcagg acuacaagau ccagagcgcg cugcucgugc cgacccuguu cagcuucuuc 900

gccaagagca cccugaucga caaguacgac cugucgaacc ugcacgagau cgccagcggg 960

ggcgccccgc ugagcaagga ggugggcgag gccguggcca agcgguucca ccucccgggc 1020

auccgccagg gcuacggccu gaccgagacc acgagcgcga uccugaucac ccccgagggg 1080

gacgacaagc cgggcgccgu gggcaaggug gucccguucu ucgaggccaa ggugguggac 1140

cuggacaccg gcaagacccu gggcgugaac cagcggggcg agcugugcgu gcgggggccg 1200

augaucauga gcggcuacgu gaacaacccg gaggccacca acgcccucau cgacaaggac 1260

ggcuggcugc acagcggcga caucgccuac ugggacgagg acgagcacuu cuucaucguc 1320

gaccggcuga agucgcugau caaguacaag ggcuaccagg uggcgccggc cgagcuggag 1380

agcauccugc uccagcaccc caacaucuuc gacgccggcg uggccgggcu gccggacgac 1440

gacgccggcg agcugccggc cgcgguggug gugcuggagc acggcaagac caugacggag 1500

aaggagaucg ucgacuacgu ggccagccag gugaccaccg ccaagaagcu gcggggcggc 1560

gugguguucg uggacgaggu cccgaagggc cugaccggga agcucgacgc ccggaagauc 1620

cgcgagaucc ugaucaaggc caagaagggc ggcaagaucg ccgugugagg acuaguuaua 1680

agacugacua gcccgauggg ccucccaacg ggcccuccuc cccuccuugc accgagauua 1740

auaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1800

aaaaaaugca uccccccccc cccccccccc cccccccccc ccaaaggcuc uuuucagagc 1860

caccagaauu 1870

<210> 3
<211> 5337
<212> RNA
<213> Artificial Sequence

<220>
<223> G/C optimized mRNA sequence of R1626 coding for Homo sapiens Mucin-1 signal peptide/epidermal growth factor receptor/Mucin-1 fusion protein (EGFR/Mucin-1)

<400> 3
gggagaaagc uuaccaugac ccccggcacc cagagcccgu ucuuccugcu ccugcugcuc 60

acggugcuga ccgucgugac cgggaugcgg ccgagcggca ccgccggggc ggcccugcuc 120

gcccugcugg ccgcccugug ccccgccucg cgcgcgcugg aggagaagaa ggugugccag 180

ggcacgagca acaagcugac ccagcucggc accuucgagg accacuuccu gagccugcag 240

cggauguuca acaacugcga ggucgugcug ggcaaccugg agaucaccua cgugcagcgg 300

aacuacgacc ugagcuuccu caagaccauc caggaggugg ccggcuacgu gcugaucgcc 360

cugaacaccg uggagcggau cccgcuggag aaccugcaga ucauccgggg caacauguac 420

uacgagaaca gcuacgcccu ggccguccuc agcaacuacg acgccaacaa gacggggcug 480

aaggagcugc cgaugcggaa ccugcaggag auccugcacg gcgcggugcg cuucucgaac 540

aacccggccc ugugcaacgu ggagagcauc caguggcggg acaucgugag cagcgacuuc 600

cucagcaaca ugagcaugga cuuccagaac caccugggcu cgugccagaa gugcgacccg 660

agcugcccga acggcagcug cuggggcgcc ggcgaggaga acugccagaa gcugaccaag 720

aucaucugcg cccagcagug cagcgggcgg ugccggggca agagccccag cgacugcugc 780

cacaaccagu gcgccgccgg cugcaccggc ccgcgggagu cggacugccu ggugugccgg 840

aaguuccgcg acgaggcgac cugcaaggac accugcccgc cgcugaugcu guacaacccg 900

accacguacc agauggacgu gaacccggag ggcaaguaca gcuucggcgc caccugcguc 960

aagaagugcc cccggaacua cguggugacc gaccacggga gcugcgugcg ggccugcggc 1020

gccgacagcu acgagaugga ggaggacggc gugcggaagu gcaagaagug cgagggcccg 1080

ugccggaagg ugugcaacgg caucggcauc ggggaguuca aggacagccu cagcaucaac 1140

gccaccaaca ucaagcacuu caagaacugc accucgauca gcggcgaccu gcacauccug 1200

ccggucgccu uccggggcga cagcuucacc cacacgccgc cgcuggaccc gcaggagcug 1260

gacauccuga agaccgugaa ggagaucacc ggcuuccucc ugauccaggc guggcccgag 1320

aaccgcaccg accugcacgc cuucgagaac cuggagauca uccggggccg gaccaagcag 1380

cacggccagu ucagccuggc cguggugagc cugaacauca ccagccucgg gcugcggucg 1440

cugaaggaga ucagcgacgg cgacgugauc aucagcggca acaagaaccu gugcuacgcc 1500

aacacgauca acuggaagaa gcuguucggc accagcggcc agaagaccaa gaucaucagc 1560

aaccggggcg agaacagcug caaggccacc gggcaggugu gccacgcccu gugcucgccg 1620

gagggcugcu ggggcccgga gccgcgggac ugcgucagcu gccgcaacgu gagccggggc 1680

cgggagugcg uggacaagug caaccuccug gagggcgagc cgcgggaguu cguggagaac 1740

agcgagugca uccagugcca cccggagugc cugccccagg cgaugaacau caccugcacc 1800

ggccgggggc cggacaacug cauccagugc gcccacuaca ucgacggccc gcacugcgug 1860

aagacgugcc cggccggcgu gaugggcgag aacaacaccc uggucuggaa guacgccgac 1920

gccggccacg ugugccaccu gugccacccg aacugcaccu acggcugcac cgggccgggc 1980

cuggagggcu gccccaccaa cggcccgaag aucccgagca ucgccaccgg caugguggggc 2040

gcgcuccugc ugcugcuggu gguggcccug gggaucggcc ucuucaugcg gcgccggcac 2100

aucgugcgga agcggacgcu gcggcggcug cugcaggagc gcgagcuggu cgagccgcug 2160

accccgagcg gcgaggcccc gaaccaggcc cuccugcgga uccugaagga gaccgaguuc 2220

aagaagauca aggugcuggg cucgggcgcc uucggcaccg uguacaaggg gcuguggauc 2280

cccgagggcg agaaggugaa gaucccggug gccaucaagg agcugcggga ggcgaccagc 2340

ccgaaggcca acaaggagau ccucgacgag gccuacguga uggccagcgu cgacaacccg 2400

cacgugugcc ggcugcuggg caucugccug accagcacgg ugcagcugau cacccagcug 2460

augccguucg gcugccuccu ggacuacgug cgggagcaca aggacaacau cggcagccag 2520

uaccugcuga acuggugcgu gcagaucgcc aagggcauga acuaccugga ggaccggcgc 2580

cuggugcacc gggaccucgc cgcgcggaac guccugguga agaccccgca gcacgugaag 2640

aucaccgacu ucgggcuggc caagcugcug ggcgccgagg agaaggagua ccacgccgag 2700

ggcggcaagg ugcccaucaa guggauggcc cuggagagca uccuccaccg gaucuacacc 2760

caccagucgg acguguggag cuacggcgug accgucuggg agcugaugac guucggcagc 2820

aagccguacg acgggauccc ggccagcgag aucagcagca uccuggagaa gggcgagcgg 2880

cugccgcagc cgccgaucug caccaucgac guguacauga ucauggugaa gugcuggaug 2940

aucgacgcgg acucgcggcc caaguuccgc gagcugauca ucgaguucag caagauggcc 3000

cgggacccgc agcgguaccu ggugauccag ggcgacgagc ggaugcaccu cccgagcccg 3060

accgacagca acuucuaccg ggcccugaug gacgaggagg acauggacga cgugguggac 3120

gccgacgagu accugauccc gcagcagggc uucuucagca gcccgucgac cagccggacc 3180

ccgcugcuga gcagccugag cgccaccagc aacaacucga cggucgccug caucgaccgc 3240

aacggccucc agagcugccc caucaaggag gacagcuucc ugcagcggua cagcagcgac 3300

ccgaccggcg cgcugaccga ggacagcauc gacgacaccu uccugccggu gccggaguac 3360

aucaaccagu cggugccgaa gcggcccgcc gggagcgugc agaacccggu guaccacaac 3420

cagccgcuga acccggcccc gagccgggac ccgcacuacc aggaccccca cagcaccgcc 3480

gugggcaacc cggaguaccu gaacaccguc cagccgacgu gcgugaacag caccuucgac 3540

agcccggccc acugggccca gaagggcucg caccagauca gccucgacaa cccggacuac 3600

cagcaggacu ucuucccgaa ggaggcgaag cccaacggca ucuucaaggg cagcaccgcc 3660

gagaacgccg aguaccugcg gguggccccg cagagcagcg aguucaucgg cgccuccggc 3720

cacgccagcu ccacccccgg gggcgagaag gagacgagcg ccacccagcg guccagcgug 3780

cccuccagca ccgagaagaa cgcggucucc augaccagcu ccgugcugag cucccacagc 3840

cccggguccg gcagcuccac gacccagggc caggacguga cccucgcccc ggccaccgag 3900

cccgccagcg gguccgccgc gacgugggggc caggacguca ccagcgugcc cgugacccgc 3960

cccgcccugg ggagcaccac gccgcccgcc cacgacguca ccuccgcccc cgacaacaag 4020

cccgcgccgg gcagcaccgc ccccccccgcc cacgggguga ccuccgcccc cgacacgcgg 4080

ccggcccccg gcagcaccgc gccccccgcc cacggcguga ccuccgcccc ggacacccgc 4140

ccggcccccg gcagcaccgc ccccccccgcc cacgggguga ccuccgcccc ggacacgcgg 4200

cccgcccccg gcagcaccgc cccgcccgcc cacggcguca cguccgcgcc cgacaaccgc 4260

cccgcccugg ggagcaccgc cccgcccgug cacaacguga ccuccgccag cggcuccgcg 4320

agcggguccg ccagcacccu cguccacaac ggcacguccg cccgggccac caccaccccc 4380

gccagcaagu ccacgcccuu cagcaucccg ucccaccaca gcgacacccc caccacccug 4440

gcgucccaca gcacgaagac cgacgccucc agcacccacc acuccagcgu gcccccgcug 4500

accagcucca accacagcac gucccgcag cucagcaccg ggguguccuu cuucuuccug 4560

agcuuccaca ucuccaaccu gcaguucaac agcucccucg aggaccccag caccgacuac 4620

uaccaggagc ugcagcggga caucuccgag auguuccugc agaucuacaa gcagggcggc 4680

uuccucgggc ugagcaacau caaguuccgc cccggcuccg ucguggugca gcugacccuc 4740

gccuuccggg aggggacgau caacguccac gacguggaga cccaguucaa ccaguacaag 4800

accgaggccg ccagccgcua caaccugacc aucuccgacg ugagcgucuc cgacgugccc 4860

uucccguuca gcgcgcaguc cggcgccggc gugcccgggg ccgugugcca gugccggcgc 4920

aagaacuacg ggcagcucga caucuucccc gcccgggaca cguaccaccc gaugagcgag 4980

uacccgaccu accacaccca cggccgcuac gucccccccа gcuccaccga ccggagcccc 5040

uacgagaagg uguccgccgg gaacggcggc agcucccuga gcuacaccaa cccggcggug 5100

gccgccgccu ccgccaaccu ggaggaccag guggaccccc ggcugaucga cggcaaguga 5160

ggacuaguua uaagacugac uagcccgaug ggccucccaa cgggcccucc uccccuccuu 5220

gcaccgagau uaauaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 5280

aaaaaaaaaa aaaaaaaaua uucccccccc cccccccccc cccccccccc ccucuag 5337

<210> 4
<211> 547
<212> RNA
<213> Artificial Sequence

<220>
<223> Non-coding immunostimulatory RNA sequence of R2025

<400> 4
gggagaaagc ucaagcuuau ccaaguaggc uggucaccug uacaacguag ccgguauuuu 60

uuuuuuuuuu uuuuuuuuga ccgucucaag guccaaguua gucugccuau aaaggugcgg 120

auccacagcu gaugaaagac uugugcggua cgguuaaucu ccccuuuuuu uuuuuuuuuu 180

uuuuuaguaa augcgucuac ugaauccagc gaugaugcug gcccagaucu ucgaccacaa 240

gugcauauag uagucaucga gggucgccuu uuuuuuuuuu uuuuuuuuuu uggcccaguu 300

cugagacuuc gcuagagacu acaguuacag cugcaguagu aaccacugcg gcuauugcag 360

gaaaucccgu ucagguuuuu uuuuuuuuuu uuuuuuccgc ucacuaugau uaagaaccag 420

guggaguguc acugcucucg aggucucacg agagcgcucg auacaguccu uggaagaauc 480

uuuuuuuuuu uuuuuuuuuu uugugcgacg aucacagaga acuucuauuc augcaggucu 540

gcucuag 547

<210> 5
<211> 52
<212> RNA
<213> Artificial Sequence

<220>
<223> hammerhead ribozyme HHNUH2d

<400> 5
gcauggcuga ugaggccucg accgauaggu cgaggccgaa aagcuuucuc cc 52

<210> 6
<211> 2083
<212> RNA
<213> Artificial Sequence

<220>
<223> G/C optimized mRNA sequence encoding HA from Influenza A H1N1 (Netherlands 2009)

<400> 6
ggggcgcugc cuacggaggu ggcagccauc uccuucucgg caucaagcuu accaugaagg 60

ccauccuggu gguccuccug uacaccuucg ccaccgcgaa cgccgacacg cugugcaucg 120

gcuaccacgc caacaacagc accgacaccg uggacaccgu gcucgagaag aacgucacgg 180

ugacccacuc cgugaaccug cuggaggaca agcacaacgg gaagcucugc aagcugcggg 240

gcgucgcccc gcugcaccuc gggaagugca acaucgccgg cuggauccug gggaacccgg 300

agugcgagag ccuguccacc gcgagcuccu ggagcuacau cguggagacc uccagcuccg 360

acaacggcac gugcuacccc ggcgacuuca ucgacuacga ggagcuccgc gagcagcuga 420

gcuccgugag cuccuucgag cgguucgaga ucuuccccaa gaccagcucc uggcccaacc 480

acgacagcaa caaggggguc accgccgccu gcccgcacgc cggcgcgaag uccuucuaca 540

agaaccugau cuggcucgug aagaagggga acagcuaccc caagcugucc aagagcuaca 600

ucaacgacaa gggcaaggag gugcuggucc ucugggggau ccaccacccc agcaccuccg 660

ccgaccagca gagccuguac cagaacgccg acgccuacgu guucgugggc uccagccgcu 720

acuccaagaa guucaagccc gagaucgcca uccggccgaa gguccgcgac caggagggcc 780

ggaugaacua cuacuggacg cugguggagc ccggggacaa gaucaccuuc gaggcgaccg 840

gcaaccucgu gguccccgc uacgccuucg ccauggagcg gaacgccggg agcggcauca 900

ucaucuccga cacccccgug cacgacugca acacgaccug ccagaccccg aagggcgcca 960

ucaacaccag ccugcccuuc cagaacaucc accccaucac gaucgggaag ugccccaagu 1020

acgugaaguc caccaagcug cgccucgcga ccggccugcg gaacgucccg agcauccagu 1080

cccgcgggcu guucggcgcc aucgccgggu ucaucgaggg cggcuggacc gggauggugg 1140

acggcuggua cggguaccac caccagaacg agcagggcag cggguacgcc gccgaccuca 1200

aguccacgca gaacgcgauc gacgagauca ccaacaaggu gaacagcguc aucgagaaga 1260

ugaacaccca guucaccgcc gugggcaagg aguucaacca ccuggagaag cggaucgaga 1320

accugaacaa gaaggucgac gacggcuucc ucgacaucug gacguacaac gccgagcugc 1380

uggugcuccu ggagaacgag cgcacccugg acuaccacga cuccaacgug aagaaccucu 1440

acgagaaggu ccggagccag cugaagaaca acgccaagga gaucgggaac ggcugcuucg 1500

aguucuacca caagugcgac aacaccugca uggaguccgu gaagaacggg accuacgacu 1560

accccaagua cagcgaggag gccaagcuga accgcgagga gaucgacggc gugaagcucg 1620

aguccacgcg gaucuaccag auccuggcga ucuacagcac cgucgccagc ucccuggugc 1680

ucguggucag ccuggggcc aucuccuucu ggaugugcag caacggcucc cugcagugcc 1740

gcaucugcau cugaccacua gugcaucaca uuuaaaagca ucucagccua ccaugagaau 1800

aagagaaaga aaaugaagau caauagcuua uucaucucuu uuucuuuuuc guugguguaa 1860

agccaacacc cugucuaaaa aacauaaauu ucuuuaauca uuuugccucu uuucucugug 1920

cuucaauuaa uaaaaaaugg aaagaaccua gaucuaaaaa aaaaaaaaaa aaaaaaaaaa 1980

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaau gcaucccccc cccccccccc 2040

cccccccccc cccccaaagg cucuuuucag agccaccaga auu 2083