

SEQUENCE LISTING

<110> CureVac GmbH

<120> Use of PEI for the improvement of endosomal release and expression of transfected nucleic acids, complexed with cationic or polycationic compounds

<130> CU01P078WO

<160> 19

<170> PatentIn version 3.5

<210> 1

<211> 1863

<212> RNA

<213> Artificial sequence

<220>

<223> Description of artificial sequence: GC enriched luciferase encoding mRNA termed "pCV19-Pp luc(GC)-muag-A70-C30"

<400> 1

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ggugccgggc acgaucgccu ucaccgacgc ccacaucgag gucgacauca ccuacgcgga	180
guacuucgag augagcgugc gccuggccga ggccaugaag cgguacggcc ugaacaccaa	240
ccaccggauc guggugugcu cggagaacag ccugcaguuc uucaugccgg ugcugggcgc	300
ccucuucauc ggcguggccg ucgccccggc gaacgacauc uacaacgagc gggagcugcu	360
gaacagcaug gggaucaagg agccgaccgu gguguucgug agcaagaagg gccugcagaa	420
gauccugaac gugcagaaga agcugcccau cauccagaag aucaucauca uggacagcaa	480
gaccgacuac cagggcuucc agucgaugua cacguucgug accagccacc ucccgccggg	540
cuucaacgag uacgacuucg ucccggagag cuucgaccgg gacaagacca ucgcccugau	600
caugaacagc agcggcagca ccggccugcc gaagggggug gccugccgc accggaccgc	660
cugcgugcgc uucucgcacg cccgggaccc caucuucggc aaccagauca ucccggacac	720
cgccauccug agcguuggug cguuccacca cggcuucggc auguucacga cccugggcua	780
ccucaucugc ggcuuccggg ugguccugau guaccgguuc gaggaggagc uguuccugcg	840
gagccugcag gacuacaaga uccagagcgc gcugcucgug ccgaccucugu ucagcuucuu	900
cgccaagagc acccugaucg acaaguacga ccugucgaac cugcacgaga ucgccagcgg	960
gggcgccccg cugagcaagg agguuggcga ggccguggcc aagcggguucc accucccggg	1020
cauccgccag ggcuaaggcc ugaccgagac cacgagcgcg auccugauca ccccccaggg	1080
ggacgacaag ccgggcgccc ugaggcaaggu ggucccgguuc uucgaggcca agguuggugga	1140
ccuggacacc ggcaagaccc ugggcgugaa ccagcggggc gagcugugcg ugcgggggcc	1200
gaugaucaug agcggcuacg ugaacaaccc ggaggccacc aacgcccua ucgacaagga	1260
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cgacgccggc	gagcugccgg	ccgcgguggu	ggugcuggag	cacggcaaga	ccaugacgga	1500
gaaggagauc	gucgacuacg	uggccagcca	ggugaccacc	gccaagaagc	ugcggggcgg	1560
cgugguguuc	guggacgagg	ucccgaaggg	ccugaccggg	aagcucgacg	cccggaagau	1620
ccgcgagauc	cugaucaagg	ccaagaaggg	cggcaagauc	gccguguaag	acuaguuaua	1680
agacugacua	gcccgauggg	ccucccaacg	ggcccuccuc	cccuccuugc	accgagauua	1740
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aaaaaaaaa	aaauuucccc	ccccccccc	ccccccccc	ccccccucua	gacaauugga	1860
auu						1863

<210> 2
 <211> 1882
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Description of artificial sequence: GC enriched luciferase encoding mRNA termed "CAP-P_{luc}(wt)-muag-A70-C30".

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uaaagaaagg	cccggcgcca uucuauccgc uggaagaugg aaccgcugga gagcaacugc 120
auaaggcuau	gaagagauac gccucguuuc cuggaacaau ugcuuuuaca gaugcacaua 180
ucgaggugga	caucacuuac gcugaguacu ucgaaauguc cguucgguug gcagaagcua 240
ugaaacgava	ugggcugaau acaaaucaca gaaucgucgu augcagugaa aacucucuuc 300
aaauuuuuau	gccgguguug ggcgcguuau uuauccggagu ugcaguugcg cccgcgaacg 360
acauuuuaua	ugaacgugaa uugcucaaca guaugggcau uucgcagccu accguggugu 420
ucguuuccaa	aaagggguug caaaaaauuu ugaacgugca aaaaaagcuc ccaaucaucc 480
aaaaauuuau	uaucauggau ucuaaaacgg auuaccaggg auuucagucg auguacacgu 540
ucgucacauc	ucaucuaccu cccgguuuua augaauacga uuuugugcca gaguccuucg 600
auagggacaa	gacaauugca cugaucauga acuccucugg aucuacuggu cugccuaaag 660
gugucgcucu	gccucauaga acugccugcg ugagauucuc gcaugccaga gauccuauuu 720
uuggcaauca	aaucauuccg gauacugcga uuuuaagugu uguuccauuc caucacgguu 780
uuggaanguu	uacuacacuc ggauauuuga uauguggauu ucgagucguc uuaauguaua 840
gauuugaaga	agagcuguuu cugaggagcc uucaggauua caagauucaa agugcgcugc 900
uggugccaac	ccuauucucc uucuuugcca aaagcacucu gauugacaaa uacgauuuau 960
cuaauuuaca	cgaaaauugc ucugguggcg cuccccucuc uaaggaaguc ggggaagcgg 1020
uugccaagag	guuccaucug ccagguaucg ggcaaggaua ugggcucacu gagacuacau 1080
cagcuauucu	gauuacaccc gagggggauu auaaaccggg cgcgguucgg aaaguuguuc 1140
cauuuuuuga	agcgaagguu guggaucugg auaccgggaa aacgcugggc guuaaucaaa 1200

gaggcgaacu	gugugugaga	gguccuauga	uuauGUccgG	uuauGuaaac	aauccggaag	1260
cgaccaacgc	cuugauugac	aaggauggau	ggcuacauuc	uggagacaua	gcuuacuggg	1320
acgaagacga	acacuucuuc	aucguugacc	gccugaaguc	ucugauuaag	uacaaaggcu	1380
aucagguggc	ucccgGugaa	uuggaaucca	ucuugcucca	acaccccaac	aucuucgacg	1440
caggugucgc	aggucuuccc	gacgaugacg	ccggugaacu	ucccgccgcc	guuguuguuu	1500
uggagcacgg	aaagacgaug	acggaaaaag	agaucgugga	uuacgucgcc	agucaaguaa	1560
caaccgcgaa	aaaguugcgc	ggaggaguug	uguuugugga	cgaaguaccg	aaaggucuua	1620
ccggaaaacu	cgacgcaaga	aaaauGagag	agauccucau	aaaggccaag	aagggcggaa	1680
agaucgccgu	guaauucuag	uuauaagacu	gacuagcccc	augggccucc	caacgggccc	1740
uccucuccuc	cuugcaccga	gauuaauaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	1800
aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	auauuccccc	cccccccccc	cccccccccc	1860
ccccucuaG	acaauuggaa	uu				1882

<210> 3
 <211> 1857
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Description of artificial sequence: GC enriched luciferase encoding mRNA termed "CAP-Ppluc(GC)-muag-A70-C30".

<400>	3					
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ggugccgggc	acgaucgccu	ucaccgacgc	ccacaucgag	gucgacauca	ccuacgcgga	180
guacuucgag	augagcgugc	gccuggccga	ggccaugaag	cgguacggcc	ugaacaccaa	240
ccaccggauc	guggugugcu	cggagaacag	ccugcaguuc	uucaugccgg	ugcuggggcg	300
ccucuucauc	ggcguggccg	ucgccccggc	gaacgacauc	uacaacgagc	gggagcugcu	360
gaacagcaug	gggaucagcc	agccgaccgu	gguguucgug	agcaagaagg	gccugcagaa	420
gauccugaac	gugcagaaga	agcugcccau	cauccagaag	aucaucauca	uggacagcaa	480
gaccgacuac	cagggcuucc	agucgaugua	cacguucgug	accagccacc	ucccgccggg	540
cuucaacgag	uacgacuucg	ucccgGagag	cuucgaccgg	gacaagacca	ucgcccugau	600
caugaacagc	agcggcagca	ccggccugcc	gaagggggug	gcccugccgc	accggaccgc	660
cugcgugcgc	uucucgcacg	ccggggaccc	caucuucggc	aaccagauca	ucccgGacac	720
cgccauccug	agcguggugc	cguuccacca	cggcuucggc	auguucacga	cccugggcua	780
ccucaucugc	ggcuuccggg	ugguuccgau	guaccgguuc	gaggaggagc	uguuccugcg	840
gagccugcag	gacuacaaga	uccagagcgc	gcugcucgug	ccgaccucgu	ucagcuucuu	900
cgccaagagc	accugaucg	acaaguacga	ccugucgaac	cugcacgaga	ucgccagcgg	960
ggcgccccg	cugagcaagg	aggugggcga	ggccguggcc	aagcgguucc	accucccggg	1020

cauccgccag	ggcuacggcc	ugaccgagac	cacgagcgcg	auccugauca	cccccgaggg	1080
ggacgacaag	ccgggcgccg	ugggcaaggu	ggucccgguuc	uucgaggcca	agguggugga	1140
ccuggacacc	ggcaagaccc	ugggcgugaa	ccagcggggc	gagcugugcg	ugcggggggcc	1200
gaugaucaug	agcggcuacg	ugaacaaccc	ggaggccacc	aacgcccuca	ucgacaagga	1260
cggcuggcgug	cacagcgggc	acaucgccua	cugggacgag	gacgagcacu	ucuucaucgu	1320
cgaccggcgug	aagucgcuga	ucaaguacaa	gggcuaccag	guggcgccgg	ccgagcugga	1380
gagcauccug	cuccagcacc	ccaacaucuu	cgacgccggc	guggccgggc	ugccggacga	1440
cgacgccggc	gagcugccgg	ccgcgguugu	ggugcuggag	cacggcaaga	ccaugacgga	1500
gaaggagauc	gucgacuacg	uggccagcca	ggugaccacc	gccagaagc	ugcggggcg	1560
cgugguguuc	guggacgagg	ucccgaaagg	ccugaccggg	aagcucgacg	cccgggaagau	1620
ccgcgagauc	cugaucaagg	ccaagaagg	cggcaagauc	gccguguaag	acuaguuuaa	1680
agacugacua	gcccgauggg	ccucccaacg	ggcccuccuc	cccuccuugc	accgagauua	1740
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<210> 4
 <211> 1653
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Description of artificial sequence: coding sequence of
 CAP-Ppluc(wt)-muag-A70-C30

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gcuuuuacag	augcacauau	cgagguggac	aucacuuacg	cugaguacuu	cgaaaugucc	180
guucgguugg	cagaagcuau	gaaacgauau	gggcugaaua	caauacacag	aaucgucgua	240
ugcagugaaa	acucucuuca	auucuuuaug	ccgguguugg	gcgcguuauu	uauccggaguu	300
gcaguugcgc	ccgcgaacga	cauuuauaau	gaacgugaau	ugcucaacag	uaugggcuuu	360
ucgcagccua	ccgugguguu	cguuuccaaa	aagggguugc	aaaaaaauuu	gaacgugcaa	420
aaaaagcucc	caaucaucca	aaaaauuaau	aucauggauu	cuaaaacgga	uuaccaggga	480
uuucagucga	uguacacguu	cgucacauuc	caucuaccuc	ccgguuuuaa	ugaauacgau	540
uuugugccag	aguccuucga	uagggacaag	acaauugcac	ugaucaugaa	cuccucugga	600
ucuacugguc	ugccuaaagg	ugucgcucug	ccucauagaa	cugccugcgu	gagauucucg	660
caugccagag	auccuauuuu	uggcaaucaa	aucauuccgg	auacugcgau	uuuaaguguu	720
guuccauucc	aucacgguuu	uggaanguuu	acuacacucg	gauauuugau	auguggauuu	780
cgagucgucu	uaauguauag	auuugaagaa	gagcuguuuc	ugaggagccu	ucaggauuac	840
aagauucaa	gugcgcugcu	ggugccaacc	cuauucuccu	ucuucgcaa	aagcacucug	900

auugacaaau acgauuuuau uaaauuacac gaaauugcuu cugguggcgc uccccucucu	960
aaggaagucg ggggaagcggg ugccaagagg uucaucugc cagguaucag gcaaggauau	1020
gggcucacug agacuacauc agcuauucug auuacacccg aggggggauga uaaaccgggc	1080
gcggucggua aaguuguucc auuuuuugaa gcgaagguug uggaucugga uaccgggaaa	1140
acgcugggcg uuaaucaaag aggcgaacug ugugugagag guccuaugau uauguccggg	1200
uanguaaaaca auccggaagc gaccaacgcc uugauugaca aggauggaug gcuacauucu	1260
ggagacauag cuuacuggga cgaagacgaa cacuucuca ucguugaccg ccugaagucu	1320
cugauuaagu acaaaggcua ucagguggcg cccgcugaau uggaauccau cuugcuccaa	1380
cacccaaca ucuucgacgc agguugcgcg ggucuucccg acgaugacgc cggugaacuu	1440
cccgccgccg uuguuguuuu ggagcacgga aagacgauga cggaaaaaga gaucguggau	1500
uacgucgcca gucaaguaac aaccgcgaaa aaguugcgcg gaggaguugu guuuguggac	1560
gaaguaccga aaggucuua cggaaaacuc gacgcaagaa aaaucaagaga gauccucaua	1620
aaggccaaga agggcggaau gaucgccgug uaa	1653

<210> 5
 <211> 1653
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Description of artificial sequence: coding sequence of
 CAP-Ppluc(GC)-muag-A70-C30

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gccuucaccg acgcccacau cgaggucgac aucaccuacg cggaguacuu cgagaugagc	180
gugcgccugg ccgaggccau gaagcgguac ggccugaaca ccaaccaccg gaucguggug	240
ugcucggaga acagccugca guucuuaug ccggugcugg gcgcccucuu caucggcgug	300
gccgucgccc cggcgaacga caucuacaac gagcgggagc ugcugaacag cauggggau	360
agccagccga ccgugguguu cgugagcaag aagggccugc agaagaucuu gaacgugcag	420
aagaagcugc ccaucaucca gaagaucauc aucauggaca gcaagaccga cuaccagggc	480
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uucgucccgg agagcuucga ccgggacaag accaucgccc ugaucaugaa cagcagcggc	600
agcaccggcc ugccgaaggg gguggccug ccgcaccgga ccgccugcgu gcgcuucug	660
cacgcccggg accccaucuu cggcaaccag aucaucccg acaccgccau ccugagcgug	720
gugccguucc accacggcuu cggcauguuc acgaccugg gcuaccucau cugcggcuuc	780
cgguugguucc ugauguaccg guucgaggag gagcuguucc ugcggagccu gcaggacuac	840
aagauccaga gcgcgucgcu cgugccgacc cuguucagcu ucuucgcaa gagcaccug	900
aucgacaagu acgaccuguc gaaccugcac gagaucgcca gcgggggcgc cccgcugagc	960

aaggaggugg gcgaggccgu ggccaagcgg uuccaccucc cgggcauccg ccagggcuac	1020
ggccugaccg agaccacgag cgcgauccug aucacccccg agggggacga caagccgggc	1080
gccgugggca aggugguccc guucuucgag gccaaggugg uggaccugga caccggcaag	1140
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ggcgacaucg ccuacuggga cgaggacgag cacuucuua ucgucgaccg gcugaagucg	1320
cugaucaagu acaagggcua ccagguggcg ccggccgagc uggagagcau ccugcuccag	1380
cacccaaca ucuucgacgc cggcguggcc gggcugccgg acgacgacgc cggcgagcug	1440
ccggccgagg ugguggugcu ggagcacggc aagaccauga cggagaagga gaucgucgac	1500
uacguggcca gccaggugac caccgccaag aagcugcggg gcggcguggu guucguggac	1560
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aaggccaaga agggcgga gaucgccgug uaa	1653

<210> 6
 <211> 12
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of artificial sequence: cationic polypeptide R9H3

<400> 6
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 1 5 10

<210> 7
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of artificial sequence: cationic polypeptide R9

<400> 7
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<210> 8
 <211> 13
 <212> RNA
 <213> Artificial

<220>
 <223> Description of sequence: kozsak-sequence

<400> 8
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<210> 9
 <211> 15
 <212> RNA

<213> Artificial
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 <223> Description of sequence: generic sequence of a stabilizing sequence

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 /replace="uracile"

 <220>
 <221> variation
 <222> (5)..(5)
 <223> /replace="cytosine"
 /replace="uracile"
 /replace="guanosine"
 /replace="adenosine", or any othe nucleic acid

 <220>
 <221> repeat_unit
 <222> (5)..(5)
 <223> x = any number

 <220>
 <221> variation
 <222> (9)..(9)
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 /replace="adonosine"

 <220>
 <221> variation
 <222> (10)..(10)
 <223> /replace="pyrimidine"

 <220>
 <221> repeat_unit
 <222> (10)..(10)
 <223> x = any number

 <220>
 <221> variation
 <222> (13)..(13)
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 /replace="uracile"

 <400> 9
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15

<210> 10
 <211> 20
 <212> RNA
 <213> Artificial Sequence

 <220>
 <223> Description of artificial sequence: immunostimulatory RNA

<p><400> 10 gguuuuuuuu uuuuuuuggg</p> <p><210> 11 <211> 20 <212> RNA <213> Artificial Sequence</p> <p><220> <223> Description of artificial sequence: immunostimulatory RNA</p> <p><400> 11 ggggguuuuu uuuuuggggg</p> <p><210> 12 <211> 40 <212> RNA <213> Artificial Sequence</p> <p><220> <223> Description of artificial sequence: immunostimulatory RNA</p> <p><400> 12 ggggguuuuu uuuuuuuuuu uuuuuuuuuu uuuuuggggg</p> <p><210> 13 <211> 39 <212> RNA <213> Artificial Sequence</p> <p><220> <223> Description of artificial sequence: immunostimulatory RNA</p> <p><400> 13 gugugugugu guuuuuuuuu uuuuuuugug ugugugugu</p> <p><210> 14 <211> 39 <212> RNA <213> Artificial Sequence</p> <p><220> <223> Description of artificial sequence: immunostimulatory RNA</p> <p><400> 14 gguugguugg uuuuuuuuuu uuuuuuuggu ugguugguu</p> <p><210> 15 <211> 57 <212> RNA <213> Artificial Sequence</p> <p><220> <223> Description of artificial sequence: immunostimulatory RNA</p> <p><400> 15 ggguuuuuuu uuuuuuuugg guuuuuuuuu uuuuuugggu uuuuuuuuuu uuuuggg</p> <p><210> 16 <211> 42 <212> RNA <213> Artificial Sequence</p>	<p>20</p> <p>20</p> <p>40</p> <p>39</p> <p>39</p> <p>57</p>
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<220>
 <223> Description of artificial sequence: immunostimulatory RNA
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<210> 17
 <211> 57
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Description of artificial sequence: immunostimulatory RNA
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<210> 18
 <211> 51
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Description of artificial sequence: immunostimulatory RNA
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<210> 19
 <211> 42
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Description of artificial sequence: immunostimulatory RNA
 <400> 19
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