SEQUENCE LISTING

<110> CureVac GmbH

<120> Nucleic acids of formula (I) (NuGlXmGnNv)a and derivatives thereof as an immune-stimulating agent/adjuvant

<130> CU01P072WO

<140>
<141>

<150> EP 08001827.8
<151> 2008-01-31

<160> 119

<170> PatentIn version 3.5

<210> 1
<211> 20
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 1
gguuuuuuuu uuuuuuuggg 20

<210> 2
<211> 20
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 2
ggggguuuuu uuuuuggggg 20

<210> 3
<211> 40
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 3
ggggguuuuu uuuuuuuuuu uuuuuuuuuu uuuuuggggg 40

<210> 4
<211> 39
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 4
gugugugugu guuuuuuuuu uuuuuuugug ugugugugu 39

<210> 5
<211> 39
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 5
gguuggauugg uuuuuuuuuu uuuuuuuggu uggauugguu 39

<210> 6
<211> 20
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 6
gggggggggu uugggggggg 20

<210> 7
<211> 20
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 7
gggggggguu uugggggggg 20

<210> 8
<211> 20
<212> DNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 8
ggggggguuu uugggggggg 20

<210> 9
<211> 20
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 9
ggggggguuu uuuggggggg 20

<210> 10
<211> 20

<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 10
gggggguuuu uuuugggggg 20

<210> 11
<211> 20
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 11
gggggguuuu uuuuuggggg 20

<210> 12
<211> 20
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 12
gggggguuuu uuuuuugggg 20

<210> 13
<211> 20
<212> DNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 13
gggggguuuu uuuuuugggg 20

<210> 14
<211> 20
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 14
gggggguuuu uuuuuuuggg 20

<210> 15
<211> 20
<212> RNA
<213> Artificial

<220>

<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 15
gggguuuuuu uuuuuuuggg 20

<210> 16
<211> 20
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 16
gggguuuuuu uuuuuuuugg 20

<210> 17
<211> 20
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 17
gguuuuuuuu uuuuuuuugg 20

<210> 18
<211> 20
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 18
guuuuuuuuu uuuuuuuuug 20

<210> 19
<211> 22
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 19
gggggggggg uuuggggggg gg 22

<210> 20
<211> 22
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 20

ggggggggu uuuggggggg gg 22

<210> 21
<211> 22
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 21
ggggggguu uuuuggggg gg 22

<210> 22
<211> 22
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 22
ggggggguu uuuuggggg gg 22

<210> 23
<211> 22
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 23
ggggggguu uuuuggggg gg 22

<210> 24
<211> 22
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 24
ggggggguu uuuuuggggg gg 22

<210> 25
<211> 22
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 25
ggggggguu uuuuuuggg gg 22

<210> 26

<211> 22
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 26
gggggguuuu uuuuuuuggg gg 22

<210> 27
<211> 22
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 27
gggggguuuu uuuuuuuugg gg 22

<210> 28
<211> 22
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 28
gggggguuuu uuuuuuuugg gg 22

<210> 29
<211> 22
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 29
gggggguuuu uuuuuuuuug gg 22

<210> 30
<211> 22
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 30
ggguuuuuuu uuuuuuuuug gg 22

<210> 31
<211> 22
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 31
gguuuuuuuu uuuuuuuuuu gg 22

<210> 32
<211> 24
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 32
gggggggggg guuuggggggg gggg 24

<210> 33
<211> 24
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 33
gggggggggg uuuuggggggg gggg 24

<210> 34
<211> 24
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 34
gggggggggu uuuuuggggg gggg 24

<210> 35
<211> 24
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 35
gggggggggu uuuuuugggg gggg 24

<210> 36
<211> 24
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 36
ggggggggguu uuuuuugggg gggg 24

<210> 37
<211> 24
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 37
ggggggggguu uuuuuuuggg gggg 24

<210> 38
<211> 24
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 38
ggggggggguu uuuuuuuugg gggg 24

<210> 39
<211> 24
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 39
ggggggguuu uuuuuuuugg gggg 24

<210> 40
<211> 24
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 40
ggggggguuu uuuuuuuuug gggg 24

<210> 41
<211> 24
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 41
ggggguuuu uuuuuuuuug gggg 24

<210> 42
<211> 24
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 42
gggggguuuu uuuuuuuuuu gggg 24

<210> 43
<211> 24
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 43
ggggguuuuu uuuuuuuuuu gggg 24

<210> 44
<211> 24
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 44
gggguuuuuu uuuuuuuuuu uggg 24

<210> 45
<211> 32
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 45
guuuuuuuuu uuuuuuuuuu uuuuuuuuuu ug 32

<210> 46
<211> 34
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 46
gguuuuuuuu uuuuuuuuuu uuuuuuuuuu uugg 34

<210> 47
<211> 36
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 47
gggguuuuuu uuuuuuuuuu uuuuuuuuuu uuuggg 36

<210> 48
<211> 37
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 48
ggggguuuuu uuuuuuuuuu uuuuuuuuuu uuuuggg 37

<210> 49
<211> 39
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 49
gggggguuuu uuuuuuuuuu uuuuuuuuuu uuuuugggg 39

<210> 50
<211> 41
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 50
ggggggguuu uuuuuuuuuu uuuuuuuuuu uuuuuugggg g 41

<210> 51
<211> 43
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 51
ggggggguuu uuuuuuuuuu uuuuuuuuuu uuuuuuuggg ggg 43

<210> 52
<211> 45
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 52
gggggggguu uuuuuuuuuu uuuuuuuuuu uuuuuuuugg ggggg 45

<210> 53
<211> 47
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 53
ggggggggguu uuuuuuuuuu uuuuuuuuuu uuuuuuuuug ggggggg 47

<210> 54
<211> 7
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 54
gguuugg 7

<210> 55
<211> 8
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 55
gguuuugg 8

<210> 56
<211> 9
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 56
gguuuuugg 9

<210> 57
<211> 10
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 57
gguuuuuugg 10

<210> 58
<211> 11
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 58
gguuuuuuug g 11

<210> 59
<211> 12
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 59
gguuuuuuuu gg 12

<210> 60
<211> 13
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 60
gguuuuuuuu ugg 13

<210> 61
<211> 14
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 61
gguuuuuuuu uugg 14

<210> 62
<211> 15
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 62
gguuuuuuuu uuugg 15

<210> 63
<211> 16
<212> RNA

<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 63
gguuuuuuuu uuuugg 16

<210> 64
<211> 17
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 64
gguuuuuuuu uuuuugg 17

<210> 65
<211> 18
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 65
gguuuuuuuu uuuuuugg 18

<210> 66
<211> 19
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 66
gguuuuuuuu uuuuuuugg 19

<210> 67
<211> 9
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 67
ggguuuggg 9

<210> 68
<211> 10
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure

"GlXmGn"

<400> 68
gggguuuggg 10

<210> 69
<211> 11
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 69
gggguuuugg g 11

<210> 70
<211> 12
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 70
ggguuuuuug gg 12

<210> 71
<211> 13
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 71
ggguuuuuuu ggg 13

<210> 72
<211> 14
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 72
ggguuuuuuu uggg 14

<210> 73
<211> 15
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 73
ggguuuuuuu uuggg 15

<210> 74
<211> 16
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 74
gggguuuuuu uuuggg 16

<210> 75
<211> 17
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 75
gggguuuuuu uuuuggg 17

<210> 76
<211> 18
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 76
gggguuuuuu uuuuuggg 18

<210> 77
<211> 19
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 77
gggguuuuuu uuuuuuggg 19

<210> 78
<211> 57
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 78
gggguuuuuu uuuuuuuugg guuuuuuuuu uuuuuugggu uuuuuuuuuu uuuuggg 57

<210> 79
<211> 42

<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 79
gggguuuuuu uuuuuuuugg gggguuuuuu uuuuuuuuug gg 42

<210> 80
<211> 51
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "GlXmGn"

<400> 80
ggguuugggu uuggguuugg guuuggguuu ggguuugggu uuggguuugg g 51

<210> 81
<211> 57
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "ClXmCn"

<400> 81
cccuuuuuuu uuuuuuuucc cuuuuuuuuu uuuuuucccu uuuuuuuuuu uuuuccc 57

<210> 82
<211> 51
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "ClXmCn"

<400> 82
cccuuucccu uucccuuucc cuuucccuuu cccuuucccu uucccuuucc c 51

<210> 83
<211> 42
<212> RNA
<213> Artificial

<220>
<223> Description of artificial sequence: Exemplary core structure "ClXmCn"

<400> 83
cccuuuuuuu uuuuuuuucc ccccuuuuuu uuuuuuuuuc cc 42

<210> 84
<211> 60
<212> RNA
<213> Artificial

<220>

<223> Description of sequence: Exemplary sequence according to formula (I)

<400> 84
uagcgaagcu cuuggaccua gguuuuuuuu uuuuuuuggg ugcguuccua gaaguacacg 60

<210> 85
<211> 60
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: Exemplary sequence according to formula (I)

<220>
<221> misc_feature
<222> (1)..(60)
<223> sequence is double-stranded RNA

<400> 85
uagcgaagcu cuuggaccua gguuuuuuuu uuuuuuuggg ugcguuccua gaaguacacg 60

<210> 86
<211> 60
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: Exemplary sequence according to formula (Ia)

<400> 86
uagcgaagcu cuuggaccua ccuuuuuuuu uuuuuuuccc ugcguuccua gaaguacacg 60

<210> 87
<211> 60
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: Exemplary sequence according to formula (Ia)

<220>
<221> misc_feature
<222> (1)..(60)
<223> sequence is double-stranded RNA

<400> 87
uagcgaagcu cuuggaccua ccuuuuuuuu uuuuuuuccc ugcguuccua gaaguacacg 60

<210> 88
<211> 40
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: Exemplary sequence according to general formula (II)

<400> 88
cccccccccc cccccccccc gguuuuuuuu uuuuuuuggg 40

<210> 89
<211> 40
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: Exemplary sequence according to general formula (II)

<220>
<221> misc_feature
<222> (1)..(20)
<223> sequence is ds RNA (poly(I:C))

<400> 89
cccccccccc cccccccccc gguuuuuuuu uuuuuuuggg 40

<210> 90
<211> 40
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: Exemplary sequence according to general formula (II)

<220>
<221> misc_feature
<222> (23)..(37)
<223> sequence is double stranded ((A:U)

<400> 90
cccccccccc cccccccccc gguuuuuuuu uuuuuuuggg 40

<210> 91
<211> 40
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: Exemplary sequence according to general formula (II)

<220>
<221> misc_feature
<222> (1)..(40)
<223> sequence is double-stranded RNA

<400> 91
cccccccccc cccccccccc gguuuuuuuu uuuuuuuggg 40

<210> 92
<211> 80
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: Exemplary sequence according to general formula (II)

<400> 92

ccccccccccc ccccccccccc uagcgaagcu cuuggaccua gguuuuuuuu uuuuuuuggg 60

ugcguuccua gaaguacacg 80

<210> 93
<211> 80
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: Exemplary sequence according to general formula (II)

<220>
<221> misc_feature
<222> (1)..(80)
<223> sequence is double-stranded RNA

<400> 93
ccccccccccc ccccccccccc gguuuuuuuu uuuuuuuggg ugcguuccua gaaguacacg 60

uagcgaagcu cuuggaccua 80

<210> 94
<211> 80
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: Exemplary sequence according to general formula (II)

<220>
<221> misc_feature
<222> (21)..(80)
<223> sequence is double stranded RNA

<400> 94
ccccccccccc ccccccccccc gguuuuuuuu uuuuuuuggg ugcguuccua gaaguacacg 60

uagcgaagcu cuuggaccua 80

<210> 95
<211> 20
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: exemplary sequence of stem 1 (sequence is palindromic to SEQ ID NO: 96)

<400> 95
uagcgaagcu cuuggaccua 20

<210> 96
<211> 20
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: exemplary sequence of stem 2 (sequence is palindromic to SEQ ID NO: 95)

<400> 96
uagguccaag agcuucgcua 20

<210> 97
<211> 11
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: exemplary sequence of stem 1 (sequence is palindromic to SEQ ID NO: 98)

<400> 97
gccgcgggcc g 11

<210> 98
<211> 11
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: exemplary sequence of stem 2 (sequence is palindromic to SEQ ID NO: 97)

<400> 98
cggcccgcgg c 11

<210> 99
<211> 10
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: exemplary sequence of stem 1 (sequence is palindromic to SEQ ID NO: 100)

<400> 99
gacacggugc 10

<210> 100
<211> 10
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: exemplary sequence of stem 2 (sequence is palindromic to SEQ ID NO: 99)

<400> 100
gcaccgugca 10

<210> 101
<211> 8
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: exemplary sequence of either stem 1/stem2 (sequence is intrinsic palindromic)

<400> 101
accuaggu 8

<210> 102
<211> 8
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: exemplary sequence of either stem 1/stem2 (sequence is intrinsic palindromic)

<400> 102
uggaucca 8

<210> 103
<211> 5
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: exemplary sequence of stem 1 (sequence is palindromic to SEQ ID NO: 104)

<400> 103
ccugc 5

<210> 104
<211> 5
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: exemplary sequence of stem 2 (sequence is palindromic to SEQ ID NO: 103)

<400> 104
gcagg 5

<210> 105
<211> 5
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: exemplary sequence of stem 1 (sequence is palindromic to SEQ ID NO: 106)

<400> 105
gcagg 5

<210> 106
<211> 5
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: exemplary sequence of stem 2 (sequence is palindromic to SEQ ID NO: 105)

<400> 106
ccugc 5

<210> 107
<211> 60
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: inventive nucleic acid according to either formula (IIIa) or (IIIb)

<400> 107
uagcgaagcu cuuggaccua ggguuuuuuu uuuuuuuggg uaggucCaag agcuucgcua 60

<210> 108
<211> 122
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: inventive nucleic acid according to either formula (IIIa) or (IIIb)

<400> 108
uagcgaagcu cuuggaccua ggguuuuuuu uuuuuuuggg ugcguuccua gaaguacacg 60

gccgcgggcc gugcguuccu agaaguacac gcggcccgcg gcugcguucc uagaaguaca 120

cg 122

<210> 109
<211> 18
<212> PRT
<213> Unknown

<220>
<223> Description of sequence: sequence of protamin P1

<400> 109

Ser Arg Ser Arg Tyr Tyr Arg Gln Arg Gln Arg Ser Arg Arg Arg Arg
1 5 10 15

Arg Arg

<210> 110
<211> 21
<212> PRT
<213> Unknown

<220>
<223> Description of sequence: sequence of protamin P2

<400> 110

Arg Arg Arg Leu His Arg Ile His Arg Arg Gln His Arg Ser Cys Arg
1 5 10 15

Arg Arg Lys Arg Arg
20

<210> 111
<211> 13
<212> RNA
<213> Unknown

<220>
<223> Description of sequence: Kozak sequence

<400> 111
gccgccacca ugg 13

<210> 112
<211> 15
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: generic stabilizing sequence of the formula (C/U)CCANxCCC(U/A)PyxUC(C/U)CC

<220>
<221> variation
<222> (1)..(1)
<223> /replace="cytidine (cytosine)"

/replace="uridine (uracile)"

<220>
<221> misc_feature
<222> (1)..(1)
<223> nucleic acid = cytidine (cytosine) or uridine (uracile)

<220>
<221> misc_feature
<222> (5)..(5)
<223> Nx = a, g, c or u or any other nucleic acid

<220>
<221> variation
<222> (5)..(5)
<223> /replace="cytidine (cytosine)"

/replace="uridine (uracile)"

/replace="guanosine"

/replace="adenosine", or any othe nucleic acid

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

<220>
<221> misc_feature
<222> (9)..(9)
<223> nucleic acid = uridine (uracile) or adenosine

<220>
<221> variation
<222> (9)..(9)
<223> /replace="uridine (uracile)"

/replace="adonosine"

<220>
<221> misc_feature
<222> (10)..(10)
<223> Py = pyrimidine

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

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

<220>
<221> misc_feature
<222> (13)..(13)
<223> nucleic acid = cytidine (cytosine) or uridine (uracile)

<220>
<221> variation
<222> (13)..(13)
<223> /replace="cytidine (cytosine)"

/replace="uridine (uracile)"

<400> 112
nccancccnn ucncc 15

<210> 113
<211> 20
<212> RNA
<213> Artificial

<220>
<223> Description of sequence: immune-stimulating oligo RNA40

<400> 113
gcccgucugu ugugugacuc 20

<210> 114
<211> 229
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of sequence: Exemplary sequence according to formula (I)

<400> 114
gggagaaagc ucaagcuugg agcaaugccc gcacauugag gaaaccgagu ugcauaucuc 60

agaguauugg cccccgugua gguuauucuu gacagacagu ggagcuuauu cacucccagg 120

auccgagucg cauacuacgg uacuggugac agaccuaggu cgucaguuga ccaguccgcc 180

acuagacgug aguccgucaa agcaguuaga uguuacacuc uauuagauc 229

<210> 115
<211> 547
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of sequence: Exemplary sequence according to formula (I)

<400> 115
gggagaaagc ucaagcuugg agcaaugccc gcacauugag gaaaccgagu ugcauaucuc 60

agaguauugg cccccgugua gguuauucuu gacagacagu ggagcuuauu cacucccagg 120

auccgagucg cauacuacgg uacuggugac agaccuaggu cgucaguuga ccaguccgcc 180

acuagacgug aguccgucaa agcaguuaga uguuacacuc uauuagaucu cggauuacag 240

cuggaaggag caggaguagu guucuugcuc uaaguaccga gugugcccaa uacccgauca 300

gcuuauuaac gaacggcucc uccucuuaga cugcagcgua agugcggaau cuggggauca 360

aauuacugac ugccuggauu acccucggac auauaaccuu guagcacgcu guugcuguau 420

aggugaccaa cgcccacucg aguagaccag cucucuuagu ccggacaaug auaggaggcg 480

cggucaaucu acuucuggcu aguuaagaau aggcugcacc gaccucuaua aguagcgugu 540

ccucuag 547

<210> 116
<211> 1083
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of sequence: Exemplary sequence according to formula (I)

<400> 116
gggagaaagc ucaagcuugg agcaaugccc gcacauugag gaaaccgagu ugcauaucuc 60

agaguauugg cccccgugua gguuauucuu gacagacagu ggagcuuauu cacucccagg 120

auccgagucg cauacuacgg uacuggugac agaccuaggu cgucaguuga ccaguccgcc 180

acuagacgug aguccgucaa agcaguuaga uguuacacuc uauuagaucu cggauuacag 240

cuggaaggag caggaguagu guucuugcuc uaaguaccga gugugcccaa uacccgauca 300

gcuuauuaac gaacggcucc uccucuuaga cugcagcgua agugcggaau cuggggauca 360

aauuacugac ugccuggauu acccucggac auauaaccuu guagcacgcu guugcuguau 420

aggugaccaa cgcccacucg aguagaccag cucucuuagu ccggacaaug auaggaggcg 480

cggucaaucu acuucuggcu aguuaagaau aggcugcacc gaccucuaua aguagcgugu 540

ccucuagagc uacgcagguu cgcaauaaaa gcguugauua gugugcauag aacagaccuc 600

uuauucggug aaacgccaga augcuaaaau ccaauaacuc uucccaaaac gcguacggcc 660

gaagacgcgc gcuuaucuug uguacguucu cgcacaugga agaaucagcg ggcauggugg 720

uagggcaaua ggggagcugg guagcagcga aaaagggccc cugcgcacgu agcuucgcug 780

uucgucugaa acaacccggc auccguugua gcgaucccgu uaucaguguu auucuugugc 840

gcacuaagau ucauggugua gucgacaaua acagcgucuu ggcagauucu ggucacgugc 900

ccuaugcccg ggcuugugcc ucucaggugc acagcgauac uuaaagccuu caagguacuc 960

gacgugggua ccgauucgug acacuuccua agauuauucc acuguguuag ccccgcaccg 1020

ccgaccuaaa cugguccaau guauacgcau ucgcugagcg gaucgauaau aaaagcuuga 1080

auu 1083

<210> 117
<211> 229
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of sequence: Exemplary sequence according to formula (I)

<400> 117
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 gcccagauc 229

<210> 118
<211> 546
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of sequence: Exemplary sequence according to formula (I)

<400> 118
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

gcucua 546

<210> 119
<211> 1083
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of sequence: Exemplary sequence according to formula (I)

<400> 119
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
gcucuagaac gaacugaccu gacgccugaa cuuaugagcg ugcguauuuu uuuuuuuuuu 600
uuuuuuuuuc cucccaacaa augucgauca auagcugggc uguuggagac gcgucagcaa 660
augccguggc uccauaggac guguagacuu cuauuuuuuu uuuuuuuuuu uuuucccggg 720
accacaaaua auauucuugc uugguugggc gcaagggccc cguaucaggu cauaaacggg 780
uacauguugc acaggcuccu uuuuuuuuuu uuuuuuuuuu uucgcugagu uauuccgguc 840
ucaaaagacg gcagacguca gucgacaaca cggucuaaag cagugcuaca aucugccgug 900
uucguguuuu uuuuuuuuuu uuuuuuguga accuacacgg cgugcacugu aguucgcaau 960
ucauagggua ccggcucaga guuaugccuu gguugaaaac ugcccagcau acuuuuuuuu 1020
uuuuuuuuuu uucauauucc caugcuaagc aagggaugcc gcgagucaug uuaagcuuga 1080
auu 1083