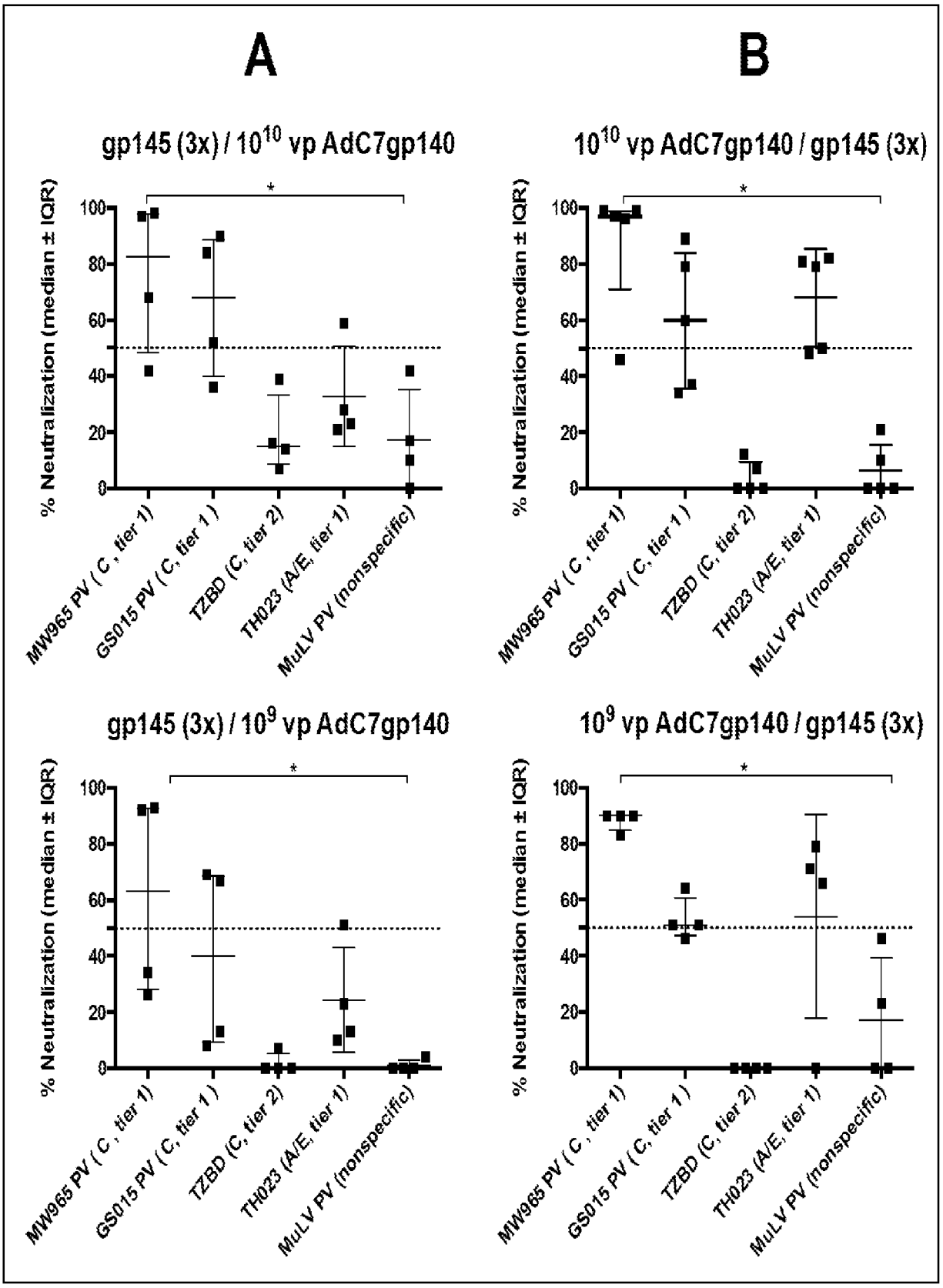
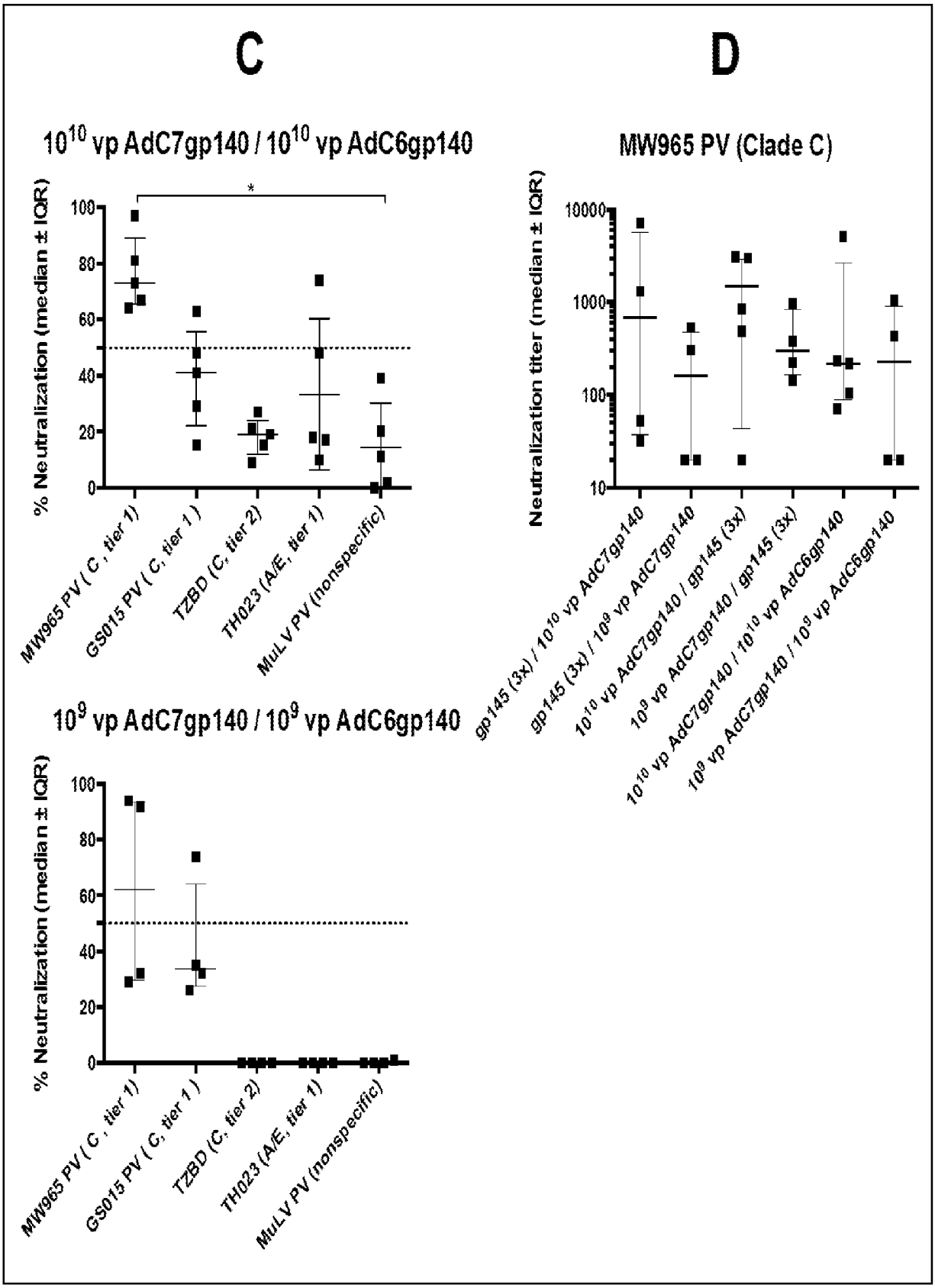

A
B
gp145 (3x) / 10^10 vp AdC7gp140
10^10 vp AdC7gp140 / gp145 (3x)
gp145 (3x) / 10^9 vp AdC7gp140
10^9 vp AdC7gp140 / gp145 (3x)
% Neutralization (median ± IQR)
*
MW965 PV (C , tier 1)
GS015 PV (C, tier 1)
TZBD (C, tier 2)
TH023 (A/E, tier 1)
MuLV PV (nonspecific)

Figs. 1A-1B


C
D
10^{10} vp AdC7gp140 / 10^{10} vp AdC6gp140
% Neutralization (median ± IQR)
MW965 PV (C , tier 1)
GS015 PV (C, tier 1)
TZBD (C, tier 2)
TH023 (A/E, tier 1)
MuLV PV (nonspecific)
10^{9} vp AdC7gp140 / 10^{9} vp AdC6gp140
MW965 PV (Clade C)
Neutralization titer (median ± IQR)
gp145 (3x) / 10^{10} vp AdC7gp140
gp145 (3x) / 10^{9} vp AdC7gp140
10^{10} vp AdC7gp140 / gp145 (3x)
10^{9} vp AdC7gp140 / gp145 (3x)
10^{10} vp AdC7gp140 / 10^{10} vp AdC6gp140
10^{9} vp AdC7gp140 / 10^{9} vp AdC6gp140

Figs. 1C-1D

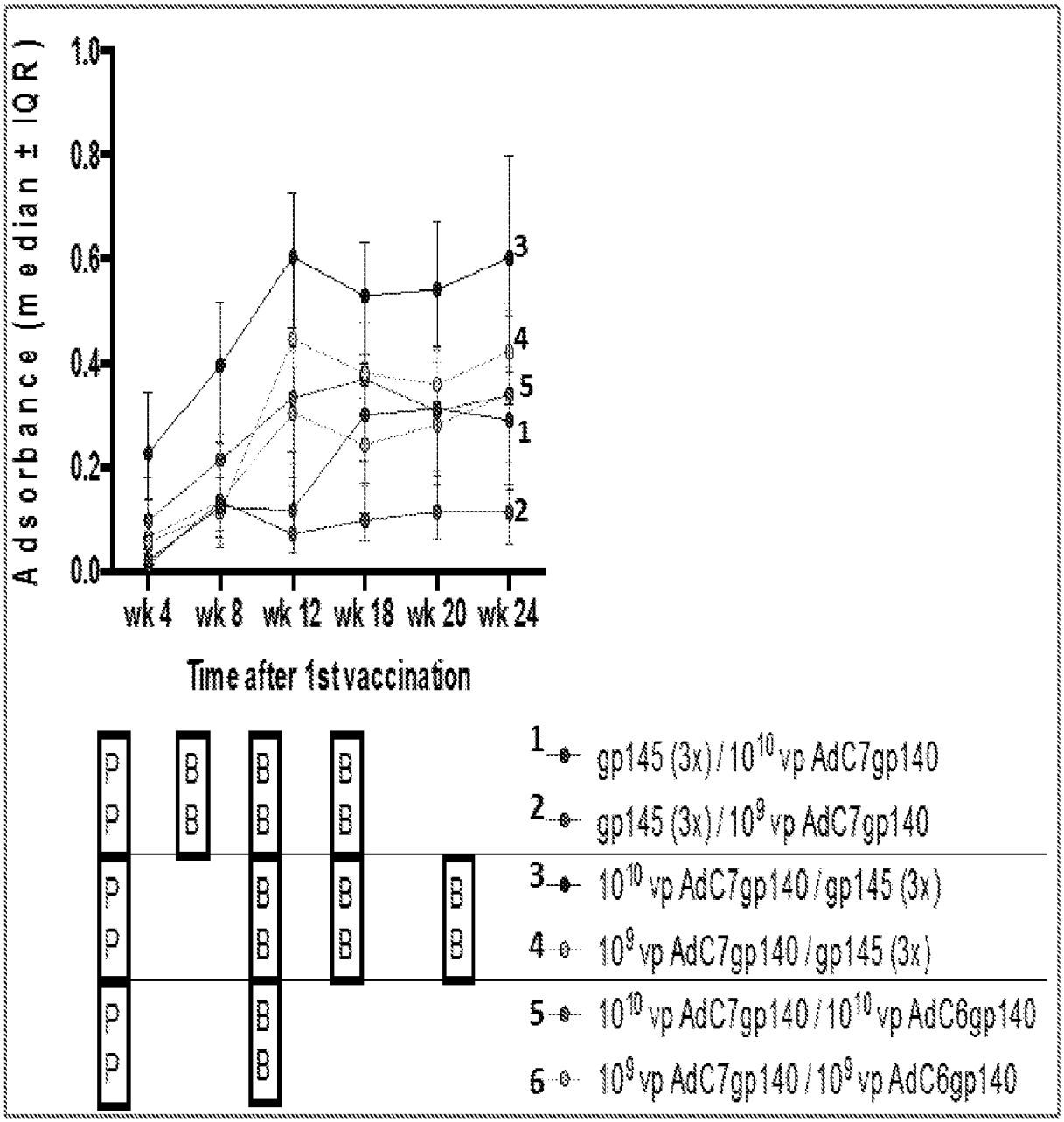

Adsorbance (median ± IQR)
1.0
0.8
0.6
0.4
0.2
0.0
wk 4
wk 8
wk 12
wk 18
wk 20
wk 24
Time after 1st vaccination
1 gp145 (3x) / 10^10 vp AdC7gp140
2 gp145 (3x) / 10^9 vp AdC7gp140
3 10^10 vp AdC7gp140 / gp145 (3x)
4 10^9 vp AdC7gp140 / gp145 (3x)
5 10^10 vp AdC7gp140 / 10^10 vp AdC6gp140
6 10^9 vp AdC7gp140 / 10^9 vp AdC6gp140

Fig. 2A

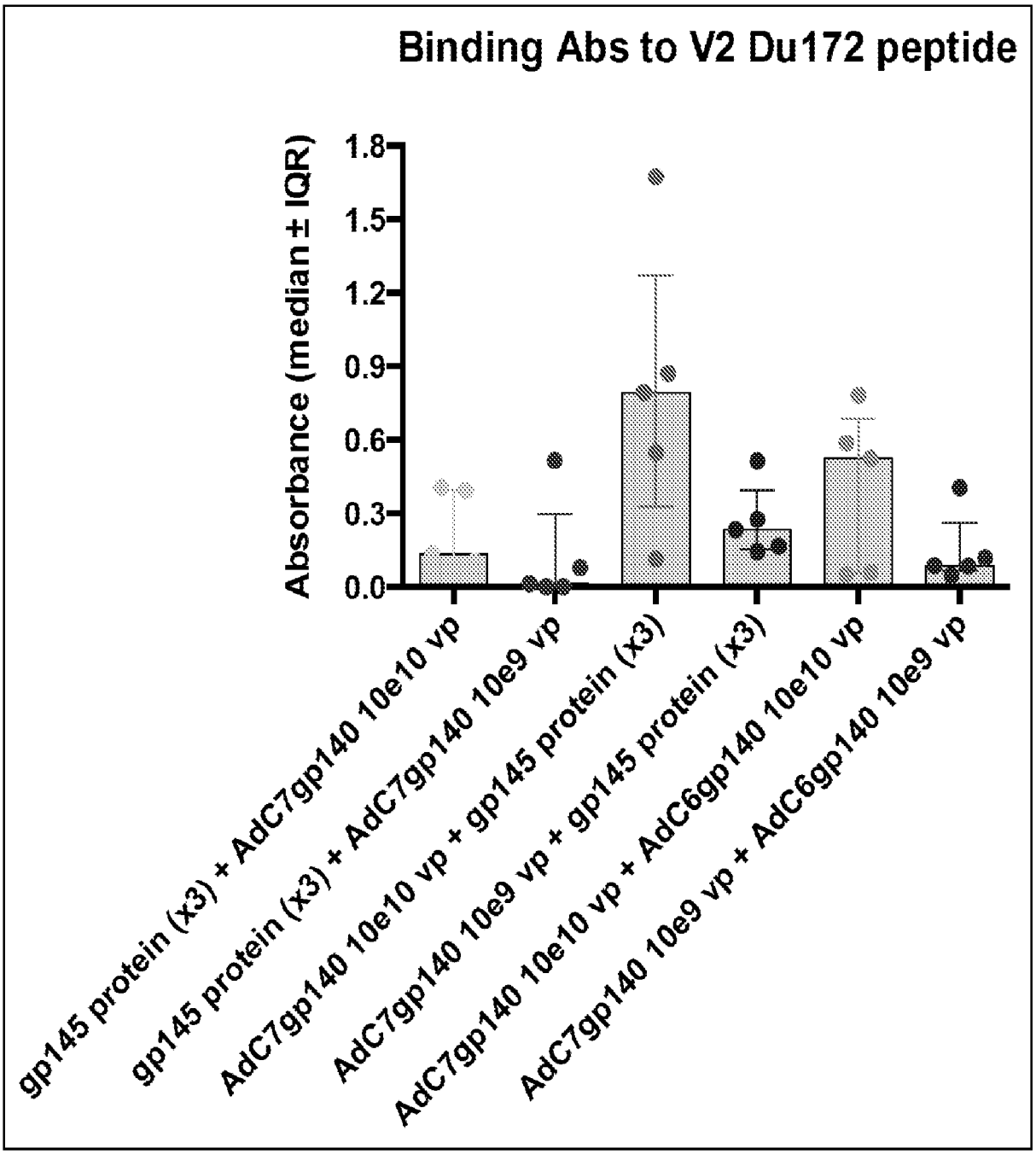

Binding Abs to V2 Du172 peptide
Absorbance (median ± IQR)
1.8
1.5
1.2
0.9
0.6
0.3
0.0
gp145 protein (x3) + AdC7gp140 10e10 vp
gp145 protein (x3) + AdC7gp140 10e9 vp
AdC7gp140 10e10 vp + gp145 protein (x3)
AdC7gp140 10e9 vp + gp145 protein (x3)
AdC7gp140 10e10 vp + AdC6gp140 10e10 vp
AdC7gp140 10e9 vp + AdC6gp140 10e9 vp

Fig. 2B

Group/ Vaccine	NHP ID	Genotype	Gender	AdHu5 Titer	AdHu26 Titer
1 AdC7/C6	4825	-*	M	20	640
	4826	-	M	20	640
	4889	-	M	0	>1280
	4372	A01, A02	F	20	1280
	4395	A01, A02	M	0	320
	4400	A01	M	160	640
	4552	A01	M	20	160
	4553	A01	M	40	>1280
	4770	A01	M	40	10
	4773	A01	M	80	40
	4774	A01	M	160	20
	4894	A02, B17	M	0	160
2 AdHu26/Hu5	4389	A02	F	0	160
	4892	A02	M	0	1280
	4893	B01	M	20	80
	4916	-	M	40	>1280
	4381	A01, A02	M	40	1280
	4394	A01	M	20	1280
	4547	A01	M	160	1280
	4776	A01	F	40	20
	4777	A01	M	160	40
	4778	A01	M	80	80
	4779	A01	M	20	640
	4781	A01	M	10	320
3 None	4824	-	M	0	160
	4886	-	M	0	0
	4891	-	M	0	20
	4365	A01	F	10	1280
	4398	A01, B01	F	10	0
	4546	A01	M	80	640
	4769	A01	M	80	20
	4771	A01	M	40	1280
	4772	A01	F	160	80
	4775	A01	M	640	40
	4780	A01	M	20	160
	4392	A02, B17	F	40	0

* animals were not positive for A01, A02, B01 or B17

Fig. 3

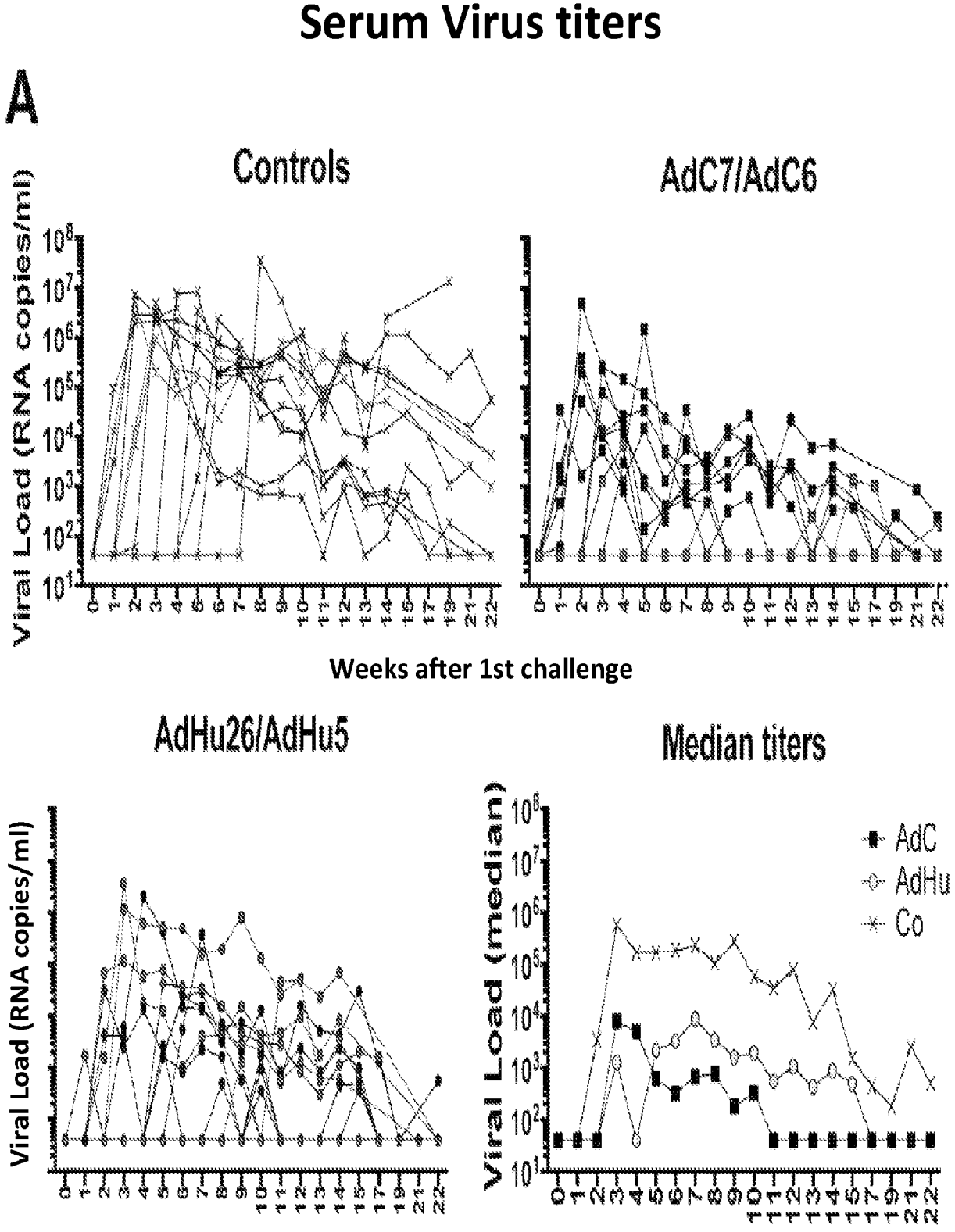
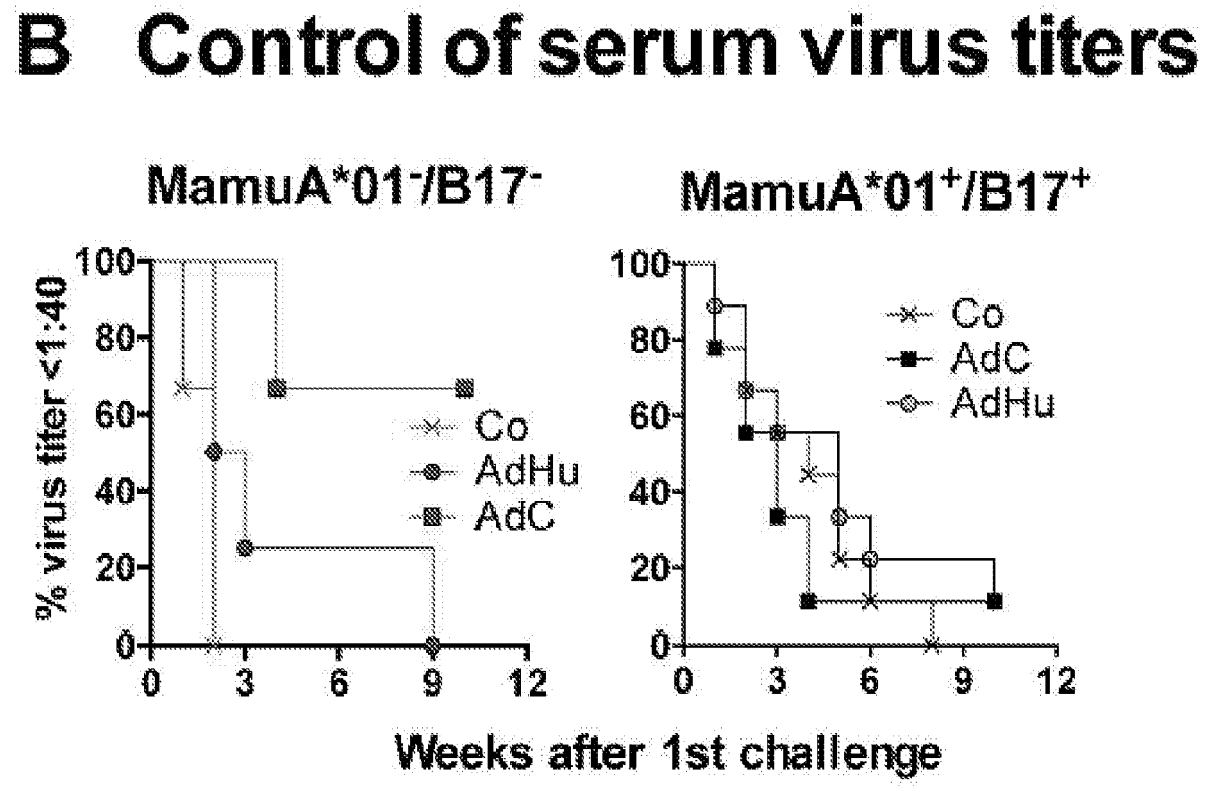
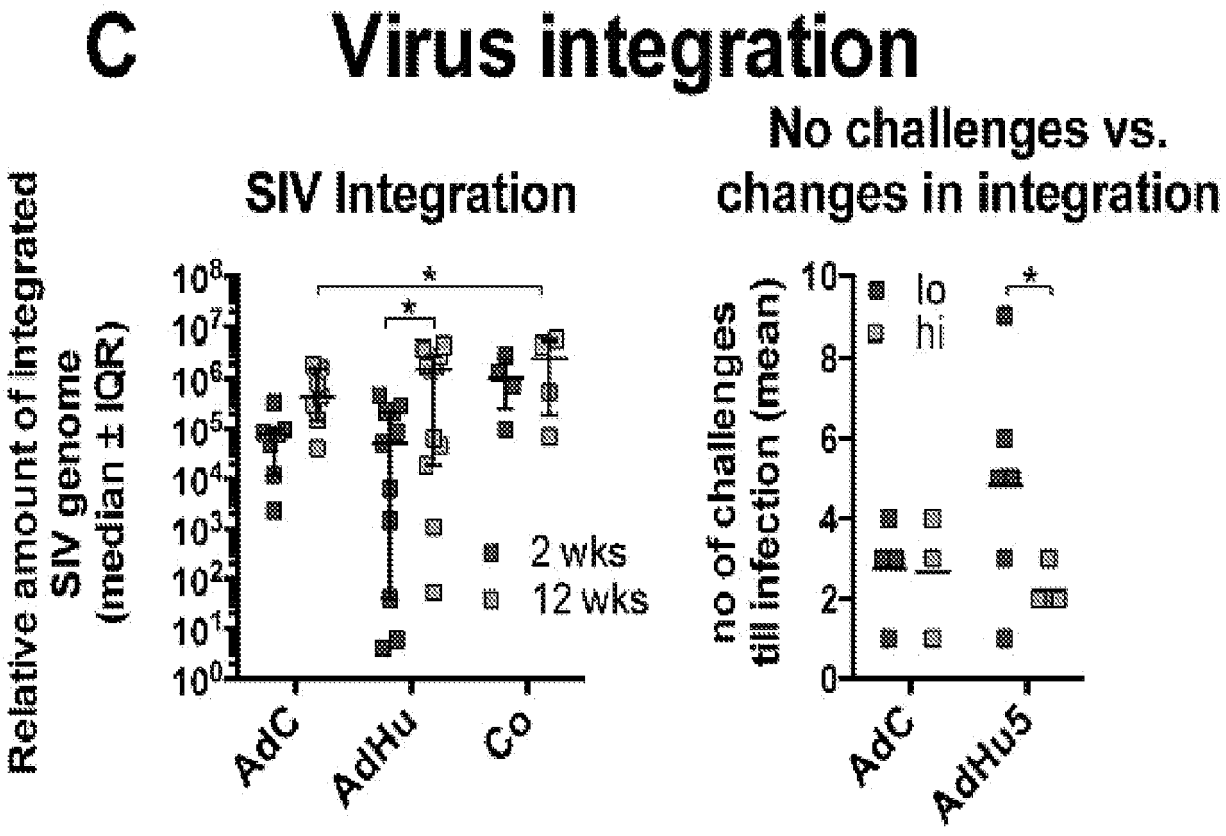
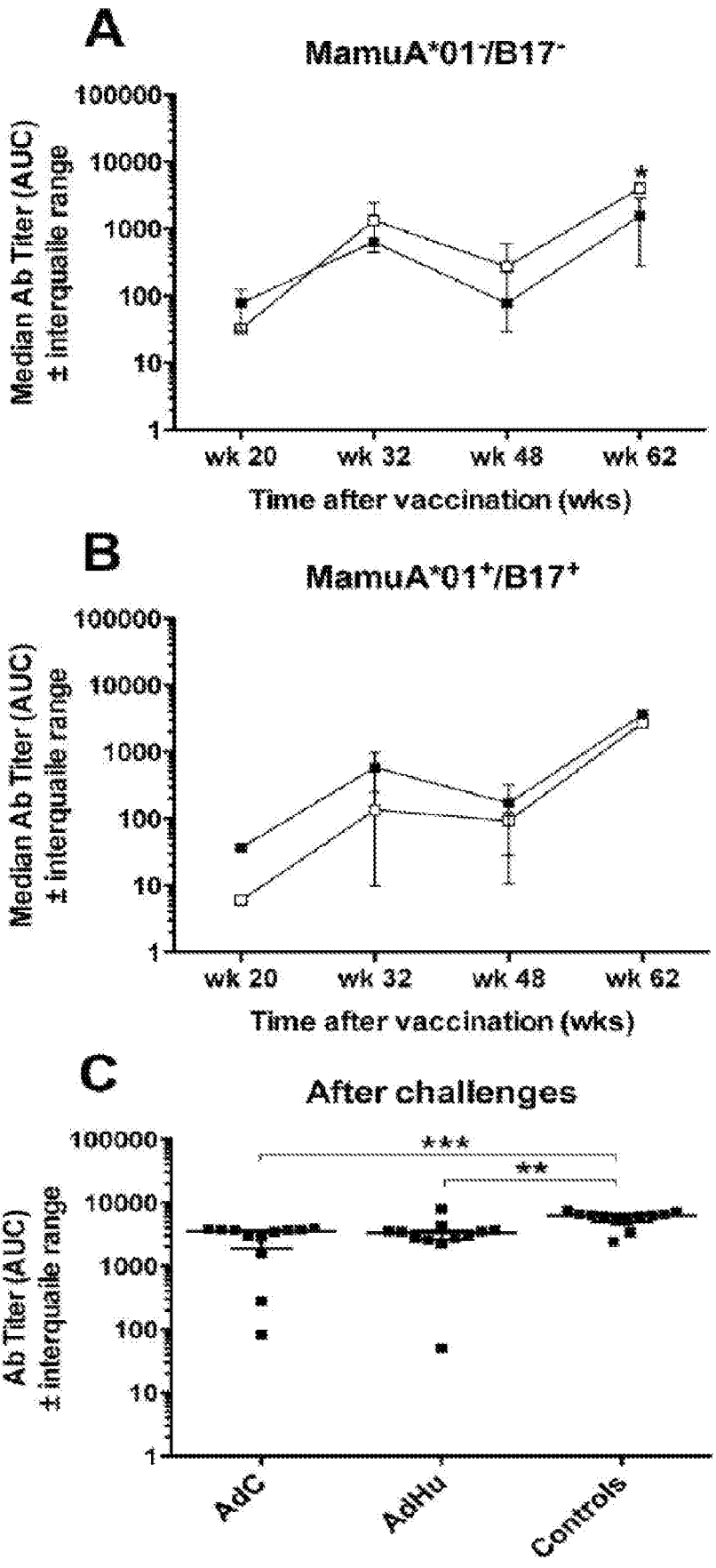

Serum Virus titers
A
Controls
AdC7/AdC6
Viral Load (RNA copies/ml)
Weeks after 1st challenge
AdHu26/AdHu5
Median titers
Viral Load (median)
AdC
AdHu
Co
Weeks after 1st challenge

Fig. 4A

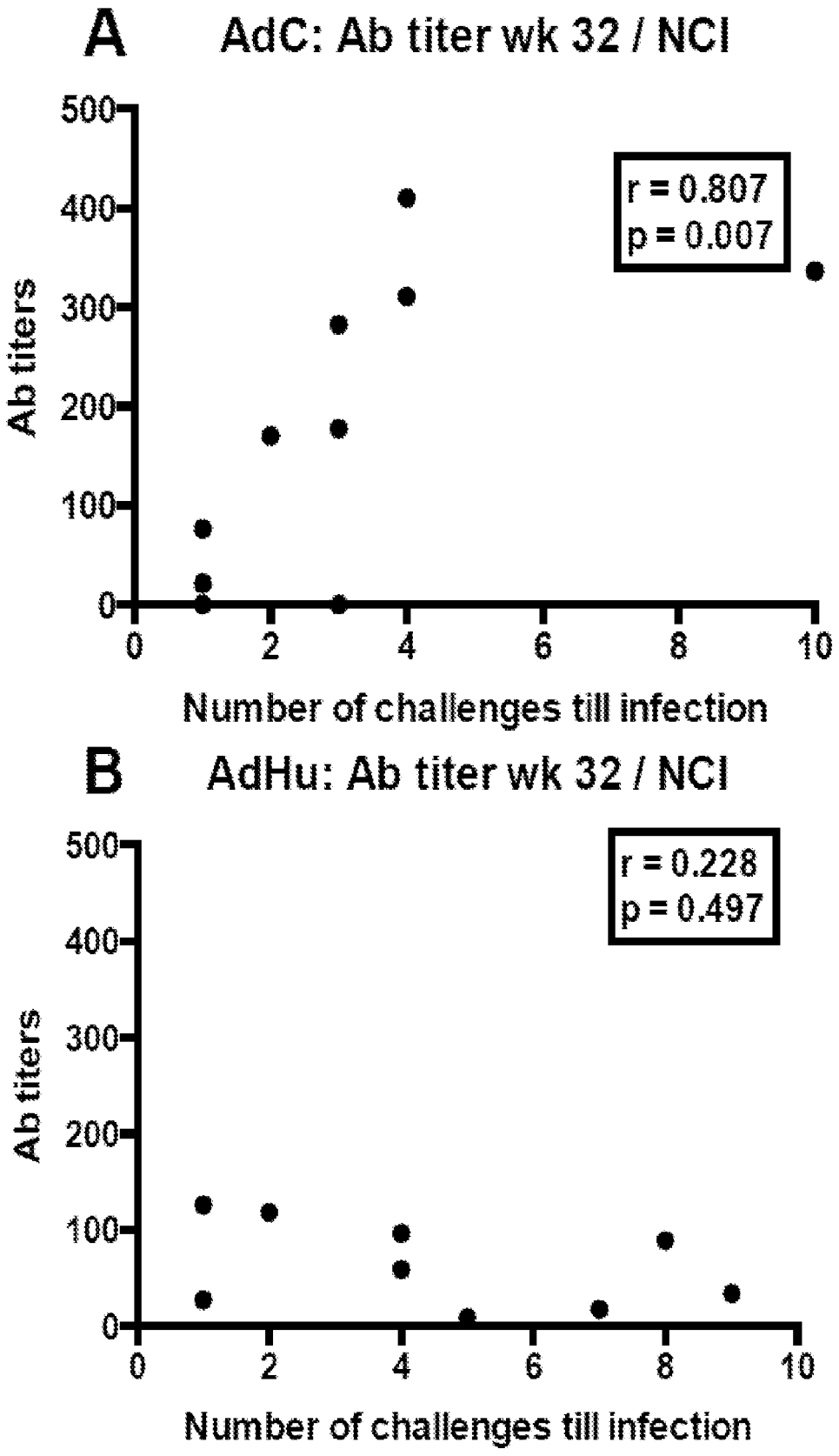

B Control of serum virus titers
MamuA*01-/B17-
MamuA*01+/B17+
% virus titer <1:40
100
80
60
40
20
0
0 3 6 9 12
Co
AdHu
AdC
Weeks after 1st challenge


C Virus integration
SIV Integration
No challenges vs. changes in integration
Relative amount of integrated SIV genome (median ± IQR)
no of challenges till infection (mean)
2 wks
12 wks
lo
hi
AdC
AdHu
Co
AdHu5

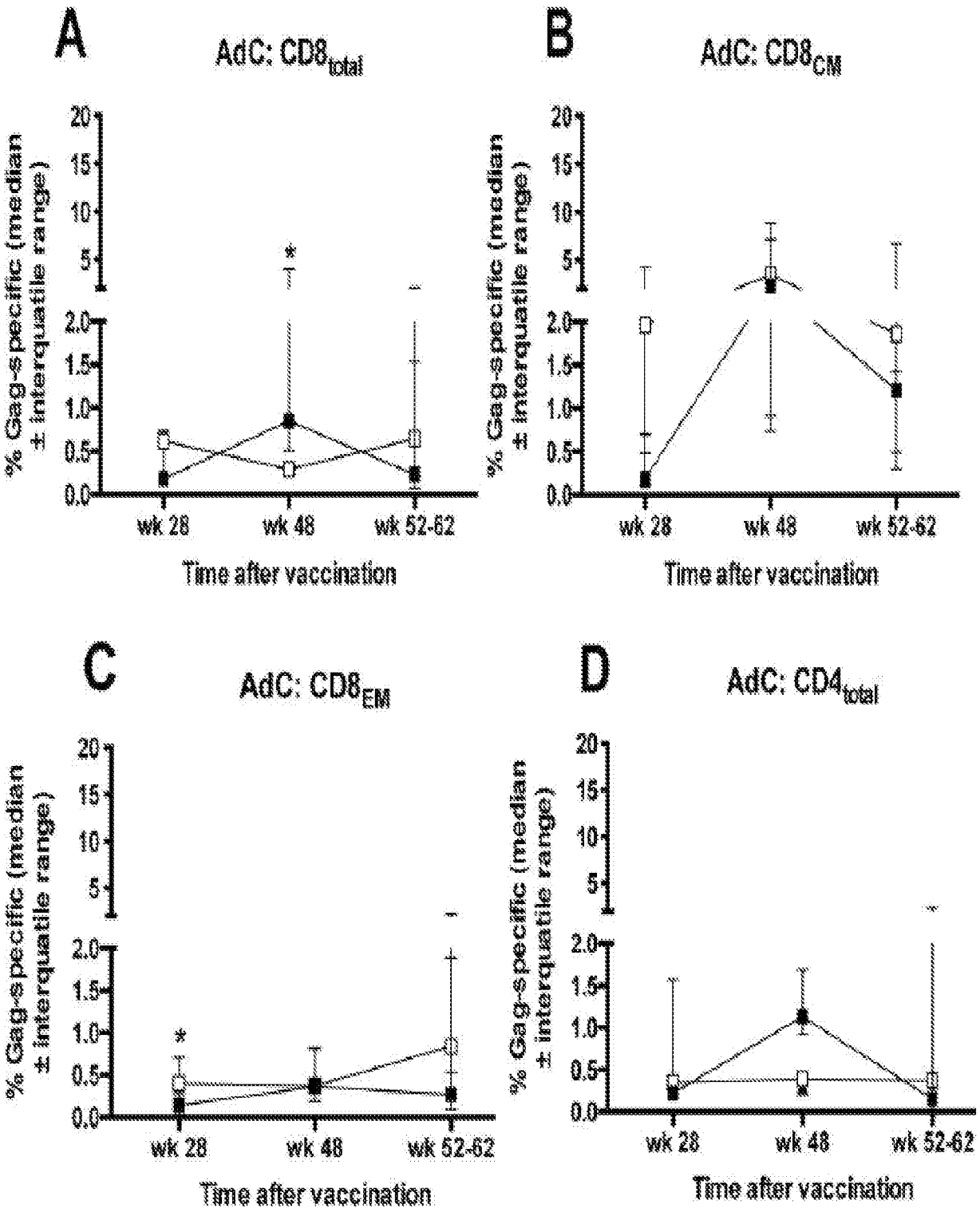
Figs. 4B-4C


A
MamuA*01-/B17-
Median Ab Titer (AUC)
± interquaile range
100000
10000
1000
100
10
1
wk 20
wk 32
wk 48
wk 62
Time after vaccination (wks)
B
MamuA*01+/B17+
Median Ab Titer (AUC)
± interquaile range
100000
10000
1000
100
10
1
wk 20
wk 32
wk 48
wk 62
Time after vaccination (wks)
C
After challenges
Ab Titer (AUC)
± interquaile range
100000
10000
1000
100
10
1
***
**
AdC
AdHu
Controls

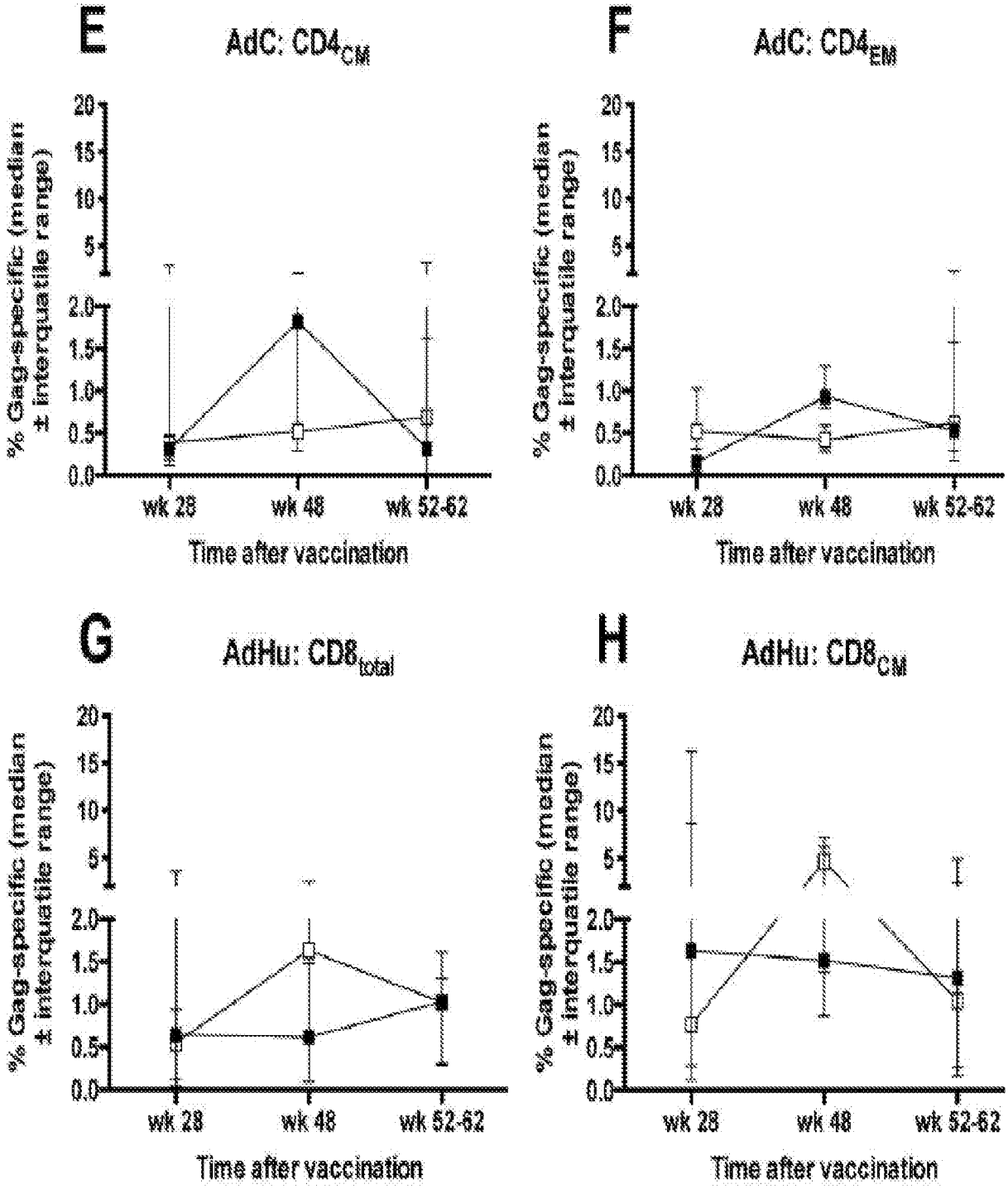
Figs. 5A-5C.


A
AdC: Ab titer wk 32 / NCI
r = 0.807
p = 0.007
Ab titers
500
400
300
200
100
0
0
2
4
6
8
10
Number of challenges till infection
B
AdHu: Ab titer wk 32 / NCI
r = 0.228
p = 0.497
Ab titers
500
400
300
200
100
0
0
2
4
6
8
10
Number of challenges till infection

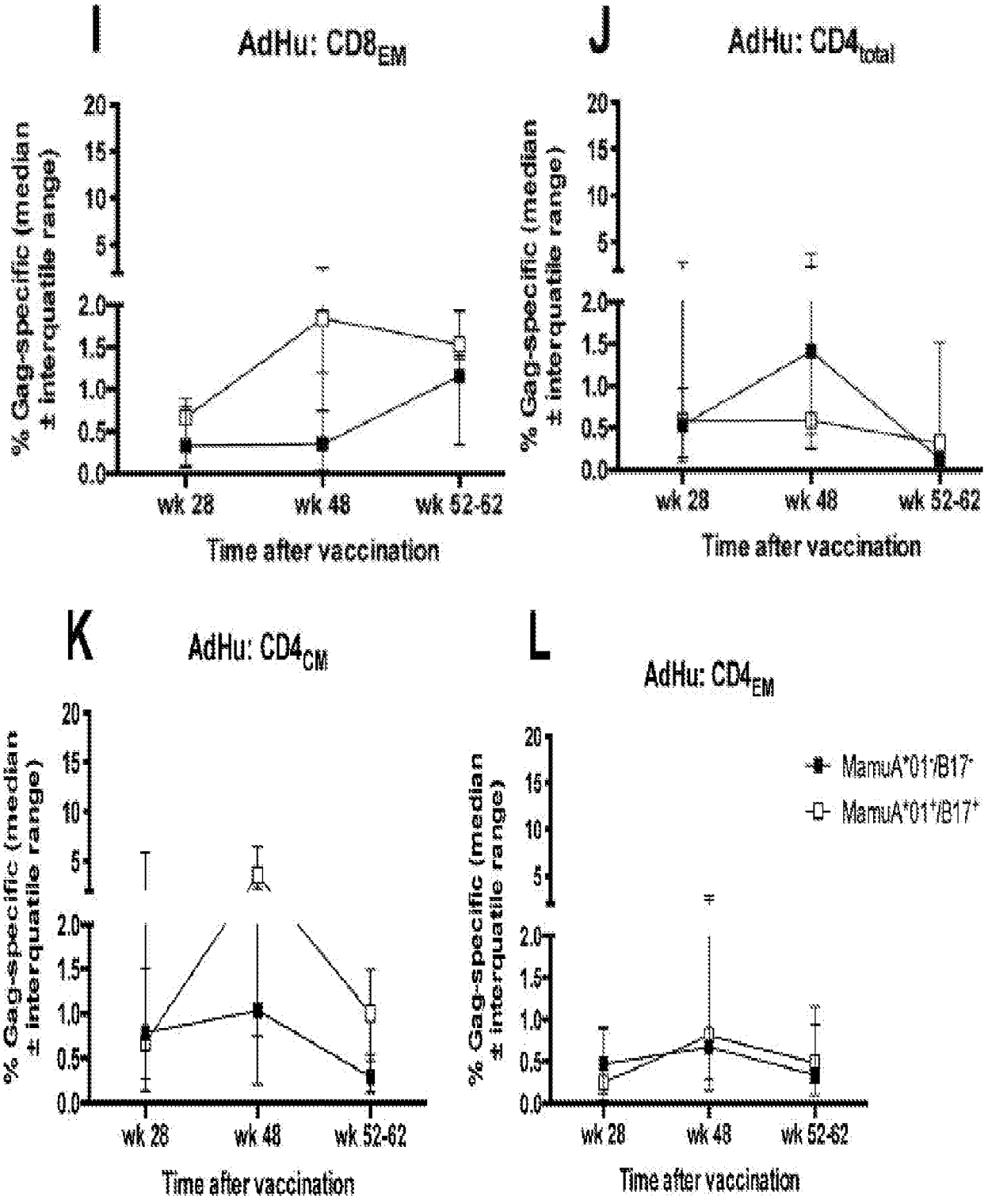
Figs. 6A-6B


A
AdC: CD8total
B
AdC: CD8CM
C
AdC: CD8EM
D
AdC: CD4total
% Gag-specific (median ± interquatile range)
20
15
10
5
2.0
1.5
1.0
0.5
0.0
*
wk 28
wk 48
wk 52-62
Time after vaccination

Figs. 7A-7D


E
AdC: CD4CM
F
AdC: CD4EM
G
AdHu: CD8total
H
AdHu: CD8CM
% Gag-specific (median ± interquatile range)
20
15
10
5
2.0
1.5
1.0
0.5
0.0
wk 28
wk 48
wk 52-62
Time after vaccination

Figs. 7E-7H


I
AdHu: CD8EM
J
AdHu: CD4total
K
AdHu: CD4CM
L
AdHu: CD4EM
% Gag-specific (median ± interquatile range)
Time after vaccination
wk 28
wk 48
wk 52-62
MamuA*01+/B17-
MamuA*01+/B17+

Figs. 7I-7L

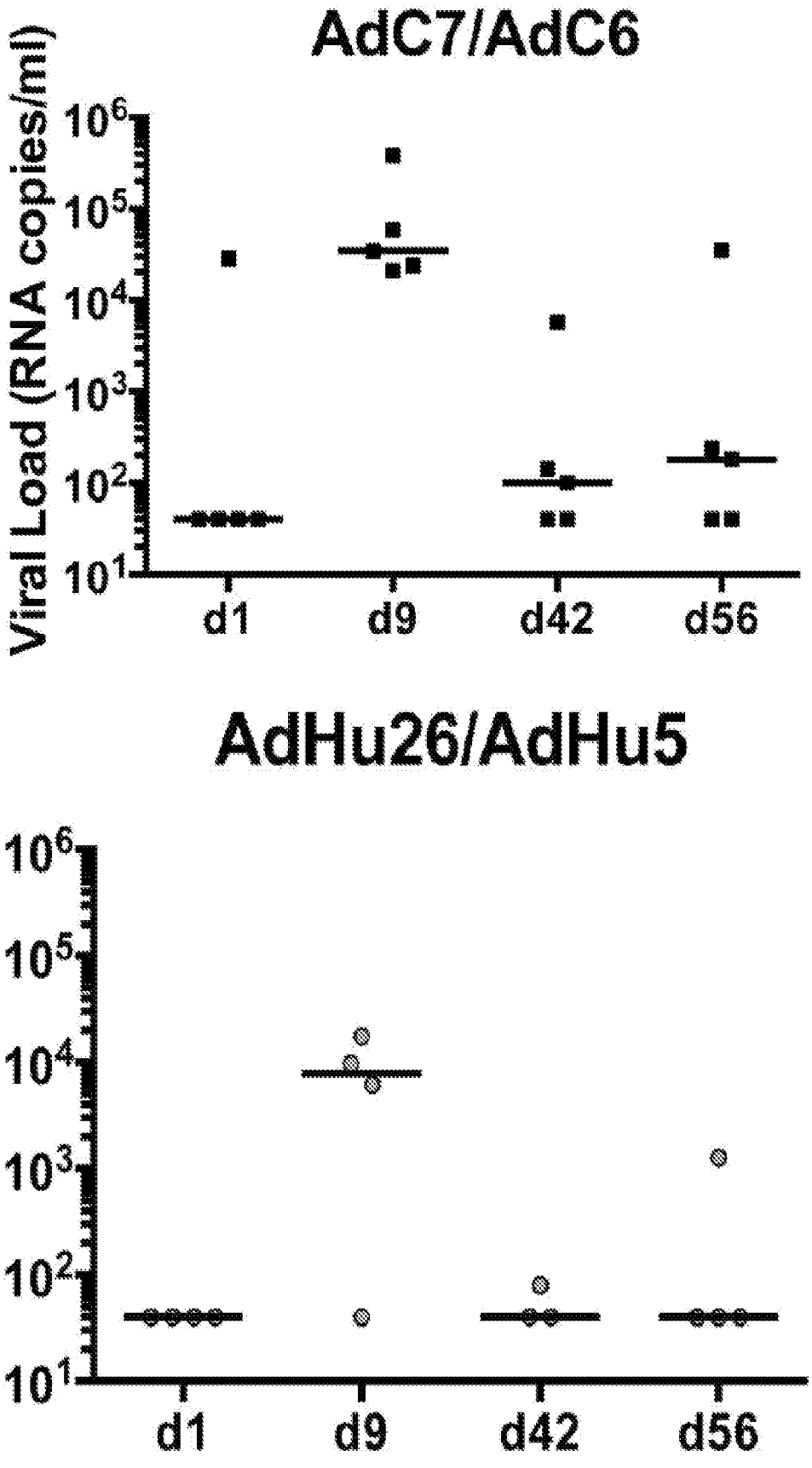

AdC7/AdC6
Viral Load (RNA copies/ml)
10^6
10^5
10^4
10^3
10^2
10^1
d1
d9
d42
d56
AdHu26/AdHu5
10^6
10^5
10^4
10^3
10^2
10^1
d1
d9
d42
d56

Fig. 8

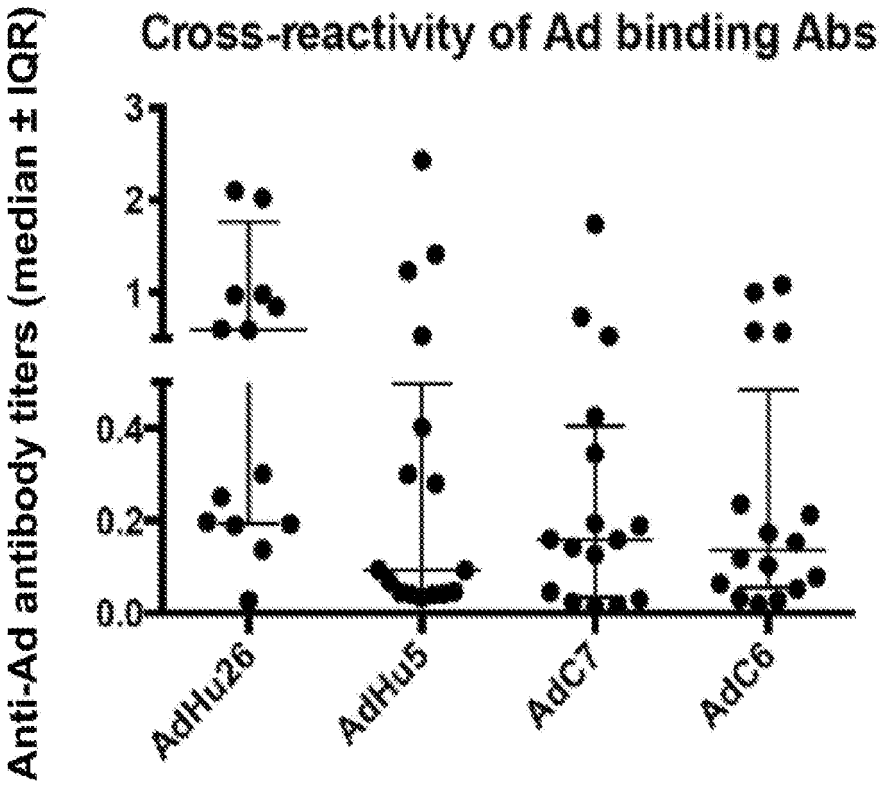
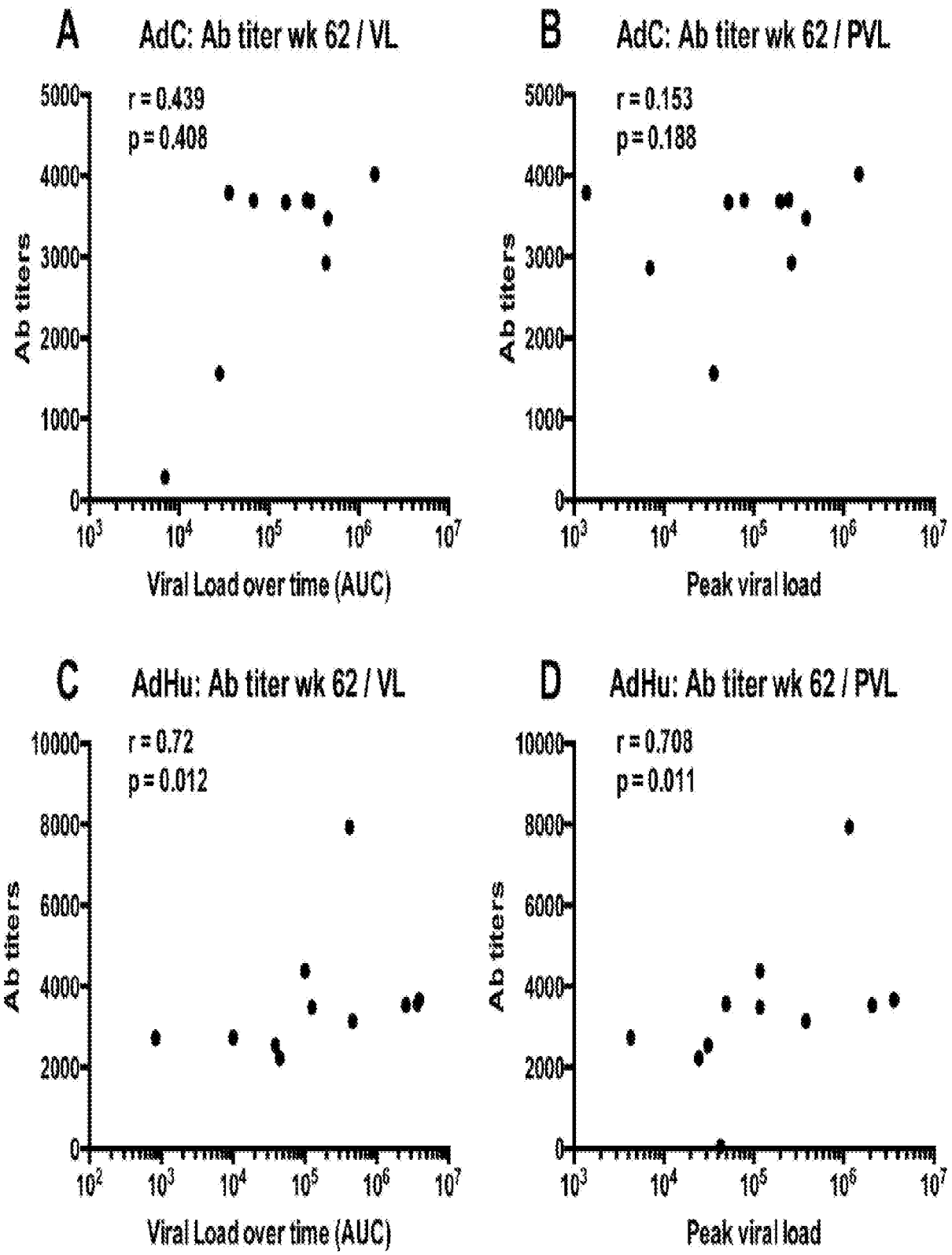

Cross-reactivity of Ad binding Abs
Anti-Ad antibody titers (median ± IQR)
3
2
1
0.4
0.2
0.0
AdHu26
AdHu5
AdC7
AdC6

Fig. 9


A
AdC: Ab titer wk 62 / VL
r = 0.439
p = 0.408
Ab titers
Viral Load over time (AUC)
B
AdC: Ab titer wk 62 / PVL
r = 0.153
p = 0.188
Ab titers
Peak viral load
C
AdHu: Ab titer wk 62 / VL
r = 0.72
p = 0.012
Ab titers
Viral Load over time (AUC)
D
AdHu: Ab titer wk 62 / PVL
r = 0.708
p = 0.011
Ab titers
Peak viral load

Figs. 10A-10D

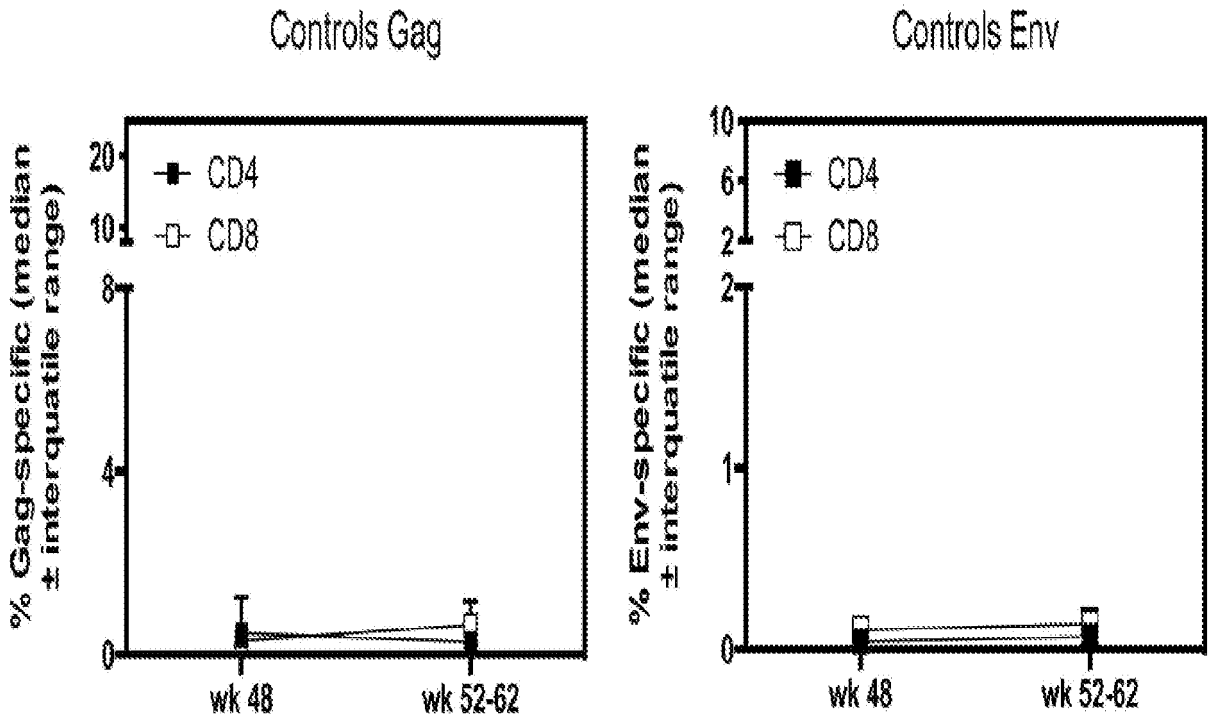
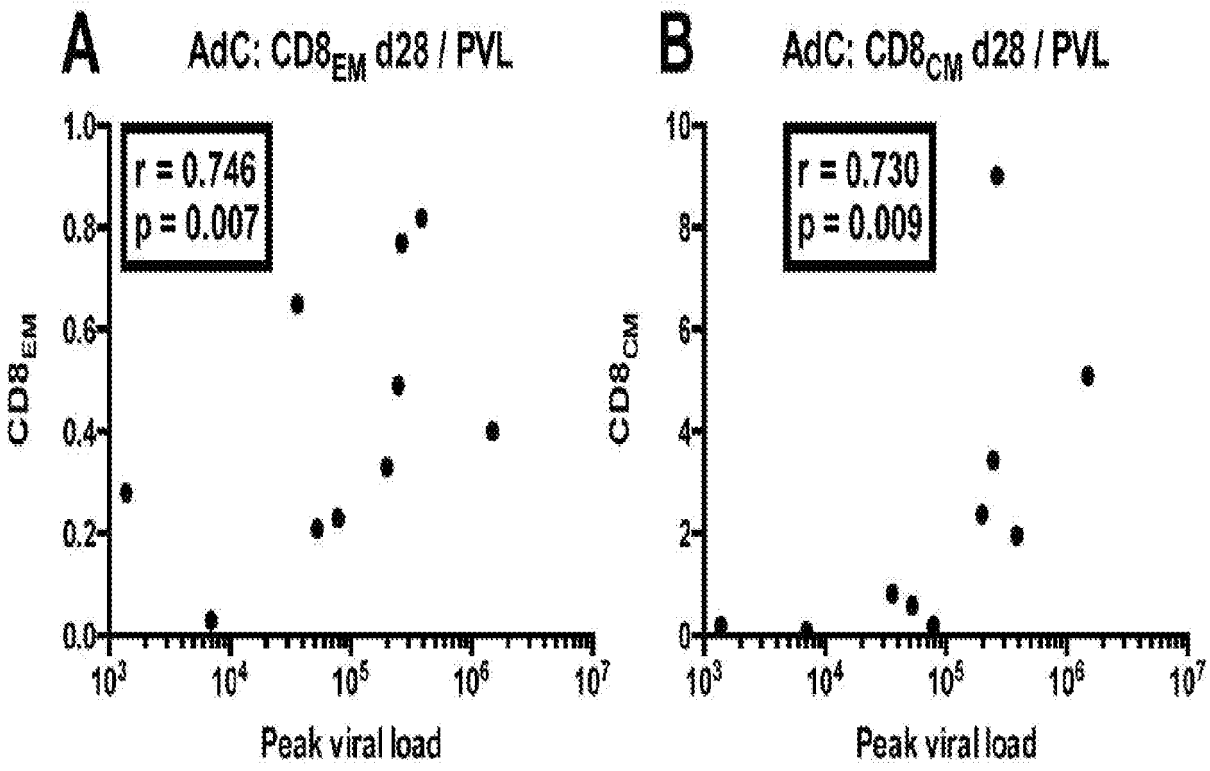
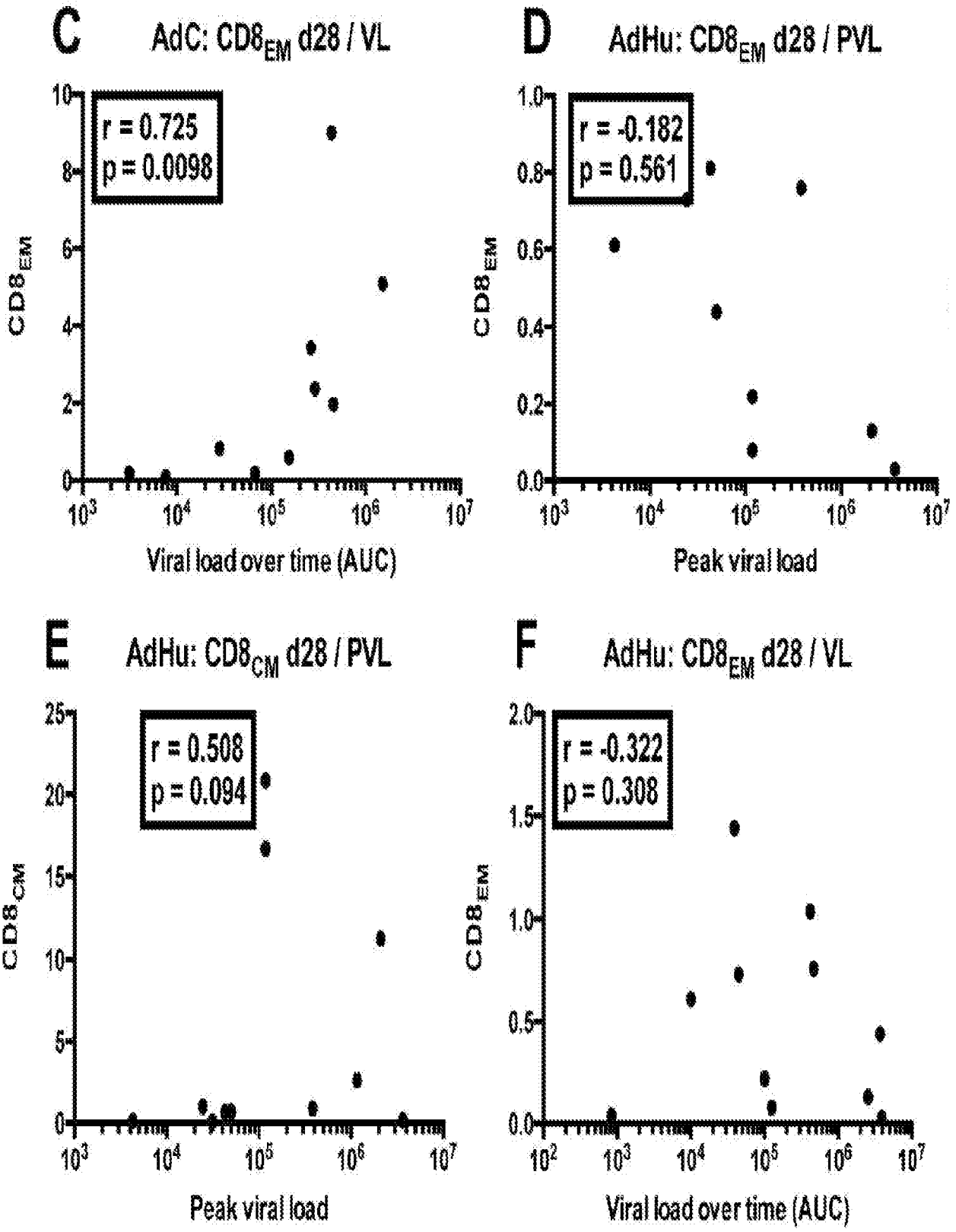


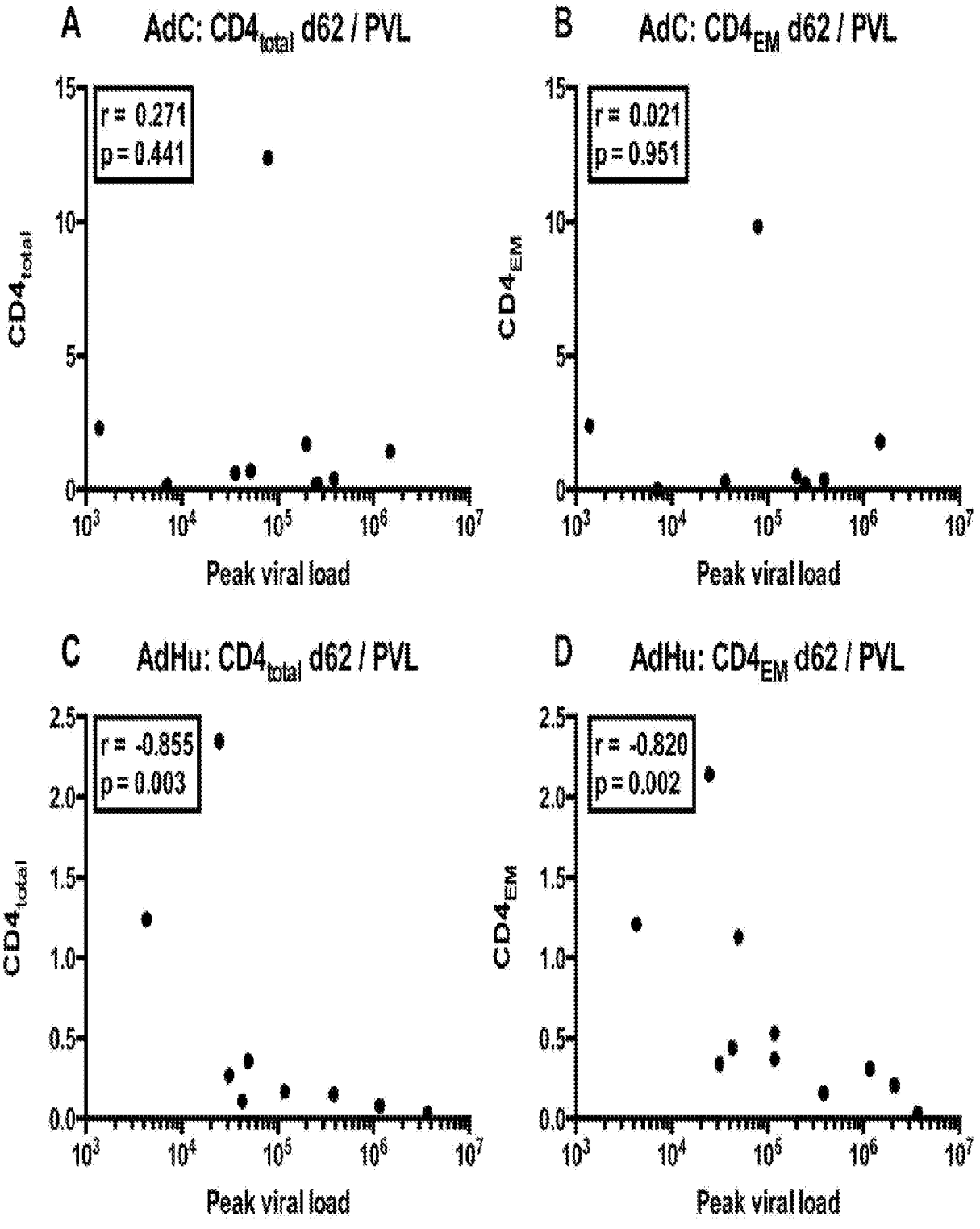
Fig. 11



Figs. 12A-12B


C
AdC: CD8EM d28 / VL
r = 0.725
p = 0.0098
CD8EM
Viral load over time (AUC)
D
AdHu: CD8EM d28 / PVL
r = -0.182
p = 0.561
CD8EM
Peak viral load
E
AdHu: CD8CM d28 / PVL
r = 0.508
p = 0.094
CD8CM
Peak viral load
F
AdHu: CD8EM d28 / VL
r = -0.322
p = 0.308
CD8EM
Viral load over time (AUC)

Figs. 12C-12F


A
AdC: CD4total d62 / PVL
r = 0.271
p = 0.441
CD4total
Peak viral load
B
AdC: CD4EM d62 / PVL
r = 0.021
p = 0.951
CD4EM
Peak viral load
C
AdHu: CD4total d62 / PVL
r = -0.855
p = 0.003
CD4total
Peak viral load
D
AdHu: CD4EM d62 / PVL
r = -0.820
p = 0.002
CD4EM
Peak viral load

Figs. 13A-13D

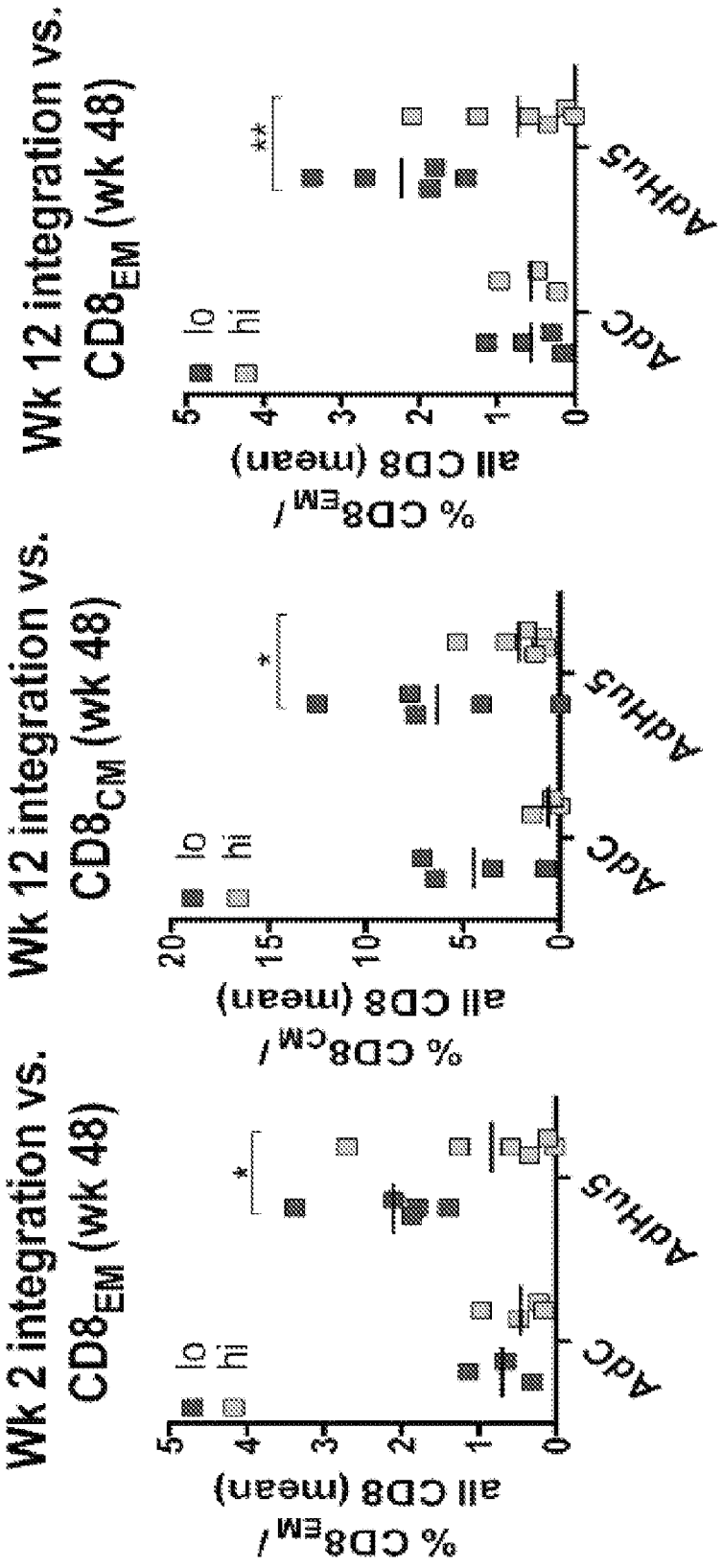
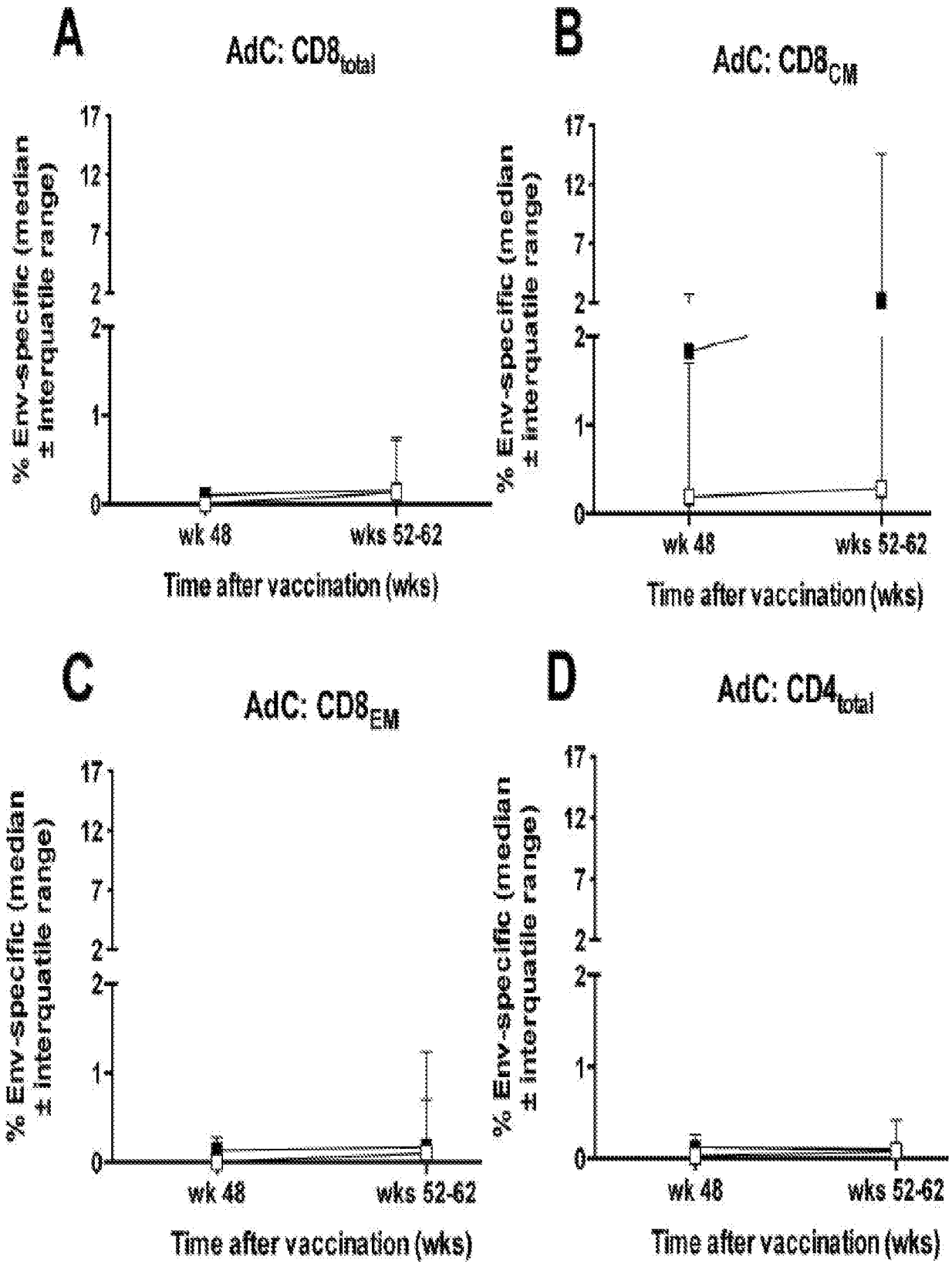
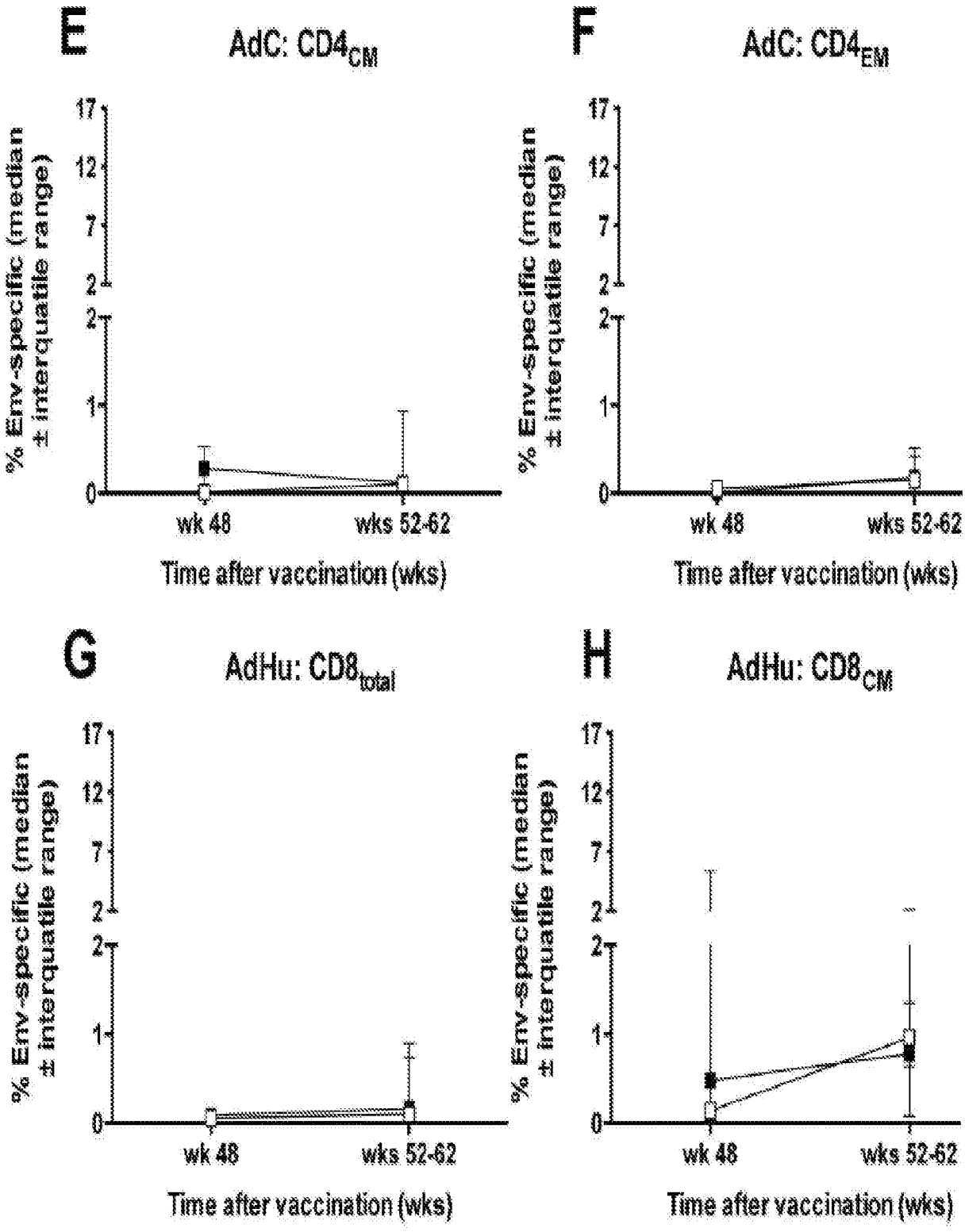

Wk 2 integration vs. CD8EM (wk 48)
Wk 12 integration vs. CD8CM (wk 48)
Wk 12 integration vs. CD8EM (wk 48)
% CD8EM / all CD8 (mean)
% CD8CM / all CD8 (mean)
% CD8EM / all CD8 (mean)
lo
hi
AdC
AdHu5
*
*
**

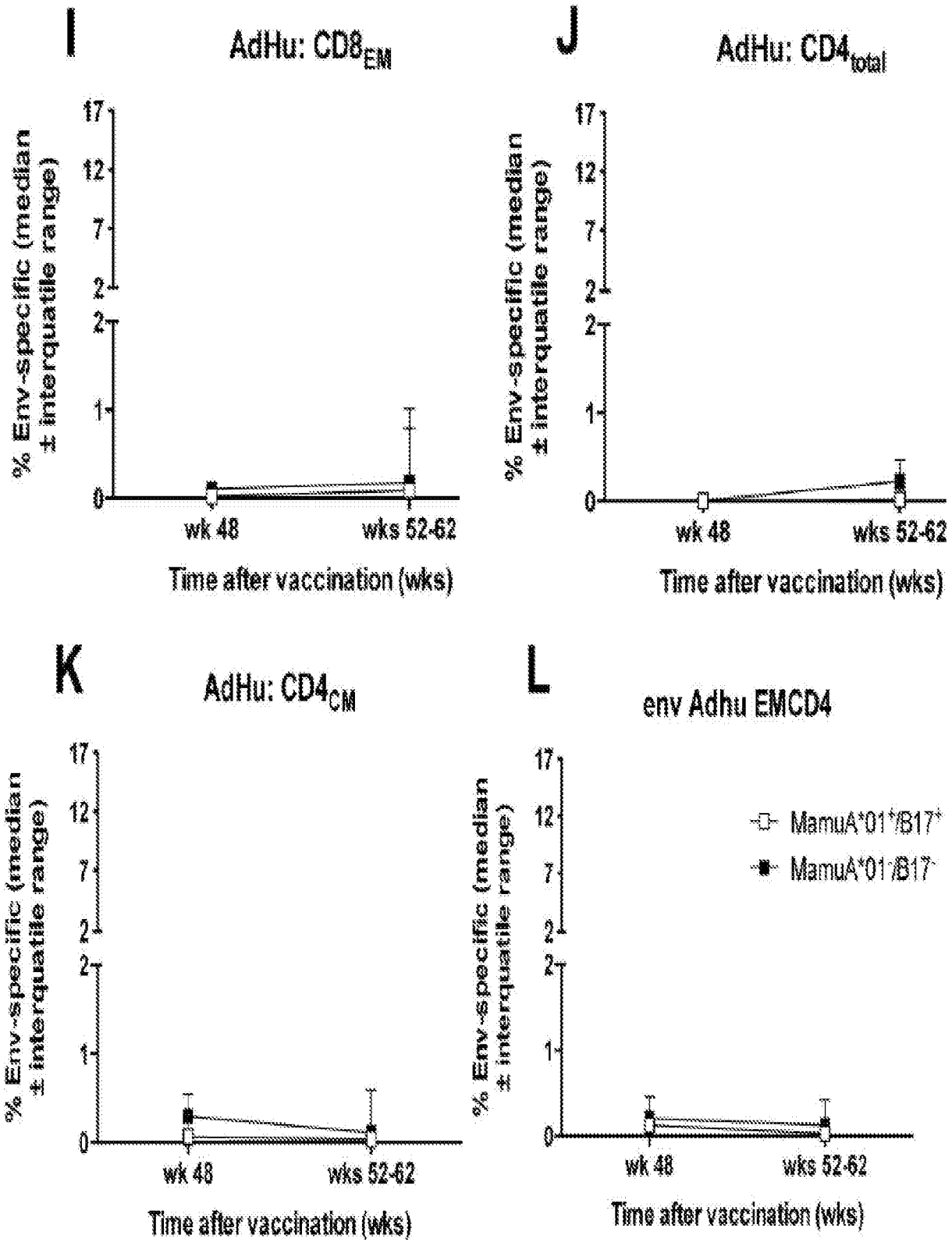
Fig. 14


A
AdC: CD8total
% Env-specific (median ± interquatile range)
17
12
7
2
2
1
0
wk 48
wks 52-62
Time after vaccination (wks)
B
AdC: CD8CM
% Env-specific (median ± interquatile range)
17
12
7
2
2
1
0
wk 48
wks 52-62
Time after vaccination (wks)
C
AdC: CD8EM
% Env-specific (median ± interquatile range)
17
12
7
2
2
1
0
wk 48
wks 52-62
Time after vaccination (wks)
D
AdC: CD4total
% Env-specific (median ± interquatile range)
17
12
7
2
2
1
0
wk 48
wks 52-62
Time after vaccination (wks)

Figs. 15A-15D


E
AdC: CD4CM
F
AdC: CD4EM
G
AdHu: CD8total
H
AdHu: CD8CM
% Env-specific (median ± interquatile range)
17
12
7
2
2
1
0
wk 48
wks 52-62
Time after vaccination (wks)

Figs. 15E-15H


I
AdHu: CD8EM
% Env-specific (median ± interquatile range)
17
12
7
2
2
1
0
wk 48
wks 52-62
Time after vaccination (wks)
J
AdHu: CD4total
% Env-specific (median ± interquatile range)
17
12
7
2
2
1
0
wk 48
wks 52-62
Time after vaccination (wks)
K
AdHu: CD4CM
% Env-specific (median ± interquatile range)
17
12
7
2
2
1
0
wk 48
wks 52-62
Time after vaccination (wks)
L
env Adhu EMCD4
% Env-specific (median ± interquatile range)
17
12
7
2
2
1
0
MamuA*01+/B17+
MamuA*01-/B17-
wk 48
wks 52-62
Time after vaccination (wks)

Figs. 15I-15L

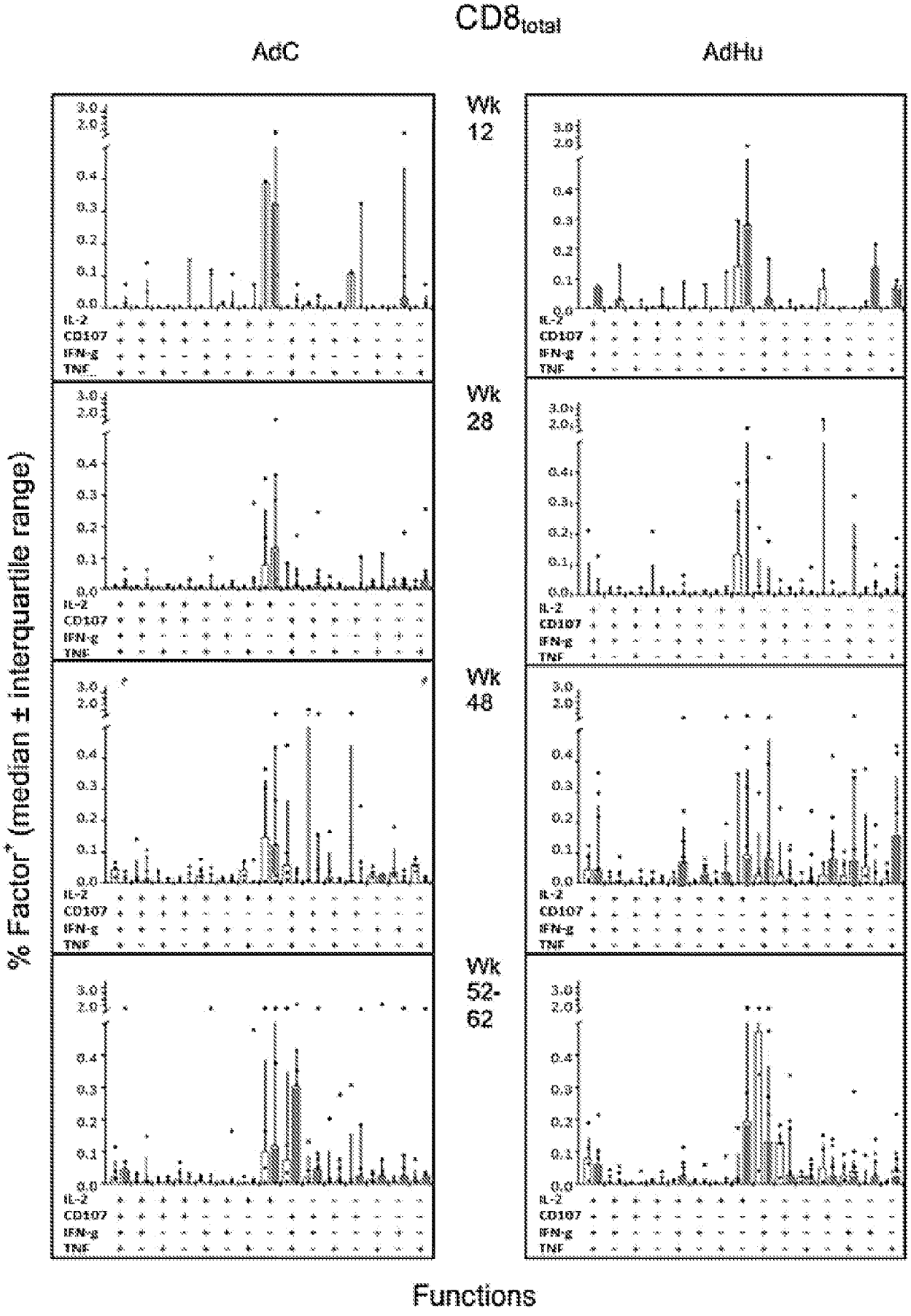

CD8total
AdC
AdHu
Wk 12
Wk 28
Wk 48
Wk 52-62
% Factor+ (median ± interquartile range)
IL-2
CD107
IFN-g
TNF
Functions

Fig. 16

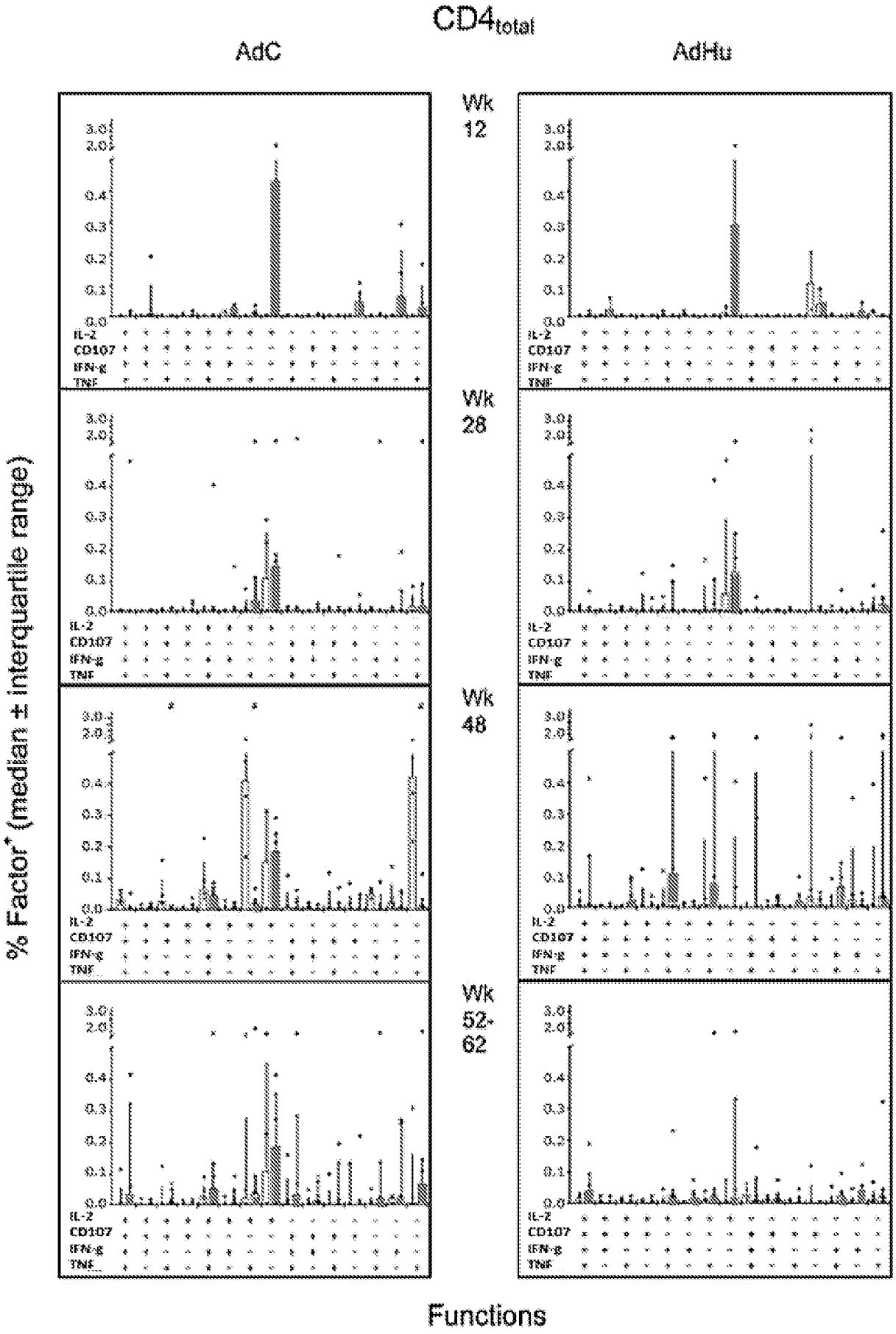

CD4total
AdC
AdHu
Wk 12
Wk 28
Wk 48
Wk 52-62
% Factor+ (median ± interquartile range)
IL-2
CD107
IFN-g
TNF
Functions

Fig. 17

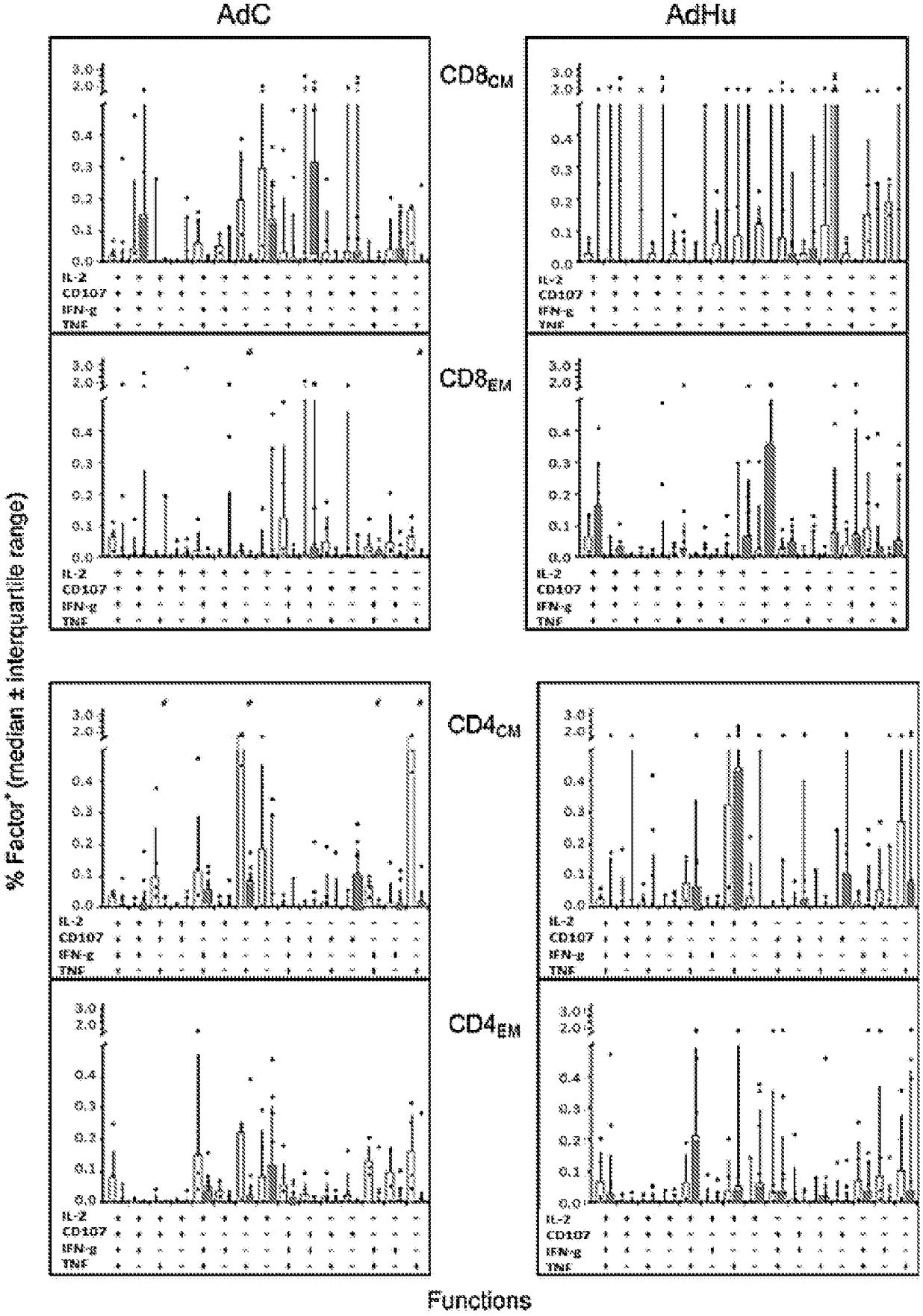
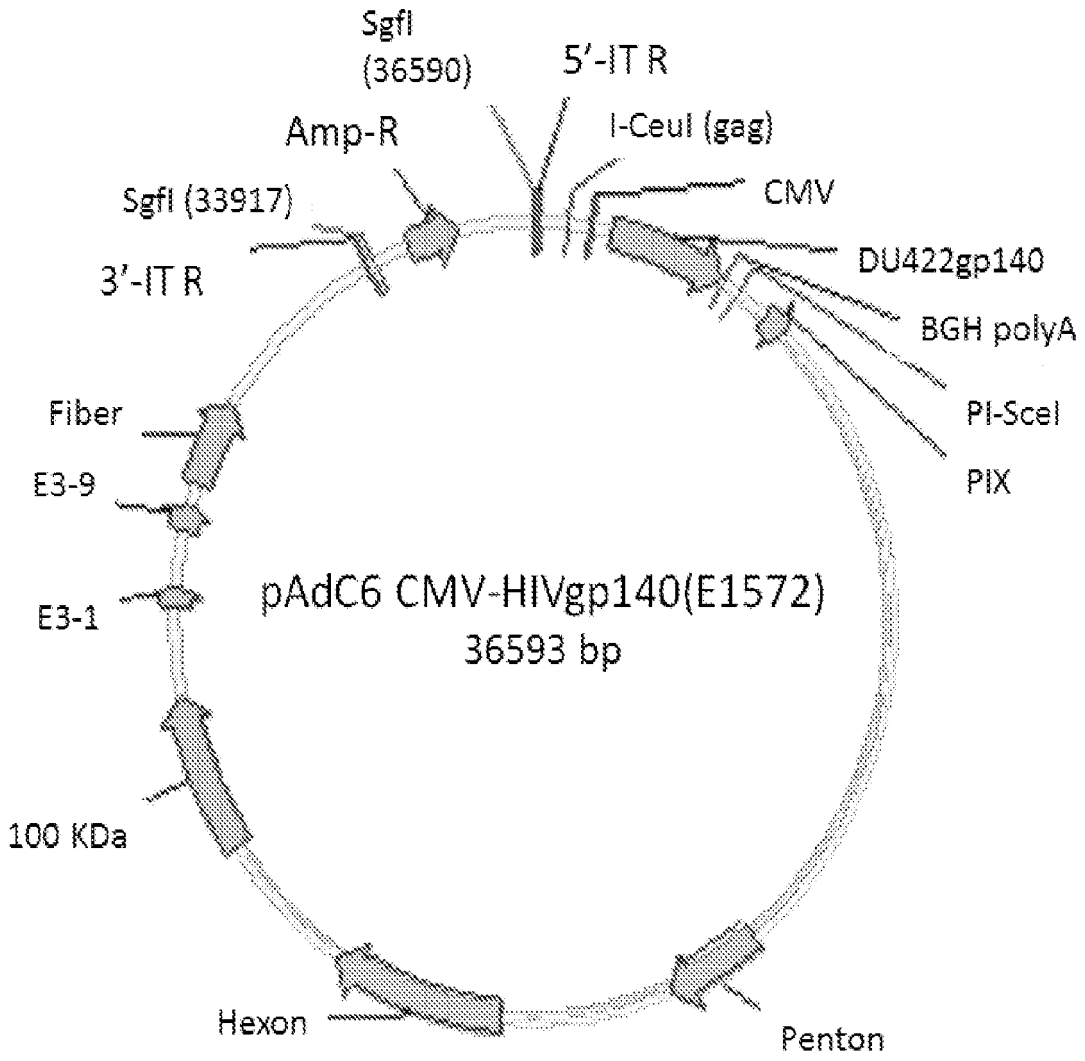
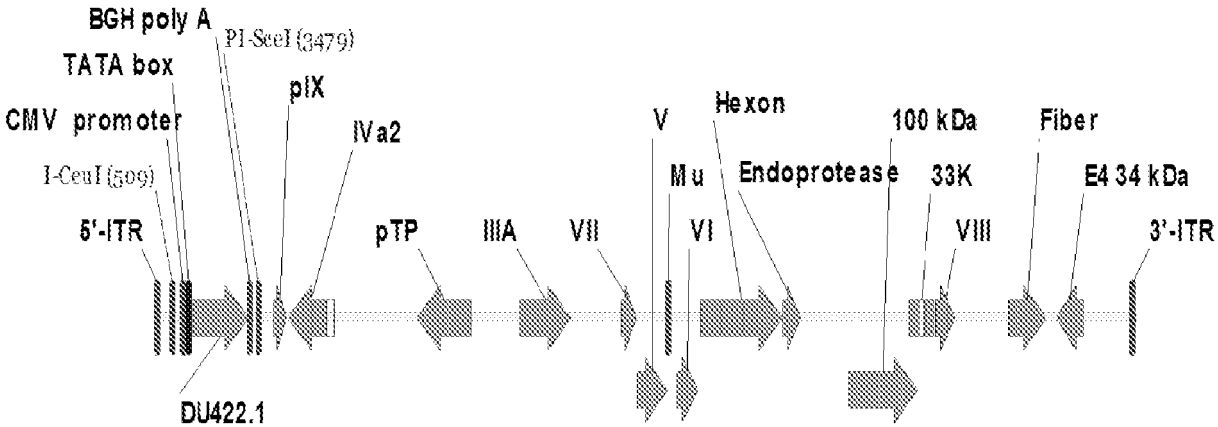

AdC
AdHu
CD8CM
CD8EM
CD4CM
CD4EM
% Factor* (median ± interquartile range)
Functions
IL-2
CD107
IFN-g
TNF

Fig. 18

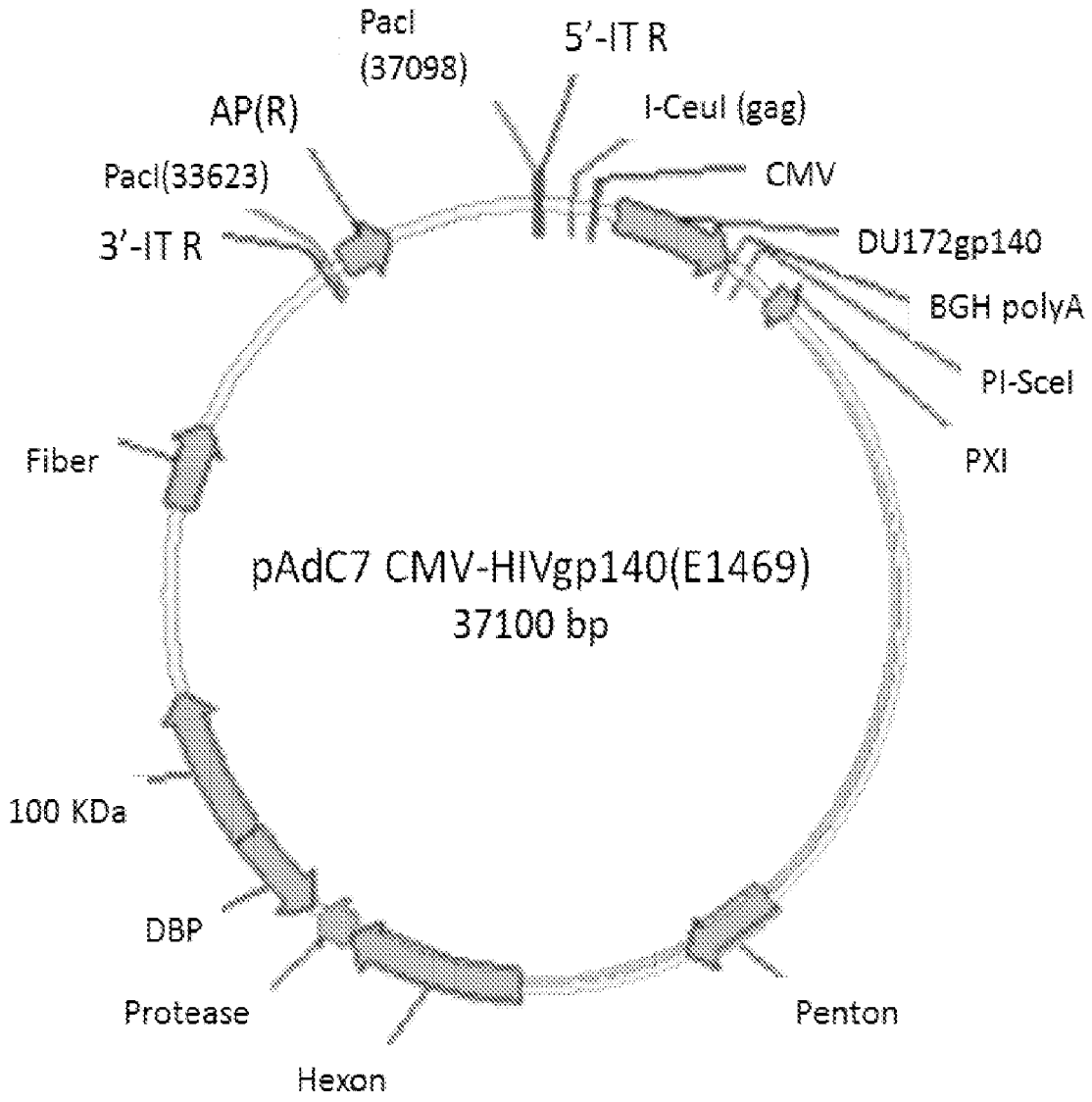


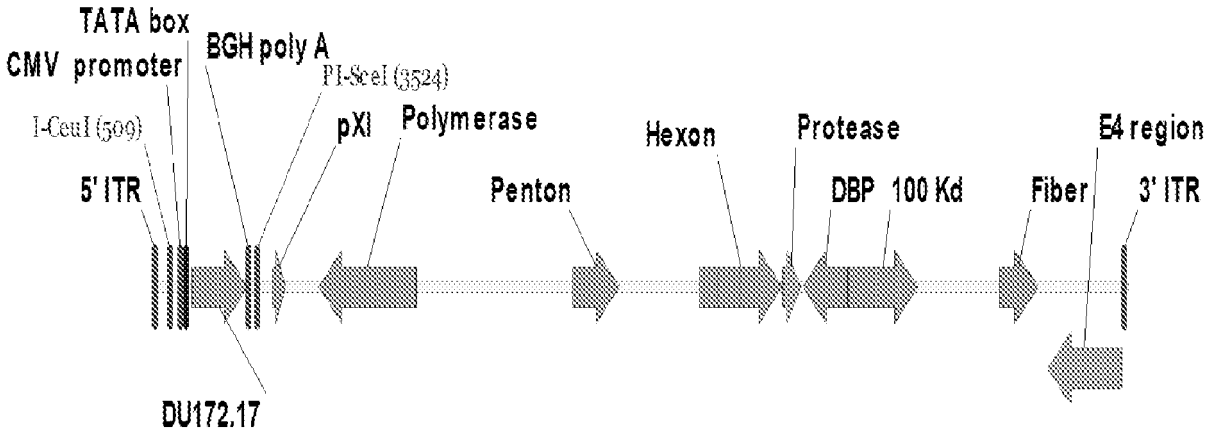


C6 020-DU422gp140(E1572)

33910 bp

Fig. 19A





C7 010-DU172gp140(E1469)

33607 bp

Fig. 19B

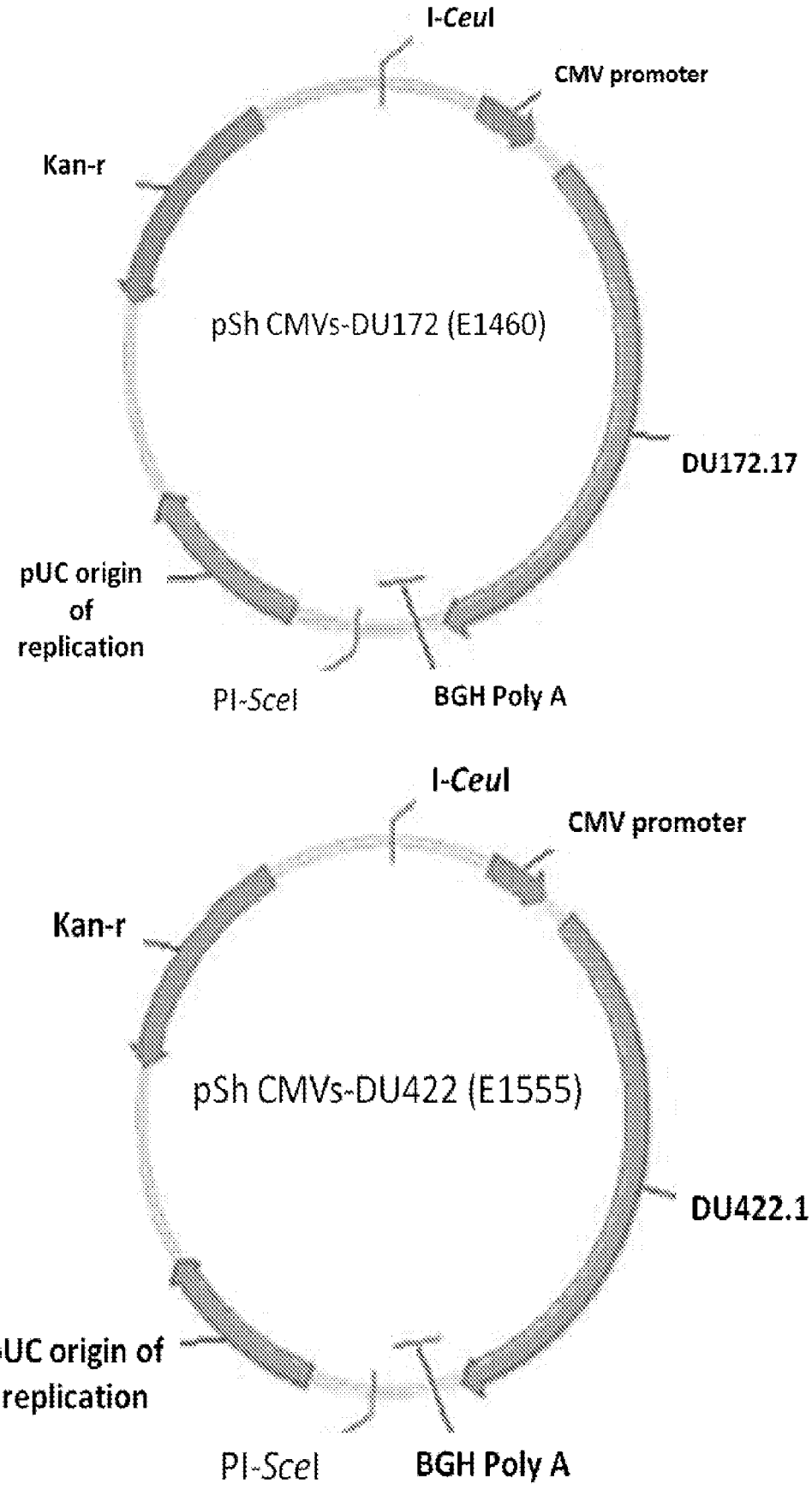

I-CeuI
CMV promoter
Kan-r
pSh CMVs-DU172 (E1460)
DU172.17
pUC origin of replication
PI-SceI
BGH Poly A
I-CeuI
CMV promoter
Kan-r
pSh CMVs-DU422 (E1555)
DU422.1
pUC origin of replication
PI-SceI
BGH Poly A

Fig. 19C

Fig. 20A

AdC6 020-HIVgp140(E1572) Nucleic Acids - SEQ ID NO: 1

CATCATCAATAATATACCTCAAACTTTTGGTGCGCGTTAATATGCAAATGAGCTGTTTGAATTTGGGGAGGGAGGAAGGTGAT
TGGCTGCGGGAGCGGCGACCGTTAGGGGCGGGGCGGGTGACGTTTTGATGACGTGGCTATGAGGCGGAGCCGGTTTGCAAG
TTCTCGTGGGAAAAGTGACGTCAAACGAGGTGTGGTTTGAACACGGAAATACTCAATTTTCCCGCGCTCTCTGACAGGAAATG
AGGTGTTTCTGGGCGGATGCAAGTGAAAACGGGCCATTTTCGCGCGAAAACTGAATGAGGAAGTGAAAATCTGAGTAATTTC
GCGTTTATGGCAGGGAGGAGTATTTGCCGAGGGCCGAGTAGACTTTGACCGATTACGTGGGGGTTTCGATTACCGTATTTTTC
ACCTAAATTTCCGCGTACGGTGTCAAAGTCCGGTGTTTTTACGTACGATATCATTTCCCCGAAAGTGCCACCTGACCGTAACTAT
AACGGTCCTAAGGTAGCGAAAGCTCAGATCTCCCGATCCCCTATGGTGCACTCTCAGTACAATCTGCTCTGATGCCGCATAGTT
AAGCCAGTATCTGCTCCCTGCTTGTGTGTTGGAGGTCGCTGAGTAGTGCGCGAGCAAAATTTAAGCTACAACAAGGCAAGGCT
TGACCGACAATTGCATGAAGAATCTGCTTAGGGTTAGGCGTTTTGCGCTGCTTCGCGATGTACGGGCCAGATATACGCGTTGA
CATTGATTATTGACTAGTATGCCAAGTACGCCCCCTATTGACGTCAATGACGGTAAATGGCCCGCCTGGCATTATGCCCAGTAC
ATGACCTTATGGGACTTTCCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCATGGTGATGCGGTTTTGGCAGTACA
TCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATTTCCAAGTCTCCACCCCATTGACGTCAATGGGAGTTTGTTTTGGCACC
AAAATCAACGGGACTTTCCAAAATGTCGTAACAACTCCGCCCCATTGACGCAAATGGGCGGTAGGCGTGTACGGTGGGAGGT
CTATATAAGCAGAGCTCGTTTAGTGAACCGTCAGATCACTAGAAGCTTTATTGCGGTAGTTTATCACAGTTAAATTGCTAACGC
AGTCAGTGCTTCTGACACAACAGTCTCGAACTTAAGGCTAGAGTTCGACGCCACCATGCGCGTGCGCGGCATCCCCCGCAACT
GGCCCCAGTGGTGGATCTGGGGCATCCTGGGCTTCTGGATGATCATCATCTGCCGCGTGGTGGGCAACCTGGACCTGTGGGT
GACCGTGTACTACGGCGTGCCCGTGTGGAAGGAGGCCAAGACCACCCTGTTCTGCGCCTCCGACGCCAAGGCCTACGACAAG
GAGGTGCACAACGTGTGGGCCACCCACGCCTGCGTGCCCACCGACCCCAACCCCCAGGAGATCGTGCTGGAGAACGTGACCG
AGAACTTCAACATGTGGAAGAACGACATGGTGGACCAGATGCACGAGGACATCATCTCCCTGTGGGACCAGTCCCTGAAGCC
CTGCGTGAAGCTGACCCCCCTGTGCGTGACCCTGAACTGCAAGAACGTGAACATCTCCGCCAACGCCAACGCCACCGCCACCC
TGAACTCCTCCATGAACGGCGAGATCAAGAACTGCTCCTTCAACACCACCACCGAGCTGCGCGACAAGAAGCAGAAGGTGTAC
GCCCTGTTCTACAAGCCCGACGTGGTGCCCCTGAACGGCGGCGAGCACAACGAGACCGGCGAGTACATCCTGATCAACTGCA
ACTCCTCCACCATCACCCAGGCCTGCCCCAAGGTGTCCTTCGACCCCATCCCCATCCACTACTGCGCCCCCGCCGGCTACGCCAT
CCTGAAGTGCAACAACAAGACCTTCAACGGCACCGGCCCCTGCAACAACGTGTCCACCGTGCAGTGCACCCACGGCATCAAGC
CCGTGGTGTCCACCCAGCTGCTGCTGAACGGCTCCCTGGCCGAGGAGGAGATCATCGTGCGCTCCGAGAACCTGACCAACAAC
ATCAAGACCATCATCGTGCACCTGAACAAGTCCGTGGAGATCAAGTGCACCCGCCCCAACAACAACACCCGCAAGTCCGTGCG
CATCGGCCCCGGCCAGACCTTCTACGCCACCGGCGAGATCATCGGCGACATCCGCGAGGCCCACTGCAACATCTCCCGCGAGA
CCTGGAACTCCACCCTGATCCAGGTGAAGGAGAAGCTGCGCGAGCACTACAACAAGACCATCAAGTTCGAGCCCTCCTCCGGC
GGCGACCTGGAGGTGACCACCCACTCCTTCAACTGCCGCGGCGAGTTCTTCTACTGCGACACCACCAAGCTGTTCAACGAGAC
CAAGCTGTTCAACGAGTCCGAGTACGTGGACAACAAGACCATCATCCTGCCCTGCCGCATCAAGCAGATCATCAACATGTGGC
AGGAGGTGGGCCGCGCCATGTACGCCCCCCCCATCGAGGGCAACATCACCTGCAAGTCCAACATCACCGGCCTGCTGCTGACC
TGGGACGGCGGCGAGAACTCCACCGAGGGCGTGTTCCGCCCCGGCGGCGGCAACATGAAGGACAACTGGCGCTCCGAGCTG
TACAAGTACAAGGTGGTGGAGATCAAGCCCCTGGGCGTGGCCCCCACCAAGTCCAAGCTGACCGTGCAGGCCCGCCAGCTGC
TGTCCGGCATCGTGCAGCAGCAGTCCAACCTGCTGCGCGCCATCGAGGCCCAGCAGCACCTGCTGCAGCTGACCGTGTGGGG
CATCAAGCAGCTGCAGACCCGCGTGCTGGCCATCGAGCGCTACCTGAAGGACCAGCAGCTGCTGGGCCTGTGGGGCTGCTCC
GGCAAGCTGATCTGCGCCACCGCCGTGCCCTGGAACTCCTCCTGGTCCAACAAGTCCCTGGGCGACATCTGGGACAACATGAC
CTGGATGCAGTGGGACCGCGAGATCTCCAACTACACCAACACCATCTTCCGCCTGCTGGAGGACTCCCAGAACCAGCAGGAGA
AGAACGAGAAGGACCTGCTGGCCCTGGACTCCTGGAAGAACCTGTGGAACTGGTTCGACATCACCAACTGGCTGTGGTAAGG
TACCTCTAGAGTCGACCCGGGCGGCCAAACCGCTGATCAGCCTCGACTGTGCCTTCTAGTTGCCAGCCATCTGTTGTTTGCCCC
TCCCCCGTGCCTTCCTTGACCCTGGAAGGTGCCACTCCCACTGTCCTTTCCTAATAAAATGAGGAAATTGCATCGCATTGTCTGA
GTAGGTGTCATTCTATTCTGGGGGGTGGGGTGGGGCAGGACAGCAAGGGGGAGGATTGGGAAGACAATAGCAGGCATGCT
GGGGATGCGGTGGGCTCTATGGCTTCTGAGGCGGAAAGAACCAGCAGATCTGCAGATCTGAATTCATCTATGTCGGGTGCGG
AGAAAGAGGTAATGAAATGGCATTATGGGTATTATGGGTCTGCATTAATGAATCGGTCAGATATCGACATATGCTGGCCACCG
TGCATGTGGCCTCGCACCCCCGCAAGACATGGCCCGAGTTCGAGCACAACGTCATGACCCGCTGCAATGTGCACCTGGGCTCC
CGCCGAGGCATGTTCATGCCCTACCAGTGCAACATGCAATTTGTGAAGGTGCTGCTGGAGCCCGATGCCATGTCCAGAGTGAG
CCTGACGGGGGTGTTTGACATGAATGTGGAGCTGTGGAAAATTCTGAGATATGATGAATCCAAGACCAGGTGCCGGGCCTGC
GAATGCGGAGGCAAGCACGCCAGGCTTCAGCCCGTGTGTGTGGAGGTGACGGAGGACCTGCGACCCGATCATTTGGTGTTGT
CCTGCAACGGGACGGAGTTCGGCTCCAGCGGGGAAGAATCTGACTAGAGTGAGTAGTGTTTGGGGCTGGGTGTGAGCCTGC

Fig. 20B

ATGAGGGGCAGAATGACTAAAATCTGTGGTTTTCTGTGTGTTGCAGCAGCATGAGCGGAAGCGCCTCCTTTGAGGGAGGGGT
ATTCAGCCCTTATCTGACGGGGCGTCTCCCCTCCTGGGCGGGAGTGCGTCAGAATGTGATGGGATCCACGGTGGACGGCCGG
CCCGTGCAGCCCGCGAACTCTTCAACCCTGACCTACGCGACCCTGAGCTCCTCGTCCGTGGACGCAGCTGCCGCCGCAGCTGCT
GCTTCCGCCGCCAGCGCCGTGCGCGGAATGGCCCTGGGCGCCGGCTACTACAGCTCTCTGGTGGCCAACTCGAGTTCCACCAA
TAATCCCGCCAGCCTGAACGAGGAGAAGCTGCTGCTGCTGATGGCCCAGCTCGAGGCCCTGACCCAGCGCCTGGGCGAGCTG
ACCCAGCAGGTGGCTCAGCTGCAGGCGGAGACGCGGGCCGCGGTTGCCACGGTGAAAACCAAATAAAAAATGAATCAATAA
ATAAACGGAGACGGTTGTTGATTTTAACACAGAGTCTTGAATCTTTATTTGATTTTTCGCGCGCGGTAGGCCCTGGACCACCGG
TCTCGATCATTGAGCACCCGGTGGATCTTTTCCAGGACCCGGTAGAGGTGGGCTTGGATGTTGAGGTACATGGGCATGAGCCC
GTCCCGGGGGTGGAGGTAGCTCCATTGCAGGGCCTCGTGCTCGGGGATGGTGTTGTAAATCACCCAGTCATAGCAGGGGCGC
AGGGCGTGGTGCTGCACGATGTCCTTGAGGAGGAGACTGATGGCCACGGGCAGCCCCTTGGTGTAGGTGTTGACGAACCTGT
TGAGCTGGGAGGGATGCATGCGGGGGGAGATGAGATGCATCTTGGCCTGGATCTTGAGATTGGCGATGTTCCCGCCCAGATC
CCGCCGGGGGTTCATGTTGTGCAGGACCACCAGCACGGTGTATCCGGTGCACTTGGGGAATTTGTCATGCAACTTGGAAGGG
AAGGCGTGAAAGAATTTGGAGACGCCCTTGTGACCGCCCAGGTTTTCCATGCACTCATCCATGATGATGGCGATGGGCCCGTG
GGCGGCGGCCTGGGCAAAGACGTTTCGGGGGTCGGACACATCGTAGTTGTGGTCCTGGGTGAGCTCGTCATAGGCCATTTTA
ATGAATTTGGGGCGGAGGGTGCCCGACTGGGGGACGAAGGTGCCCTCGATCCCGGGGGCGTAGTTGCCCTCGCAGATCTGC
ATCTCCCAGGCCTTGAGCTCGGAGGGGGGGATCATGTCCACCTGCGGGGCGATGAAAAAAACGGTTTCCGGGGCGGGGGAG
ATGAGCTGGGCCGAAAGCAGGTTCCGGAGCAGCTGGGACTTGCCGCAACCGGTGGGGCCGTAGATGACCCCGATGACCGGC
TGCAGGTGGTAGTTGAGGGAGAGACAGCTGCCGTCCTCGCGGAGGAGGGGGGCCACCTCGTTCATCATCTCGCGCACATGCA
TGTTCTCGCGCACGAGTTCCGCCAGGAGGCGCTCGCCCCCCAGCGAGAGGAGCTCTTGCAGCGAGGCGAAGTTTTTCAGCGG
CTTGAGTCCGTCGGCCATGGGCATTTTGGAGAGGGTCTGTTGCAAGAGTTCCAGACGGTCCCAGAGCTCGGTGATGTGCTCTA
GGGCATCTCGATCCAGCAGACCTCCTCGTTTCGCGGGTTGGGGCGACTGCGGGAGTAGGGCACCAGGCGATGGGCGTCCAGC
GAGGCCAGGGTCCGGTCCTTCCAGGGCCGCAGGGTCCGCGTCAGCGTGGTCTCCGTCACGGTGAAGGGGTGCGCGCCGGGC
TGGGCGCTTGCGAGGGTGCGCTTCAGGCTCATCCGGCTGGTCGAGAACCGCTCCCGGTCGGCGCCCTGCGCGTCGGCCAGGT
AGCAATTGAGCATGAGTTCGTAGTTGAGCGCCTCGGCCGCGTGGCCCTTGGCGCGGAGCTTACCTTTGGAAGTGTGTCCGCAG
ACGGGACAGAGGAGGGACTTGAGGGCGTAGAGCTTGGGGGCGAGGAAGACGGACTCGGGGGCGTAGGCGTCCGCGCCGC
AGCTGGCGCAGACGGTCTCGCACTCCACGAGCCAGGTGAGGTCGGGGCGGTTGGGGTCAAAAACGAGGTTTCCTCCGTGCTT
TTTGATGCGTTTCTTACCTCTGGTCTCCATGAGCTCGTGTCCCCGCTGGGTGACAAAGAGGCTGTCCGTGTCCCCGTAGACCGA
CTTTATGGGCCGGTCCTCGAGCGGGGTGCCGCGGTCCTCGTCGTAGAGGAACCCCGCCCACTCCGAGACGAAGGCCCGGGTC
CAGGCCAGCACGAAGGAGGCCACGTGGGAGGGGTAGCGGTCGTTGTCCACCAGCGGGTCCACCTTCTCCAGGGTATGCAAG
CACATGTCCCCCTCGTCCACATCCAGGAAGGTGATTGGCTTGTAAGTGTAGGCCACGTGACCGGGGGTCCCGGCCGGGGGGG
TATAAAAGGGGGCGGGCCCCTGCTCGTCCTCACTGTCTTCCGGATCGCTGTCCAGGAGCGCCAGCTGTTGGGGTAGGTATTCC
CTCTCGAAGGCGGGCATGACCTCGGCACTCAGGTTGTCAGTTTCTAGAAACGAGGAGGATTTGATATTGACGGTGCCGTTGGA
GACGCCTTTCATGAGCCCCTCGTCCATTTGGTCAGAAAAGACGATCTTTTTGTTGTCGAGCTTGGTGGCGAAGGAGCCGTAGA
GGGCGTTGGAGAGCAGCTTGGCGATGGAGCGCATGGTCTGGTTCTTTTCCTTGTCGGCGCGCTCCTTGGCGGCGATGTTGAGC
TGCACGTACTCGCGCGCCACGCACTTCCATTCGGGGAAGACGGTGGTGAGCTCGTCGGGCACGATTCTGACCCGCCAGCCGC
GGTTGTGCAGGGTGATGAGGTCCACGCTGGTGGCCACCTCGCCGCGCAGGGGCTCGTTGGTCCAGCAGAGGCGCCCGCCCTT
GCGCGAGCAGAAGGGGGGCAGCGGGTCCAGCATGAGCTCGTCGGGGGGGTCGGCGTCCACGGTGAAGATGCCGGGCAGGA
GCTCGGGGTCGAAGTAGCTGATGCAGGTGCCCAGATTGTCCAGCGCCGCTTGCCAGTCGCGCACGGCCAGCGCGCGCTCGTA
GGGGCTGAGGGGCGTGCCCCAGGGCATGGGGTGCGTGAGCGCGGAGGCGTACATGCCGCAGATGTCGTAGACGTAGAGGG
GCTCCTCGAGGACGCCGATGTAGGTGGGGTAGCAGCGCCCCCCGCGGATGCTGGCGCGCACGTAGTCGTACAGCTCGTGCGA
GGGCGCGAGGAGCCCCGTGCCGAGGTTGGAGCGTTGCGGCTTTTCGGCGCGGTAGACGATCTGGCGGAAGATGGCGTGGGA
GTTGGAGGAGATGGTGGGCCTTTGGAAGATGTTGAAGTGGGCGTGGGGCAGGCCGACCGAGTCCCTGATGAAGTGGGCGTA
GGAGTCCTGCAGCTTGGCGACGAGCTCGGCGGTGACGAGGACGTCCAGGGCGCAGTAGTCGAGGGTCTCTTGGATGATGTC
ATACTTGAGCTGGCCCTTCTGCTTCCACAGCTCGCGGTTGAGAAGGAACTCTTCGCGGTCCTTCCAGTACTCTTCGAGGGGGAA
CCCGTCCTGATCGGCACGGTAAGAGCCCACCATGTAGAACTGGTTGACGGCCTTGTAGGCGCAGCAGCCCTTCTCCACGGGGA
GGGCGTAAGCTTGCGCGGCCTTGCGCAGGGAGGTGTGGGTGAGGGCGAAGGTGTCGCGCACCATGACCTTGAGGAACTGGT
GCTTGAAGTCGAGGTCGTCGCAGCCGCCCTGCTCCCAGAGTTGGAAGTCCGTGCGCTTCTTGTAGGCGGGGTTAGGCAAAGC
GAAAGTAACATCGTTGAAGAGGATCTTGCCCGCGCGGGGCATGAAGTTGCGAGTGATGCGGAAAGGCTGGGGCACCTCGGC
CCGGTTGTTGATGACCTGGGCGGCGAGGACGATCTCGTCGAAGCCGTTGATGTTGTGCCCGACGATGTAGAGTTCCACGAATC
GCGGGCGGCCCTTGACGTGGGGCAGCTTCTTGAGCTCGTCGTAGGTGAGCTCGGCGGGGTCGCTGAGCCCGTGCTGCTCGAG

Fig. 20C

GGCCCAGTCGGCGACGTGGGGGTTGGCGCTGAGGAAGGAAGTCCAGAGATCCACGGCCAGGGCGGTCTGCAAGCGGTCCCG
GTACTGACGGAACTGTTGGCCCACGGCCATTTTTTCGGGGGTGACGCAGTAGAAGGTGCGGGGGTCGCCGTGCCAGCGGTCC
CACTTGAGCTGGAGGGCGAGGTCGTGGGCGAGCTCGACGAGCGGCGGGTCCCCGGAGAGTTTCATGACCAGCATGAAGGGG
ACGAGCTGCTTGCCGAAGGACCCCATCCAGGTGTAGGTTTCCACATCGTAGGTGAGGAAGAGCCTTTCGGTGCGAGGATGCG
AGCCGATGGGGAAGAACTGGATCTCCTGCCACCAGTTGGAGGAATGGCTGTTGATGTGATGGAAGTAGAAATGCCGACGGC
GCGCCGAGCACTCGTGCTTGTGTTTATACAAGCGTCCGCAGTGCTCGCAACGCTGCACGGGATGCACGTGCTGCACGAGCTGT
ACCTGGGTTCCTTTGGCGAGGAATTTCAGTGGGCAGTGGAGCGCTGGCGGCTGCATCTCGTGCTGTACTACGTCTTGGCCATC
GGCGTGGCCATCGTCTGCCTCGATGGTGGTCATGCTGACGAGCCCGCGCGGGAGGCAGGTCCAGACCTCGGCTCGGACGGGT
CGGAGAGCGAGGACGAGGGCGCGCAGGCCGGAGCTGTCCAGGGTCCTGAGACGCTGCGGAGTCAGGTCAGTGGGCAGCGG
CGGCGCGCGGTTGACTTGCAGGAGCTTTTCCAGGGCGCGCGGGAGGTCCAGATGGTACTTGATCTCCACGGCGCCGTTGGTG
GCTACGTCCACGGCTTGCAGGGTGCCGTGCCCCTGGGGCGCCACCACCGTGCCCCGTTTCTTCTTGGGCGCTGCTTCCATGTCG
GTCAGAAGCGGCGGCGAGGACGCGCGCCGGGCGGCAGGGGCGGCTCGGGGCCCGGAGGCAGGGGCGGCAGGGGCACGTC
GGCGCCGCGCGCGGGCAGGTTCTGGTACTGCGCCCGGAGAAGACTGGCGTGAGCGACGACGCGACGGTTGACGTCCTGGAT
CTGACGCCTCTGGGTGAAGGCCACGGGACCCGTGAGTTTGAACCTGAAAGAGAGTTCGACAGAATCAATCTCGGTATCGTTG
ACGGCGGCCTGCCGCAGGATCTCTTGCACGTCGCCCGAGTTGTCCTGGTAGGCGATCTCGGTCATGAACTGCTCGATCTCCTCC
TCCTGAAGGTCTCCGCGGCCGGCGCGCTCGACGGTGGCCGCGAGGTCGTTGGAGATGCGGCCCATGAGCTGCGAGAAGGCG
TTCATGCCGGCCTCGTTCCAGACGCGGCTGTAGACCACGGCTCCGTCGGGGTCGCGCGCGCGCATGACCACCTGGGCGAGGT
TGAGCTCGACGTGGCGCGTGAAGACCGCGTAGTTGCAGAGGCGCTGGTAGAGGTAGTTGAGCGTGGTGGCGATGTGCTCGG
TGACGAAGAAGTACATGATCCAGCGGCGGAGCGGCATCTCGCTGACGTCGCCCAGGGCTTCCAAGCGTTCCATGGCCTCGTA
GAAGTCCACGGCGAAGTTGAAAAACTGGGAGTTGCGCGCCGAGACGGTCAACTCCTCCTCCAGAAGACGGATGAGCTCGGCG
ATGGTGGCGCGCACCTCGCGCTCGAAGGCCCCGGGGGGCTCCTCTTCCATCTCCTCCTCTTCCTCCTCCACTAACATCTCTTCTA
CTTCCTCCTCAGGAGGCGGTGGCGGGGGAGGGGCCCTGCGTCGCCGGCGGCGCACGGGCAGACGGTCGATGAAGCGCTCGA
TGGTCTCCCCGCGCCGGCGACGCATGGTCTCGGTGACGGCGCGCCCGTCCTCGCGGGGCCGCAGCATGAAGACGCCGCCGCG
CATCTCCAGGTGGCCGCCGGGGGGGTCTCCGTTGGGCAGGGAGAGGGCGCTGACGATGCATCTTATCAATTGACCCGTAGGG
ACTCCGCGCAAGGACCTGAGCGTCTCGAGATCCACGGGATCCGAAAACCGCTGAACGAAGGCTTCGAGCCAGTCGCAGTCGC
AAGGTAGGCTGAGCCCGGTTTCTTGTTCTTCGGGTATTTGGTCGGGAGGCGGGCGGGCGATGCTGCTGGTGATGAAGTTGAA
GTAGGCGGTCCTGAGACGGCGGATGGTGGCGAGGAGCACCAGGTCCTTGGGCCCGGCTTGCTGGATGCGCAGACGGTCGGC
CATGCCCCAGGCGTGGTCCTGACACCTGGCGAGGTCCTTGTAGTAGTCCTGCATGAGCCGCTCCACGGGCACCTCCTCCTCGCC
CGCGCGGCCGTGCATGCGCGTGAGCCCGAACCCGCGCTGCGGCTGGACGAGCGCCAGGTCGGCGACGACGCGCTCGGTGAG
GATGGCCTGCTGGATCTGGGTGAGGGTGGTCTGGAAGTCGTCGAAGTCGACGAAGCGGTGGTAGGCTCCGGTGTTGATGGT
GTAGGAGCAGTTGGCCATGACGGACCAGTTGACGGTCTGGTGGCCGGGTCGCACGAGCTCGTGGTACTTGAGGCGCGAGTA
GGCGCGCGTGTCGAAGATGTAGTCGTTGCAGGCGCGCACGAGGTACTGGTATCCGACGAGGAAGTGCGGCGGCGGCTGGCG
GTAGAGCGGCCATCGCTCGGTGGCGGGGGCGCCGGGCGCGAGGTCCTCGAGCATGAGGCGGTGGTAGCCGTAGATGTACCT
GGACATCCAGGTGATGCCGGCGGCGGTGGTGGAGGCGCGCGGGAACTCGCGGACGCGGTTCCAGATGTTGCGCAGCGGCA
GGAAGTAGTTCATGGTGGCCGCGGTCTGGCCCGTGAGGCGCGCGCAGTCGTGGATGCTCTAGACATACGGGCAAAAACGAA
AGCGGTCAGCGGCTCGACTCCGTGGCCTGGAGGCTAAGCGAACGGGTTGGGCTGCGCGTGTACCCCGGTTCGAATCTCGAAT
CAGGCTGGAGCCGCAGCTAACGTGGTACTGGCACTCCCGTCTCGACCCAAGCCTGCTAACGAAACCTCCAGGATACGGAGGC
GGGTCGTTTTTTGGCCTTGGTCGCTGGTCATGAAAAACTAGTAAGCGCGGAAAGCGGCCGCCCGCGATGGCTCGCTGCCGTA
GTCTGGAGAAAGAATCGCCAGGGTTGCGTTGCGGTGTGCCCCGGTTCGAGCCTCAGCGCTCGGCGCCGGCCGGATTCCGCGG
CTAACGTGGGCGTGGCTGCCCCGTCGTTTCCAAGACCCCTTAGCCAGCCGACTTCTCCAGTTACGGAGCGAGCCCCTCTTTTTTT
TTCTTGTGTTTTTGCCAGATGCATCCCGTACTGCGGCAGATGCGCCCCCACCCTCCACCACAACCGCCCCTACCGCAGCAGCAG
CAACAGCCGGCGCTTCTGCCCCCGCCCCAGCAGCAGCCAGCCACTACCGCGGCGGCCGCCGTGAGCGGAGCCGGCGTTCAGT
ATGACCTGGCCTTGGAAGAGGGCGAGGGGCTGGCGCGGCTGGGGGCGTCGTCGCCGGAGCGGCACCCGCGCGTGCAGATG
AAAAGGGACGCTCGCGAGGCCTACGTGCCCAAGCAGAACCTGTTCAGAGACAGGAGCGGCGAGGAGCCCGAGGAGATGCGC
GCCTCCCGCTTCCACGCGGGGCGGGAGCTGCGGCGCGGCCTGGACCGAAAGCGGGTGCTGAGGGACGAGGATTTCGAGGCG
GACGAGCTGACGGGGATCAGCCCCGCGCGCGCGCACGTGGCCGCGGCCAACCTGGTCACGGCGTACGAGCAGACCGTGAAG
GAGGAGAGCAACTTCCAAAAATCCTTCAACAACCACGTGCGCACGCTGATCGCGCGCGAGGAGGTGACCCTGGGCCTGATGC
ACCTGTGGGACCTGCTGGAGGCCATCGTGCAGAACCCCACGAGCAAGCCGCTGACGGCGCAGCTGTTTCTGGTGGTGCAGCA
CAGTCGGGACAACGAGACGTTCAGGGAGGCGCTGCTGAATATCACCGAGCCCGAGGGCCGCTGGCTCCTGGACCTGGTGAAC
ATTTTGCAGAGCATCGTGGTGCAGGAGCGCGGGCTGCCGCTGTCCGAGAAGCTGGCGGCCATCAACTTCTCGGTGCTGAGTC

Fig. 20D

TGGGCAAGTACTACGCTAGGAAGATCTACAAGACCCCGTACGTGCCCATAGACAAGGAGGTGAAGATCGACGGGTTTTACAT
GCGCATGACCCTGAAAGTGCTGACCCTGAGCGACGATCTGGGGGTGTACCGCAACGACAGGATGCACCGCGCGGTGAGCGC
CAGCCGCCGGCGCGAGCTGAGCGACCAGGAGCTGATGCACAGCCTGCAGCGGGCCCTGACCGGGGCCGGGACCGAGGGGG
AGAGCTACTTTGACATGGGCGCGGACCTGCGCTGGCAGCCCAGCCGCCGGGCCTTGGAAGCTGCCGGCGGTTCCCCCTACGT
GGAGGAGGTGGACGATGAGGAGGAGGAGGGCGAGTACCTGGAAGACTGATGGCGCGACCGTATTTTTGCTAGATGCAGCA
ACAGCCACCGCCGCCGCCTCCTGATCCCGCGATGCGGGCGGCGCTGCAGAGCCAGCCGTCCGGCATTAACTCCTCGGACGATT
GGACCCAGGCCATGCAACGCATCATGGCGCTGACGACCCGCAATCCCGAAGCCTTTAGACAGCAGCCTCAGGCCAACCGGCTC
TCGGCCATCCTGGAGGCCGTGGTGCCCTCGCGCTCGAACCCCACGCACGAGAAGGTGCTGGCCATCGTGAACGCGCTGGTGG
AGAACAAGGCCATCCGCGGTGACGAGGCCGGGCTGGTGTACAACGCGCTGCTGGAGCGCGTGGCCCGCTACAACAGCACCA
ACGTGCAGACGAACCTGGACCGCATGGTGACCGACGTGCGCGAGGCGGTGTCGCAGCGCGAGCGGTTCCACCGCGAGTCGA
ACCTGGGCTCCATGGTGGCGCTGAACGCCTTCCTGAGCACGCAGCCCGCCAACGTGCCCCGGGGCCAGGAGGACTACACCAA
CTTCATCAGCGCGCTGCGGCTGATGGTGGCCGAGGTGCCCCAGAGCGAGGTGTACCAGTCGGGGCCGGACTACTTCTTCCAG
ACCAGTCGCCAGGGCTTGCAGACCGTGAACCTGAGCCAGGCTTTCAAGAACTTGCAGGGACTGTGGGGCGTGCAGGCCCCGG
TCGGGGACCGCGCGACGGTGTCGAGCCTGCTGACGCCGAACTCGCGCCTGCTGCTGCTGCTGGTGGCGCCCTTCACGGACAG
CGGCAGCGTGAGCCGCGACTCGTACCTGGGCTACCTGCTTAACCTGTACCGCGAGGCCATCGGACAGGCGCACGTGGACGAG
CAGACCTACCAGGAGATCACCCACGTGAGCCGCGCGCTGGGCCAGGAGGACCCGGGCAACCTGGAGGCCACCCTGAACTTCC
TGCTGACCAACCGGTCGCAGAAGATCCCGCCCCAGTACGCGCTGAGCACCGAGGAGGAGCGCATCCTGCGCTACGTGCAGCA
GAGCGTGGGGCTGTTCCTGATGCAGGAGGGGGCCACGCCCAGCGCGGCGCTCGACATGACCGCGCGCAACATGGAGCCCAG
CATGTACGCCCGCAACCGCCCGTTCATCAATAAGCTGATGGACTACTTGCATCGGGCGGCCGCCATGAACTCGGACTACTTTAC
CAACGCCATCTTGAACCCGCACTGGCTCCCGCCGCCCGGGTTCTACACGGGCGAGTACGACATGCCCGACCCCAACGACGGGT
TCCTGTGGGACGACGTGGACAGCAGCGTGTTCTCGCCGCGTCCAGGAACCAATGCCGTGTGGAAGAAAGAGGGCGGGGACC
GGCGGCCGTCCTCGGCGCTGTCCGGTCGCGCGGGTGCTGCCGCGGCGGTGCCCGAGGCCGCCAGCCCCTTCCCGAGCCTGCC
CTTTTCGCTGAACAGCGTGCGCAGCAGCGAGCTGGGTCGGCTGACGCGACCGCGCCTGCTGGGCGAGGAGGAGTACCTGAAC
GACTCCTTGTTGAGGCCCGAGCGCGAGAAGAACTTCCCCAATAACGGGATAGAGAGCCTGGTGGACAAGATGAGCCGCTGGA
AGACGTACGCGCACGAGCACAGGGACGAGCCCCGAGCTAGCAGCGCAGGCACCCGTAGACGCCAGCGGCACGACAGGCAGC
GGGGACTGGTGTGGGACGATGAGGATTCCGCCGACGACAGCAGCGTGTTGGACTTGGGTGGGAGTGGTGGTAACCCGTTCG
CTCACCTGCGCCCCCGTATCGGGCGCCTGATGTAAGAATCTGAAAAAATAAAAGACGGTACTCACCAAGGCCATGGCGACCAG
CGTGCGTTCTTCTCTGTTGTTTGTAGTAGTATGATGAGGCGCGTGTACCCGGAGGGTCCTCCTCCCTCGTACGAGAGCGTGATG
CAGCAGGCGGTGGCGGCGGCGATGCAGCCCCCGCTGGAGGCGCCTTACGTGCCCCCGCGGTACCTGGCGCCTACGGAGGGG
CGGAACAGCATTCGTTACTCGGAGCTGGCACCCTTGTACGATACCACCCGGTTGTACCTGGTGGACAACAAGTCGGCAGACAT
CGCCTCGCTGAACTACCAGAACGACCACAGCAACTTCCTGACCACCGTGGTGCAGAACAACGATTTCACCCCCACGGAGGCCA
GCACCCAGACCATCAACTTTGACGAGCGCTCGCGGTGGGGCGGCCAGCTGAAAACCATCATGCACACCAACATGCCCAACGT
GAACGAGTTCATGTACAGCAACAAGTTCAAGGCGCGGGTGATGGTCTCGCGCAAGACCCCCAACGGGGTGGATGATGATTAT
GATGGTAGTCAGGACGAGCTGACCTACGAGTGGGTGGAGTTTGAGCTGCCCGAGGGCAACTTCTCGGTGACCATGACCATCG
ATCTGATGAACAACGCCATCATCGACAACTACTTGGCGGTGGGGCGGCAGAACGGGGTGCTGGAGAGCGACATCGGCGTGA
AGTTCGACACGCGCAACTTCCGGCTGGGCTGGGACCCCGTGACCGAGCTGGTGATGCCGGGCGTGTACACCAACGAGGCCTT
CCACCCCGACATCGTCCTGCTGCCCGGCTGCGGCGTGGACTTCACCGAGAGCCGCCTCAGCAACCTGCTGGGCATCCGCAAGC
GGCAGCCCTTCCAGGAGGGCTTCCAGATCCTGTACGAGGACCTGGAGGGGGGCAACATCCCCGCGCTCTTGGATGTCGAAGC
CTACGAGAAAAGCAAGGAGGATAGCACCGCCGCGGCGACCGCAGCCGTGGCCACCGCCTCTACCGAGGTGCGGGGCGATAA
TTTTGCTAGCGCTGCGGCAGCGGCCGAGGCGGCTGAAACCGAAAGTAAGATAGTCATCCAGCCGGTGGAGAAGGACAGCAA
GGACAGGAGCTACAACGTGCTCGCGGACAAGAAAAACACCGCCTACCGCAGCTGGTACCTGGCCTACAACTACGGCGACCCC
GAGAAGGGCGTGCGCTCCTGGACGCTGCTCACCACCTCGGACGTCACCTGCGGCGTGGAGCAAGTCTACTGGTCGCTGCCCG
ACATGATGCAAGACCCGGTCACCTTCCGCTCCACGCGTCAAGTTAGCAACTACCCGGTGGTGGGCGCCGAGCTCCTGCCCGTC
TACTCCAAGAGCTTCTTCAACGAGCAGGCCGTCTACTCGCAGCAGCTGCGCGCCTTCACCTCGCTCACGCACGTCTTCAACCGC
TTCCCCGAGAACCAGATCCTCGTCCGCCCGCCCGCGCCCACCATTACCACCGTCAGTGAAAACGTTCCTGCTCTCACAGATCAC
GGGACCCTGCCGCTGCGCAGCAGTATCCGGGGAGTCCAGCGCGTGACCGTCACTGACGCCAGACGCCGCACCTGCCCCTACG
TCTACAAGGCCCTGGGCGTAGTCGCGCCGCGCGTCCTCTCGAGCCGCACCTTCTAAAAAATGTCCATTCTCATCTCGCCCAGTA
ATAACACCGGTTGGGGCCTGCGCGCGCCCAGCAAGATGTACGGAGGCGCTCGCCAACGCTCCACGCAACACCCCGTGCGCGT
GCGCGGGCACTTCCGCGCTCCCTGGGGCGCCCTCAAGGGCCGCGTGCGCTCGCGCACCACCGTCGACGACGTGATCGACCAG
GTGGTGGCCGACGCGCGCAACTACACGCCCGCCGCCGCGCCCGTCTCCACCGTGGACGCCGTCATCGACAGCGTGGTGGCCG

Fig. 20E

ACGCGCGCCGGTACGCCCGCACCAAGAGCCGGCGGCGGCGCATCGCCCGGCGGCACCGGAGCACCCCCGCCATGCGCGCGG
CGCGAGCCTTGCTGCGCAGGGCCAGGCGCACGGGACGCAGGGCCATGCTCAGGGCGGCCAGACGCGCGGCCTCCGGCAGCA
GCAGCGCCGGCAGGACCCGCAGACGCGCGGCCACGGCGGCGGCGGCGGCCATCGCCAGCATGTCCCGCCCGCGGCGCGGCA
ACGTGTACTGGGTGCGCGACGCCGCCACCGGTGTGCGCGTGCCCGTGCGCACCCGCCCCCCTCGCACTTGAAGATGCTGACTT
CGCGATGTTGATGTGTCCCAGCGGCGAGGAGGATGTCCAAGCGCAAATACAAGGAAGAGATGCTCCAGGTCATCGCGCCTGA
GATCTACGGCCCCGCGGCGGCGGTGAAGGAGGAAAGAAAGCCCCGCAAACTGAAGCGGGTCAAAAAGGACAAAAAGGAGG
AGGAAGATGACGGACTGGTGGAGTTTGTGCGCGAGTTCGCCCCCCGGCGGCGCGTGCAGTGGCGCGGGCGGAAAGTGAAAC
CGGTGCTGCGGCCCGGCACCACGGTGGTCTTCACGCCCGGCGAGCGTTCCGGCTCCGCCTCCAAGCGCTCCTACGACGAGGT
GTACGGGGACGAGGACATCCTCGAGCAGGCGGTCGAGCGTCTGGGCGAGTTTGCGTACGGCAAGCGCAGCCGCCCCGCGCC
CTTGAAAGAGGAGGCGGTGTCCATCCCGCTGGACCACGGCAACCCCACGCCGAGCCTGAAGCCGGTGACCCTGCAGCAGGTG
CTACCGAGCGCGGCGCCGCGCCGGGGCTTCAAGCGCGAGGGCGGCGAGGATCTGTACCCGACCATGCAGCTGATGGTGCCC
AAGCGCCAGAAGCTGGAGGACGTGCTGGAGCACATGAAGGTGGACCCCGAGGTGCAGCCCGAGGTCAAGGTGCGGCCCATC
AAGCAGGTGGCCCCGGGCCTGGGCGTGCAGACCGTGGACATCAAGATCCCCACGGAGCCCATGGAAACGCAGACCGAGCCC
GTGAAGCCCAGCACCAGCACCATGGAGGTGCAGACGGATCCCTGGATGCCAGCACCAGCTTCCACCAGCACTCGCCGAAGAC
GCAAGTACGGCGCGGCCAGCCTGCTGATGCCCAACTACGCGCTGCATCCTTCCATCATCCCCACGCCGGGCTACCGCGGCACG
CGCTTCTACCGCGGCTACACCAGCAGCCGCCGCCGCAAGACCACCACCCGCCGCCGTCGTCGCAGCCGCCGCAGCAGCACCGC
GACTTCCGCCTTGGTGCGGAGAGTGTATCGCAGCGGGCGCGAGCCTCTGACCCTGCCGCGCGCGCGCTACCACCCGAGCATC
GCCATTTAACTACCGCCTCCTACTTGCAGATATGGCCCTCACATGCCGCCTCCGCGTCCCCATTACGGGCTACCGAGGAAGAAA
GCCGCGCCGTAGAAGGCTGACGGGGAACGGGCTGCGTCGCCATCACCACCGGCGGCGGCGCGCCATCAGCAAGCGGTTGGG
GGGAGGCTTCCTGCCCGCGCTGATCCCCATCATCGCCGCGGCGATCGGGGCGATCCCCGGCATAGCTTCCGTGGCGGTGCAG
GCCTCTCAGCGCCACTGAGACACAAAAAAGCATGGATTTGTAATAAAAAAAAAAATGGACTGACGCTCCTGGTCCTGTGATGT
GTGTTTTTAGATGGAAGACATCAATTTTTCGTCCCTGGCACCGCGACACGGCACGCGGCCGTTTATGGGCACCTGGAGCGACA
TCGGCAACAGCCAACTGAACGGGGGCGCCTTCAATTGGAGCAGTCTCTGGAGCGGGCTTAAGAATTTCGGGTCCACGCTCAA
AACCTATGGCAACAAGGCGTGGAACAGCAGCACAGGGCAGGCGCTGAGGGAAAAGCTGAAAGAACAGAACTTCCAGCAGAA
GGTGGTTGATGGCCTGGCCTCAGGCATCAACGGGGTGGTTGACCTGGCCAACCAGGCCGTGCAGAAACAGATCAACAGCCGC
CTGGACGCGGTCCCGCCCGCGGGGTCCGTGGAGATGCCCCAGGTGGAGGAGGAGCTGCCTCCCCTGGACAAGCGCGGCGAC
AAGCGACCGCGTCCCGACGCGGAGGAGACGCTGCTGACGCACACGGACGAGCCGCCCCCGTACGAGGAGGCGGTGAAACTG
GGCCTGCCCACCACGCGGCCCGTGGCGCCTCTGGCCACCGGAGTGCTGAAACCCAGCAGCAGCCAGCCCGCGACCCTGGACT
TGCCTCCGCCTCGCCCCTCCACAGTGGCTAAGCCCCTGCCGCCGGTGGCCGTCGCGTCGCGCGCCCCCCGAGGCCGCCCCCAG
GCGAACTGGCAGAGCACTCTGAACAGCATCGTGGGTCTGGGAGTGCAGAGTGTGAAGCGCCGCCGCTGCTATTAAAAGACAC
TGTAGCGCTTAACTTGCTTGTCTGTGTGTATATGTATGTCCGCCGACCAGAAGGAGGAGTGTGAAGAGGCGCGTCGCCGAGTT
GCAAGATGGCCACCCCATCGATGCTGCCCCAGTGGGCGTACATGCACATCGCCGGACAGGACGCTTCGGAGTACCTGAGTCC
GGGTCTGGTGCAGTTCGCCCGCGCCACAGACACCTACTTCAGTCTGGGGAACAAGTTTAGGAACCCCACGGTGGCGCCCACGC
ACGATGTGACCACCGACCGCAGCCAGCGGCTGACGCTGCGCTTCGTGCCCGTGGACCGCGAGGACAACACCTACTCGTACAA
AGTGCGCTACACGCTGGCCGTGGGCGACAACCGCGTGCTGGACATGGCCAGCACCTACTTTGACATCCGCGGCGTGCTGGAC
CGGGGCCCTAGCTTCAAACCCTACTCTGGCACCGCCTACAACAGCCTAGCTCCCAAGGGAGCTCCCAATTCCAGCCAGTGGGA
GCAAGCAAAAACAGGCAATGGGGGAACTATGGAAACACACACATATGGTGTGGCCCCAATGGGCGGAGAGAATATTACAAA
AGATGGTCTTCAAATTGGAACTGACGTTACAGCGAATCAGAATAAACCAATTTATGCCGACAAAACATTTCAACCAGAACCGC
AAGTAGGAGAAGAAAATTGGCAAGAAACTGAAAACTTTTATGGCGGTAGAGCTCTTAAAAAAGACACAAACATGAAACCTTG
CTATGGCTCCTATGCTAGACCCACCAATGAAAAAGGAGGTCAAGCTAAACTTAAAGTTGGAGATGATGGAGTTCCAACCAAAG
AATTCGACATAGACCTGGCTTTCTTTGATACTCCCGGTGGCACCGTGAACGGTCAAGACGAGTATAAAGCAGACATTGTCATGT
ATACCGAAAACACGTATTTGGAAACTCCAGACACGCATGTGGTATACAAACCAGGCAAGGATGATGCAAGTTCTGAAATTAAC
CTGGTTCAGCAGTCTATGCCCAACAGACCCAACTACATTGGGTTCAGGGACAACTTTATCGGTCTTATGTACTACAACAGCACT
GGCAATATGGGTGTGCTTGCTGGTCAGGCCTCCCAGCTGAATGCTGTGGTTGATTTGCAAGACAGAAACACCGAGCTGTCCTA
CCAGCTCTTGCTTGACTCTTTGGGTGACAGAACCCGGTATTTCAGTATGTGGAACCAGGCGGTGGACAGTTATGACCCCGATG
TGCGCATCATCGAAAACCATGGTGTGGAGGATGAATTGCCAAACTATTGCTTCCCCTTGGACGGCTCTGGCACTAACGCCGCA
TACCAAGGTGTGAAAGTAAAAGATGGTCAAGATGGTGATGTTGAGAGTGAATGGGAAAATGACGATACTGTTGCAGCTCGAA
ATCAATTATGTAAAGGTAACATTTTCGCCATGGAGATTAATCTCCAGGCTAACCTGTGGAGAAGTTTCCTCTACTCGAACGTGG
CCCTGTACCTGCCCGACTCCTACAAGTACACGCCGACCAACGTCACGCTGCCGACCAACACCAACACCTACGATTACATGAATG
GCAGAGTGACACCTCCCTCGCTGGTAGACGCCTACCTCAACATCGGGGCGCGCTGGTCGCTGGACCCCATGGACAACGTCAAC

Fig. 20F

CCCTTCAACCACCACCGCAACGCGGGCCTGCGCTACCGCTCCATGCTCCTGGGCAACGGGCGCTACGTGCCCTTCCACATCCAG
GTGCCCCAAAAGTTTTTCGCCATCAAGAGCCTCCTGCTCCTGCCCGGGTCCTACACCTACGAGTGGAACTTCCGCAAGGACGTC
AACATGATCCTGCAGAGCTCCCTAGGCAACGACCTGCGCACGGACGGGGCCTCCATCGCCTTCACCAGCATCAACCTCTACGC
CACCTTCTTCCCCATGGCGCACAACACCGCCTCCACGCTCGAGGCCATGCTGCGCAACGACACCAACGACCAGTCCTTCAACGA
CTACCTCTCGGCGGCCAACATGCTCTACCCCATCCCGGCCAACGCCACCAACGTGCCCATCTCCATCCCCTCGCGCAACTGGGC
CGCCTTCCGCGGATGGTCCTTCACGCGCCTGAAGACCCGCGAGACGCCCTCGCTCGGCTCCGGGTTCGACCCCTACTTCGTCTA
CTCGGGCTCCATCCCCTACCTAGACGGCACCTTCTACCTCAACCACACCTTCAAGAAGGTCTCCATCACCTTCGACTCCTCCGTC
AGCTGGCCCGGCAACGACCGCCTCCTGACGCCCAACGAGTTCGAAATCAAGCGCACCGTCGACGGAGAGGGATACAACGTGG
CCCAGTGCAACATGACCAAGGACTGGTTCCTGGTCCAGATGCTGGCCCACTACAACATCGGCTACCAGGGCTTCTACGTGCCC
GAGGGCTACAAGGACCGCATGTACTCCTTCTTCCGCAACTTCCAGCCCATGAGCCGCCAGGTCGTGGACGAGGTCAACTACAA
GGACTACCAGGCCGTCACCCTGGCCTACCAGCACAACAACTCGGGCTTCGTCGGCTACCTCGCGCCCACCATGCGCCAGGGCC
AGCCCTACCCCGCCAACTACCCCTACCCGCTCATCGGCAAGAGCGCCGTCGCCAGCGTCACCCAGAAAAAGTTCCTCTGCGACC
GGGTCATGTGGCGCATCCCCTTCTCCAGCAACTTCATGTCCATGGGCGCGCTCACCGACCTCGGCCAGAACATGCTCTACGCCA
ACTCCGCCCACGCGCTAGACATGAATTTCGAAGTCGACCCCATGGATGAGTCCACCCTTCTCTATGTTGTCTTCGAAGTCTTCGA
CGTCGTCCGAGTGCACCAGCCCCACCGCGGCGTCATCGAAGCCGTCTACCTGCGCACGCCCTTCTCGGCCGGCAACGCCACCA
CCTAAGCCGCTCTTGCTTCTTGCAAGATGACGGCGGGCTCCGGCGAGCAGGAGCTCAGGGCCATCCTCCGCGACCTGGGCTGC
GGGCCCTGCTTCCTGGGCACCTTCGACAAGCGCTTCCCTGGATTCATGGCCCCGCACAAGCTGGCCTGCGCCATCGTGAACAC
GGCCGGCCGCGAGACCGGGGGCGAGCACTGGCTGGCCTTCGCCTGGAACCCGCGCTCCCACACATGCTACCTCTTCGACCCCT
TCGGGTTCTCGGACGAGCGCCTCAAGCAGATCTACCAGTTCGAGTACGAGGGCCTGCTGCGTCGCAGCGCCCTGGCCACCGA
GGACCGCTGCGTCACCCTGGAAAAGTCCACCCAGACCGTGCAGGGTCCGCGCTCGGCCGCCTGCGGGCTCTTCTGCTGCATGT
TCCTGCACGCCTTCGTGCACTGGCCCGACCGCCCCATGGACAAGAACCCCACCATGAACTTACTGACGGGGGTGCCCAACGGC
ATGCTCCAGTCGCCCCAGGTGGAACCCACCCTGCGCCGCAACCAGGAAGCGCTCTACCGCTTCCTCAATGCCCACTCCGCCTAC
TTTCGCTCCCACCGCGCGCGCATCGAGAAGGCCACCGCCTTCGACCGCATGAATCAAGACATGTAAAAAACCGGTGTGTGTAT
GTGAATGCTTTATTCATAATAAACAGCACATGTTTATGCCACCTTCTCTGAGGCTCTGACTTTATTTAGAAATCGAAGGGGTTCT
GCCGGCTCTCGGCATGGCCCGCGGGCAGGGATACGTTGCGGAACTGGTACTTGGGCAGCCACTTGAACTCGGGGATCAGCAG
CTTGGGCACGGGGAGGTCGGGGAACGAGTCGCTCCACAGCTTGCGCGTGAGTTGCAGGGCGCCCAGCAGGTCGGGCGCGGA
GATCTTGAAATCGCAGTTGGGACCCGCGTTCTGCGCGCGAGAGTTGCGGTACACGGGGTTGCAGCACTGGAACACCATCAGG
GCCGGGTGCTTCACGCTTGCCAGCACCGTCGCGTCGGTGATGCCCTCCACGTCCAGATCCTCGGCGTTGGCCATCCCGAAGGG
GGTCATCTTGCAGGTCTGCCGCCCCATGCTGGGCACGCAGCCGGGCTTGTGGTTGCAATCGCAGTGCAGGGGGATCAGCATC
ATCTGGGCCTGCTCGGAGCTCATGCCCGGGTACATGGCCTTCATGAAAGCCTCCAGCTGGCGGAAGGCCTGCTGCGCCTTGCC
GCCCTCGGTGAAGAAGACCCCGCAGGACTTGCTAGAGAACTGGTTGGTGGCGCAGCCGGCGTCGTGCACGCAGCAGCGCGC
GTCGTTGTTGGCCAGCTGCACCACGCTGCGCCCCCAGCGGTTCTGGGTGATCTTGGCCCGGTTGGGGTTCTCCTTCAGCGCGC
GCTGCCCGTTCTCGCTCGCCACATCCATCTCGATAGTGTGCTCCTTCTGGATCATCACGGTCCCGTGCAGGCACCGCAGCTTGC
CCTCGGCTTCGGTGCAGCCGTGCAGCCACAGCGCGCAGCCGGTGCACTCCCAGTTCTTGTGGGCGATCTGGGAGTGCGAGTG
CACGAAGCCCTGCAGGAAGCGGCCCATCATCGCGGTCAGGGTCTTGTTGCTGGTGAAGGTCAGCGGGATGCCGCGGTGCTCC
TCGTTCACATACAGGTGGCAGATGCGGCGGTACACCTCGCCCTGCTCGGGCATCAGCTGGAAGGCGGACTTCAGGTCGCTCTC
CACGCGGTACCGGTCCATCAGCAGCGTCATCACTTCCATGCCCTTCTCCCAGGCCGAAACGATCGGCAGGCTCAGGGGGTTCT
TCACCGCCATTGTCATCTTAGTCGCCGCCGCCGAGGTCAGGGGGTCGTTCTCGTCCAGGGTCTCAAACACTCGCTTGCCGTCCT
TCTCGATGATGCGCACGGGGGGAAAGCTGAAGCCCACGGCCGCCAGCTCCTCCTCGGCCTGCCTTTCGTCCTCGCTGTCCTGG
CTGATGTCTTGCAAAGGCACATGCTTGGTCTTGCGGGGTTTCTTTTTGGGCGGCAGAGGCGGCGGCGATGTGCTGGGAGAGC
GCGAGTTCTCGTTCACCACGACTATTTCTTCTTCTTGGCCGTCGTCCGAGACCACGCGGCGGTAGGCATGCCTCTTCTGGGGCA
GAGGCGGAGGCGACGGGCTCTCGCGGTTCGGCGGGCGGCTGGCAGAGCCCCTTCCGCGTTCGGGGGTGCGCTCCTGGCGGC
GCTGCTCTGACTGACTTCCTCCGCGGCCGGCCATTGTGTTCTCCTAGGGAGCAACAACAAGCATGGAGACTCAGCCATCGTCG
CCAACATCGCCATCTGCCCCCGCCGCCACCGCCGACGAGAACCAGCAGCAGAATGAAAGCTTAACCGCCCCGCCGCCCAGCCC
CACCTCCGACGCCGCGGCCCCAGACATGCAAGAGATGGAGGAATCCATCGAGATTGACCTGGGCTACGTGACGCCCGCGGAG
CACGAGGAGGAGCTGGCAGCGCGCTTTTCAGCCCCGGAAGAGAACCACCAAGAGCAGCCAGAGCAGGAAGCAGAGAACGA
GCAGAACCAGGCTGGGCACGAGCATGGCGACTACCTGAGCGGGGCAGAGGACGTGCTCATCAAGCATCTGGCCCGCCAATG
CATCATCGTCAAGGACGCGCTGCTCGACCGCGCCGAGGTGCCCCTCAGCGTGGCGGAGCTCAGCCGCGCCTACGAGCGCAAC
CTCTTCTCGCCGCGCGTGCCCCCCAAGCGCCAGCCCAACGGCACCTGTGAGCCCAACCCGCGCCTCAACTTCTACCCGGTCTTC
GCGGTGCCCGAGGCCCTGGCCACCTACCACCTCTTTTTCAAGAACCAAAGGATCCCCGTCTCCTGCCGCGCCAACCGCACCCGC

Fig. 20G

GCCGACGCCCTGCTCAACCTGGGCCCCGGCGCCCGCCTACCTGATATCACCTCCTTGGAAGAGGTTCCCAAGATCTTCGAGGG
TCTGGGCAGCGACGAGACTCGGGCCGCGAACGCTCTGCAAGGAAGCGGAGAGGAGCATGAGCACCACAGCGCCCTGGTGGA
GTTGGAAGGCGACAACGCGCGCCTGGCGGTCCTCAAGCGCACGGTCGAGCTGACCCACTTCGCCTACCCGGCGCTCAACCTGC
CCCCCAAGGTCATGAGCGCCGTCATGGACCAGGTGCTCATCAAGCGCGCCTCGCCCCTCTCGGAGGAGGAGATGCAGGACCC
CGAGAGTTCGGACGAGGGCAAGCCCGTGGTCAGCGACGAGCAGCTGGCGCGCTGGCTGGGAGCGAGTAGCACCCCCCAGAG
CCTGGAAGAGCGGCGCAAGCTCATGATGGCCGTGGTCCTGGTGACCGTGGAGCTGGAGTGTCTGCGCCGCTTCTTTGCCGAC
GCGGAGACCCTGCGCAAGGTCGAGGAGAACCTGCACTACCTCTTCAGGCACGGGTTCGTGCGCCAGGCCTGCAAGATCTCCA
ACGTGGAGCTGACCAACCTGGTCTCCTACATGGGCATCCTGCACGAGAACCGCCTGGGGCAAAACGTGCTGCACACCACCCTG
CGCGGGGAGGCCCGCCGCGACTACATCCGCGACTGCGTCTACCTGTACCTCTGCCACACCTGGCAGACGGGCATGGGCGTGT
GGCAGCAGTGCCTGGAGGAGCAGAACCTGAAAGAGCTCTGCAAGCTCCTGCAGAAGAACCTCAAGGCCCTGTGGACCGGGTT
CGACGAGCGTACCACCGCCTCGGACCTGGCCGACCTCATCTTCCCCGAGCGCCTGCGGCTGACGCTGCGCAACGGGCTGCCCG
ACTTTATGAGCCAAAGCATGTTGCAAAACTTTCGCTCTTTCATCCTCGAACGCTCCGGGATCCTGCCCGCCACCTGCTCCGCGCT
GCCCTCGGACTTCGTGCCGCTGACCTTCCGCGAGTGCCCCCCGCCGCTCTGGAGCCACTGCTACTTGCTGCGCCTGGCCAACTA
CCTGGCCTACCACTCGGACGTGATCGAGGACGTCAGCGGCGAGGGTCTGCTGGAGTGCCACTGCCGCTGCAACCTCTGCACG
CCGCACCGCTCCCTGGCCTGCAACCCCCAGCTGCTGAGCGAGACCCAGATCATCGGCACCTTCGAGTTGCAAGGCCCCGGCGA
CGGCGAGGGCAAGGGGGGTCTGAAACTCACCCCGGGGCTGTGGACCTCGGCCTACTTGCGCAAGTTCGTGCCCGAGGACTAC
CATCCCTTCGAGATCAGGTTCTACGAGGACCAATCCCAGCCGCCCAAGGCCGAGCTGTCGGCCTGCGTCATCACCCAGGGGGC
CATCCTGGCCCAATTGCAAGCCATCCAGAAATCCCGCCAAGAATTTCTGCTGAAAAAGGGCCACGGGGTCTACTTGGACCCCC
AGACCGGAGAGGAGCTCAACCCCAGCTTCCCCCAGGATGCCCCGAGGAAGCAGCAAGAAGCTGAAAGTGGAGCTGCCGCCG
CCGGAGGATTTGGAGGAAGACTGGGAGAGCAGTCAGGCAGAGGAGGAGGAGATGGAAGACTGGGACAGCACTCAGGCAG
AGGAGGACAGCCTGCAAGACAGTCTGGAGGAGGAAGACGAGGTGGAGGAGGCAGAGGAAGAAGCAGCCGCCGCCAGACC
GTCGTCCTCGGCGGAGAAAGCAAGCAGCACGGATACCATCTCCGCTCCGGGTCGGGGTCGCGGCGGCCGGGCCCACAGTAG
GTGGGACGAGACCGGGCGCTTCCCGAACCCCACCACCCAGACCGGTAAGAAGGAGCGGCAGGGATACAAGTCCTGGCGGGG
GCACAAAAACGCCATCGTCTCCTGCTTGCAAGCCTGCGGGGGCAACATCTCCTTCACCCGGCGCTACCTGCTCTTCCACCGCGG
GGTGAACTTCCCCCGCAACATCTTGCATTACTACCGTCACCTCCACAGCCCCTACTACTGTTTCCAAGAAGAGGCAGAAACCCA
GCAGCAGCAGAAAACCAGCGGCAGCAGCAGCTAGAAAATCCACAGCGGCGGCAGGTGGACTGAGGATCGCGGCGAACGAG
CCGGCGCAGACCCGGGAGCTGAGGAACCGGATCTTTCCCACCCTCTATGCCATCTTCCAGCAGAGTCGGGGGCAGGAGCAGG
AACTGAAAGTCAAGAACCGTTCTCTGCGCTCGCTCACCCGCAGTTGTCTGTATCACAAGAGCGAAGACCAACTTCAGCGCACTC
TCGAGGACGCCGAGGCTCTCTTCAACAAGTACTGCGCGCTCACTCTTAAAGAGTAGCCCGCGCCCGCCCACACACGGAAAAAG
GCGGGAATTACGTCACCACCTGCGCCCTTCGCCCGACCATCATGAGCAAAGAGATTCCCACGCCTTACATGTGGAGCTACCAG
CCCCAGATGGGCCTGGCCGCCGGCGCCGCCCAGGACTACTCCACCCGCATGAACTGGCTCAGTGCCGGGCCCGCGATGATCTC
ACGGGTGAATGACATCCGCGCCCACCGAAACCAGATACTCCTAGAACAGTCAGCGATCACCGCCACGCCCCGCCATCACCTTA
ATCCGCGTAATTGGCCCGCCGCCCTGGTGTACCAGGAAATTCCCCAGCCCACGACCGTACTACTTCCGCGAGACGCCCAGGCC
GAAGTCCAGCTGACTAACTCAGGTGTCCAGCTGGCCGGCGGCGCCGCCCTGTGTCGTCACCGCCCCGCTCAGGGTATAAAGCG
GCTGGTGATCCGAGGCAGAGGCACACAGCTCAACGACGAGGTGGTGAGCTCTTCGCTGGGTCTGCGACCTGACGGAGTCTTC
CAACTCGCCGGATCGGGGAGATCTTCCTTCACGCCTCGTCAGGCCGTCCTGACTTTGGAGAGTTCGTCCTCGCAGCCCCGCTCG
GGCGGCATCGGCACTCTCCAGTTCGTGGAGGAGTTCACTCCCTCGGTCTACTTCAACCCCTTCTCCGGCTCCCCCGGCCACTAC
CCGGACGAGTTCATCCCGAACTTCGACGCCATCAGCGAGTCGGTGGACGGCTACGATTGAATGTCCCATGGTGGCGCAGCTG
ACCTAGCTCGGCTTCGACACCTGGACCACTGCCGCCGCTTCCGCTGCTTCGCTCGGGATCTCGCCGAGTTTGCCTACTTTGAGC
TGCCCGAGGAGCACCCTCAGGGCCCAGCCCACGGAGTGCGGATCATCGTCGAAGGGGGCCTCGACTCCCACCTGCTTCGGAT
CTTCAGCCAGCGACCGATCCTGGTCGAGCGCGAACAAGGACAGACCCTTCTTACTTTGTACTGCATCTGCAACCACCCCGGCCT
GCATGAAAGTCTTTGTTGTCTGCTGTGTACTGAGTATAATAAAAGCTGAGATCAGCGACTACTCCGGACTCGATTGTGGTGTTC
CTGCTATCAACCGGTCCCTGTTCTTCACCGGGAACGAGACCGAGCTCCAGCTCCAGTGTAAGCCCCACAAGAAGTACCTCACCT
GGCTGTTCCAGGGCTCCCCGATCGCCGTTGTCAACCACTGCGACAACGACGGAGTCCTGCTGAGCGGCCCTGCCAACCTTACTT
TTTCCACCCGCAGAAGCAAGCTCCAGCTCTTCCAACCCTTCCTCCCCGGGACCTATCAGTGCGTCTCAGGACCCTGCCATCACAC
CTTCCACCTGATCCCGAATACCACAGCGCCGCTCCCCGCTACTAACAACCAAACTACCCACCAACGCCACCGTCGCGACCTTTCC
TCTGAATCTAATACCACTACCGGAGGTGGCTTCTGCTGTTAGTGCTCCCCCGTCCCGTCGACCCCCGGTCCCCCACTCAGTCCCC
CGAGGAGGTTCGCAAATGCAAATTCCAAGAACCCTGGAAATTCCTCAAATGCTACCGCCAAAAATCAGACATGCATCCCAGCT
GGATCATGATCATTGGGATCGTGAACATTCTGGCCTGCACCCTCATCTCCTTTGTGATTTACCCCTGCTTTGACTTTGGTTGGAA
CTCGCCAGAGGCGCTCTATCTCCCGCCTGAACCTGACACACCACCACAGCAGCAACCTCAGGCACACGCACTACCACCACCACA

Fig. 20H

GCCTAGGCCACAATACATGCCCATATTAGACTATGAGGCCGAGCCACAGCGACCCATGCTCCCCGCTATTAGTTACTTCAATCT
AACCGGCGGAGATGACTGACCCACTGGCCAATAACAACGTCAACGACCTTCTCCTGGACATGGACGGCCGCGCCTCGGAGCA
GCGACTCGCCCAACTTCGCATTCGTCAGCAGCAGGAGAGAGCCGTCAAGGAGCTGCAGGACGGCATAGCCATCCACCAGTGC
AAGAGAGGCATCTTCTGCCTGGTGAAACAGGCCAAGATCTCCTACGAGGTCACCCAGACCGACCATCGCCTCTCCTACGAGCT
CCTGCAGCAGCGCCAGAAGTTCACCTGCCTGGTCGGAGTCAACCCCATCGTCATCACCCAGCAGTCGGGCGATACCAAGGGGT
GCATCCACTGCTCCTGCGACTCCCCCGACTGCGTCCACACTCTGATCAAGACCCTCTGCGGCCTCCGCGACCTCCTCCCCATGAA
CTAATCACCCCCTTATCCAGTGAAATAAAGATCATATTGATGATGATTTAAATAAAAAAAATAATCATTTGATTTGAAATAAAGA
TACAATCATATTGATGATTTGAGTTTAACAAAAATAAAGAATCACTTACTTGAAATCTGATACCAGGTCTCTGTCCATGTTTTCT
GCCAACACCACCTCACTCCCCTCTTCCCAGCTCTGGTACTGCAGGCCCCGGCGGGCTGCAAACTTCCTCCACACGCTGAAGGGG
ATGTCAAATTCCTCCTGTCCCTCAATCTTCATTTTATCTTCTATCAGATGTCCAAAAAGCGCGTCCGGGTGGATGATGACTTCGA
CCCCGTCTACCCCTACGATGCAGACAACGCACCGACCGTGCCCTTCATCAACCCCCCCTTCGTCTCTTCAGATGGATTCCAAGAG
AAGCCCCTGGGGGTGTTGTCCCTGCGACTGGCTGACCCCGTCACCACCAAGAACGGGGAAATCACCCTCAAGCTGGGAGAGG
GGGTGGACCTCGACTCGTCGGGAAAACTCATCTCCAACACGGCCACCAAGGCCGCCGCCCCTCTCAGTATTTCAAACAACACC
ATTTCCCTTAAAACTGCTGCCCCTTTCTACAACAACAATGGAACTTTAAGCCTCAATGTCTCCACACCATTAGCAGTATTTCCCAC
ATTTAACACTTTAGGCATAAGTCTTGGAAACGGTCTTCAGACTTCAAATAAGTTGTTGACTGTACAACTAACTCATCCTCTTACA
TTCAGCTCAAATAGCATCACAGTAAAAACAGACAAAGGGCTATATATTAACTCCAGTGGAAACAGAGGACTTGAGGCTAATAT
AAGCCTAAAAAGAGGACTAGTTTTTGACGGTAATGCTATTGCAACATATATTGGAAATGGCTTAGACTATGGATCTTATGATAG
TGATGGAAAAACAAGACCCGTAATTACCAAAATTGGAGCAGGATTAAATTTTGATGCTAACAAAGCAATAGCTGTCAAACTAG
GCACAGGTTTAAGTTTTGACTCCGCTGGTGCCTTGACAGCTGGAAACAAACAGGATGACAAGCTAACACTTTGGACTACCCCT
GACCCAAGCCCTAATTGTCAATTACTTTCAGACAGAGATGCCAAATTTACTCTCTGTCTTACAAAATGCGGTAGTCAAATACTAG
GCACTGTGGCAGTGGCGGCTGTTACTGTAGGATCAGCACTAAATCCAATTAATGACACAGTCAAAAGCGCCATAGTTTTCCTTA
GATTTGATTCCGATGGTGTACTCATGTCAAACTCATCAATGGTAGGTGATTACTGGAACTTTAGGGAGGGACAGACCACTCAA
AGTGTAGCCTATACAAATGCTGTGGGATTCATGCCAAATATAGGTGCATATCCAAAAACCCAAAGTAAAACACCTAAAAATAG
CATAGTCAGTCAGGTATATTTAACTGGAGAAACTACTATGCCAATGACACTAACCATAACTTTCAATGGCACTGATGAAAAAGA
CACAACCCCAGTTAGCACCTACTCTATGACTTTTACATGGCAGTGGACTGGAGACTATAAGGACAAAAATATTACCTTTGCTAC
CAACTCATTCTCTTTTTCCTACATCGCCCAGGAATAATCCCACCCAGCAAGCCAACCCCTTTTCCCACCACCTTTGTCTATATGGA
AACTCTGAAACAGAAAAATAAAGTTCAAGTGTTTTATTGAATCAACAGTTTTACAGGACTCGAGCAGTTATTTTTCCTCCACCCT
CCCAGGACATGGAATACACCACCCTCTCCCCCCGCACAGCCTTGAACATCTGAATGCCATTGGTGATGGACATGCTTTTGGTCT
CCACGTTCCACACAGTTTCAGAGCGAGCCAGTCTCGGATCGGTCAGGGAGATGAAACCCTCCGGGCACTCCCGCATCTGCACC
TCACAGCTCAACAGCTGAGGATTGTCCTCGGTGGTCGGGATCACGGTTATCTGGAAGAAGCAGAAGAGCGGCGGTGGGAATC
ATAGTCCGCGAACGGGATCGGCCGGTGGTGTCGCATCAGGCCCCGCAGCAGTCGCTGCCGCCGCCGCTCCGTCAAGCTGCTG
CTCAGGGGGTTCGGGTCCAGGGACTCCCTCAGCATGATGCCCACGGCCCTCAGCATCAGTCGTCTGGTGCGGCGGGCGCAGC
AGCGCATGCGAATCTCGCTCAGGTCACTGCAGTACGTGCAACACAGGACCACCAGGTTGTTCAACAGTCCATAGTTCAACACG
CTCCAGCCGAAACTCATCGCGGGAAGGATGCTACCCACGTGGCCGTCGTACCAGATCCTCAGGTAAATCAAGTGGCGCTCCCT
CCAGAAGACGCTGCCCATGTACATGATCTCCTTGGGCATGTGGCGGTTCACCACCTCCCGGTACCACATCACCCTCTGGTTGAA
CATGCAGCCCCGGATGATCCTGCGGAACCACAGGGCCAGCACCGCCCCGCCCGCCATGCAGCGAAGAGACCCCGGATCCCGG
CAATGACAATGGAGGACCCACCGCTCGTACCCGTGGATCATCTGGGAGCTGAACAAGTCTATGTTGGCACAGCACAGGCATAT
GCTCATGCATCTCTTCAGCACTCTCAGCTCCTCGGGGGTCAAAACCATATCCCAGGGCACGGGGAACTCTTGCAGGACAGCGA
ACCCCGCAGAACAGGGCAATCCTCGCACATAACTTACATTGTGCATGGACAGGGTATCGCAATCAGGCAGCACCGGGTGATCC
TCCACCAGAGAAGCGCGGGTCTCGGTCTCCTCACAGCGTGGTAAGGGGGCCGGCCGATACGGGTGATGGCGGGACGCGGCT
GATCGTGTTCTCGACCGTGTCATGATGCAGTTGCTTTCGGACATTTTCGTACTTGCTGTAGCAGAACCTGGTCCGGGCGCTGCA
CACCGATCGCCGGCGGCGGTCTCGGCGCTTGGAACGCTCGGTGTTAAAGTTGTAAAACAGCCACTCTCTCAGACCGTGCAGCA
GATCTAGGGCCTCAGGAGTGATGAAGATCCCATCATGCCTGATAGCTCTGATCACATCGACCACCGTGGAATGGGCCAGGCCC
AGCCAGATGATGCAATTTTGTTGGGTTTCGGTGACGGCGGGGGAGGGAAGAACAGGAAGAACCATGATTAACTTTTAATCCA
AACGGTCTCGGAGCACTTCAAAATGAAGGTCACGGAGATGGCACCTCTCGCCCCCGCTGTGTTGGTGGAAAATAACAGCCAG
GTCAAAGGTGATACGGTTCTCGAGATGTTCCACGGTGGCTTCCAGCAAAGCCTCCACGCGCACATCCAGAAACAAGACAATAG
CGAAAGCGGGAGGGTTCTCTAATTCCTCAACCATCATGTTACACTCCTGCACCATCCCCAGATAATTTTCATTTTTCCAGCCTTG
AATGATTCGAACTAGTTCCTGAGGTAAATCCAAGCCAGCCATGATAAAAAGCTCGCGCAGAGCACCCTCCACCGGCATTCTTAA
GCACACCCTCATAATTCCAAGATATTCTGCTCCTGGTTCACCTGCAGCAGATTGACAAGCGGAATATCAAAATCTCTGCCGCGA
TCCCTGAGCTCCTCCCTCAGCAATAACTGTAAGTACTCTTTCATATCGTCTCCGAAATTTTTAGCCATAGGACCCCCAGGAATAA
GAGAAGGGCAAGCCACATTACAGATAAACCGAAGTCCCCCCCAGTGAGCATTGCCAAATGTAAGATTGAAATAAGCATGCTG
GCTAGACCCGGTGATATCTTCCAGATAACTGGACAGAAAATCGGGTAAGCAATTTTTAAGAAAATCAACAAAAGAAAAATCTT
CCAGGTGCACGTTTAGGGCCTCGGGAACAACGATGGAGTAAGTGCAAGGGGTGCGTTCCAGCATGGTTAGTTAGCTGATCTG
TAAAAAAACAAAAAATAAAACATTAAACCATGCTAGCCTGGCGAACAGGTGGGTAAATCGTTCTCTCCAGCACCAGGCAGGCC
ACGGGGTCTCCGGCGCGACCCTCGTAAAAATTGTCGCTATGATTGAAAACCATCACAGAGAGACGTTCCCGGTGGCCGGCGT
GAATGATTCGAGAAGAAGCATACACCCCCGGAACATTGGAGTCCGTGAGTGAAAAAAAGCGGCCGAGGAAGCAATGAGGCA
CTACAACGCTCACTCTCAAGTCCAGCAAAGCGATGCCATGCGGATGAAGCACAAAATTTTCAGGTGCGTAAAAAATGTAATTA
CTCCCCTCCTGCACAGGCAGCGAAGCTCCCGATCCCTCCAGATACACATACAAAGCCTCAGCGTCCATAGCTTACCGAGCGGCA
GCAGCAGCGGCACACAACAGGCGCAAGAGTCAGAGAAAAGACTGAGCTCTAACCTGTCCGCCCGCTCTCTGCTCAATATATAG
CCCCAGATCTACACTGACGTAAAGGCCAAAGTCTAAAAATACCCGCCAAATAATCACACACGCCCAGCACACGCCCAGAAACC
GGTGACACACTCAGAAAAATACGCGCACTTCCTCAAACGGCCAAACTGCCGTCATTTCCGGGTTCCCACGCTACGTCATCAAAA
CACGACTTTCAAATTCCGTCGACCGTTAAAAACATCACCCGCCCCGCCCCTAACGGTCGCCGCTCCCGCAGCCAATCACCTTCCT
CCCTCCCCAAATTCAAACAGCTCATTTGCATATTAACGCGCACCAAAAGTTTGAGGTATATTATTGATGATG

Fig. 20I

AdC6 020-HIVgp140(E1572) Amino acids – SEQ ID NO: 9
The symbol " * " refers herein to stop codons in the non coding regions

HHQ*YTSNFWCALICK*AV*IWGGRKVIGCGSGDR*GRGG*RFDDVAMRRSRFASSRGKSDVKRGVV*TRKYSIFPRSLTGNEVFL
GGCK*KRAIFARKLNEEVKI*VISRLWQGGVFAEGRVDFDRLRGGFDYRIFHLNFRVRCQSPVFLRTISFPRKCHLTVTITVLR*RKLRS
PDPLWCTLSTICSDAA*LSQYLLPACVLEVAE*CASKI*ATTRQGLTDNCMKNLLRVRRFALLRDVRARYTR*H*LLTSMPSTPPIDVN
DGKWPAWHYAQYMTLWDFPTWQYIYVLVIAITMVMRFWQYINGRG*RFDSRGFPSLHPIDVNGSLFWHQNQRDFPKCRNNSA
PLTQMGGRRVRWEVYISRARLVNRQITRSFIAVVYHS*IANAVSASDTTVSNLRLEFDATMRVRGIPRNWPQWWIWGILGFWMIII
CRVVGNLDLWVTVYYGVPVWKEAKTTLFCASDAKAYDKEVHNVWATHACVPTDPNPQEIVLENVTENFNMWKNDMVDQMHE
DIISLWDQSLKPCVKLTPLCVTLNCKNVNISANANATATLNSSMNGEIKNCSFNTTTELRDKKQKVYALFYKPDVVPLNGGEHNETGE
YILINCNSSTITQACPKVSFDPIPIHYCAPAGYAILKCNNKTFNGTGPCNNVSTVQCTHGIKPVVSTQLLLNGSLAEEEIIVRSENLTNNIK
TIIVHLNKSVEIKCTRPNNNTRKSVRIGPGQTFYATGEIIGDIREAHCNISRETWNSTLIQVKEKLREHYNKTIKFEPSSGGDLEVTTHSF
NCRGEFFYCDTTKLFNETKLFNESEYVDNKTIILPCRIKQIINMWQEVGRAMYAPPIEGNITCKSNITGLLLTWDGGENSTEGVFRPG
GGNMKDNWRSELYKYKVVEIKPLGVAPTKSKLTVQARQLLSGIVQQQSNLLRAIEAQQHLLQLTVWGIKQLQTRVLAIERYLKDQQL
LGLWGCSGKLICATAVPWNSSWSNKSLGDIWDNMTWMQWDREISNYTNTIFRLLEDSQNQQEKNEKDLLALDSWKNLWNWF
DITNWLW*GTSRVDPGGQTADQPRLCLLVASHLLFAPPPCLP*PWKVPLPLSFPNKMRKLHRIV*VGVILFWGVGWGRTARGRIG
KTIAGMLGMRWALWLLRRKEPADLQI*IHLCRVRRKR**NGIMGIMGLH**IGQISTYAGHRACGLAPPQDMARVRAQRHDPLQ
CAPGLPPRHVHALPVQHAICEGAAGARCHVQSEPDGGV*HECGAVENSEI**IQDQVPGLRMRRQARQASARVCGGDGGPATRS
FGVVLQRDGVRLQRGRI*LE*VVFGAGCEPA*GAE*LKSVVFCVLQQHERKRLL*GRGIQPLSDGASPLLGGSASECDGIHGGRPAR
AARELFNPDLRDPELLVRGRSCRRSCCFRRQRRARNGPGRRLLQLSGGQLEFHQ*SRQPERGEAAAADGPARGPDPAPGRADPAG
GSAAGGDAGRGCHGENQIKNESINKRRRLLILTQSLESLFDFSRAVGPGPPVSIIEHPVDLFQDPVEVGLDVEVHGHEPVPGVEVAPL
QGLVLGDGVVNHPVIAGAQGVVLHDVLEEETDGHGQPLGVGVDEPVELGGMHAGGDEMHLGLDLEIGDVPAQIPPGVHVVQD
HQHGVSGALGEFVMQLGREGVKEFGDALVTAQVFHALIHDDGDGPVGGGLGKDVSGVGHIVVVVLGELVIGHFNEFGAEGARLG
DEGALDPGGVVALADLHLPGLELGGGDHVHLRGDEKNGFRGGGDELGRKQVPEQLGLAATGGAVDDPDDRLQVVVEGETAAVL
AEEGGHLVHHLAHMHVLAHEFRQEALAPQREELLQRGEVFQRLESVGHGHFGEGLLQEFQTVPELGDVL*GISIQQTSSFRGLGRL
RE*GTRRWASSEARVRSFQGRRVRVSVVSVTVKGCAPGWALARVRFRLIRLVENRSRSAPCASAR*QLSMSS*LSASAAWPLARSL
PLEVCPQTGQRRDLRA*SLGARKTDSGA*ASAPQLAQTVSHSTSQVRSGRLGSKTRFPPCFLMRFLPLVSMSSCPRWVTKRLSVSP*
TDFMGRSSSGVPRSSS*RNPAHSETKARVQASTKEATWEG*RSLSTSGSTFSRVCKHMSPSSTSRKVIGL*V*AT*PGVPAGGV*KG
AGPCSSSLSSGSLSRSASCWGRYSLSKAGMTSALRLSVSRNEEDLILTVPLETPFMSPSSIWSEKTIFLLSSLVAKEP*RALESSLAMER
MVWFFSLSARSLAAMLSCTYSRATHFHSGKTVVSSSGTILTRQPRLCRVMRSTLVATSPRRGSLVQQRRPPLREQKGGSGSSMSSSG
GSASTVKMPGRSSGSK*LMQVPRLSSAACQSRTASARS*GLRGVPQGMGCVSAEAYMPQMS*T*RGSSRTPM*VG*QRPPRML
ART*SYSSCEGARSPVPRLERCGFSAR*TIWRKMAWELEEMVGLWKMLKWAWGRPTESLMKWA*ESCSLATSSAVTRTSRAQ*S
RVSWMMSYLSWPFCFHSSRLRRNSSRSFQYSSRGNPS*SAR*EPTM*NWLTAL*AQQPFSTGRA*ACAALRREVWVRAKVSRTM
TLRNWCLKSRSSQPPCSQSWKSVRFL*AGLGKAKVTSLKRILPARGMKLRVMRKGWGTSARLLMTWAARTISSKPLMLCPTM*SS
TNRGRPLTWGSFLSSS*VSSAGSLSPCCSRAQSATWGLALRKEVQRSTARAVCKRSRY*RNCWPTAIFSGVTQ*KVRGSPCQRSHLS
WRARSWASSTSGGSPESFMTSMKGTSCLPKDPIQV*VSTS*VRKSLSVRGCEPMGKNWISCHQLEEWLLM*WK*KCRRRAEHSC
LCLYKRPQCSQRCTGCTCCTSCTWVPLARNFSGQWSAGGCISCCTTSWPSAWPSSASMVVMLTSPRGRQVQTSARTGRRARTRA
RRPELSRVLRRCGVRSVGSGGARLTCRSFSRARGRSRWYLISTAPLVATSTACRVPCPWGATTVPRFFLGAASMSVRSGGEDARRA
AGAARGPEAGAAGARRRRARAGSGTAPGEDWRERRRDG*RPGSDASG*RPRDP*V*T*KRVRQNQSRYR*RRPAAGSLARRPSC
PGRRSRS*TARSPPPEGLRGRRARRWPRGRWRCGP*AARRRSCRPRSRRGCRPRLRRGRARA*PPGRG*ARRGA*RPRSCRGAG
RGS*AWWRCAR*RRST*SSGGAASR*RRPGLPSVPWPRRSPRRS*KTGSCAPRRSTPPPEDG*ARRWWRAPRARRPRGAPLPSP
PLPPPLTSLLLPPQEAVAGEGPCVAGGARADGR*SARWSPRAGDAWSR*RRARPRGAAA*RRRRASPGGRRGGLRWAGRGR*R
CILSIDP*GLRART*ASRDPRDPKTAERRLRASRSRKVG*ARFLVLRVFGREAGGRCCW**S*SRRS*DGGWWRGAPGPWARLAG
CADGRPCPRRGPDTWRGPCSSPA*AAPRAPPPRPRGRACA*ARTRAAAGRAPGRRRRAR*GWPAGSG*GWSGSRRSRRSGGRL
RC*WCRSSWP*RTS*RSGGRVARARGT*GASRRACRRCSRCRRARGTGIRRGSAAAAGGRAAIARWRGRRARGPRA*GGGSRRC
TWTSR*CRRRWWRRAGTRGRGSRCCAAAGSSSWWPRSGP*GARSRGCSRHTGKNESGQRLDSVAWRLSERVGLRVYPGSNLES
GWSRS*RGTGTPVSTQAC*RNLQDTEAGRFLALVAGHEKLVSAESGRPRWLAAVVWRKNRQGCVAVCPGSSLSARRRPDSAANV
GVAAPSFPRPLSQPTSPVTERAPLFFSCVFARCIPYCGRCAPTLHHNRPYRSSSNSRRFCPRPSSSQPLPRRPP*AEPAFSMTWPWKR
ARGWRGWGRRRRSGTRACR*KGTLARPTCPSRTCSETGAARSPRRCAPPASTRGGSCGAAWTESGC*GTRISRRTS*RGSAPRAR
TWPRPTWSRRTSRP*RRRATSKNPSTTTCAR*SRARR*PWA*CTCGTCWRPSCRTPRASR*RRSCFWWCSTVGTTRRSGRRC*ISP

Fig. 20J

SPRAAGSWTW*TFCRASWCRSAGCRCPRSWRPSTSRC*VWASTTLGRSTRPRTCP*TRR*RSTGFTCA*P*KC*P*ATIWGCTATT
GCTAR*APAAGAS*ATRS*CTACSGP*PGPGPRGRATLTWARTCAGSPAAGPWKLPAVPPTWRRWTMRRRRASTWKTDGATVF
LLDAATATAAAS*SRDAGGAAEPAVRH*LLGRLDPGHATHHGADDPQSRSL*TAASGQPALGHPGGRGALALEPHAREGAGHRE
RAGGEQGHPR*RGRAGVQRAAGARGPLQQHQRADEPGPHGDRRARGGVAARAVPPRVEPGLHGGAERLPEHAARQRAPGPG
GLHQLHQRAAADGGRGAPERGVPVGAGLLLPDQSPGLADREPEPGFQELAGTVGRAGPGRGPRDGVEPADAELAPAAAAGGAL
HGQRQREPRLVPGLPA*PVPRGHRTGARGRADLPGDHPREPRAGPGGPGQPGGHPELPADQPVAEDPAPVRAEHRGGAHPALR
AAERGAVPDAGGGHAQRGARHDRAQHGAQHVRPQPPVHQ*ADGLLASGGRHELGLLYQRHLEPALAPAARVLHGRVRHARPQ
RRVPVGRRGQQRVLAASRNQCRVEERGRGPAAVLGAVRSRGCCRGGARGRQPLPEPALFAEQRAQQRAGSADATAPAGRGGVP
ERLLVEARAREELPQ*RDREPGGQDEPLEDVRARAQGRAPS*QRRHP*TPAARQAAGTGVGR*GFRRRQQRVGLGWEWW*PV
RSPAPPYRAPDVRI*KNKRRYSPRPWRPACVLLCCL**YDEARVPGGSSSLVRERDAAGGGGGDAAPAGGALRAPAVPGAYGGAE
QHSLLGAGTLVRYHPVVPGGQQVGRHRLAELPERPQQLPDHRGAEQRFHPHGGQHPDHQL*RALAVGRPAENHHAHQHAQRE
RVHVQQQVQGAGDGLAQDPQRGG**L*W*SGRADLRVGGV*AARGQLLGDHDHRSDEQRHHRQLLGGGAAERGAGERHRRE
VRHAQLPAGLGPRDRAGDAGRVHQRGLPPRHRPAARLRRGLHREPPQQPAGHPQAAALPGGLPDPVRGPGGGQHPRALGCRSL
REKQGG*HRRGDRSRGHRLYRGAGR*FC*RCGSGRGG*NRK*DSHPAGGEGQQGQELQRARGQEKHRLPQLVPGLQLRRPREG
RALLDAAHHLGRHLRRGASLLVAARHDARPGHLPLHASS*QLPGGGRRAPARLLQELLQRAGRLLAAAARLHLAHARLQPLPREPD
PRPPARAHHYHRQ*KRSCSHRSRDPAAAQQYPGSPARDRH*RQTPHLPLRLQGPGRSRAARPLEPHLLKNVHSHLAQ**HRLGPA
RAQQDVRRRSPTLHATPRARARALPRSLGRPQGPRALAHHRRRRDRPGGGRRAQLHARRRARLHRGRRHRQRGGRRAPVRPHQ
EPAAAHRPAAPEHPRHARGASLAAQGQAHGTQGHAQGGQTRGLRQQQRRQDPQTRGHGGGGGHRQHVPPAARQRVLGARR
RHRCARARAHPPPSHLKMLTSRC*CVPAARRMSKRKYKEEMLQVIAPEIYGPAAAVKEERKPRKLKRVKKDKKEEEDDGLVEFVREF
APRRRVQWRGRKVKPVLRPGTTVVFTPGERSGSASKRSYDEVYGDEDILEQAVERLGEFAYGKRSRPAPLKEEAVSIPLDHGNPTPSL
KPVTLQQVLPSAAPRRGFKREGGEDLYPTMQLMVPKRQKLEDVLEHMKVDPEVQPEVKVRPIKQVAPGLGVQTVDIKIPTEPMET
QTEPVKPSTSTMEVQTDPWMPAPASTSTRRRRKYGAASLLMPNYALHPSIIPTPGYRGTRFYRGYTSSRRRKTTTRRRRRSRRSSTAT
SALVRRVYRSGREPLTLPRARYHPSIAI*LPPPTCRYGPHMPPPRPHYGLPRKKAAP*KADGERAASPSPPAAARHQQAVGGRLPAR
ADPHHRRGDRGDPRHSFRGGAGLSAPLRHKKAWICNKKKNGLTLLVL*CVFLDGRHQFFVPGTATRHAAVYGHLERHRQQPTERG
RLQLEQSLERA*EFRVHAQNLWQQGVEQQHRAGAEGKAERTELPAEGG*WPGLRHQRGG*PGQPGRAETDQQPPGRGPARGV
RGDAPGGGGAASPGQARRQATASRRGGDAADAHGRAAPVRGGGETGPAHHAARGASGHRSAETQQQPARDPGLASASPLHSG
*APAAGGRRVARPPRPPPGELAEHSEQHRGSGSAECEAPPLLLKDTVALNLLVCVYMYVRRPEGGV*RGASPSCKMATPSMLPQW
AYMHIAGQDASEYLSPGLVQFARATDTYFSLGNKFRNPTVAPTHDVTTDRSQRLTLRFVPVDREDNTYSYKVRYTLAVGDNRVLDM
ASTYFDIRGVLDRGPSFKPYSGTAYNSLAPKGAPNSSQWEQAKTGNGGTMETHTYGVAPMGGENITKDGLQIGTDVTANQNKPIY
ADKTFQPEPQVGEENWQETENFYGGRALKKDTNMKPCYGSYARPTNEKGGQAKLKVGDDGVPTKEFDIDLAFFDTPGGTVNGQD
EYKADIVMYTENTYLETPDTHVVYKPGKDDASSEINLVQQSMPNRPNYIGFRDNFIGLMYYNSTGNMGVLAGQASQLNAVVDLQD
RNTELSYQLLLDSLGDRTRYFSMWNQAVDSYDPDVRIIENHGVEDELPNYCFPLDGSGTNAAYQGVKVKDGQDGDVESEWENDD
TVAARNQLCKGNIFAMEINLQANLWRSFLYSNVALYLPDSYKYTPTNVTLPTNTNTYDYMNGRVTPPSLVDAYLNIGARWSLDPM
DNVNPFNHHRNAGLRYRSMLLGNGRYVPFHIQVPQKFFAIKSLLLLPGSYTYEWNFRKDVNMILQSSLGNDLRTDGASIAFTSINLY
ATFFPMAHNTASTLEAMLRNDTNDQSFNDYLSAANMLYPIPANATNVPISIPSRNWAAFRGWSFTRLKTRETPSLGSGFDPYFVYS
GSIPYLDGTFYLNHTFKKVSITFDSSVSWPGNDRLLTPNEFEIKRTVDGEGYNVAQCNMTKDWFLVQMLAHYNIGYQGFYVPEGYK
DRMYSFFRNFQPMSRQVVDEVNYKDYQAVTLAYQHNNSGFVGYLAPTMRQGQPYPANYPYPLIGKSAVASVTQKKFLCDRVMW
RIPFSSNFMSMGALTDLGQNMLYANSAHALDMNFEVDPMDESTLLYVVFEVFDVVRVHQPHRGVIEAVYLRTPFSAGNATT*AAL
ASCKMTAGSGEQELRAILRDLGCGPCFLGTFDKRFPGFMAPHKLACAIVNTAGRETGGEHWLAFAWNPRSHTCYLFDPFGFSDERL
KQIYQFEYEGLLRRSALATEDRCVTLEKSTQTVQGPRSAACGLFCCMFLHAFVHWPDRPMDKNPTMNLLTGVPNGMLQSPQVEP
TLRRNQEALYRFLNAHSAYFRSHRARIEKATAFDRMNQDM*KTGVCM*MLYS**TAHVYATFSEALTLFRNRRGSAGSRHGPRAGI
RCGTGTWAAT*TRGSAAWARGGRGTSRSTACA*VAGRPAGRARRS*NRSWDPRSARESCGTRGCSTGTPSGPGASRLPAPSRR*
CPPRPDPRRWPSRRGSSCRSAAPCWARSRACGCNRSAGGSASSGPARSSCPGTWPS*KPPAGGRPAAPCRPR*RRPRRTC*RTG
WWRSRRRARSSARRCWPAAPRCAPSGSG*SWPGWGSPSARAARSRSPHPSR*CAPSGSSRSRAGTAACPRLRCSRAATARSRCT
PSSCGRSGSASARSPAGSGPSSRSGSCCW*RSAGCRGAPRSHTGGRCGGTPRPARASAGRRTSGRSPRGTGPSAASSLPCPSPRPK
RSAGSGGSSPPLSS*SPPPRSGGRSRPGSQTLACRPSR*CARGES*SPRPPAPPRPAFRPRCPG*CLAKAHAWSCGVSFWAAEAAA
MCWESASSRSPRLFLLLGRRPRPRGGRHASSGAEAEATGSRGSAGGWQSPFRVRGCAPGGAALTDFLRGRPLCSPREQQQAWRL
SHRRQHRHLPPPPPPTRTSSRMKA*PPRRPAPPPTPRPQTCKRWRNPSRLTWAT*RPRSTRRSWQRAFQPRKRTTKSSQSRKQRT
SRTRLGTSMATT*AGQRTCSSSIWPANASSSRTRCSTAPRCPSAWRSSAAPTSATSSRRACPPSASPTAPVSPTRASTSTRSSRCPRP
WPPTTSFSRTKGSPSPAAPTAPAPTPCSTWAPAPAYLISPPWKRFPRSSRVWAATRLGPRTLCKEAERSMSTTAPWWSWKATTRA

Fig. 20K

WRSSSARSS*PTSPTRRSTCPPRS*APSWTRCSSSAPRPSRRRRCRTPRVRTRASPWSATSSWRAGWERVAPPRAWKSGASS*WP
WSW*PWSWSVCAASLPTRRPCARSRRTCTTSSGTGSCARPARSPTWS*PTWSPTWASCTRTAWGKTCCTPPCAGRPAATTSATA
STCTSATPGRRAWACGSSAWRSRT*KSSASSCRRTSRPCGPGSTSVPPPRTWPTSSSPSACG*RCATGCPTL*AKACCKTFALSSSN
APGSCPPPAPRCPRTSCR*PSASAPRRSGATATCCAWPTTWPTTRT*SRTSAARVCWSATAAATSARRTAPWPATPSC*ARPRSSA
PSSCKAPATARARGV*NSPRGCGPRPTCASSCPRTTIPSRSGSTRTNPSRPRPSCRPASSPRGPSWPNCKPSRNPAKNFC*KRATGST
WTPRPERSSTPASPRMPRGSSKKLKVELPPPEDLEEDWESSQAEEEEMEDWDSTQAEEDSLQDSLEEEDEVEEAEEEAAAARPSSS
AEKASSTDTISAPGRGRGGRAHSRWDETGRFPNPTTQTGKKERQGYKSWRGHKNAIVSCLQACGGNISFTRRYLLFHRGVNFPRNI
LHYYRHLHSPYYCFQEEAETQQQQKTSGSSS*KIHSGGRWTEDRGERAGADPGAEEPDLSHPLCHLPAESGAGAGTESQEPFSALA
HPQLSVSQERRPTSAHSRGRRGSLQQVLRAHS*RVARARPHTEKGGNYVTTCALRPTIMSKEIPTPYMWSYQPQMGLAAGAAQD
YSTRMNWLSAGPAMISRVNDIRAHRNQILLEQSAITATPRHHLNPRNWPAALVYQEIPQPTTVLLPRDAQAEVQLTNSGVQLAGG
AALCRHRPAQGIKRLVIRGRGTQLNDEVVSSSLGLRPDGVFQLAGSGRSSFTPRQAVLTLESSSSQPRSGGIGTLQFVEEFTPSVYFNP
FSGSPGHYPDEFIPNFDAISESVDGYD*MSHGGAADLARLRHLDHCRRFRCFARDLAEFAYFELPEEHPQGPAHGVRIIVEGGLDSHL
LRIFSQRPILVEREQGQTLLTLYCICNHPGLHESLCCLLCTEYNKS*DQRLLRTRLWCSCYQPVPVLHRERDRAPAPV*APQEVPHLAV
PGLPDRRCQPLRQRRSPAERPCQPYFFHPQKQAPALPTLPPRDLSVRLRTLPSHLPPDPEYHSAAPRY*QPNYPPTPPSRPFL*I*YHY
RRWLLLLVLPRPVDPRSPTQSPEEVRKCKFQEPWKFLKCYRQKSDMHPSWIMIIGIVNILACTLISFVIYPCFDFGWNSPEALYLPPEP
DTPPQQQPQAHALPPPQPRPQYMPILDYEAEPQRPMLPAISYFNLTGGDD*PTGQ*QRQRPSPGHGRPRLGAATRPTSHSSAAGE
SRQGAAGRHSHPPVQERHLLPGETGQDLLRGHPDRPSPLLRAPAAAPEVHLPGRSQPHRHHPAVGRYQGVHPLLLRLPRLRPHSD
QDPLRPPRPPPHELITPLSSEIKIILMMI*IKKIII*FEIKIQSY**FEFNKNKESLT*NLIPGLCPCFLPTPPHSPLPSSGTAGPGGLQTSSTR
*RGCQIPPVPQSSFYLLSDVQKARPGG**LRPRLPLRCRQRTDRALHQPPLRLFRWIPREAPGGVVPATG*PRHHQERGNHPQAGR
GGGPRLVGKTHLQHGHQGRRPSQYFKQHHFP*NCCPFLQQQWNFKPQCLHTISSISHI*HFRHKSWKRSSDFK*VVDCTTNSSSYI
QLK*HHSKNRQRAIY*LQWKQRT*G*YKPKKRTSF*R*CYCNIYWKWLRLWIL***WKNKTRNYQNWSRIKF*C*QSNSCQTRHR
FKF*LRWCLDSWKQTG*QANTLDYP*PKP*LSITFRQRCQIYSLSYKMR*SNTRHCGSGGCYCRISTKSN**HSQKRHSFP*I*FRWC
THVKLINGR*LLEL*GGTDHSKCSLYKCCGIHAKYRCISKNPK*NT*K*HSQSGIFNWRNYYANDTNHNFQWH**KRHNPS*HLLYD
FYMAVDWRL*GQKYYLCYQLILFFLHRPGIIPPSKPTPFPTTFVYMETLKQKNKVQVFY*INSFTGLEQLFFLHPPRTWNTPPSPPAQP
*TSECHW*WTCFWSPRSTQFQSEPVSDRSGR*NPPGTPASAPHSSTAEDCPRWSGSRLSGRSRRAAVGIIVRERDRPVVSHQAPQ
QSLPPPLRQAAAQGVRVQGLPQHDAHGPQHQSSGAAGAAAHANLAQVTAVRATQDHQVVQQSIVQHAPAETHRGKDATHVA
VVPDPQVNQVALPPEDAAHVHDLLGHVAVHHLPVPHHPLVEHAAPDDPAEPQGQHRPARHAAKRPRIPAMTMEDPPLVPVDHL
GAEQVYVGTAQAYAHASLQHSQLLGGQNHIPGHGELLQDSEPRRTGQSSHITYIVHGQGIAIRQHRVILHQRSAGLGLLTAW*GGR
PIRVMAGRG*SCSRPCHDAVAFGHFRTCCSRTWSGRCTPIAGGGLGAWNARC*SCKTATLSDRAADLGPQE**RSHHA**L*SHR
PPWNGPGPAR*CNFVGFR*RRGREEQEEP*LTFNPNGLGALQNEGHGDGTSRPRCVGGK*QPGQR*YGSRDVPRWLPAKPPRA
HPETRQ*RKREGSLIPQPSCYTPAPSPDNFHFSSLE*FELVPEVNPSQP**KARAEHPPPAFLSTPS*FQDILLLVHLQQIDKRNIKISAA
IPELLPQQ*L*VLFHIVSEIFSHRTPRNKRRASHITDKPKSPPVSIAKCKIEISMLARPGDIFQITGQKIG*AIFKKINKRKIFQVHV*GLGN
NDGVSARGAFQHG*LADL*KNKK*NIKPC*PGEQVGKSFSPAPGRPRGLRRDPRKNCRYD*KPSQRDVPGGRRE*FEKKHTPPEH
WSP*VKKSGRGSNEALQRSLSSPAKRCHADEAQNFQVRKKCNYSPPAQAAKLPIPPDTHTKPQRP*LTERQQQRHTTGARVREKTE
L*PVRPLSAQYIAPDLH*RKGQSLKIPAK*SHTPSTRPETGDTLRKIRALPQTAKLPSFPGSHATSSKHDFQIPSTVKNITRPAPNGRRS
RSQSPSSLPKFKQLICILTRTKSLRYIIDD

Fig. 21A

AdC6 010-HIVgag (E1026) Nucleic Acids – SEQ ID NO: 2

CATCATCAATAATATACCTCAAACTTTTGGTGCGCGTTAATATGCAAATGAGCTGTTTGAATTTGGGGAGGGAGGAAGGTGAT
TGGCTGCGGGAGCGGCGACCGTTAGGGGCGGGGCGGGTGACGTTTTGATGACGTGGCTATGAGGCGGAGCCGGTTTGCAAG
TTCTCGTGGGAAAAGTGACGTCAAACGAGGTGTGGTTTGAACACGGAAATACTCAATTTTCCCGCGCTCTCTGACAGGAAATG
AGGTGTTTCTGGGCGGATGCAAGTGAAAACGGGCCATTTTCGCGCGAAAACTGAATGAGGAAGTGAAAATCTGAGTAATTTC
GCGTTTATGGCAGGGAGGAGTATTTGCCGAGGGCCGAGTAGACTTTGACCGATTACGTGGGGGTTTCGATTACCGTATTTTTC
ACCTAAATTTCCGCGTACGGTGTCAAAGTCCGGTGTTTTTACGTACGATATCATTTCCCCGAAAGTGCCACCTGACCGTAACTAT
AACGGTCCTAAGGTAGCGAAAGCTCAGATCTCCCGATCCCCTATGGTGCACTCTCAGTACAATCTGCTCTGATGCCGCATAGTT
AAGCCAGTATCTGCTCCCTGCTTGTGTGTTGGAGGTCGCTGAGTAGTGCGCGAGCAAAATTTAAGCTACAACAAGGCAAGGCT
TGACCGACAATTGCATGAAGAATCTGCTTAGGGTTAGGCGTTTTGCGCTGCTTCGCGATGTACGGGCCAGATATACGCGTTGA
CATTGATTATTGACTAGTTATTAATAGTAATCAATTACGGGGTCATTAGTTCATAGCCCATATATGGAGTTCCGCGTTACATAAC
TTACGGTAAATGGCCCGCCTGGCTGACCGCCCAACGACCCCCGCCCATTGACGTCAATAATGACGTATGTTCCCATAGTAACGC
CAATAGGGACTTTCCATTGACGTCAATGGGTGGAGTATTTACGGTAAACTGCCCACTTGGCAGTACATCAAGTGTATCATATGC
CAAGTACGCCCCCTATTGACGTCAATGACGGTAAATGGCCCGCCTGGCATTATGCCCAGTACATGACCTTATGGGACTTTCCTA
CTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCATGGTGATGCGGTTTTGGCAGTACATCAATGGGCGTGGATAGCGGT
TTGACTCACGGGGATTTCCAAGTCTCCACCCCATTGACGTCAATGGGAGTTTGTTTTGGCACCAAAATCAACGGGACTTTCCAA
AATGTCGTAACAACTCCGCCCCATTGACGCAAATGGGCGGTAGGCGTGTACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTA
GTGAACCGTCAGATCACTAGAAGCTTTATTGCGGTAGTTTATCACAGTTAAATTGCTAACGCAGTCAGTGCTTCTGACACAACA
GTCTCGAACTTAAGCTGCAGAAGTTGGTCGTGAGGCACTGGGCAGGTAAGTATCAAGGTTACAAGACAGGTTTAAGGAGACC
AATAGAAACTGGGCTTGTCGAGACAGAGAAGACTCTTGCGTTTCTGATAGGCACCTATTGGTCTTACTGACATCCACTTTGCCT
TTCTCTCCACAGGTGTCCACTCCCAGTTCAATTACAGCTCTTAAGGCTAGAGTACTTAATACGACTCACTATAGGCTAGCGCCAC
CATGGGCGCCAGAGCCAGCGTGCTGAGCGGGGGAGAGCTGGATCGCTGGGAAAAGATTAGACTGAGGCCCGGAGGGAAGA
AAAAGTACAAGCTGAAACACATCGTGTGGGCCAGCAGGGAGCTGGAGCGCTTCGCCGTGAACCCCGGACTGCTGGAGACCTC
CGAAGGCTGTCGGCAGATCCTGGGGCAGCTGCAGCCTTCCCTGCAGACAGGCTCCGAGGAGCTGCGGTCTCTGTATAATACA
GTGGCCACACTGTACTGTGTGCACCAGCGGATTGAGGTGAAGGATACAAAAGAGGCCCTGGAGAAGATTGAGGAGGAGCAG
AACAAGAGCAAGAAGAAAGCCCAGCAGGCCGCCGCCGACACCGGCAATAGCTCCCAGGTGAGCCAGAACTATCCAATTGTGC
AGAATCTGCAGGGCCAGATGGTGCACCAGGCCATTTCCCCACGGACACTGAACGCCTGGGTGAAGGTGGTGGAGGAGAAGG
CCTTCAGCCCCGAAGTGATCCCTATGTTTTCCGCCCTGTCCGAAGGCGCCACCCCTCAGGACCTGAACACCATGCTGAACACAG
TGGGGGGACACCAGGCCGCCATGCAGATGCTGAAGGAAACCATCAACGAGGAGGCCGCCGAGTGGGATCGGCTGCACCCCG
TGCACGCCGGGCCAATCGCCCCTGGCCAGATGAGGGAGCCCAGAGGCTCTGACATCGCCGGCACCACATCTACCCTGCAGGA
ACAGATCGGGTGGATGACCAATAACCCACCAATCCCAGTGGGCGAGATCTACAAGAGGTGGATTATTCTGGGACTGAACAAA
ATTGTGCGCATGTATTCCCCTACATCCATCCTGGACATCAGGCAGGGCCCTAAGGAACCTTTCCGCGACTACGTGGATCGGTTC
TACAAAACCCTGCGCGCCGAGCAGGCCAGCCAGGAAGTGAAGAATTGGATGACAGAGACCCTGCTGGTGCAGAACGCCAATC
CTGACTGTAAAACCATCCTGAAGGCCCTGGGCCCTGCCGCCACACTGGAGGAAATGATGACCGCCTGCCAGGGCGTGGGCGG
CCCTGGCCACAAAGCCAGGGTGCTGGCCGAGGCCATGTCTCAGGTGACCAACTCTGCCACAATTATGATGCAGCGGGGGAAC
TTTCGGAACCAGAGGAAGACCGTGAAGTGCTTCAACTGTGGCAAGGAGGGACACATCGCCAAGAATTGCCGCGCCCCACGGA
AGAAGGGGTGTTGGAAATGCGGGAAGGAGGGCCACCAGATGAAAGACTGCACAGAGCGGCAGGCCAACTTTCTGGGCAAG
ATTTGGCCCAGCCACAAGGGCCGCCCCGGAAACTTTCTGCAGTCCAGGCCTGAGCCTACCGCCCCCCCTGAGGAATCCTTCCG
GTTCGGCGAGGAGACAACCACCCCAAGCCAGAAGCAGGAACCCATCGACAAAGAGCTGTACCCCCTGGCCAGCCTGAGATCC
CTGTTCGGGAATGACCCCAGCTCTCAGTGATGATCTAGCGTTTAAACGGGCCCTCTAGAGTCGACCCGGGCGGCCAAACCGCT
GATCAGCCTCGACTGTGCCTTCTAGTTGCCAGCCATCTGTTGTTTGCCCCTCCCCCGTGCCTTCCTTGACCCTGGAAGGTGCCAC
TCCCACTGTCCTTTCCTAATAAAATGAGGAAATTGCATCGCATTGTCTGAGTAGGTGTCATTCTATTCTGGGGGGTGGGGTGGG
GCAGGACAGCAAGGGGGAGGATTGGGAAGACAATAGCAGGCATGCTGGGGATGCGGTGGGCTCTATGGCTTCTGAGGCGG
AAAGAACCAGCAGATCTGCAGATCTGAATTCATCTATGTCGGGTGCGGAGAAAGAGGTAATGAAATGGTATTATGGGTATTAT
GGGTCTGCATTAATGAATCGGTCAGATATCGACATATGCTGGCCACCGTGCATGTGGCCTCGCACCCCCGCAAGACATGGCCC
GAGTTCGAGCACAACGTCATGACCCGCTGCAATGTGCACCTGGGCTCCCGCCGAGGCATGTTCATGCCCTACCAGTGCAACAT
GCAATTTGTGAAGGTGCTGCTGGAGCCCGATGCCATGTCCAGAGTGAGCCTGACGGGGGTGTTTGACATGAATGTGGAGCTG
TGGAAAATTCTGAGATATGATGAATCCAAGACCAGGTGCCGGGCCTGCGAATGCGGAGGCAAGCACGCCAGGCTTCAGCCCG
TGTGTGTGGAGGTGACGGAGGACCTGCGACCCGATCATTTGGTGTTGTCCTGCAACGGGACGGAGTTCGGCTCCAGCGGGGA

Fig. 21B

AGAATCTGACTAGAGTGAGTAGTGTTTGGGGCTGGGTGTGAGCCTGCATGAGGGGCAGAATGACTAAAATCTGTGGTTTTCT
GTGTGTTGCAGCAGCATGAGCGGAAGCGCCTCCTTTGAGGGAGGGGTATTCAGCCCTTATCTGACGGGGCGTCTCCCCTCCTG
GGCGGGAGTGCGTCAGAATGTGATGGGATCCACGGTGGACGGCCGGCCCGTGCAGCCCGCGAACTCTTCAACCCTGACCTAC
GCGACCCTGAGCTCCTCGTCCGTGGACGCAGCTGCCGCCGCAGCTGCTGCTTCCGCCGCCAGCGCCGTGCGCGGAATGGCCCT
GGGCGCCGGCTACTACAGCTCTCTGGTGGCCAACTCGAGTTCCACCAATAATCCCGCCAGCCTGAACGAGGAGAAGCTGCTGC
TGCTGATGGCCCAGCTCGAGGCCCTGACCCAGCGCCTGGGCGAGCTGACCCAGCAGGTGGCTCAGCTGCAGGCGGAGACGC
GGGCCGCGGTTGCCACGGTGAAAACCAAATAAAAAATGAATCAATAAATAAACGGAGACGGTTGTTGATTTTAACACAGAGT
CTTGAATCTTTATTTGATTTTTCGCGCGCGGTAGGCCCTGGACCACCGGTCTCGATCATTGAGCACCCGGTGGATCTTTTCCAG
GACCCGGTAGAGGTGGGCTTGGATGTTGAGGTACATGGGCATGAGCCCGTCCCGGGGGTGGAGGTAGCTCCATTGCAGGGC
CTCGTGCTCGGGGATGGTGTTGTAAATCACCCAGTCATAGCAGGGGCGCAGGGCGTGGTGCTGCACGATGTCCTTGAGGAGG
AGACTGATGGCCACGGGCAGCCCCTTGGTGTAGGTGTTGACGAACCTGTTGAGCTGGGAGGGATGCATGCGGGGGGAGATG
AGATGCATCTTGGCCTGGATCTTGAGATTGGCGATGTTCCCGCCCAGATCCCGCCGGGGGTTCATGTTGTGCAGGACCACCAG
CACGGTGTATCCGGTGCACTTGGGGAATTTGTCATGCAACTTGGAAGGGAAGGCGTGAAAGAATTTGGAGACGCCCTTGTGA
CCGCCCAGGTTTTCCATGCACTCATCCATGATGATGGCGATGGGCCCGTGGGCGGCGGCCTGGGCAAAGACGTTTCGGGGGT
CGGACACATCGTAGTTGTGGTCCTGGGTGAGCTCGTCATAGGCCATTTTAATGAATTTGGGGCGGAGGGTGCCCGACTGGGG
GACGAAGGTGCCCTCGATCCCGGGGGCGTAGTTGCCCTCGCAGATCTGCATCTCCCAGGCCTTGAGCTCGGAGGGGGGGATC
ATGTCCACCTGCGGGGCGATGAAAAAAACGGTTTCCGGGGCGGGGGAGATGAGCTGGGCCGAAAGCAGGTTCCGGAGCAGC
TGGGACTTGCCGCAACCGGTGGGGCCGTAGATGACCCCGATGACCGGCTGCAGGTGGTAGTTGAGGGAGAGACAGCTGCCG
TCCTCGCGGAGGAGGGGGGCCACCTCGTTCATCATCTCGCGCACATGCATGTTCTCGCGCACGAGTTCCGCCAGGAGGCGCTC
GCCCCCCAGCGAGAGGAGCTCTTGCAGCGAGGCGAAGTTTTTCAGCGGCTTGAGTCCGTCGGCCATGGGCATTTTGGAGAGG
GTCTGTTGCAAGAGTTCCAGACGGTCCCAGAGCTCGGTGATGTGCTCTAGGGCATCTCGATCCAGCAGACCTCCTCGTTTCGC
GGGTTGGGGCGACTGCGGGAGTAGGGCACCAGGCGATGGGCGTCCAGCGAGGCCAGGGTCCGGTCCTTCCAGGGCCGCAG
GGTCCGCGTCAGCGTGGTCTCCGTCACGGTGAAGGGGTGCGCGCCGGGCTGGGCGCTTGCGAGGGTGCGCTTCAGGCTCATC
CGGCTGGTCGAGAACCGCTCCCGGTCGGCGCCCTGCGCGTCGGCCAGGTAGCAATTGAGCATGAGTTCGTAGTTGAGCGCCT
CGGCCGCGTGGCCCTTGGCGCGGAGCTTACCTTTGGAAGTGTGTCCGCAGACGGGACAGAGGAGGGACTTGAGGGCGTAGA
GCTTGGGGGCGAGGAAGACGGACTCGGGGGCGTAGGCGTCCGCGCCGCAGCTGGCGCAGACGGTCTCGCACTCCACGAGCC
AGGTGAGGTCGGGGCGGTTGGGGTCAAAAACGAGGTTTCCTCCGTGCTTTTTGATGCGTTTCTTACCTCTGGTCTCCATGAGCT
CGTGTCCCCGCTGGGTGACAAAGAGGCTGTCCGTGTCCCCGTAGACCGACTTTATGGGCCGGTCCTCGAGCGGGGTGCCGCG
GTCCTCGTCGTAGAGGAACCCCGCCCACTCCGAGACGAAGGCCCGGGTCCAGGCCAGCACGAAGGAGGCCACGTGGGAGGG
GTAGCGGTCGTTGTCCACCAGCGGGTCCACCTTCTCCAGGGTATGCAAGCACATGTCCCCCTCGTCCACATCCAGGAAGGTGA
TTGGCTTGTAAGTGTAGGCCACGTGACCGGGGGTCCCGGCCGGGGGGGTATAAAAGGGGGCGGGCCCCTGCTCGTCCTCACT
GTCTTCCGGATCGCTGTCCAGGAGCGCCAGCTGTTGGGGTAGGTATTCCCTCTCGAAGGCGGGCATGACCTCGGCACTCAGGT
TGTCAGTTTCTAGAAACGAGGAGGATTTGATATTGACGGTGCCGTTGGAGACGCCTTTCATGAGCCCCTCGTCCATTTGGTCAG
AAAAGACGATCTTTTTGTTGTCGAGCTTGGTGGCGAAGGAGCCGTAGAGGGCGTTGGAGAGCAGCTTGGCGATGGAGCGCAT
GGTCTGGTTCTTTTCCTTGTCGGCGCGCTCCTTGGCGGCGATGTTGAGCTGCACGTACTCGCGCGCCACGCACTTCCATTCGGG
GAAGACGGTGGTGAGCTCGTCGGGCACGATTCTGACCCGCCAGCCGCGGTTGTGCAGGGTGATGAGGTCCACGCTGGTGGC
CACCTCGCCGCGCAGGGGCTCGTTGGTCCAGCAGAGGCGCCCGCCCTTGCGCGAGCAGAAGGGGGGCAGCGGGTCCAGCAT
GAGCTCGTCGGGGGGGTCGGCGTCCACGGTGAAGATGCCGGGCAGGAGCTCGGGGTCGAAGTAGCTGATGCAGGTGCCCA
GATTGTCCAGCGCCGCTTGCCAGTCGCGCACGGCCAGCGCGCGCTCGTAGGGGCTGAGGGGCGTGCCCCAGGGCATGGGGT
GCGTGAGCGCGGAGGCGTACATGCCGCAGATGTCGTAGACGTAGAGGGGCTCCTCGAGGACGCCGATGTAGGTGGGGTAGC
AGCGCCCCCCGCGGATGCTGGCGCGCACGTAGTCGTACAGCTCGTGCGAGGGCGCGAGGAGCCCCGTGCCGAGGTTGGAGC
GTTGCGGCTTTTCGGCGCGGTAGACGATCTGGCGGAAGATGGCGTGGGAGTTGGAGGAGATGGTGGGCCTTTGGAAGATGT
TGAAGTGGGCGTGGGGCAGGCCGACCGAGTCCCTGATGAAGTGGGCGTAGGAGTCCTGCAGCTTGGCGACGAGCTCGGCGG
TGACGAGGACGTCCAGGGCGCAGTAGTCGAGGGTCTCTTGGATGATGTCATACTTGAGCTGGCCCTTCTGCTTCCACAGCTCG
CGGTTGAGAAGGAACTCTTCGCGGTCCTTCCAGTACTCTTCGAGGGGGAACCCGTCCTGATCGGCACGGTAAGAGCCCACCAT
GTAGAACTGGTTGACGGCCTTGTAGGCGCAGCAGCCCTTCTCCACGGGGAGGGCGTAAGCTTGCGCGGCCTTGCGCAGGGAG
GTGTGGGTGAGGGCGAAGGTGTCGCGCACCATGACCTTGAGGAACTGGTGCTTGAAGTCGAGGTCGTCGCAGCCGCCCTGCT
CCCAGAGTTGGAAGTCCGTGCGCTTCTTGTAGGCGGGGTTAGGCAAAGCGAAAGTAACATCGTTGAAGAGGATCTTGCCCGC
GCGGGGCATGAAGTTGCGAGTGATGCGGAAAGGCTGGGGCACCTCGGCCCGGTTGTTGATGACCTGGGCGGCGAGGACGAT
CTCGTCGAAGCCGTTGATGTTGTGCCCGACGATGTAGAGTTCCACGAATCGCGGGCGGCCCTTGACGTGGGGCAGCTTCTTGA

Fig. 21C

GCTCGTCGTAGGTGAGCTCGGCGGGGTCGCTGAGCCCGTGCTGCTCGAGGGCCCAGTCGGCGACGTGGGGGTTGGCGCTGA
GGAAGGAAGTCCAGAGATCCACGGCCAGGGCGGTCTGCAAGCGGTCCCGGTACTGACGGAACTGTTGGCCCACGGCCATTTT
TTCGGGGGTGACGCAGTAGAAGGTGCGGGGGTCGCCGTGCCAGCGGTCCCACTTGAGCTGGAGGGCGAGGTCGTGGGCGA
GCTCGACGAGCGGCGGGTCCCCGGAGAGTTTCATGACCAGCATGAAGGGGACGAGCTGCTTGCCGAAGGACCCCATCCAGGT
GTAGGTTTCCACATCGTAGGTGAGGAAGAGCCTTTCGGTGCGAGGATGCGAGCCGATGGGGAAGAACTGGATCTCCTGCCAC
CAGTTGGAGGAATGGCTGTTGATGTGATGGAAGTAGAAATGCCGACGGCGCGCCGAGCACTCGTGCTTGTGTTTATACAAGC
GTCCGCAGTGCTCGCAACGCTGCACGGGATGCACGTGCTGCACGAGCTGTACCTGGGTTCCTTTGGCGAGGAATTTCAGTGG
GCAGTGGAGCGCTGGCGGCTGCATCTCGTGCTGTACTACGTCTTGGCCATCGGCGTGGCCATCGTCTGCCTCGATGGTGGTCA
TGCTGACGAGCCCGCGCGGGAGGCAGGTCCAGACCTCGGCTCGGACGGGTCGGAGAGCGAGGACGAGGGCGCGCAGGCCG
GAGCTGTCCAGGGTCCTGAGACGCTGCGGAGTCAGGTCAGTGGGCAGCGGCGGCGCGCGGTTGACTTGCAGGAGCTTTTCCA
GGGCGCGCGGGAGGTCCAGATGGTACTTGATCTCCACGGCGCCGTTGGTGGCTACGTCCACGGCTTGCAGGGTGCCGTGCCC
CTGGGGCGCCACCACCGTGCCCCGTTTCTTCTTGGGCGCTGCTTCCATGTCGGTCAGAAGCGGCGGCGAGGACGCGCGCCGG
GCGGCAGGGGCGGCTCGGGGCCCGGAGGCAGGGGCGGCAGGGGCACGTCGGCGCCGCGCGCGGGCAGGTTCTGGTACTGC
GCCCGGAGAAGACTGGCGTGAGCGACGACGCGACGGTTGACGTCCTGGATCTGACGCCTCTGGGTGAAGGCCACGGGACCC
GTGAGTTTGAACCTGAAAGAGAGTTCGACAGAATCAATCTCGGTATCGTTGACGGCGGCCTGCCGCAGGATCTCTTGCACGTC
GCCCGAGTTGTCCTGGTAGGCGATCTCGGTCATGAACTGCTCGATCTCCTCCTCCTGAAGGTCTCCGCGGCCGGCGCGCTCGA
CGGTGGCCGCGAGGTCGTTGGAGATGCGGCCCATGAGCTGCGAGAAGGCGTTCATGCCGGCCTCGTTCCAGACGCGGCTGTA
GACCACGGCTCCGTCGGGGTCGCGCGCGCGCATGACCACCTGGGCGAGGTTGAGCTCGACGTGGCGCGTGAAGACCGCGTA
GTTGCAGAGGCGCTGGTAGAGGTAGTTGAGCGTGGTGGCGATGTGCTCGGTGACGAAGAAGTACATGATCCAGCGGCGGAG
CGGCATCTCGCTGACGTCGCCCAGGGCTTCCAAGCGTTCCATGGCCTCGTAGAAGTCCACGGCGAAGTTGAAAAACTGGGAGT
TGCGCGCCGAGACGGTCAACTCCTCCTCCAGAAGACGGATGAGCTCGGCGATGGTGGCGCGCACCTCGCGCTCGAAGGCCCC
GGGGGGCTCCTCTTCCATCTCCTCCTCTTCCTCCTCCACTAACATCTCTTCTACTTCCTCCTCAGGAGGCGGTGGCGGGGGAGG
GGCCCTGCGTCGCCGGCGGCGCACGGGCAGACGGTCGATGAAGCGCTCGATGGTCTCCCCGCGCCGGCGACGCATGGTCTCG
GTGACGGCGCGCCCGTCCTCGCGGGGCCGCAGCATGAAGACGCCGCCGCGCATCTCCAGGTGGCCGCCGGGGGGGTCTCCG
TTGGGCAGGGAGAGGGCGCTGACGATGCATCTTATCAATTGACCCGTAGGGACTCCGCGCAAGGACCTGAGCGTCTCGAGAT
CCACGGGATCCGAAAACCGCTGAACGAAGGCTTCGAGCCAGTCGCAGTCGCAAGGTAGGCTGAGCCCGGTTTCTTGTTCTTCG
GGTATTTGGTCGGGAGGCGGGCGGGCGATGCTGCTGGTGATGAAGTTGAAGTAGGCGGTCCTGAGACGGCGGATGGTGGC
GAGGAGCACCAGGTCCTTGGGCCCGGCTTGCTGGATGCGCAGACGGTCGGCCATGCCCCAGGCGTGGTCCTGACACCTGGCG
AGGTCCTTGTAGTAGTCCTGCATGAGCCGCTCCACGGGCACCTCCTCCTCGCCCGCGCGGCCGTGCATGCGCGTGAGCCCGAA
CCCGCGCTGCGGCTGGACGAGCGCCAGGTCGGCGACGACGCGCTCGGTGAGGATGGCCTGCTGGATCTGGGTGAGGGTGGT
CTGGAAGTCGTCGAAGTCGACGAAGCGGTGGTAGGCTCCGGTGTTGATGGTGTAGGAGCAGTTGGCCATGACGGACCAGTT
GACGGTCTGGTGGCCGGGTCGCACGAGCTCGTGGTACTTGAGGCGCGAGTAGGCGCGCGTGTCGAAGATGTAGTCGTTGCA
GGCGCGCACGAGGTACTGGTATCCGACGAGGAAGTGCGGCGGCGGCTGGCGGTAGAGCGGCCATCGCTCGGTGGCGGGGG
CGCCGGGCGCGAGGTCCTCGAGCATGAGGCGGTGGTAGCCGTAGATGTACCTGGACATCCAGGTGATGCCGGCGGCGGTGG
TGGAGGCGCGCGGGAACTCGCGGACGCGGTTCCAGATGTTGCGCAGCGGCAGGAAGTAGTTCATGGTGGCCGCGGTCTGGC
CCGTGAGGCGCGCGCAGTCGTGGATGCTCTAGACATACGGGCAAAAACGAAAGCGGTCAGCGGCTCGACTCCGTGGCCTGG
AGGCTAAGCGAACGGGTTGGGCTGCGCGTGTACCCCGGTTCGAATCTCGAATCAGGCTGGAGCCGCAGCTAACGTGGTACTG
GCACTCCCGTCTCGACCCAAGCCTGCTAACGAAACCTCCAGGATACGGAGGCGGGTCGTTTTTTGGCCTTGGTCGCTGGTCAT
GAAAAACTAGTAAGCGCGGAAAGCGGCCGCCCGCGATGGCTCGCTGCCGTAGTCTGGAGAAAGAATCGCCAGGGTTGCGTT
GCGGTGTGCCCCGGTTCGAGCCTCAGCGCTCGGCGCCGGCCGGATTCCGCGGCTAACGTGGGCGTGGCTGCCCCGTCGTTTCC
AAGACCCCTTAGCCAGCCGACTTCTCCAGTTACGGAGCGAGCCCCTCTTTTTTTTTCTTGTGTTTTTGCCAGATGCATCCCGTACT
GCGGCAGATGCGCCCCCACCCTCCACCACAACCGCCCCTACCGCAGCAGCAGCAACAGCCGGCGCTTCTGCCCCCGCCCCAGC
AGCAGCCAGCCACTACCGCGGCGGCCGCCGTGAGCGGAGCCGGCGTTCAGTATGACCTGGCCTTGGAAGAGGGCGAGGGGC
TGGCGCGGCTGGGGGCGTCGTCGCCGGAGCGGCACCCGCGCGTGCAGATGAAAAGGGACGCTCGCGAGGCCTACGTGCCCA
AGCAGAACCTGTTCAGAGACAGGAGCGGCGAGGAGCCCGAGGAGATGCGCGCCTCCCGCTTCCACGCGGGGCGGGAGCTGC
GGCGCGGCCTGGACCGAAAGCGGGTGCTGAGGGACGAGGATTTCGAGGCGGACGAGCTGACGGGGATCAGCCCCGCGCGC
GCGCACGTGGCCGCGGCCAACCTGGTCACGGCGTACGAGCAGACCGTGAAGGAGGAGAGCAACTTCCAAAAATCCTTCAACA
ACCACGTGCGCACCTTGATCGCGCGCGAGGAGGTGACCCTGGGCCTGATGCACCTGTGGGACCTGCTGGAGGCCATCGTGCA
GAACCCCACGAGCAAGCCGCTGACGGCGCAGCTGTTTCTGGTGGTGCAGCACAGTCGGGACAACGAGACGTTCAGGGAGGC
GCTGCTGAATATCACCGAGCCCGAGGGCCGCTGGCTCCTGGACCTGGTGAACATTTTGCAGAGCATCGTGGTGCAGGAGCGC

Fig. 21C

GGGCTGCCGCTGTCCGAGAAGCTGGCGGCCATCAACTTCTCGGTGCTGAGTCTGGGCAAGTACTACGCTAGGAAGATCTACA
AGACCCCGTACGTGCCCATAGACAAGGAGGTGAAGATCGACGGGTTTTACATGCGCATGACCCTGAAAGTGCTGACCCTGAG
CGACGATCTGGGGGTGTACCGCAACGACAGGATGCACCGCGCGGTGAGCGCCAGCCGCCGGCGCGAGCTGAGCGACCAGGA
GCTGATGCACAGCCTGCAGCGGGCCCTGACCGGGGCCGGGACCGAGGGGGAGAGCTACTTTGACATGGGCGCGGACCTGCG
CTGGCAGCCCAGCCGCCGGGCCTTGGAAGCTGCCGGCGGTTCCCCCTACGTGGAGGAGGTGGACGATGAGGAGGAGGAGG
GCGAGTACCTGGAAGACTGATGGCGCGACCGTATTTTTGCTAGATGCAGCAACAGCCACCGCCGCCGCCTCCTGATCCCGCGA
TGCGGGCGGCGCTGCAGAGCCAGCCGTCCGGCATTAACTCCTCGGACGATTGGACCCAGGCCATGCAACGCATCATGGCGCT
GACGACCCGCAATCCCGAAGCCTTTAGACAGCAGCCTCAGGCCAACCGGCTCTCGGCCATCCTGGAGGCCGTGGTGCCCTCGC
GCTCGAACCCCACGCACGAGAAGGTGCTGGCCATCGTGAACGCGCTGGTGGAGAACAAGGCCATCCGCGGTGACGAGGCCG
GGCTGGTGTACAACGCGCTGCTGGAGCGCGTGGCCCGCTACAACAGCACCAACGTGCAGACGAACCTGGACCGCATGGTGAC
CGACGTGCGCGAGGCGGTGTCGCAGCGCGAGCGGTTCCACCGCGAGTCGAACCTGGGCTCCATGGTGGCGCTGAACGCCTTC
CTGAGCACGCAGCCCGCCAACGTGCCCCGGGGCCAGGAGGACTACACCAACTTCATCAGCGCGCTGCGGCTGATGGTGGCCG
AGGTGCCCCAGAGCGAGGTGTACCAGTCGGGGCCGGACTACTTCTTCCAGACCAGTCGCCAGGGCTTGCAGACCGTGAACCT
GAGCCAGGCTTTCAAGAACTTGCAGGGACTGTGGGGCGTGCAGGCCCCGGTCGGGGACCGCGCGACGGTGTCGAGCCTGCT
GACGCCGAACTCGCGCCTGCTGCTGCTGCTGGTGGCGCCCTTCACGGACAGCGGCAGCGTGAGCCGCGACTCGTACCTGGGC
TACCTGCTTAACCTGTACCGCGAGGCCATCGGACAGGCGCACGTGGACGAGCAGACCTACCAGGAGATCACCCACGTGAGCC
GCGCGCTGGGCCAGGAGGACCCGGGCAACCTGGAGGCCACCCTGAACTTCCTGCTGACCAACCGGTCGCAGAAGATCCCGCC
CCAGTACGCGCTGAGCACCGAGGAGGAGCGCATCCTGCGCTACGTGCAGCAGAGCGTGGGGCTGTTCCTGATGCAGGAGGG
GGCCACGCCCAGCGCGGCGCTCGACATGACCGCGCGCAACATGGAGCCCAGCATGTACGCCCGCAACCGCCCGTTCATCAAT
AAGCTGATGGACTACTTGCATCGGGCGGCCGCCATGAACTCGGACTACTTTACCAACGCCATCTTGAACCCGCACTGGCTCCCG
CCGCCCGGGTTCTACACGGGCGAGTACGACATGCCCGACCCCAACGACGGGTTCCTGTGGGACGACGTGGACAGCAGCGTGT
TCTCGCCGCGTCCAGGAACCAATGCCGTGTGGAAGAAAGAGGGCGGGGACCGGCGGCCGTCCTCGGCGCTGTCCGGTCGCG
CGGGTGCTGCCGCGGCGGTGCCCGAGGCCGCCAGCCCCTTCCCGAGCCTGCCCTTTTCGCTGAACAGCGTGCGCAGCAGCGA
GCTGGGTCGGCTGACGCGACCGCGCCTGCTGGGCGAGGAGGAGTACCTGAACGACTCCTTGTTGAGGCCCGAGCGCGAGAA
GAACTTCCCCAATAACGGGATAGAGAGCCTGGTGGACAAGATGAGCCGCTGGAAGACGTACGCGCACGAGCACAGGGACGA
GCCCCGAGCTAGCAGCGCAGGCACCCGTAGACGCCAGCGGCACGACAGGCAGCGGGGACTGGTGTGGGACGATGAGGATTC
CGCCGACGACAGCAGCGTGTTGGACTTGGGTGGGAGTGGTGGTAACCCGTTCGCTCACCTGCGCCCCCGTATCGGGCGCCTG
ATGTAAGAATCTGAAAAAATAAAAGACGGTACTCACCAAGGCCATGGCGACCAGCGTGCGTTCTTCTCTGTTGTTTGTAGTAG
TATGATGAGGCGCGTGTACCCGGAGGGTCCTCCTCCCTCGTACGAGAGCGTGATGCAGCAGGCGGTGGCGGCGGCGATGCA
GCCCCCGCTGGAGGCGCCTTACGTGCCCCCGCGGTACCTGGCGCCTACGGAGGGGCGGAACAGCATTCGTTACTCGGAGCTG
GCACCCTTGTACGATACCACCCGGTTGTACCTGGTGGACAACAAGTCGGCAGACATCGCCTCGCTGAACTACCAGAACGACCA
CAGCAACTTCCTGACCACCGTGGTGCAGAACAACGATTTCACCCCCACGGAGGCCAGCACCCAGACCATCAACTTTGACGAGC
GCTCGCGGTGGGGCGGCCAGCTGAAAACCATCATGCACACCAACATGCCCAACGTGAACGAGTTCATGTACAGCAACAAGTTC
AAGGCGCGGGTGATGGTCTCGCGCAAGACCCCCAACGGGGTGGATGATGATTATGATGGTAGTCAGGACGAGCTGACCTAC
GAGTGGGTGGAGTTTGAGCTGCCCGAGGGCAACTTCTCGGTGACCATGACCATCGATCTGATGAACAACGCCATCATCGACAA
CTACTTGGCGGTGGGGCGGCAGAACGGGGTGCTGGAGAGCGACATCGGCGTGAAGTTCGACACGCGCAACTTCCGGCTGGG
CTGGGACCCCGTGACCGAGCTGGTGATGCCGGGCGTGTACACCAACGAGGCCTTCCACCCCGACATCGTCCTGCTGCCCGGCT
GCGGCGTGGACTTCACCGAGAGCCGCCTCAGCAACCTGCTGGGCATCCGCAAGCGGCAGCCCTTCCAGGAGGGCTTCCAGAT
CCTGTACGAGGACCTGGAGGGGGGCAACATCCCCGCGCTCTTGGATGTCGAAGCCTACGAGAAAAGCAAGGAGGATAGCAC
CGCCGCGGCGACCGCAGCCGTGGCCACCGCCTCTACCGAGGTGCGGGGCGATAATTTTGCTAGCGCTGCGGCAGCGGCCGAG
GCGGCTGAAACCGAAAGTAAGATAGTCATCCAGCCGGTGGAGAAGGACAGCAAGGACAGGAGCTACAACGTGCTCGCGGAC
AAGAAAAACACCGCCTACCGCAGCTGGTACCTGGCCTACAACTACGGCGACCCCGAGAAGGGCGTGCGCTCCTGGACGCTGC
TCACCACCTCGGACGTCACCTGCGGCGTGGAGCAAGTCTACTGGTCGCTGCCCGACATGATGCAAGACCCGGTCACCTTCCGC
TCCACGCGTCAAGTTAGCAACTACCCGGTGGTGGGCGCCGAGCTCCTGCCCGTCTACTCCAAGAGCTTCTTCAACGAGCAGGC
CGTCTACTCGCAGCAGCTGCGCGCCTTCACCTCGCTCACGCACGTCTTCAACCGCTTCCCCGAGAACCAGATCCTCGTCCGCCC
GCCCGCGCCCACCATTACCACCGTCAGTGAAAACGTTCCTGCTCTCACAGATCACGGGACCCTGCCGCTGCGCAGCAGTATCCG
GGGAGTCCAGCGCGTGACCGTCACTGACGCCAGACGCCGCACCTGCCCCTACGTCTACAAGGCCCTGGGCGTAGTCGCGCCG
CGCGTCCTCTCGAGCCGCACCTTCTAAAAAATGTCCATTCTCATCTCGCCCAGTAATAACACCGGTTGGGGCCTGCGCGCGCCC
AGCAAGATGTACGGAGGCGCTCGCCAACGCTCCACGCAACACCCCGTGCGCGTGCGCGGGCACTTCCGCGCTCCCTGGGGCG
CCCTCAAGGGCCGCGTGCGCTCGCGCACCACCGTCGACGACGTGATCGACCAGGTGGTGGCCGACGCGCGCAACTACACGCC

Fig. 21D

CGCCGCCGCGCCCGTCTCCACCGTGGACGCCGTCATCGACAGCGTGGTGGCCGACGCGCGCCGGTACGCCCGCACCAAGAGC
CGGCGGCGGCGCATCGCCCGGCGGCACCGGAGCACCCCCGCCATGCGCGCGGCGCGAGCCTTGCTGCGCAGGGCCAGGCGC
ACGGGACGCAGGGCCATGCTCAGGGCGGCCAGACGCGCGGCCTCCGGCAGCAGCAGCGCCGGCAGGACCCGCAGACGCGC
GGCCACGGCGGCGGCGGCGGCCATCGCCAGCATGTCCCGCCCGCGGCGCGGCAACGTGTACTGGGTGCGCGACGCCGCCAC
CGGTGTGCGCGTGCCCGTGCGCACCCGCCCCCCTCGCACTTGAAGATGCTGACTTCGCGATGTTGATGTGTCCCAGCGGCGAG
GAGGATGTCCAAGCGCAAATACAAGGAAGAGATGCTCCAGGTCATCGCGCCTGAGATCTACGGCCCCGCGGCGGCGGTGAA
GGAGGAAAGAAAGCCCCGCAAACTGAAGCGGGTCAAAAAGGACAAAAAGGAGGAGGAAGATGACGGACTGGTGGAGTTTG
TGCGCGAGTTCGCCCCCCGGCGGCGCGTGCAGTGGCGCGGGCGGAAAGTGAAACCGGTGCTGCGGCCCGGCACCACGGTGG
TCTTCACGCCCGGCGAGCGTTCCGGCTCCGCCTCCAAGCGCTCCTACGACGAGGTGTACGGGGACGAGGACATCCTCGAGCA
GGCGGTCGAGCGTCTGGGCGAGTTTGCGTACGGCAAGCGCAGCCGCCCCGCGCCCTTGAAAGAGGAGGCGGTGTCCATCCC
GCTGGACCACGGCAACCCCACGCCGAGCCTGAAGCCGGTGACCCTGCAGCAGGTGCTACCGAGCGCGGCGCCGCGCCGGGG
CTTCAAGCGCGAGGGCGGCGAGGATCTGTACCCGACCATGCAGCTGATGGTGCCCAAGCGCCAGAAGCTGGAGGACGTGCT
GGAGCACATGAAGGTGGACCCCGAGGTGCAGCCCGAGGTCAAGGTGCGGCCCATCAAGCAGGTGGCCCCGGGCCTGGGCGT
GCAGACCGTGGACATCAAGATCCCCACGGAGCCCATGGAAACGCAGACCGAGCCCGTGAAGCCCAGCACCAGCACCATGGAG
GTGCAGACGGATCCCTGGATGCCAGCACCAGCTTCCACCAGCACTCGCCGAAGACGCAAGTACGGCGCGGCCAGCCTGCTGA
TGCCCAACTACGCGCTGCATCCTTCCATCATCCCCACGCCGGGCTACCGCGGCACGCGCTTCTACCGCGGCTACACCAGCAGCC
GCCGCCGCAAGACCACCACCCGCCGCCGTCGTCGCAGCCGCCGCAGCAGCACCGCGACTTCCGCCTTGGTGCGGAGAGTGTA
TCGCAGCGGGCGCGAGCCTCTGACCCTGCCGCGCGCGCGCTACCACCCGAGCATCGCCATTTAACTACCGCCTCCTACTTGCAG
ATATGGCCCTCACATGCCGCCTCCGCGTCCCCATTACGGGCTACCGAGGAAGAAAGCCGCGCCGTAGAAGGCTGACGGGGAA
CGGGCTGCGTCGCCATCACCACCGGCGGCGGCGCGCCATCAGCAAGCGGTTGGGGGGAGGCTTCCTGCCCGCGCTGATCCCC
ATCATCGCCGCGGCGATCGGGGCGATCCCCGGCATAGCTTCCGTGGCGGTGCAGGCCTCTCAGCGCCACTGAGACACAAAAA
AGCATGGATTTGTAATAAAAAAAAAAATGGACTGACGCTCCTGGTCCTGTGATGTGTGTTTTTAGATGGAAGACATCAATTTTT
CGTCCCTGGCACCGCGACACGGCACGCGGCCGTTTATGGGCACCTGGAGCGACATCGGCAACAGCCAACTGAACGGGGGCGC
CTTCAATTGGAGCAGTCTCTGGAGCGGGCTTAAGAATTTCGGGTCCACGCTCAAAACCTATGGCAACAAGGCGTGGAACAGCA
GCACAGGGCAGGCGCTGAGGGAAAAGCTGAAAGAACAGAACTTCCAGCAGAAGGTGGTTGATGGCCTGGCCTCAGGCATCA
ACGGGGTGGTTGACCTGGCCAACCAGGCCGTGCAGAAACAGATCAACAGCCGCCTGGACGCGGTCCCGCCCGCGGGGTCCGT
GGAGATGCCCCAGGTGGAGGAGGAGCTGCCTCCCCTGGACAAGCGCGGCGACAAGCGACCGCGTCCCGACGCGGAGGAGA
CGCTGCTGACGCACACGGACGAGCCGCCCCCGTACGAGGAGGCGGTGAAACTGGGCCTGCCCACCACGCGGCCCGTGGCGC
CTCTGGCCACCGGAGTGCTGAAACCCAGCAGCAGCCAGCCCGCGACCCTGGACTTGCCTCCGCCTCGCCCCTCCACAGTGGCT
AAGCCCCTGCCGCCGGTGGCCGTCGCGTCGCGCGCCCCCCGAGGCCGCCCCCAGGCGAACTGGCAGAGCACTCTGAACAGCA
TCGTGGGTCTGGGAGTGCAGAGTGTGAAGCGCCGCCGCTGCTATTAAAAGACACTGTAGCGCTTAACTTGCTTGTCTGTGTGT
ATATGTATGTCCGCCGACCAGAAGGAGGAGTGTGAAGAGGCGCGTCGCCGAGTTGCAAGATGGCCACCCCATCGATGCTGCC
CCAGTGGGCGTACATGCACATCGCCGGACAGGACGCTTCGGAGTACCTGAGTCCGGGTCTGGTGCAGTTCGCCCGCGCCACA
GACACCTACTTCAGTCTGGGGAACAAGTTTAGGAACCCCACGGTGGCGCCCACGCACGATGTGACCACCGACCGCAGCCAGC
GGCTGACGCTGCGCTTCGTGCCCGTGGACCGCGAGGACAACACCTACTCGTACAAAGTGCGCTACACGCTGGCCGTGGGCGA
CAACCGCGTGCTGGACATGGCCAGCACCTACTTTGACATCCGCGGCGTGCTGGACCGGGGCCCTAGCTTCAAACCCTACTCTG
GCACCGCCTACAACAGCCTAGCTCCCAAGGGAGCTCCCAATTCCAGCCAGTGGGAGCAAGCAAAAACAGGCAATGGGGGAAC
TATGGAAACACACACATATGGTGTGGCCCCAATGGGCGGAGAGAATATTACAAAAGATGGTCTTCAAATTGGAACTGACGTTA
CAGCGAATCAGAATAAACCAATTTATGCCGACAAAACATTTCAACCAGAACCGCAAGTAGGAGAAGAAAATTGGCAAGAAAC
TGAAAACTTTTATGGCGGTAGAGCTCTTAAAAAAGACACAAACATGAAACCTTGCTATGGCTCCTATGCTAGACCCACCAATGA
AAAAGGAGGTCAAGCTAAACTTAAAGTTGGAGATGATGGAGTTCCAACCAAAGAATTCGACATAGACCTGGCTTTCTTTGATA
CTCCCGGTGGCACCGTGAACGGTCAAGACGAGTATAAAGCAGACATTGTCATGTATACCGAAAACACGTATTTGGAAACTCCA
GACACGCATGTGGTATACAAACCAGGCAAGGATGATGCAAGTTCTGAAATTAACCTGGTTCAGCAGTCTATGCCCAACAGACC
CAACTACATTGGGTTCAGGGACAACTTTATCGGTCTTATGTACTACAACAGCACTGGCAATATGGGTGTGCTTGCTGGTCAGGC
CTCCCAGCTGAATGCTGTGGTTGATTTGCAAGACAGAAACACCGAGCTGTCCTACCAGCTCTTGCTTGACTCTTTGGGTGACAG
AACCCGGTATTTCAGTATGTGGAACCAGGCGGTGGACAGTTATGACCCCGATGTGCGCATCATCGAAAACCATGGTGTGGAG
GATGAATTGCCAAACTATTGCTTCCCCTTGGACGGCTCTGGCACTAACGCCGCATACCAAGGTGTGAAAGTAAAAGATGGTCA
AGATGGTGATGTTGAGAGTGAATGGGAAAATGACGATACTGTTGCAGCTCGAAATCAATTATGTAAAGGTAACATTTTCGCCA
TGGAGATTAATCTCCAGGCTAACCTGTGGAGAAGTTTCCTCTACTCGAACGTGGCCCTGTACCTGCCCGACTCCTACAAGTACA
CGCCGACCAACGTCACGCTGCCGACCAACACCAACACCTACGATTACATGAATGGCAGAGTGACACCTCCCTCGCTGGTAGAC

Fig. 21E

GCCTACCTCAACATCGGGGCGCGCTGGTCGCTGGACCCCATGGACAACGTCAACCCCTTCAACCACCACCGCAACGCGGGCCT
GCGCTACCGCTCCATGCTCCTGGGCAACGGGCGCTACGTGCCCTTCCACATCCAGGTGCCCCAAAAGTTTTTCGCCATCAAGAG
CCTCCTGCTCCTGCCCGGGTCCTACACCTACGAGTGGAACTTCCGCAAGGACGTCAACATGATCCTGCAGAGCTCCCTAGGCAA
CGACCTGCGCACGGACGGGGCCTCCATCGCCTTCACCAGCATCAACCTCTACGCCACCTTCTTCCCCATGGCGCACAACACCGC
CTCCACGCTCGAGGCCATGCTGCGCAACGACACCAACGACCAGTCCTTCAACGACTACCTCTCGGCGGCCAACATGCTCTACCC
CATCCCGGCCAACGCCACCAACGTGCCCATCTCCATCCCCTCGCGCAACTGGGCCGCCTTCCGCGGATGGTCCTTCACGCGCCT
GAAGACCCGCGAGACGCCCTCGCTCGGCTCCGGGTTCGACCCCTACTTCGTCTACTCGGGCTCCATCCCCTACCTAGACGGCAC
CTTCTACCTCAACCACACCTTCAAGAAGGTCTCCATCACCTTCGACTCCTCCGTCAGCTGGCCCGGCAACGACCGCCTCCTGACG
CCCAACGAGTTCGAAATCAAGCGCACCGTCGACGGAGAGGGATACAACGTGGCCCAGTGCAACATGACCAAGGACTGGTTCC
TGGTCCAGATGCTGGCCCACTACAACATCGGCTACCAGGGCTTCTACGTGCCCGAGGGCTACAAGGACCGCATGTACTCCTTCT
TCCGCAACTTCCAGCCCATGAGCCGCCAGGTCGTGGACGAGGTCAACTACAAGGACTACCAGGCCGTCACCCTGGCCTACCAG
CACAACAACTCGGGCTTCGTCGGCTACCTCGCGCCCACCATGCGCCAGGGCCAGCCCTACCCCGCCAACTACCCCTACCCGCTC
ATCGGCAAGAGCGCCGTCGCCAGCGTCACCCAGAAAAAGTTCCTCTGCGACCGGGTCATGTGGCGCATCCCCTTCTCCAGCAA
CTTCATGTCCATGGGCGCGCTCACCGACCTCGGCCAGAACATGCTCTACGCCAACTCCGCCCACGCGCTAGACATGAATTTCGA
AGTCGACCCCATGGATGAGTCCACCCTTCTCTATGTTGTCTTCGAAGTCTTCGACGTCGTCCGAGTGCACCAGCCCCACCGCGG
CGTCATCGAAGCCGTCTACCTGCGCACGCCCTTCTCGGCCGGCAACGCCACCACCTAAGCCGCTCTTGCTTCTTGCAAGATGAC
GGCGGGCTCCGGCGAGCAGGAGCTCAGGGCCATCCTCCGCGACCTGGGCTGCGGGCCCTGCTTCCTGGGCACCTTCGACAAG
CGCTTCCCTGGATTCATGGCCCCGCACAAGCTGGCCTGCGCCATCGTGAACACGGCCGGCCGCGAGACCGGGGGCGAGCACT
GGCTGGCCTTCGCCTGGAACCCGCGCTCCCACACATGCTACCTCTTCGACCCCTTCGGGTTCTCGGACGAGCGCCTCAAGCAGA
TCTACCAGTTCGAGTACGAGGGCCTGCTGCGTCGCAGCGCCCTGGCCACCGAGGACCGCTGCGTCACCCTGGAAAAGTCCACC
CAGACCGTGCAGGGTCCGCGCTCGGCCGCCTGCGGGCTCTTCTGCTGCATGTTCCTGCACGCCTTCGTGCACTGGCCCGACCG
CCCCATGGACAAGAACCCCACCATGAACTTACTGACGGGGGTGCCCAACGGCATGCTCCAGTCGCCCCAGGTGGAACCCACCC
TGCGCCGCAACCAGGAAGCGCTCTACCGCTTCCTCAATGCCCACTCCGCCTACTTTCGCTCCCACCGCGCGCGCATCGAGAAGG
CCACCGCCTTCGACCGCATGAATCAAGACATGTAAAAAACCGGTGTGTGTATGTGAATGCTTTATTCATAATAAACAGCACATG
TTTATGCCACCTTCTCTGAGGCTCTGACTTTATTTAGAAATCGAAGGGGTTCTGCCGGCTCTCGGCATGGCCCGCGGGCAGGG
ATACGTTGCGGAACTGGTACTTGGGCAGCCACTTGAACTCGGGGATCAGCAGCTTGGGCACGGGGAGGTCGGGGAACGAGT
CGCTCCACAGCTTGCGCGTGAGTTGCAGGGCGCCCAGCAGGTCGGGCGCGGAGATCTTGAAATCGCAGTTGGGACCCGCGTT
CTGCGCGCGAGAGTTGCGGTACACGGGGTTGCAGCACTGGAACACCATCAGGGCCGGGTGCTTCACGCTTGCCAGCACCGTC
GCGTCGGTGATGCCCTCCACGTCCAGATCCTCGGCGTTGGCCATCCCGAAGGGGGTCATCTTGCAGGTCTGCCGCCCCATGCT
GGGCACGCAGCCGGGCTTGTGGTTGCAATCGCAGTGCAGGGGGATCAGCATCATCTGGGCCTGCTCGGAGCTCATGCCCGGG
TACATGGCCTTCATGAAAGCCTCCAGCTGGCGGAAGGCCTGCTGCGCCTTGCCGCCCTCGGTGAAGAAGACCCCGCAGGACTT
GCTAGAGAACTGGTTGGTGGCGCAGCCGGCGTCGTGCACGCAGCAGCGCGCGTCGTTGTTGGCCAGCTGCACCACGCTGCGC
CCCCAGCGGTTCTGGGTGATCTTGGCCCGGTTGGGGTTCTCCTTCAGCGCGCGCTGCCCGTTCTCGCTCGCCACATCCATCTCG
ATAGTGTGCTCCTTCTGGATCATCACGGTCCCGTGCAGGCACCGCAGCTTGCCCTCGGCTTCGGTGCAGCCGTGCAGCCACAG
CGCGCAGCCGGTGCACTCCCAGTTCTTGTGGGCGATCTGGGAGTGCGAGTGCACGAAGCCCTGCAGGAAGCGGCCCATCATC
GCGGTCAGGGTCTTGTTGCTGGTGAAGGTCAGCGGGATGCCGCGGTGCTCCTCGTTCACATACAGGTGGCAGATGCGGCGGT
ACACCTCGCCCTGCTCGGGCATCAGCTGGAAGGCGGACTTCAGGTCGCTCTCCACGCGGTACCGGTCCATCAGCAGCGTCATC
ACTTCCATGCCCTTCTCCCAGGCCGAAACGATCGGCAGGCTCAGGGGGTTCTTCACCGCCATTGTCATCTTAGTCGCCGCCGCC
GAGGTCAGGGGGTCGTTCTCGTCCAGGGTCTCAAACACTCGCTTGCCGTCCTTCTCGATGATGCGCACGGGGGGAAAGCTGA
AGCCCACGGCCGCCAGCTCCTCCTCGGCCTGCCTTTCGTCCTCGCTGTCCTGGCTGATGTCTTGCAAAGGCACATGCTTGGTCTT
GCGGGGTTTCTTTTTGGGCGGCAGAGGCGGCGGCGATGTGCTGGGAGAGCGCGAGTTCTCGTTCACCACGACTATTTCTTCTT
CTTGGCCGTCGTCCGAGACCACGCGGCGGTAGGCATGCCTCTTCTGGGGCAGAGGCGGAGGCGACGGGCTCTCGCGGTTCG
GCGGGCGGCTGGCAGAGCCCCTTCCGCGTTCGGGGGTGCGCTCCTGGCGGCGCTGCTCTGACTGACTTCCTCCGCGGCCGGC
CATTGTGTTCTCCTAGGGAGCAACAACAAGCATGGAGACTCAGCCATCGTCGCCAACATCGCCATCTGCCCCCGCCGCCACCGC
CGACGAGAACCAGCAGCAGAATGAAAGCTTAACCGCCCCGCCGCCCAGCCCCACCTCCGACGCCGCGGCCCCAGACATGCAA
GAGATGGAGGAATCCATCGAGATTGACCTGGGCTACGTGACGCCCGCGGAGCACGAGGAGGAGCTGGCAGCGCGCTTTTCA
GCCCCGGAAGAGAACCACCAAGAGCAGCCAGAGCAGGAAGCAGAGAACGAGCAGAACCAGGCTGGGCACGAGCATGGCGA
CTACCTGAGCGGGGCAGAGGACGTGCTCATCAAGCATCTGGCCCGCCAATGCATCATCGTCAAGGACGCGCTGCTCGACCGC
GCCGAGGTGCCCCTCAGCGTGGCGGAGCTCAGCCGCGCCTACGAGCGCAACCTCTTCTCGCCGCGCGTGCCCCCCAAGCGCCA
GCCCAACGGCACCTGTGAGCCCAACCCGCGCCTCAACTTCTACCCGGTCTTCGCGGTGCCCGAGGCCCTGGCCACCTACCACCT

Fig. 21F

CTTTTTCAAGAACCAAAGGATCCCCGTCTCCTGCCGCGCCAACCGCACCCGCGCCGACGCCCTGCTCAACCTGGGCCCCGGCGC
CCGCCTACCTGATATCACCTCCTTGGAAGAGGTTCCCAAGATCTTCGAGGGTCTGGGCAGCGACGAGACTCGGGCCGCGAACG
CTCTGCAAGGAAGCGGAGAGGAGCATGAGCACCACAGCGCCCTGGTGGAGTTGGAAGGCGACAACGCGCGCCTGGCGGTCC
TCAAGCGCACGGTCGAGCTGACCCACTTCGCCTACCCGGCGCTCAACCTGCCCCCCAAGGTCATGAGCGCCGTCATGGACCAG
GTGCTCATCAAGCGCGCCTCGCCCCTCTCGGAGGAGGAGATGCAGGACCCCGAGAGTTCGGACGAGGGCAAGCCCGTGGTCA
GCGACGAGCAGCTGGCGCGCTGGCTGGGAGCGAGTAGCACCCCCCAGAGCCTGGAAGAGCGGCGCAAGCTCATGATGGCCG
TGGTCCTGGTGACCGTGGAGCTGGAGTGTCTGCGCCGCTTCTTTGCCGACGCGGAGACCCTGCGCAAGGTCGAGGAGAACCT
GCACTACCTCTTCAGGCACGGGTTCGTGCGCCAGGCCTGCAAGATCTCCAACGTGGAGCTGACCAACCTGGTCTCCTACATGG
GCATCCTGCACGAGAACCGCCTGGGGCAAAACGTGCTGCACACCACCCTGCGCGGGGAGGCCCGCCGCGACTACATCCGCGA
CTGCGTCTACCTGTACCTCTGCCACACCTGGCAGACGGGCATGGGCGTGTGGCAGCAGTGCCTGGAGGAGCAGAACCTGAAA
GAGCTCTGCAAGCTCCTGCAGAAGAACCTCAAGGCCCTGTGGACCGGGTTCGACGAGCGTACCACCGCCTCGGACCTGGCCG
ACCTCATCTTCCCCGAGCGCCTGCGGCTGACGCTGCGCAACGGGCTGCCCGACTTTATGAGCCAAAGCATGTTGCAAAACTTTC
GCTCTTTCATCCTCGAACGCTCCGGGATCCTGCCCGCCACCTGCTCCGCGCTGCCCTCGGACTTCGTGCCGCTGACCTTCCGCGA
GTGCCCCCCGCCGCTCTGGAGCCACTGCTACTTGCTGCGCCTGGCCAACTACCTGGCCTACCACTCGGACGTGATCGAGGACG
TCAGCGGCGAGGGTCTGCTGGAGTGCCACTGCCGCTGCAACCTCTGCACGCCGCACCGCTCCCTGGCCTGCAACCCCCAGCTG
CTGAGCGAGACCCAGATCATCGGCACCTTCGAGTTGCAAGGCCCCGGCGACGGCGAGGGCAAGGGGGGTCTGAAACTCACC
CCGGGGCTGTGGACCTCGGCCTACTTGCGCAAGTTCGTGCCCGAGGACTACCATCCCTTCGAGATCAGGTTCTACGAGGACCA
ATCCCAGCCGCCCAAGGCCGAGCTGTCGGCCTGCGTCATCACCCAGGGGGCCATCCTGGCCCAATTGCAAGCCATCCAGAAAT
CCCGCCAAGAATTTCTGCTGAAAAAGGGCCACGGGGTCTACTTGGACCCCCAGACCGGAGAGGAGCTCAACCCCAGCTTCCCC
CAGGATGCCCCGAGGAAGCAGCAAGAAGCTGAAAGTGGAGCTGCCGCCGCCGGAGGATTTGGAGGAAGACTGGGAGAGCA
GTCAGGCAGAGGAGGAGGAGATGGAAGACTGGGACAGCACTCAGGCAGAGGAGGACAGCCTGCAAGACAGTCTGGAGGAG
GAAGACGAGGTGGAGGAGGCAGAGGAAGAAGCAGCCGCCGCCAGACCGTCGTCCTCGGCGGAGAAAGCAAGCAGCACGGA
TACCATCTCCGCTCCGGGTCGGGGTCGCGGCGGCCGGGCCCACAGTAGGTGGGACGAGACCGGGCGCTTCCCGAACCCCACC
ACCCAGACCGGTAAGAAGGAGCGGCAGGGATACAAGTCCTGGCGGGGGCACAAAAACGCCATCGTCTCCTGCTTGCAAGCCT
GCGGGGGCAACATCTCCTTCACCCGGCGCTACCTGCTCTTCCACCGCGGGGTGAACTTCCCCCGCAACATCTTGCATTACTACC
GTCACCTCCACAGCCCCTACTACTGTTTCCAAGAAGAGGCAGAAACCCAGCAGCAGCAGAAAACCAGCGGCAGCAGCAGCTA
GAAAATCCACAGCGGCGGCAGGTGGACTGAGGATCGCGGCGAACGAGCCGGCGCAGACCCGGGAGCTGAGGAACCGGATC
TTTCCCACCCTCTATGCCATCTTCCAGCAGAGTCGGGGGCAGGAGCAGGAACTGAAAGTCAAGAACCGTTCTCTGCGCTCGCT
CACCCGCAGTTGTCTGTATCACAAGAGCGAAGACCAACTTCAGCGCACTCTCGAGGACGCCGAGGCTCTCTTCAACAAGTACT
GCGCGCTCACTCTTAAAGAGTAGCCCGCGCCCGCCCACACACGGAAAAAGGCGGGAATTACGTCACCACCTGCGCCCTTCGCC
CGACCATCATGAGCAAAGAGATTCCCACGCCTTACATGTGGAGCTACCAGCCCCAGATGGGCCTGGCCGCCGGCGCCGCCCA
GGACTACTCCACCCGCATGAACTGGCTCAGTGCCGGGCCCGCGATGATCTCACGGGTGAATGACATCCGCGCCCACCGAAACC
AGATACTCCTAGAACAGTCAGCGATCACCGCCACGCCCCGCCATCACCTTAATCCGCGTAATTGGCCCGCCGCCCTGGTGTACC
AGGAAATTCCCCAGCCCACGACCGTACTACTTCCGCGAGACGCCCAGGCCGAAGTCCAGCTGACTAACTCAGGTGTCCAGCTG
GCCGGCGGCGCCGCCCTGTGTCGTCACCGCCCCGCTCAGGGTATAAAGCGGCTGGTGATCCGAGGCAGAGGCACACAGCTCA
ACGACGAGGTGGTGAGCTCTTCGCTGGGTCTGCGACCTGACGGAGTCTTCCAACTCGCCGGATCGGGGAGATCTTCCTTCACG
CCTCGTCAGGCCGTCCTGACTTTGGAGAGTTCGTCCTCGCAGCCCCGCTCGGGCGGCATCGGCACTCTCCAGTTCGTGGAGGA
GTTCACTCCCTCGGTCTACTTCAACCCCTTCTCCGGCTCCCCCGGCCACTACCCGGACGAGTTCATCCCGAACTTCGACGCCATC
AGCGAGTCGGTGGACGGCTACGATTGAATGTCCCATGGTGGCGCAGCTGACCTAGCTCGGCTTCGACACCTGGACCACTGCC
GCCGCTTCCGCTGCTTCGCTCGGGATCTCGCCGAGTTTGCCTACTTTGAGCTGCCCGAGGAGCACCCTCAGGGCCCAGCCCAC
GGAGTGCGGATCATCGTCGAAGGGGGCCTCGACTCCCACCTGCTTCGGATCTTCAGCCAGCGACCGATCCTGGTCGAGCGCG
AACAAGGACAGACCCTTCTTACTTTGTACTGCATCTGCAACCACCCCGGCCTGCATGAAAGTCTTTGTTGTCTGCTGTGTACTGA
GTATAATAAAAGCTGAGATCAGCGACTACTCCGGACTCGATTGTGGTGTTCCTGCTATCAACCGGTCCCTGTTCTTCACCGGGA
ACGAGACCGAGCTCCAGCTCCAGTGTAAGCCCCACAAGAAGTACCTCACCTGGCTGTTCCAGGGCTCCCCGATCGCCGTTGTC
AACCACTGCGACAACGACGGAGTCCTGCTGAGCGGCCCTGCCAACCTTACTTTTTCCACCCGCAGAAGCAAGCTCCAGCTCTTC
CAACCCTTCCTCCCCGGGACCTATCAGTGCGTCTCAGGACCCTGCCATCACACCTTCCACCTGATCCCGAATACCACAGCGCCGC
TCCCCGCTACTAACAACCAAACTACCCACCAACGCCACCGTCGCGACCTTTCCTCTGAATCTAATACCACTACCGGAGGTGAGC
TCCGAGGTCGACCAACCTCTGGGATTTACTACGGCCCCTGGGAGGTGGTGGGGTTAATAGCAAATAAAAAAAATAATCATTTG
ATTTGAAATAAAGATACAATCATATTGATGATTTGAGTTTAACAAAAATAAAGAATCACTTACTTGAAATCTGATACCAGGTCTC
TGTCCATGTTTTCTGCCAACACCACCTCACTCCCCTCTTCCCAGCTCTGGTACTGCAGGCCCCGGCGGGCTGCAAACTTCCTCCA

Fig. 21G

CACGCTGAAGGGGATGTCAAATTCCTCCTGTCCCTCAATCTTCATTTTATCTTCTATCAGATGTCCAAAAAGCGCGTCCGGGTGG
ATGATGACTTCGACCCCGTCTACCCCTACGATGCAGACAACGCACCGACCGTGCCCTTCATCAACCCCCCCTTCGTCTCTTCAGA
TGGATTCCAAGAGAAGCCCCTGGGGGTGTTGTCCCTGCGACTGGCTGACCCCGTCACCACCAAGAACGGGGAAATCACCCTCA
AGCTGGGAGAGGGGGTGGACCTCGACTCGTCGGGAAAACTCATCTCCAACACGGCCACCAAGGCCGCCGCCCCTCTCAGTAT
TTCAAACAACACCATTTCCCTTAAAACTGCTGCCCCTTTCTACAACAACAATGGAACTTTAAGCCTCAATGTCTCCACACCATTAG
CAGTATTTCCCACATTTAACACTTTAGGCATAAGTCTTGGAAACGGTCTTCAGACTTCAAATAAGTTGTTGACTGTACAACTAAC
TCATCCTCTTACATTCAGCTCAAATAGCATCACAGTAAAAACAGACAAAGGGCTATATATTAACTCCAGTGGAAACAGAGGACT
TGAGGCTAATATAAGCCTAAAAAGAGGACTAGTTTTTGACGGTAATGCTATTGCAACATATATTGGAAATGGCTTAGACTATG
GATCTTATGATAGTGATGGAAAAACAAGACCCGTAATTACCAAAATTGGAGCAGGATTAAATTTTGATGCTAACAAAGCAATA
GCTGTCAAACTAGGCACAGGTTTAAGTTTTGACTCCGCTGGTGCCTTGACAGCTGGAAACAAACAGGATGACAAGCTAACACT
TTGGACTACCCCTGACCCAAGCCCTAATTGTCAATTACTTTCAGACAGAGATGCCAAATTTACTCTCTGTCTTACAAAATGCGGT
AGTCAAATACTAGGCACTGTGGCAGTGGCGGCTGTTACTGTAGGATCAGCACTAAATCCAATTAATGACACAGTCAAAAGCGC
CATAGTTTTCCTTAGATTTGATTCCGATGGTGTACTCATGTCAAACTCATCAATGGTAGGTGATTACTGGAACTTTAGGGAGGG
ACAGACCACTCAAAGTGTAGCCTATACAAATGCTGTGGGATTCATGCCAAATATAGGTGCATATCCAAAAACCCAAAGTAAAA
CACCTAAAAATAGCATAGTCAGTCAGGTATATTTAACTGGAGAAACTACTATGCCAATGACACTAACCATAACTTTCAATGGCA
CTGATGAAAAAGACACAACCCCAGTTAGCACCTACTCTATGACTTTTACATGGCAGTGGACTGGAGACTATAAGGACAAAAAT
ATTACCTTTGCTACCAACTCATTCTCTTTTTCCTACATCGCCCAGGAATAATCCCACCCAGCAAGCCAACCCCTTTTCCCACCACC
TTTGTCTATATGGAAACTCTGAAACAGAAAAATAAAGTTCAAGTGTTTTATTGAATCAACAGTTTTACAGGACTCGAGCAGTTA
TTTTTCCTCCACCCTCCCAGGACATGGAATACACCACCCTCTCCCCCCGCACAGCCTTGAACATCTGAATGCCATTGGTGATGGA
CATGCTTTTGGTCTCCACGTTCCACACAGTTTCAGAGCGAGCCAGTCTCGGATCGGTCAGGGAGATGAAACCCTCCGGGCACT
CCCGCATCTGCACCTCACAGCTCAACAGCTGAGGATTGTCCTCGGTGGTCGGGATCACGGTTATCTGGAAGAAGCAGAAGAGC
GGCGGTGGGAATCATAGTCCGCGAACGGGATCGGCCGGTGGTGTCGCATCAGGCCCCGCAGCAGTCGCTGCCGCCGCCGCTC
CGTCAAGCTGCTGCTCAGGGGGTTCGGGTCCAGGGACTCCCTCAGCATGATGCCCACGGCCCTCAGCATCAGTCGTCTGGTGC
GGCGGGCGCAGCAGCGCATGCGAATCTCGCTCAGGTCACTGCAGTACGTGCAACACAGGACCACCAGGTTGTTCAACAGTCC
ATAGTTCAACACGCTCCAGCCGAAACTCATCGCGGGAAGGATGCTACCCACGTGGCCGTCGTACCAGATCCTCAGGTAAATCA
AGTGGCGCTCCCTCCAGAAGACGCTGCCCATGTACATGATCTCCTTGGGCATGTGGCGGTTCACCACCTCCCGGTACCACATCA
CCCTCTGGTTGAACATGCAGCCCCGGATGATCCTGCGGAACCACAGGGCCAGCACCGCCCCGCCCGCCATGCAGCGAAGAGA
CCCCGGATCCCGGCAATGACAATGGAGGACCCACCGCTCGTACCCGTGGATCATCTGGGAGCTGAACAAGTCTATGTTGGCAC
AGCACAGGCATATGCTCATGCATCTCTTCAGCACTCTCAGCTCCTCGGGGGTCAAAACCATATCCCAGGGCACGGGGAACTCTT
GCAGGACAGCGAACCCCGCAGAACAGGGCAATCCTCGCACATAACTTACATTGTGCATGGACAGGGTATCGCAATCAGGCAG
CACCGGGTGATCCTCCACCAGAGAAGCGCGGGTCTCGGTCTCCTCACAGCGTGGTAAGGGGGCCGGCCGATACGGGTGATGG
CGGGACGCGGCTGATCGTGTTCTCGACCGTGTCATGATGCAGTTGCTTTCGGACATTTTCGTACTTGCTGTAGCAGAACCTGGT
CCGGGCGCTGCACACCGATCGCCGGCGGCGGTCTCGGCGCTTGGAACGCTCGGTGTTAAAGTTGTAAAACAGCCACTCTCTCA
GACCGTGCAGCAGATCTAGGGCCTCAGGAGTGATGAAGATCCCATCATGCCTGATAGCTCTGATCACATCGACCACCGTGGAA
TGGGCCAGGCCCAGCCAGATGATGCAATTTTGTTGGGTTTCGGTGACGGCGGGGGAGGGAAGAACAGGAAGAACCATGATT
AACTTTTAATCCAAACGGTCTCGGAGCACTTCAAAATGAAGGTCACGGAGATGGCACCTCTCGCCCCCGCTGTGTTGGTGGAA
AATAACAGCCAGGTCAAAGGTGATACGGTTCTCGAGATGTTCCACGGTGGCTTCCAGCAAAGCCTCCACGCGCACATCCAGAA
ACAAGACAATAGCGAAAGCGGGAGGGTTCTCTAATTCCTCAACCATCATGTTACACTCCTGCACCATCCCCAGATAATTTTCATT
TTTCCAGCCTTGAATGATTCGAACTAGTTCCTGAGGTAAATCCAAGCCAGCCATGATAAAAAGCTCGCGCAGAGCACCCTCCAC
CGGCATTCTTAAGCACACCCTCATAATTCCAAGATATTCTGCTCCTGGTTCACCTGCAGCAGATTGACAAGCGGAATATCAAAA
TCTCTGCCGCGATCCCTGAGCTCCTCCCTCAGCAATAACTGTAAGTACTCTTTCATATCGTCTCCGAAATTTTTAGCCATAGGACC
CCCAGGAATAAGAGAAGGGCAAGCCACATTACAGATAAACCGAAGTCCCCCCCAGTGAGCATTGCCAAATGTAAGATTGAAA
TAAGCATGCTGGCTAGACCCGGTGATATCTTCCAGATAACTGGACAGAAAATCGGGTAAGCAATTTTTAAGAAAATCAACAAA
AGAAAAATCTTCCAGGTGCACGTTTAGGGCCTCGGGAACAACGATGGAGTAAGTGCAAGGGGTGCGTTCCAGCATGGTTAGT
TAGCTGATCTGTAAAAAAACAAAAAATAAAACATTAAACCATGCTAGCCTGGCGAACAGGTGGGTAAATCGTTCTCTCCAGCA
CCAGGCAGGCCACGGGGTCTCCGGCGCGACCCTCGTAAAAATTGTCGCTATGATTGAAAACCATCACAGAGAGACGTTCCCG
GTGGCCGGCGTGAATGATTCGAGAAGAAGCATACACCCCCGGAACATTGGAGTCCGTGAGTGAAAAAAAGCGGCCGAGGAA
GCAATGAGGCACTACAACGCTCACTCTCAAGTCCAGCAAAGCGATGCCATGCGGATGAAGCACAAAATTTTCAGGTGCGTAAA
AAATGTAATTACTCCCCTCCTGCACAGGCAGCGAAGCTCCCGATCCCTCCAGATACACATACAAAGCCTCAGCGTCCATAGCTT
ACCGAGCGGCAGCAGCAGCGGCACACAACAGGCGCAAGAGTCAGAGAAAAGACTGAGCTCTAACCTGTCCGCCCGCTCTCTG
CTCAATATATAGCCCCAGATCTACACTGACGTAAAGGCCAAAGTCTAAAAATACCCGCCAAATAATCACACACGCCCAGCACAC
GCCCAGAAACCGGTGACACACTCAGAAAAATACGCGCACTTCCTCAAACGGCCAAACTGCCGTCATTTCCGGGTTCCCACGCTA
CGTCATCAAAACACGACTTTCAAATTCCGTCGACCGTTAAAAACATCACCCGCCCCGCCCCTAACGGTCGCCGCTCCCGCAGCC
AATCACCTTCCTCCCTCCCCAAATTCAAACAGCTCATTTGCATATTAACGCGCACCAAAAGTTTGAGGTATATTATTGATGATG

Fig. 21H

AdC6 010-HIVgag (E1026) Amino acids – SEQ ID NO: 10
The symbol " * " refers herein to stop codons in the non coding regions

HHQ*YTSNFWCALICK*AV*IWGGRKVIGCGSGDR*GRGG*RFDDVAMRRSRFASSRGKSDVKRGVV*TRKYSIFPRSLTGNEVFL
GGCK*KRAIFARKLNEEVKI*VISRLWQGGVFAEGRVDFDRLRGGFDYRIFHLNFRVRCQSPVFLRTISFPRKCHLTVTITVLR*RKLRS
PDPLWCTLSTICSDAA*LSQYLLPACVLEVAE*CASKI*ATTRQGLTDNCMKNLLRVRRFALLRDVRARYTR*H*LLTSY***SITGSLV
HSPYMEFRVT*LTVNGPPG*PPNDPRPLTSIMTYVPIVTPIGTFH*RQWVEYLR*TAHLAVHQVYHMPSTPPIDVNDGKWPAWHY
AQYMTLWDFPTWQYIYVLVIAITMVMRFWQYINGRG*RFDSRGFPSLHPIDVNGSLFWHQNQRDFPKCRNNSAPLTQMGGRRV
RWEVYISRARLVNRQITRSFIAVVYHS*IANAVSASDTTVSNLSCRSWS*GTGQVSIKVTRQV*GDQ*KLGLSRQRRLLRF**APIGLT
DIHFAFLSTGVHSQFNYSS*G*ST*YDSL*ASATMGARASVLSGGELDRWEKIRLRPGGKKKYKLKHIVWASRELERFAVNPGLLETS
EGCRQILGQLQPSLQTGSEELRSLYNTVATLYCVHQRIEVKDTKEALEKIEEEQNKSKKKAQQAAADTGNSSQVSQNYPIVQNLQGQ
MVHQAISPRTLNAWVKVVEEKAFSPEVIPMFSALSEGATPQDLNTMLNTVGGHQAAMQMLKETINEEAAEWDRLHPVHAGPIA
PGQMREPRGSDIAGTTSTLQEQIGWMTNNPPIPVGEIYKRWIILGLNKIVRMYSPTSILDIRQGPKEPFRDYVDRFYKTLRAEQASQE
VKNWMTETLLVQNANPDCKTILKALGPAATLEEMMTACQGVGGPGHKARVLAEAMSQVTNSATIMMQRGNFRNQRKTVKCFN
CGKEGHIAKNCRAPRKKGCWKCGKEGHQMKDCTERQANFLGKIWPSHKGRPGNFLQSRPEPTAPPEESFRFGEETTTPSQKQEPI
DKELYPLASLRSLFGNDPSSQ**SSV*TGPLESTRAAKPLISLDCAF*LPAICCLPLPRAFLDPGRCHSHCPFLIK*GNCIALSE*VSFYSG
GWGGAGQQGGGLGRQ*QACWGCGGLYGF*GGKNQQICRSEFIYVGCGERGNEMVLWVLWVCINESVRYRHMLATVHVASHP
RKTWPEFEHNVMTRCNVHLGSRRGMFMPYQCNMQFVKVLLEPDAMSRVSLTGVFDMNVELWKILRYDESKTRCRACECGGKH
ARLQPVCVEVTEDLRPDHLVLSCNGTEFGSSGEESD*SE*CLGLGVSLHEGQND*NLWFSVCCSSMSGSASFEGGVFSPYLTGRLPS
WAGVRQNVMGSTVDGRPVQPANSSTLTYATLSSSSVDAAAAAAAASAASAVRGMALGAGYYSSLVANSSSTNNPASLNEEKLLLL
MAQLEALTQRLGELTQQVAQLQAETRAAVATVKTK*KMNQ*INGDGC*F*HRVLNLYLIFRAR*ALDHRSRSLSTRWIFSRTR*RW
AWMLRYMGMSPSRGWR*LHCRASCSGMVL*ITQS*QGRRAWCCTMSLRRRLMATGSPLV*VLTNLLSWEGCMRGEMRCILA
WILRLAMFPPRSRRGFMLCRTTSTVYPVHLGNLSCNLEGKA*KNLETPL*PPRFSMHSSMMMAMGPWAAAWAKTFRGSDTS*L
WSWVSSS*AILMNLGRRVPDWGTKVPSIPGA*LPSQICISQALSSEGGIMSTCGAMKKTVSGAGEMSWAESRFRSSWDLPQPVGP
*MTPMTGCRW*LRERQLPSSRRRGATSFIISRTCMFSRTSSARRRSPPSERSSCSEAKFFSGLSPSAMGILERVCCKSSRRSQSSVMCS
RASRSSRPPRFAGWGDCGSRAPGDGRPARPGSGPSRAAGSASAWSPSR*RGARRAGRLRGCASGSSGWSRTAPGRRPARRPGS
N*A*VRS*APRPRGPWRGAYLWKCVRRRDRGGT*GRRAWGRGRRTRGRRRPRRSWRRRSRTPRAR*GRGGWGQKRGFLRAF*
CVSYLWSP*ARVPAG*QRGCPCPRRPTLWAGPRAGCRGPRRRGTPPTPRRRPGSRPARRRPRGRGSGRCPPAGPPSPGYASTCPP
RPHPGR*LACKCRPRDRGSRPGGYKRGRAPARPHCLPDRCPGAPAVGVGIPSRRRA*PRHSGCQFLETRRI*Y*RCRWRRLS*APR
PFGQKRRSFCCRAWWRRSRRGRWRAAWRWSAWSGSFPCRRAPWRRC*AARTRAPRTSIRGRRW*ARRARF*PASRGCAG**G
PRWWPPRRAGARWSSRGARPCASRRGAAGPA*ARRGGRRPR*RCRAGARGRSS*CRCPDCPAPLASRARPARARRG*GACPRA
WGA*ARRRTCRRCRRRRGAPRGRRCRWGSSAPRGCWRARSRTARARARGAPCRGWSVAAFRRGRRSGGRWRGSWRRWWAF
GRC*SGRGAGRPSP**SGRRSPAAWRRARR*RGRPGRSSRGSLG*CHT*AGPSASTARG*EGTLRGPSSTLRGGTRPDRHGKSPPC
RTG*RPCRRSSPSPRGGRKLARPCAGRCG*GRRCRAP*P*GTGA*SRGRRSRPAPRVGSPCASCRRG*AKRK*HR*RGSCPRGA*S
CE*CGKAGAPRPGC**PGRRGRSRRSR*CCARRCRVPRIAGGP*RGAAS*ARRR*ARRGR*ARAARGPSRRRGGWR*GRKSRDPR
PGRSASGPGTDGTVGPRPFFRG*RSRRCGGRRASGPT*AGGRGRGRARRAAGPRRVS*PA*RGRAACRRTPSRCRFPHRR*GRAF
RCEDASRWGRTGSPATSWRNGC*CDGSRNADGAPSTRACVYTSVRSARNAARDARAARAVPGFLWRGISVGSGALAAASRAVLR
LGHRRGHRLPRWWSC*RARAGGRSRPRLGRVGERGRGRAGRSCPGS*DAAESGQWAAAARG*LAGAFPGRAGGPDGT*SPRR
RWWLRPRLAGCRAPGAPPPCPVSSWALLPCRSEAAARTRAGRQGRLGARRQGRQGHVGAARGQVLVLRPEKTGVSDDATVDVL
DLTPLGEGHGTREFEPEREFDRINLGIVDGGLPQDLLHVARVVLVGDLGHELLDLLLLKVSAAGALDGGREVVGDAAHELREGVHAG
LVPDAAVDHGSVGVARAHDHLGEVELDVAREDRVVAEALVEVVERGGDVLGDEEVHDPAAERHLADVAQGFQAFHGLVEVHGE
VEKLGVARRDGQLLLQKTDELGDGGAHLALEGPGGLLFHLLLFLLH*HLFYFLLRRRWRGRGPASPAAHGQTVDEALDGLPAPATH
GLGDGAPVLAGPQHEDAAAHLQVAAGGVSVGQGEGADDASYQLTRRDSAQGPERLEIHGIRKPLNEGFEPVAVAR*AEPGFLFFG
YLVGRRAGDAAGDEVEVGGPETADGGEEHQVLGPGLLDAQTVGHAPGVVLTPGEVLVVVLHEPLHGHLLLARAAVHAREPEPALR
LDERQVGDDALGEDGLLDLGEGGLEVVEVDEAVVGSGVDGVGAVGHDGPVDGLVAGSHELVVLEARVGARVEDVVVAGAHEVL
VSDEEVRRRLAVERPSLGGGGAGREVLEHEAVVAVDVPGHPGDAGGGGGGARELADAVPDVAQRQEVVHGGRGLAREARAVVD
ALDIRAKTKAVSGSTPWPGG*ANGLGCACTPVRISNQAGAAANVVLALPSRPKPANETSRIRRRVVFWPWSLVMKN**ARKAAAR
DGSLP*SGERIARVALRCAPVRASALGAGRIPRLTWAWLPRRFQDPLASRLLQLRSEPLFFFLVFLPDASRTAADAPPPSTTTAPTAAA
ATAGASAPAPAAASHYRGGRRERSRRSV*PGLGRGRGAGAAGGVVAGAAPARADEKGRSRGLRAQAEPVQRQERRGARGDARL
PLPRGAGAAARPGPKAGAEGRGFRGGRADGDQPRARARGRGQPGHGVRADREGGEQLPKILQQPRAHLDRARGGDPGPDAPV
GPAGGHRAEPHEQAADGAAVSGGAAQSGQRDVQGGAAEYHRARGPLAPGPGEHFAEHRGAGARAAAVREAGGHQLLGAESG

Fig. 21I

QVLR*EDLQDPVRAHRQGGEDRRVLHAHDPESADPERRSGGVPQRQDAPRGERQPPARAERPGADAQPAAGPDRGRDRGGELL
*HGRGPALAAQPPGLGSCRRFPLRGGGGR*GGGGRVPGRLMARPYFC*MQQQPPPPPPDPAMRAALQSQPSGINSSDDWTQA
MQRIMALTTRNPEAFRQQPQANRLSAILEAVVPSRSNPTHEKVLAIVNALVENKAIRGDEAGLVYNALLERVARYNSTNVQTNLDR
MVTDVREAVSQRERFHRESNLGSMVALNAFLSTQPANVPRGQEDYTNFISALRLMVAEVPQSEVYQSGPDYFFQTSRQGLQTVNL
SQAFKNLQGLWGVQAPVGDRATVSSLLTPNSRLLLLLVAPFTDSGSVSRDSYLGYLLNLYREAIGQAHVDEQTYQEITHVSRALGQE
DPGNLEATLNFLLTNRSQKIPPQYALSTEEERILRYVQQSVGLFLMQEGATPSAALDMTARNMEPSMYARNRPFINKLMDYLHRAA
AMNSDYFTNAILNPHWLPPPGFYTGEYDMPDPNDGFLWDDVDSSVFSPRPGTNAVWKKEGGDRRPSSALSGRAGAAAAVPEAA
SPFPSLPFSLNSVRSSELGRLTRPRLLGEEEYLNDSLLRPEREKNFPNNGIESLVDKMSRWKTYAHEHRDEPRASSAGTRRRQRHDRQ
RGLVWDDEDSADDSSVLDLGGSGGNPFAHLRPRIGRLM*ESEKIKDGTHQGHGDQRAFFSVVCSSMMRRVYPEGPPPSYESVMQ
QAVAAAMQPPLEAPYVPPRYLAPTEGRNSIRYSELAPLYDTTRLYLVDNKSADIASLNYQNDHSNFLTTVVQNNDFTPTEASTQTINF
DERSRWGGQLKTIMHTNMPNVNEFMYSNKFKARVMVSRKTPNGVDDDYDGSQDELTYEWVEFELPEGNFSVTMTIDLMNNAII
DNYLAVGRQNGVLESDIGVKFDTRNFRLGWDPVTELVMPGVYTNEAFHPDIVLLPGCGVDFTESRLSNLLGIRKRQPFQEGFQILYE
DLEGGNIPALLDVEAYEKSKEDSTAAATAAVATASTEVRGDNFASAAAAAEAAETESKIVIQPVEKDSKDRSYNVLADKKNTAYRSW
YLAYNYGDPEKGVRSWTLLTTSDVTCGVEQVYWSLPDMMQDPVTFRSTRQVSNYPVVGAELLPVYSKSFFNEQAVYSQQLRAFTS
LTHVFNRFPENQILVRPPAPTITTVSENVPALTDHGTLPLRSSIRGVQRVTVTDARRRTCPYVYKALGVVAPRVLSSRTF*KMSILISPS
NNTGWGLRAPSKMYGGARQRSTQHPVRVRGHFRAPWGALKGRVRSRTTVDDVIDQVVADARNYTPAAAPVSTVDAVIDSVVAD
ARRYARTKSRRRRIARRHRSTPAMRAARALLRRARRTGRRAMLRAARRAASGSSSAGRTRRRAATAAAAAIASMSRPRRGNVYWV
RDAATGVRVPVRTRPPRT*RC*LRDVDVSQRRGGCPSANTRKRCSRSSRLRSTAPRRR*RRKESPAN*SGSKRTKRRRKMTDWWS
LCASSPPGGACSGAGGK*NRCCGPAPRWSSRPASVPAPPPSAPTTRCTGTRTSSSRRSSVWASLRTASAAAPRP*KRRRCPSRWTT
ATPRRA*SR*PCSRCYRARRRAGASSARAARICTRPCS*WCPSARSWRTCWST*RWTPRCSPRSRCGPSSRWPRAWACRPWTSRS
PRSPWKRRPSP*SPAPAPWRCRRIPGCQHQLPPALAEDASTARPAC*CPTTRCILPSSPRRATAARASTAATPAAAAARPPPAAVVA
AAAAAPRLPPWCGECIAAGASL*PCRARATTRASPFNYRLLLADMALTCRLRVPITGYRGRKPRRRRLTGNGLRRHHHRRRRAISKR
LGGGFLPALIPIIAAAIGAIPGIASVAVQASQRH*DTKKHGFVIKKKMD*RSWSCDVCF*MEDINFSSLAPRHGTRPFMGTWSDIGN
SQLNGGAFNWSSLWSGLKNFGSTLKTYGNKAWNSSTGQALREKLKEQNFQQKVVDGLASGINGVVDLANQAVQKQINSRLDAV
PPAGSVEMPQVEEELPPLDKRGDKRPRPDAEETLLTHTDEPPPYEEAVKLGLPTTRPVAPLATGVLKPSSSQPATLDLPPPRPSTVAK
PLPPVAVASRAPRGRPQANWQSTLNSIVGLGVQSVKRRRCY*KTL*RLTCLSVCICMSADQKEECEEARRRVARWPPHRCCPSGRT
CTSPDRTLRST*VRVWCSSPAPQTPTSVWGTSLGTPRWRPRTM*PPTAASG*RCASCPWTARTTPTRTKCATRWPWATTACWT
WPAPTLTSAACWTGALASNPTLAPPTTA*LPRELPIPASGSKQKQAMGELWKHTHMVWPQWAERILQKMVFKLELTLQRIRINQF
MPTKHFNQNRK*EKKIGKKLKTFMAVELLKKTQT*NLAMAPMLDPPMKKEVKLNLKLEMMEFQPKNST*TWLSLILPVAP*TVKTS
IKQTLSCIPKTRIWKLQTRMWYTNQARMMQVLKLTWFSSLCPTDPTTLGSGTTLSVLCTTTALAIWVCLLVRPPS*MLWLICKTETP
SCPTSSCLTLWVTEPGISVCGTRRWTVMTPMCASSKTMVWRMNCQTIASPWTALALTPHTKV*K*KMVKMVMLRVNGKMTILL
QLEINYVKVTFSPWRLISRLTCGEVSSTRTWPCTCPTPTSTRRPTSRCRPTPTPTIT*MAE*HLPRW*TPTSTSGRAGRWTPWTTSTP
STTTATRACATAPCSWATGATCPSTSRCPKSFSPSRASCSCPGPTPTSGTSARTST*SCRAP*ATTCARTGPPSPSPASTSTPPSSPWR
TTPPPRSRPCCATTPTTSPSTTTSRRPTCSTPSRPTPPTCPSPSPRATGPPSADGPSRA*RPARRPRSAPGSTPTSSTRAPSPT*TAPSTS
TTPSRRSPSPSTPPSAGPATTAS*RPTSSKSSAPSTERDTTWPSAT*PRTGSWSRCWPTTTSATRASTCPRATRTACTPSSATSSP*AA
RSWTRSTTRTTRPSPWPTSTTTRASSATSRPPCARASPTPPTTPTRSSARAPSPASPRKSSSATGSCGASPSPATSCPWARSPTSARTC
STPTPPTR*T*ISKSTPWMSPPFSMLSSKSSTSSECTSPTAASSKPSTCARPSRPATPPPKPLLLLAR*RRAPASRSSGPSSATWAAGPA
SWAPSTSASLDSWPRTSWPAPS*TRPAARPGASTGWPSPGTRAPTHATSSTPSGSRTSASSRSTSSSTRACCVAAPWPPRTAASP
WKSPPRPCRVRARPPAGSSAACSCTPSCTGPTAPWTRTPP*TY*RGCPTACSSRPRWNPPCAATRKRSTASSMPTPPTFAPTARAS
RRPPPSTA*IKTCKKPVCVCECFIHNKQHMFMPPSLRL*LYLEIEGVLPALGMARGQGYVAELVLGQPLELGDQQLGHGEVGERVAP
QLARELQGAQQVGRGDLEIAVGTRVLRARVAVHGVAALEHHQGRVLHACQHRRVGDALHVQILGVGHPEGGHLAGLPPHAGHA
AGLVVAIAVQGDQHHLGLLGAHARVHGLHESLQLAEGLLRLAALGEEDPAGLARELVGGAAGVVHAAARVVVGQLHHAAPPAVL
GDLGPVGVLLQRALPVLARHIHLDSVLLLDHHGPVQAPQLALGFGAAVQPQRAAGALPVLVGDLGVRVHEALQEAAHHRGQGLV
AGEGQRDAAVLLVHIQVADAAVHLALLGHQLEGGLQVALHAVPVHQQRHHFHALLPGRNDRQAQGVLHRHCHLSRRRRGQGVV
LVQGLKHSLAVLLDDAHGGKAEAHGRQLLLGLPFVLAVLADVLQRHMLGLAGFLFGRQRRRRCAGRARVLVHHDYFFFLAVVRDH
AAVGMPLLGQRRRRRALAVRRAAGRAPSAFGGALLAALL*LTSSAAGHCVLLGSNNKHGDSAIVANIAICPRRHRRREPAAE*KLNR
PAAQPHLRRRGPRHARDGGIHRD*PGLRDARGARGGAGSALFSPGREPPRAARAGSRERAEPGWARAWRLPERGRGRAHQASG
PPMHHRQGRAARPRRGAPQRGGAQPRLRAQPLLAARAPQAPAQRHL*AQPAPQLLPGLRGARGPGHLPPLFQEPKDPRLLPRQP
HPRRRPAQPGPRRPPT*YHLLGRGSQDLRGSGQRRDSGRERSARKRRGA*APQRPGGVGRRQRAPGGPQAHGRADPLRLPGAQ
PAPQGHERRHGPGAHQARLAPLGGGDAGPREFGRGQARGQRRAAGALAGSE*HPPEPGRAAQAHDGRGPGDRGAGVSAPLLC
RRGDPAQGRGEPALPLQARVRAPGLQDLQRGADQPGLLHGHPAREPPGAKRAAHHPARGGPPRLHPRLRLPVPLPHLADGHGRV

Fig. 21J

AAVPGGAEPERALQAPAEEPQGPVDRVRRAYHRLGPGRPHLPRAPAADAAQRAARLYEPKHVAKLSLFHPRTLRDPARHLLRAALG
LRAADLPRVPPAALEPLLLAAPGQLPGLPLGRDRGRQRRGSAGVPLPLQPLHAAPLPGLQPPAAERDPDHRHLRVARPRRRRGQG
GSETHPGAVDLGLLAQVRARGLPSLRDQVLRGPIPAAQGRAVGLRHHPGGHPGPIASHPEIPPRISAEKGPRGLLGPPDRRGAQPQ
LPPGCPEEAARS*KWSCRRRRIWRKTGRAVRQRRRRWKTGTALRQRRTACKTVWRRKTRWRRQRKKQPPPDRRPRRRKQAARIP
SPLRVGVAAAGPTVGGTRPGASRTPPPRPVRRSGRDTSPGGGTKTPSSPACKPAGATSPSPGATCSSTAG*TSPATSCITTVTSTAPT
TVSKKRQKPSSSRKPAAAAARKSTAAAGGLRIAANEPAQTRELRNRIFPTLYAIFQQSRGQEQELKVKNRSLRSLTRSCLYHKSEDQLQ
RTLEDAEALFNKYCALTLKE*PAPAHTRKKAGITSPPAPFARPS*AKRFPRLTCGATSPRWAWPPAPPRTTPPA*TGSVPGPR*SHG*
MTSAPTETRYS*NSQRSPPRPAITLIRVIGPPPWCTRKFPSPRPYYFRETPRPKSS*LTQVSSWPAAPPCVVTAPLRV*SGW*SEAEA
HSSTTRW*ALRWVCDLTESSNSPDRGDLPSRLVRPS*LWRVRPRSPARAASALSSSWRSSLPRSTSTPSPAPPATTRTSSSRTSTPSAS
RWTATIECPMVAQLT*LGFDTWTTAAASAASLGISPSLPTLSCPRSTLRAQPTECGSSSKGASTPTCFGSSASDRSWSSANKDRPFLL
CTASATTPACMKVFVVCCVLSIIKAEISDYSGLDCGVPAINRSLFFTGNETELQLQCKPHKKYLTWLFQGSPIAVVNHCDNDGVLLSGP
ANLTFSTRRSKLQLFQPFLPGTYQCVSGPCHHTFHLIPNTTAPLPATNNQTTHQRHRRDLSSESNTTTGGELRGRPTSGIYYGPWEVV
GLIANKKNNHLI*NKDTIILMI*V*QK*RITYLKSDTRSLSMFSANTTSLPSSQLWYCRPRRAANFLHTLKGMSNSSCPSIFILSSIRCPKS
ASGWMMTSTPSTPTMQTTHRPCPSSTPPSSLQMDSKRSPWGCCPCDWLTPSPPRTGKSPSSWERGWTSTRRENSSPTRPPRPPP
LSVFQTTPFPLKLLPLSTTTMEL*ASMSPHH*QYFPHLTL*A*VLETVFRLQISC*LYN*LILLHSAQIASQ*KQTKGYILTPVETEDLRLI*
A*KED*FLTVMLLQHILEMA*TMDLMIVMEKQDP*LPKLEQD*ILMLTKQ*LSN*AQV*VLTPLVP*QLETNRMTS*HFGLPLTQA
LIVNYFQTEMPNLLSVLQNAVVKY*ALWQWRLLL*DQH*IQLMTQSKAP*FSLDLIPMVYSCQTHQW*VITGTLGRDRPLKV*PIQ
MLWDSCQI*VHIQKPKVKHLKIA*SVRYI*LEKLLCQ*H*P*LSMALMKKTQPQLAPTL*LLHGSGLETIRTKILPLLPTHSLFPTSPRN
NPTQQANPFSHHLCLYGNSETEK*SSSVLLNQQFYRTRAVIFPPPSQDMEYTTLSPRTALNI*MPLVMDMLLVSTFHTVSERASLGS
VREMKPSGHSRICTSQLNS*GLSSVVGITVIWKKQKSGGGNHSPRTGSAGGVASGPAAVAAAAAPSSCCSGGSGPGTPSA*CPRPS
ASVVWCGGRSSACESRSGHCSTCNTGPPGCSTVHSSTRSSRNSSREGCYPRGRRTRSSGKSSGAPSRRRCPCT*SPWACGGSPPPG
TTSPSG*TCSPG*SCGTTGPAPPRPPCSEETPDPGNDNGGPTARTRGSSGS*TSLCWHSTGICSCISSALSAPRGSKPYPRARGTLAG
QRTPQNRAILAHNLHCAWTGYRNQAAPGDPPPEKRGSRSPHSVVRGPADTGDGGTRLIVFSTVS*CSCFRTFSYLL*QNLVRALHT
DRRRRSRRLERSVLKL*NSHSLRPCSRSRASGVMKIPSCLIALITSTTVEWARPSQMMQFCWVSVTAGEGRTGRTMINF*SKRSRST
SK*RSRRWHLSPPLCWWKITARSKVIRFSRCSTVASSKASTRTSRNKTIAKAGGFSNSSTIMLHSCTIPR*FSFFQP*MIRTSS*GKSKP
AMIKSSRRAPSTGILKHTLIIPRYSAPGSPAAD*QAEYQNLCRDP*APPSAITVSTLSYRLRNF*P*DPQE*EKGKPHYR*TEVPPSEHC
QM*D*NKHAG*TR*YLPDNWTENRVSNF*ENQQKKNLPGARLGPREQRWSKCKGCVPAWLVS*SVKKQKIKH*TMLAWRTGG
*IVLSSTRQATGSPARPS*KLSL*LKTITERRSRWPA*MIREEAYTPGTLESVSEKKRPRKQ*GTTTLTLKSSKAMPCG*STKFSGA*KM
*LLPSCTGSEAPDPSRYTYKASASIAYRAAAAAAAHNRRKSQRKD*ALTCPPALCSIYSPRSTLT*RPKSKNTRQIITHAQHTPRNR*HTQ
KNTRTSSNGQTAVISGFPRYVIKTRLSNSVDR*KHHPPRP*RSPLPQPITFLPPQIQTAHLHINAHQKFEVYY**

Fig. 22A

AdC7 010-HIVgp140(E1469) Nucleic Acids – SEQ ID NO: 3

CATCATCAATAATATACCTCAAACTTTTGGTGCGCGTTAATATGCAAATGAGCTGTTTGAATTTGGGGAGGGAGGAAGGTGAT
TGGCCGAGAGACGGGCGACCGTTAGGGGCGGGGCGGGTGACGTTTTGATGACGTGGCCGTGAGGCGGAGCCGGTTTGCAA
GTTCTCGTGGGAAAAGTGACGTCAAACGAGGTGTGGTTTGAACACGGAAATACTCAATTTTCCCGCGCTCTCTGACAGGAAAT
GAGGTGTTTCTGGGCGGATGCAAGTGAAAACGGGCCATTTTCGCGCGAAAACTGAATGAGGAAGTGAAAATCTGAGTAATTT
CGCGTTTATGGCAGGGAGGAGTATTTGCCGAGGGCCGAGTAGACTTTGACCGATTACGTGGGGGTTTCGATTACCGTATTTTT
CACCTAAATTTCCGCGTACGGTGTCAAAGTCCGGTGTTTTTACGTACGATATCATTTCCCCGAAAGTGCCACCTGACCGTAACTA
TAACGGTCCTAAGGTAGCGAAAGCTCAGATCTCCCGATCCCCTATGGTGCACTCTCAGTACAATCTGCTCTGATGCCGCATAGT
TAAGCCAGTATCTGCTCCCTGCTTGTGTGTTGGAGGTCGCTGAGTAGTGCGCGAGCAAAATTTAAGCTACAACAAGGCAAGGC
TTGACCGACAATTGCATGAAGAATCTGCTTAGGGTTAGGCGTTTTGCGCTGCTTCGCGATGTACGGGCCAGATATACGCGTTG
ACATTGATTATTGACTAGTATGCCAAGTACGCCCCCTATTGACGTCAATGACGGTAAATGGCCCGCCTGGCATTATGCCCAGTA
CATGACCTTATGGGACTTTCCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCATGGTGATGCGGTTTTGGCAGTAC
ATCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATTTCCAAGTCTCCACCCCATTGACGTCAATGGGAGTTTGTTTTGGCA
CCAAAATCAACGGGACTTTCCAAAATGTCGTAACAACTCCGCCCCATTGACGCAAATGGGCGGTAGGCGTGTACGGTGGGAG
GTCTATATAAGCAGAGCTCGTTTAGTGAACCGTCAGATCACTAGAAGCTTTATTGCGGTAGTTTATCACAGTTAAATTGCTAAC
GCAGTCAGTGCTTCTGACACAACAGTCTCGAACTTAAGGCTAGAGTACTTAATACGACTCACTATAGGCTAGTTAAGGCTAGA
GTTCGACGCCACCATGCGCGTGATGGGCATCCTGCGCTCCTACCAGCAGTGGTGGATCTGGGGCATCCTGGGCTTCTGGATGC
TGATGATCTGCAACGTGTGGGGCAACCTGTGGGTGACCGTGTACTACGGCGTGCCCGTGTGGAAGGAGGCCAAGACCACCCT
GTTCTGCGCCTCCGACGCCAAGGCCCACAAGGAGGAGGTGCACAACATCTGGGCCACCCACGCCTGCGTGCCCACCGACCCCA
ACCCCCAGGAGATCGTGCTGAAGAACGTGACCGAGAACTTCAACATGTGGAAGAACGACATGGTGGACCAGATGCACGAGG
ACATCATCTCCCTGTGGGACCAGTCCCTGAAGCCCTGCGTGAAGCTGACCCCCCTGTGCGTGACCCTGAACTGCTCCGACGTGA
AGATCAAGGGCACCAACGCCACCTACAACAACGCCACCTACAACAACAACAACACCATCTCCGACATGAAGAACTGCTCCTTCA
ACACCACCACCGAGATCACCGACAAGAAGAAGAAGGAGTACGCCCTGTTCTACAAGCTGGACGTGGTGGCCCTGGACGGCAA
GGAGACCAACTCCACCAACTCCTCCGAGTACCGCCTGATCAACTGCAACACCTCCGCCGTGACCCAGGCCTGCCCCAAGGTGTC
CTTCGACCCCATCCCCATCCACTACTGCGCCCCCGCCGGCTACGCCATCCTGAAGTGCAACAACAAGACCTTCAACGGCACCGG
CCCCTGCAACAACGTGTCCACCGTGCAGTGCACCCACGGCATCAAGCCCGTGGTGTCCACCCAGCTGCTGCTGAACGGCTCCCT
GGCCGAGGAGGAGGTGGTGATCCGCTTCGAGAACCTGACCAACAACGCCAAGATCATCATCGTGCACCTGAACGAGTCCGTG
GAGATCAACTGCACCCGCCCCTCCAACAACACCCGCAAGTCCGTGCGCATCGGCCCCGGCCAGACCTTCTTCGCCACCGGCGA
CATCATCGGCGACATCCGCCAGGCCCACTGCAACATCTCCCGCAAGAAGTGGAACACCACCCTGCAGCGCGTGAAGGAGAAG
CTGAAGGAGAAGTTCCCCAACAAGACCATCCAGTTCGCCCCCTCCTCCGGCGGCGACCTGGAGATCACCACCCACTCCTTCAAC
TGCCGCGGCGAGTTCTTCTACTGCTACACCTCCGACCTGTTCAACTCCACCTACATGTCCAACAACACCGGCGGCGCCAACATC
ACCCTGCAGTGCCGCATCAAGCAGATCATCCGCATGTGGCAGGGCGTGGGCCAGGCCATGTACGCCCCCCCCATCGCCGGCA
ACATCACCTGCAAGTCCAACATCACCGGCCTGCTGCTGACCCGCGACGGCGGCAAGGAGAAGAACGACACCGAGACCTTCCG
CCCCGGCGGCGGCGACATGCGCGACAACTGGCGCTCCGAGCTGTACAAGTACAAGGTGGTGGAGATCAAGCCCCTGGGCATC
GCCCCCGACAAGGCCAAGCTGACCGTGCAGGCCCGCCAGCTGCTGTCCGGCATCGTGCAGCAGCAGTCCAACCTGCTGCGCG
CCATCGAGGCCCAGCAGCACATGCTGCAGCTGACCGTGTGGGGCATCAAGCAGCTGCAGACCCGCGTGCTGGCCATCGAGCG
CTACCTGAAGGACCAGCAGCTGCTGGGCATCTGGGGCTGCTCCGGCAAGCTGATCTGCACCACCGCCGTGCCCTGGAACGCCT
CCTGGTCCAACAAGTCCTACGAGGAGATCTGGGGCAACATGACCTGGATGCAGTGGGACCGCGAGATCAACAACTACACCAA
CACCATCTACTCCCTGCTGGAGGAGTCCCAGAACCAGCAGGAGAAGAACGAGAAGGACCTGCTGGCCCTGGACTCCTGGGAG
TCCCTGTGGTCCTGGTTCAACATCACCAACTGGCTGTGGTAAGGTACCTCTAGAGTCGACCCGGGCGGCCAAACCGCTGATCA
GCCTCGACTGTGCCTTCTAGTTGCCAGCCATCTGTTGTTTGCCCCTCCCCCGTGCCTTCCTTGACCCTGGAAGGTGCCACTCCCA
CTGTCCTTTCCTAATAAAATGAGGAAATTGCATCGCATTGTCTGAGTAGGTGTCATTCTATTCTGGGGGGTGGGGTGGGGCAG
GACAGCAAGGGGGAGGATTGGGAAGACAATAGCAGGCATGCTGGGGATGCGGTGGGCTCTATGGCTTCTGAGGCGGAAAG
AACCAGCAGATCTGCAGATCTGAATTCATCTATGTCGGGTGCGGAGAAAGAGGTAATGAAATGGCATTATGGGTATTATGGG
TCTGCATTAATGAATCGGCCAGATATCGATATGCTGGCCACCGTGCATGTGACCTCGCACCCCCGCAAGACATGGCCCGAGTTC
GAGCACAACGTCATGACCCGATGCAATGTGCACCTGGGGTCCCGCCGAGGCATGTTCATGCCCTACCAGTGCAACATGCAATT
TGTGAAGGTGCTGCTGGAGCCCGATGCCATGTCCAGAGTGAGCCTGACGGGGGTGTTTGACATGAATGTGGAGCTGTGGAAA
ATTCTGAGATATGATGAATCCAAGACCAGGTGCCGGGCCTGCGAATGCGGAGGCAAGCACGCCAGGCTTCAGCCCGTGTGTG
TGGAGGTGACGGAGGACCTGCGACCCGATCATTTGGTGTTGTCCTGCAACGGGACGGAGTTCGGCTCCAGCGGGGAAGAATC

Fig. 22B

TGACTAGAGTGAGTAGTGTTTGGGGGAGGTGGAGGGCTTGTATGAGGGGCAGAATGACTAAAATCTGTGTTTTTCTGTGTGT
TGCAGCAGCATGAGCGGAAGCGCCTCCTTTGAGGGAGGGGTATTCAGCCCTTATCTGACGGGGCGTCTCCCCTCCTGGGCGG
GAGTGCGTCAGAATGTGATGGGATCCACGGTGGACGGCCGGCCCGTGCAGCCCGCGAACTCTTCAACCCTGACCTACGCGAC
CCTGAGCTCCTCGTCCGTGGACGCAGCTGCCGCCGCAGCTGCTGCTTCCGCCGCCAGCGCCGTGCGCGGAATGGCCCTGGGC
GCCGGCTACTACAGCTCTCTGGTGGCCAACTCGACTTCCACCAATAATCCCGCCAGCCTGAACGAGGAGAAGCTGCTGCTGCT
GATGGCCCAGCTCGAGGCCCTGACCCAGCGCCTGGGCGAGCTGACCCAGCAGGTGGCTCAGCTGCAGGCGGAGACGCGGGC
CGCGGTTGCCACGGTGAAAACCAAATAAAAAATGAATCAATAAATAAACGGAGACGGTTGTTGATTTTAACACAGAGTCTTGA
ATCTTTATTTGATTTTTCGCGCGCGGTAGGCCCTGGACCACCGGTCTCGATCATTGAGCACCCGGTGGATTTTTTCCAGGACCC
GGTAGAGGTGGGCTTGGATGTTGAGGTACATGGGCATGAGCCCGTCCCGGGGGTGGAGGTAGCTCCATTGCAGGGCCTCGT
GCTCGGGGGTGGTGTTGTAAATCACCCAGTCATAGCAGGGGCGCAGGGCGTGGTGCTGCACGATGTCCTTGAGGAGGAGAC
TGATGGCCACGGGCAGCCCCTTGGTGTAGGTGTTGACGAACCTGTTGAGCTGGGAGGGATGCATGCGGGGGGAGATGAGAT
GCATCTTGGCCTGGATCTTGAGATTGGCGATGTTCCCGCCCAGATCCCGCCGGGGGTTCATGTTGTGCAGGACCACCAGCACG
GTGTATCCGGCGCACTTGGGGAATTTGTCATGCAACTTGGAAGGGAAGGCGTGAAAGAATTTGGAGACGCCCTTGTGACCGC
CCAGGTTTTCCATGCACTCATCCATGATGATGGCGATGGGCCCGTGGGCGGCGGCCTGGGCAAAGACGTTTCGGGGGTCGGA
CACATCGTAGTTGTGGTCCTGGGTGAGCTCGTCATAGGCCATTTTAATGAATTTGGGGCGGAGGGTGCCCGACTGGGGGACG
AAGGTGCCCTCGATCCCGGGGGCGTAGTTGCCCTCGCAGATCTGCATCTCCCAGGCCTTGAGCTCGGAGGGGGGGATCATGT
CCACCTGCGGGGCGATGAAAAAAACGGTTTCCGGGGCGGGGGAGATGAGCTGGGCCGAAAGCAGGTTCCGGAGCAGCTGG
GACTTGCCGCAGCCGGTGGGGCCGTAGATGACCCCGATGACCGGCTGCAGGTGGTAGTTGAGGGAGAGACAGCTGCCGTCC
TCGCGGAGGAGGGGGGCCACCTCGTTCATCATCTCGCGCACATGCATGTTCTCGCGCACGAGTTCCGCCAGGAGGCGCTCGCC
CCCCAGCGAGAGGAGCTCTTGCAGCGAGGCGAAGTTTTTCAGCGGCTTGAGYCCGTCGGCCATGGGCATTTTGGAGAGGGTC
TGTTGCAAGAGTTCCAGACGGTCCCAGAGCTCGGTGATGTGCTCTAGGGCATCTCGATCCAGCAGACCTCCTCGTTTCGCGGG
TTGGGGCGACTGCGGGAGTAGGGCACCAGGCGATGGGCGTCCAGCGAGGCCAGGGTCCGGTCCTTCCAGGGTCGCAGGGTC
CGCGTCAGCGTGGTCTCCGTCACGGTGAAGGGGTGCGCGCCGGGCTGGGCGCTTGCGAGGGTGCGCTTCAGGCTCATCCGGC
TGGTCGAGAACCGCTCCCGGTCGGCGCCCTGCGCGTCGGCCAGGTAGCAATTGAGCATGAGTTCGTAGTTGAGCGCCTCGGC
CGCGTGGCCCTTGGCGCGGAGCTTACCTTTGGAAGTGTGTCCGCAGACGGGACAGAGGAGGGACTTGAGGGCGTAGAGCTT
GGGGGCGAGGAAGACGGACTCGGGGGCGTAGGCGTCCGCGCCGCAGCTGGCGCAGACGGTCTCGCACTCCACGAGCCAGG
TGAGGTCGGGCCGGTTGGGGTCAAAAACGAGGTTTCCTCCGTGCTTTTTGATGCGTTTCTTACCTCTGGTCTCCATGAGCTCGT
GTCCCCGCTGGGTGACAAAGAGGCTGTCCGTGTCCCCGTAGACCGACTTTATGGGCCGGTCCTCGAGCGGGGTGCCGCGGTC
CTCGTCGTAGAGGAACCCCGCCCACTCCGAGACGAAGGCCCGGGTCCAGGCCAGCACGAAGGAGGCCACGTGGGAGGGGTA
GCGGTCGTTGTCCACCAGCGGGTCCACCTTCTCCAGGGTATGCAAGCACATGTCCCCCTCGTCCACATCCAGGAAGGTGATTG
GCTTGTAAGTGTAGGCCACGTGACCGGGGGTCCCGGCCGGGGGGGTATAAAAGGGGGCGGGCCCCTGCTCGTCCTCACTGTC
TTCCGGATCGCTGTCCAGGAGCGCCAGCTGTTGGGGTAGGTATTCCCTCTCGAAGGCTGGCATAACCTCGGCACTCAGGTTGT
CAGTTTCTAGAAACGAGGAGGATTTGATATTGACGGTGCCGTTGGAGACGCCTTTCATGAGCCCCTCGTCCATCTGGTCAGAA
AAGACGATCTTTTTGTTGTCGAGCTTGGTGGCGAAGGAGCCGTAGAGGGCGTTGGAGAGGAGCTTGGCGATGGAGCGCATG
GTCTGGTTCTTTTCCTTGTCGGCGCGCTCCTTGGCGGCGATGTTGAGCTGCACGTACTCGCGCGCCACGCACTTCCATTCGGGG
AAGACGGTGGTGAGCTCGTCGGGCACGATTCTGACCCGCCAGCCGCGGTTGTGCAGGGTGATGAGGTCCACGCTGGTGGCCA
CCTCGCCGCGCAGGGGCTCGTTGGTCCAGCAGAGGCGCCCGCCCTTGCGCGAGCAGAAGGGGGGCAGCGGGTCCAGCATGA
GCTCGTCGGGGGGGTCGGCGTCCACGGTGAAGATGCCGGGCAGAAGCTCGGGGTCGAAGTAGCTGATGCAGGTGTCCAGAT
CGTCCAGCGCCGCTTGCCAGTCGCGCACGGCCAGCGCGCGCTCGTAGGGGCTGAGGGGCGTGCCCCAGGGCATGGGGTGCG
TGAGCGCGGAGGCGTACATGCCGCAGATGTCGTAGACGTAGAGGGGCTCCTCGAGGACGCCGATGTAGGTGGGGTAGCAGC
GCCCCCCGCGGATGCTGGCGCGCACGTAGTCGTACAGCTCGTGCGAGGGCGCGAGGAGCCCCGTGCCGAGGTTGGAGCGTT
GCGGCTTTTCGGCGCGGTAGACGATCTGGCGGAAGATGGCGTGGGAGTTGGAGGAGATGGTGGGCCTCTGGAAGATGTTGA
AGTGGGCGTGGGGCAGGCCGACCGAGTCCCTGATGAAGTGGGCGTAGGAGTCCTGCAGCTTGGCGACGAGCTCGGCGGTGA
CGAGGACGTCCAGGGCGCAGTAGTCGAGGGTCTCTTGGATGATGTCGTACTTGAGCTGGCCCTTCTGCTTCCACAGCTCGCGG
TTGAGAAGGAACTCTTCGCGGTCCTTCCAGTACTCTTCGAGGGGGAACCCGTCCTGATCGGCACGGTAAGAGCCCACCATGTA
GAACTGGTTGACGGCCTTGTAGGCGCAGCAGCCCTTCTCCACGGGGAGGGCGTAAGCTTGTGCGGCCTTGCGCAGGGAGGTG
TGGGTGAGGGCGAAGGTGTCGCGCACCATGACCTTGAGGAACTGGTGCTTGAAGTCGAGGTCGTCGCAGCCGCCCTGCTCCC
AGAGCTGGAAGTCCGTGCGCTTCTTGTAGGCGGGGTTGGGCAAAGCGAAAGTAACATCGTTGAAGAGGATCTTGCCCGCGCG
GGGCATGAAGTTGCGAGTGATGCGGAAAGGCTGGGGCACCTCGGCCCGGTTGTTGATGACCTGGGCGGCGAGGACGATCTC
GTCGAAGCCGTTGATGTTGTGCCCGACGATGTAGAGTTCCACGAATCGCGGGCGGCCCTTAACGTGGGGCAGCTTCTTGAGCT
CGTCGTAGGTGAGCTCGGCGGGGTCGCTGAGCCCGTGCTGCTCGAGGGCCCAGTCGGCGACGTGGGGGTTGGCGCTGAGGA

Fig. 22C

AGGAAGTCCAGAGATCCACGGCCAGGGCGGTCTGCAAGCGGTCCCGGTACTGACGGAACTGCTGGCCCACGGCCATTTTTTC
GGGGGTGACGCAGTAGAAGGTGCGGGGGTCGCCGTGCCAGCGGTCCCACTTGAGCTGGAGGGCGAGGTCGTGGGCGAGCT
CGACGAGCGGCGGGTCCCCGGAGAGTTTCATGACCAGCATGAAGGGGACGAGCTGCTTGCCGAAGGACCCCATCCAGGTGT
AGGTTTCCACATCGTAGGTGAGGAAGAGCCTTTCGGTGCGAGGATGCGAGCCGATGGGGAAGAACTGGATCTCCTGCCACCA
GTTGGAGGAATGGCTGTTGATGTGATGGAAGTAGAAATGCCGACGGCGCGCCGAGCACTCGTGCTTGTGTTTATACAAGCGT
CCGCAGTGCTCGCAACGCTGCACGGGATGCACGTGCTGCACGAGCTGTACCTGGGTTCCTTTGACGAGGAATTTCAGTGGGCA
GTGGAGCGCTGGCGGCTGCATCTGGTGCTGTACTACGTCCTGGCCATCGGCGTGGCCATCGTCTGCCTCGATGGTGGTCATGC
TGACGAGCCCGCGCGGGAGGCAGGTCCAGACTTCGGCTCGGACGGGTCGGAGAGCGAGGACGAGGGCGCGCAGGCCGGAG
CTGTCCAGGGTCCTGAGACGCTGCGGAGTCAGGTCAGTGGGCAGCGGCGGCGCGCGGTTGACTTGCAGGAGCTTTTCCAGG
GCGCGCGGGAGGTCCAGATGGTACTTGATCTCCACGGCGCCGTTGGTGGCGACGTCCACGGCTTGCAGGGTCCCGTGCCCCT
GGGGCGCCACCACCGTGCCCCGTTTCTTCTTGGGCGCTGCTTCCATGCCGGTCAGAAGCGGCGGCGAGGACGCGCGCCGGGC
GGCAGGGGCGGCTCGGGACCCGGAGGCAGGGGCGGCAGGGGCACGTCGGCGCCGCGCGCGGGCAGGTTCTGGTACTGCGC
CCGGAGAAGACTGGCGTGAGCGACGACGCGACGGTTGACGTCCTGGATCTGACGCCTCTGGGTGAAGGCCACGGGACCCGT
GAGTTTGAACCTGAAAGAGAGTTCGACAGAATCAATCTCGGTATCGTTGACGGCGGCCTGCCGCAGGATCTCTTGCACGTCGC
CCGAGTTGTCCTGGTAGGCGATCTCGGTCATGAACTGCTCGATCTCCTCCTCCTGAAGGTCTCCGCGGCCGGCGCGCTCGACG
GTGGCCGCGAGGTCGTTGGAGATGCGGCCCATGAGCTGCGAGAAGGCGTTCATGCCGGCCTCGTTCCAGACGCGGCTGTAGA
CCACGGCTCCGTCGGGGTCGCGCGCGCGCATGACCACCTGGGCGAGGTTGAGCTCGACGTGGCGCGTGAAGACCGCGTAGTT
GCAGAGGCGCTGGTAGAGGTAGTTGAGCGTGGTGGCGATGTGCTCGGTGACGAAGAAGTACATGATCCAGCGGCGGAGCG
GCATCTCGCTGACGTCGCCCAGGGCTTCCAAGCGCTCCATGGCCTCGTAGAAGTCCACGGCGAAGTTGAAAAACTGGGAGTTG
CGCGCCGAGACGGTCAACTCCTCCTCCAGAAGACGGATGAGCTCAGCGATGGTGGCGCGCACCTCGCGCTCGAAGGCCCCGG
GGGGCTCCTCTTCTTCCATCTCTTCCTCCTCCACTAACATCTCTTCTACTTCCTCCTCAGGAGGCGGCGGCGGGGGAGGGGCCCT
GCGTCGCCGGCGGCGCACGGGCAGACGGTCGATGAAGCGCTCGATGGTCTCCCCGCGCCGGCGACGCATGGTCTCGGTGAC
GGCGCGCCCGTCCTCGCGGGGCCGCAGCGTGAAGACGCCGCCGCGCATCTCCAGGTGGCCGCCGGGGGGGTCTCCGTTGGG
CAGGGAGAGGGCGCTGACGATGCATCTTATCAATTGGCCCGTAGGGACTCCGCGCAAGGACCTGAGCGTCTCGAGATCCACG
GGATCCGAAAACCGCTGAACGAAGGCTTCGAGCCAGTCGCAGTCGCAAGGTAGGCTGAGCCCGGTTTCTTGTTCTTCGGGGA
TTTCGGGAGGCGGGCGGGCGATGCTGCTGGTGATGAAGTTGAAGTAGGCGGTCCTGAGACGGCGGATGGTGGCGAGGAGC
ACCAGGTCCTTGGGCCCGGCTTGCTGGATGCGCAGACGGTCGGCCATGCCCCAGGCGTGGTCCTGACACCTGGCGAGGTCCT
TGTAGTAGTCCTGCATGAGCCGCTCCACGGGCACCTCCTCCTCGCCCGCGCGGCCGTGCATGCGCGTGAGCCCGAACCCGCGC
TGGGGCTGGACGAGCGCCAGGTCGGCGACGACGCGCTCGGCGAGGATGGCCTGCTGTATCTGGGTGAGGGTGGTCTGGAAG
TCGTCGAAGTCGACGAAGCGGTGGTAGGCTCCGGTGTTGATGGTATAGGAGCAGTTGGCCATGACGGACCAGTTGACGGTCT
GGTGGCCGGGTCGCACGAGCTCGTGGTACTTGAGGCGCGAGTAGGCGCGCGTGTCGAAGATGTAGTCGTTGCAGGTGCGCA
CGAGGTACTGGTATCCGACGAGGAAGTGCGGCGGCGGCTGGCGGTAGAGCGGCCATCGCTCGGTGGCGGGGGCGCCGGGC
GCGAGGTCCTCGAGCATGAGGCGGTGGTAGCCGTAGATGTACCTGGACATCCAGGTGATGCCGGCGGCGGTGGTGGAGGCG
CGCGGGAACTCGCGGACGCGGTTCCAGATGTTGCGCAGCGGCAGGAAGTAGTTCATGGTGGCCGCGGTCTGGCCCGTGAGG
CGCGCGCAGTCGTGGATGCTCTAGACATACGGGCAAAAACGAAAGCGGTCAGCGGCTCGACTCCGTGGCCTGGAGGCTAAGC
GAACGGGTTGGGCTGCGCGTGTACCCCGGTTCGAATCTCGAATCAGGCTGGAGCCGCAGCTAACGTGGTACTGGCACTCCCG
TCTCGACCCAAGCCTGCTAACGAAACCTCCAGGATACGGAGGCGGGTCGTTTTTTGGCCTTGGTCGCTGGTCATGAAAAACTA
GTAAGCGCGGAAAGCGACCGCCCGCGATGGCTCGCTGCCGTAGTCTGGAGAAAGAATCGCCAGGGTTGCGTTGCGGTGTGCC
CCGGTTCGAGCCTCAGCGCTCGGCGCCGGCCGGATTCCGCGGCTAACGTGGGCGTGGCTGCCCCGTCGTTTCCAAGACCCCTT
AGCCAGCCGACTTCTCCAGTTACGGAGCGAGCCCCTCTTTTTCTTGTGTTTTTGCCAGATGCATCCCGTACTGCGGCAGATGCG
CCCCCACCCTCCACCTCAACCGCCCCTACCGCCGCAGCAGCAGCAACAGCCGGCGCTTCTGCCCCCGCCCCAGCAGCAGCCAGC
CACTACCGCGGCGGCCGCCGTGAGCGGAGCCGGCGTTCAGTATGACCTGGCCTTGGAAGAGGGCGAGGGGCTGGCGCGGCT
GGGGGCGTCGTCGCCGGAGCGGCACCCGCGCGTGCAGATGAAAAGGGACGCTCGCGAGGCCTACGTGCCCAAGCAGAACCT
GTTCAGAGACAGGAGCGGCGAGGAGCCCGAGGAGATGCGCGCCTCCCGCTTCCACGCGGGGCGGGAGCTGCGGCGCGGCCT
GGACCGAAAGCGGGTGCTGAGGGACGAGGATTTCGAGGCGGACGAGCTGACGGGGATCAGCCCCGCGCGCGCGCACGTGG
CCGCGGCCAACCTGGTCACGGCGTACGAGCAGACCGTGAAGGAGGAGAGCAACTTCCAAAAATCCTTCAACAACCACGTGCG
CACGCTGATCGCGCGCGAGGAGGTGACCCTGGGCCTGATGCACCTGTGGGACCTGCTGGAGGCCATCGTGCAGAACCCCACG
AGCAAGCCGCTGACGGCGCAGCTGTTTCTGGTGGTGCAGCACAGTCGGGACAACGAGACGTTCAGGGAGGCGCTGCTGAAT
ATCACCGAGCCCGAGGGCCGCTGGCTCCTGGACCTGGTGAACATTCTGCAGAGCATCGTGGTGCAGGAGCGCGGGCTGCCGC
TGTCCGAGAAGCTGGCGGCTATCAACTTCTCGGTGCTGAGCCTGGGCAAGTACTACGCTAGGAAGATCTACAAGACCCCGTAC
GTGCCCATAGACAAGGAGGTGAAGATCGACGGGTTTTACATGCGCATGACCCTGAAAGTGCTGACCCTGAGCGACGATCTGG

Fig. 22D

GGGTGTACCGCAACGACAGGATGCACCGCGCGGTGAGCGCCAGCCGCCGGCGCGAGCTGAGCGACCAGGAGCTGATGCACA
GCCTGCAGCGGGCCCTGACCGGGGCCGGGACCGAGGGGGAGAGCTACTTTGACATGGGCGCGGACCTGCGCTGGCAGCCCA
GCCGCCGGGCCTTGGAAGCTGCCGGCGGTTCCCCCTACGTGGAGGAGGTGGACGATGAGGAGGAGGAGGGCGAGTACCTG
GAAGACTGATGGCGCGACCGTATTTTTGCTAGATGCAGCAACAGCCACCGCCTCCTGATCCCGCGATGCGGGCGGCGCTGCA
GAGCCAGCCGTCCGGCATTAACTCCTCGGACGATTGGACCCAGGCCATGCAACGCATCATGGCGCTGACGACCCGCAATCCCG
AAGCCTTTAGACAGCAGCCTCAGGCCAACCGGCTCTCGGCCATCCTGGAGGCCGTGGTGCCCTCGCGCTCGAACCCCACGCAC
GAGAAGGTGCTGGCCATCGTGAACGCGCTGGTGGAGAACAAGGCCATCCGCGGCGACGAGGCCGGGCTGGTGTACAACGCG
CTGCTGGAGCGCGTGGCCCGCTACAACAGCACCAACGTGCAGACGAACCTGGACCGCATGGTGACCGACGTGCGCGAGGCG
GTGTCGCAGCGCGAGCGGTTCCACCGCGAGTCGAACCTGGGCTCCATGGTGGCGCTGAACGCCTTCCTGAGCACGCAGCCCG
CCAACGTGCCCCGGGGCCAGGAGGACTACACCAACTTCATCAGCGCGCTGCGGCTGATGGTGGCCGAGGTGCCCCAGAGCGA
GGTGTACCAGTCGGGGCCGGACTACTTCTTCCAGACCAGTCGCCAGGGCTTGCAGACCGTGAACCTGAGCCAGGCTTTCAAGA
ACTTGCAGGGACTGTGGGGCGTGCAGGCCCCGGTCGGGGACCGCGCGACGGTGTCGAGCCTGCTGACGCCGAACTCGCGCC
TGCTGCTGCTGCTGGTGGCGCCCTTCACGGACAGCGGCAGCGTGAGCCGCGACTCGTACCTGGGCTACCTGCTTAACCTGTAC
CGCGAGGCCATCGGGCAGGCGCACGTGGACGAGCAGACCTACCAGGAGATCACCCACGTGAGCCGCGCGCTGGGCCAGGAG
GACCCGGGCAACCTGGAGGCCACCCTGAACTTCCTGCTGACCAACCGGTCGCAGAAGATCCCGCCCCAGTACGCGCTGAGCAC
CGAGGAGGAGCGCATCCTGCGCTACGTGCAGCAGAGCGTGGGGCTGTTCCTGATGCAGGAGGGGGCCACGCCCAGCGCCGC
GCTCGACATGACCGCGCGCAACATGGAGCCCAGCATGTACGCTCGCAACCGCCCGTTCATCAATAAGCTGATGGACTACTTGC
ATCGGGCGGCCGCCATGAACTCGGACTACTTTACCAACGCCATCTTGAACCCGCACTGGCTCCCGCCGCCCGGGTTCTACACG
GGCGAGTACGACATGCCCGACCCCAACGACGGGTTCCTGTGGGACGACGTGGACAGCAGCGTGTTCTCGCCGCGCCCCGCCA
CCACCGTGTGGAAGAAAGAGGGCGGGGACCGGCGGCCGTCCTCGGCGCTGTCCGGTCGCGCGGGTGCTGCCGCGGCGGTGC
CTGAGGCCGCCAGCCCCTTCCCGAGCCTGCCCTTTTCGCTGAACAGCGTGCGCAGCAGCGAGCTGGGTCGGCTGACGCGGCC
GCGCCTGCTGGGCGAGGAGGAGTACCTGAACGACTCCTTGTTGAGGCCCGAGCGCGAGAAGAACTTCCCCAATAACGGGATA
GAGAGCCTGGTGGACAAGATGAGCCGCTGGAAGACGTACGCGCACGAGCACAGGGACGAGCCCCGAGCTAGCAGCAGCGC
AGGCACCCGTAGACGCCAGCGACACGACAGGCAGCGGGGTCTGGTGTGGGACGATGAGGATTCCGCCGACGACAGCAGCGT
GTTGGACTTGGGTGGGAGTGGTGGTGGTAACCCGTTCGCTCACTTGCGCCCCCGTATCGGGCGCCTGATGTAAGAATCTGAAA
AAATAAAAAACGGTACTCACCAAGGCCATGGCGACCAGCGTGCGTTCTTCTCTGTTGTTTGTAGTAGTATGATGAGGCGCGTG
TACCCGGAGGGTCCTCCTCCCTCGTACGAGAGCGTGATGCAGCAGGCGGTGGCGGCGGCGATGCAGCCCCCGCTGGAGGCG
CCTTACGTGCCCCCGCGGTACCTGGCGCCTACGGAGGGGCGGAACAGCATTCGTTACTCGGAGCTGGCACCCTTGTACGATAC
CACCCGGTTGTACCTGGTGGACAACAAGTCGGCGGACATCGCCTCGCTGAACTACCAGAACGACCACAGCAACTTCCTGACCA
CCGTGGTGCAGAACAACGATTTCACCCCCACGGAGGCCAGCACCCAGACCATCAACTTTGACGAGCGCTCGCGGTGGGGCGG
CCAGCTGAAAACCATCATGCACACCAACATGCCCAACGTGAACGAGTTCATGTACAGCAACAAGTTCAAGGCGCGGGTGATG
GTCTCGCGCAAGACCCCCAATGGGGTCGCGGTGGATGAGAATTATGATGGTAGTCAGGACGAGCTGACTTACGAGTGGGTGG
AGTTTGAGCTGCCCGAGGGCAACTTCTCGGTGACCATGACCATCGATCTGATGAACAACGCCATCATCGACAACTACTTGGCG
GTGGGGCGTCAGAACGGGGTGCTGGAGAGCGACATCGGCGTGAAGTTCGACACGCGCAACTTCCGGCTGGGCTGGGACCCC
GTGACCGAGCTGGTGATGCCGGGCGTGTACACCAACGAGGCCTTCCACCCCGACATCGTCCTGCTGCCCGGCTGCGGCGTGG
ACTTCACCGAGAGCCGCCTCAGCAACCTGCTGGGCATCCGCAAGCGGCAGCCCTTCCAGGAGGGCTTCCAGATCCTGTACGAG
GACCTGGAGGGGGGCAACATCCCCGCGCTCTTGGATGTCGAAGCCTATGAGAAAAGCAAGGAGGAGGCCGCCGCAGCGGCG
ACCGCAGCCGTGGCCACCGCCTCTACCGAGGTGCGGGGCGATAATTTTGCTAGCGCCGCGGCAGTGGCCGAGGCGGCTGAAA
CCGAAAGTAAGATAGTCATCCAGCCGGTGGAGAAGGACAGCAAGGACAGGAGCTACAACGTGCTCGCGGACAAGAAAAACA
CCGCCTACCGCAGCTGGTACCTGGCCTACAACTACGGCGACCCCGAGAAGGGCGTGCGCTCCTGGACGCTGCTCACCACCTCG
GACGTCACCTGCGGCGTGGAGCAAGTCTACTGGTCGCTGCCCGACATGATGCAAGACCCGGTCACCTTCCGCTCCACGCGTCA
AGTTAGCAACTACCCGGTGGTGGGCGCCGAGCTCCTGCCCGTCTACTCCAAGAGCTTCTTCAACGAGCAGGCCGTCTACTCGC
AGCAGCTGCGCGCCTTCACCTCGCTCACGCACGTCTTCAACCGCTTCCCCGAGAACCAGATCCTCGTCCGCCCGCCCGCGCCCA
CCATTACCACCGTCAGTGAAAACGTTCCTGCTCTCACAGATCACGGGACCCTGCCGCTGCGCAGCAGTATCCGGGGAGTCCAG
CGCGTGACCGTCACTGACGCCAGACGCCGCACCTGCCCCTACGTCTACAAGGCCCTGGGCGTAGTCGCGCCGCGCGTCCTCTC
GAGCCGCACCTTCTAAAAAATGTCCATTCTCATCTCGCCCAGTAATAACACCGGTTGGGGCCTGCGCGCGCCCAGCAAGATGT
ACGGAGGCGCTCGCCAACGCTCCACGCAACACCCCGTGCGCGTGCGCGGGCACTTCCGCGCTCCCTGGGGCGCCCTCAAGGG
CCGCGTGCGCTCGCGCACCACCGTCGACGACGTGATCGACCAGGTGGTGGCCGACGCGCGCAACTACACGCCCGCCGCCGCG
CCCGCCTCCACCGTGGACGCCGTCATCGACAGCGTGGTGGCCGATGCGCGCCGGTACGCCCGCGCCAAGAGCCGGCGGCGGC
GCATCGCCCGGCGGCACCGGAGCACCCCCGCCATGCGCGCGGCGCGAGCCTTGCTGCGCAGGGCCAGGCGCACGGGACGCA
GGGCCATGCTCAGGGCGGCCAGACGCGCGGCCTCCGGCAGCAGCAGCGCCGGCAGGACCCGCAGACGCGCGGCCACGGCG

Fig. 22E

GCGGCGGCGGCCATCGCCAGCATGTCCCGCCCGCGGCGCGGCAACGTGTACTGGGTGCGCGACGCCGCCACCGGTGTGCGC
GTGCCCGTGCGCACCCGCCCCCCTCGCACTTGAAGATGCTGACTTCGCGATGTTGATGTGTCCCAGCGGCGAGGAGGATGTCC
AAGCGCAAATACAAGGAAGAGATGCTCCAGGTCATCGCGCCTGAGATCTACGGCCCCGCGGTGAAGGAGGAAAGAAAGCCC
CGCAAACTGAAGCGGGTCAAAAAGGACAAAAAGGAGGAGGAAGATGTGGACGGACTGGTGGAGTTTGTGCGCGAGTTCGC
CCCCCGGCGGCGCGTGCAGTGGCGCGGGCGGAAAGTGAAACCGGTGCTGCGGCCCGGCACCACGGTGGTCTTCACGCCCGG
CGAGCGTTCCGGCTCCGCCTCCAAGCGCTCCTACGACGAGGTGTACGGGGACGAGGACATCCTCGAGCAGGCGGTCGAGCGT
CTGGGCGAGTTTGCTTACGGCAAGCGCAGCCGCCCCGCGCCCTTGAAAGAGGAGGCGGTGTCCATCCCGCTGGACCACGGCA
ACCCCACGCCGAGCCTGAAGCCGGTGACCCTGCAGCAGGTGCTGCCGAGCGCGGCGCCGCGCCGGGGCTTCAAGCGCGAGG
GCGGCGAGGATCTGTACCCGACCATGCAGCTGATGGTGCCCAAGCGCCAGAAGCTGGAGGACGTGCTGGAGCACATGAAGG
TGGACCCCGAGGTGCAGCCCGAGGTCAAGGTGCGGCCCATCAAGCAGGTGGCCCCGGGCCTGGGCGTGCAGACCGTGGACA
TCAAGATCCCCACGGAGCCCATGGAAACGCAGACCGAGCCCGTGAAGCCCAGCACCAGCACCATGGAGGTGCAGACGGATCC
CTGGATGCCGGCGCCGGCTTCCACCACTCGCCGAAGACGCAAGTACGGCGCGGCCAGCCTGCTGATGCCCAACTACGCGCTG
CATCCTTCCATCATCCCCACGCCGGGCTACCGCGGCACGCGCTTCTACCGCGGCTACACCAGCAGCCGCCGCAAGACCACCACC
CGCCGCCGCCGTCGTCGCACCCGCCGCAGCAGCACCGCGACTTCCGCCGCCGCCCTGGTGCGGAGAGTGTACCGCAGCGGGC
GCGAGCCTCTGACCCTGCCGCGCGCGCGCTACCACCCGAGCATCGCCATTTAACTCTGCCGTCGCCTCCTACTTGCAGATATGG
CCCTCACATGCCGCCTCCGCGTCCCCATTACGGGCTACCGAGGAAGAAAGCCGCGCCGTAGAAGGCTGACGGGGAACGGGCT
GCGTCGCCATCACCACCGGCGGCGGCGCGCCATCAGCAAGCGGTTGGGGGGAGGCTTCCTGCCCGCGCTGATCCCCATCATC
GCCGCGGCGATCGGGGCGATCCCCGGCATAGCTTCCGTGGCGGTGCAGGCCTCTCAGCGCCACTGAGACACAGCTTGGAAAA
TTTGTAATAAAAAAATGGACTGACGCTCCTGGTCCTGTGATGTGTGTTTTTAGATGGAAGACATCAATTTTTCGTCCCTGGCAC
CGCGACACGGCACGCGGCCGTTTATGGGCACCTGGAGCGACATCGGCAACAGCCAACTGAACGGGGGCGCCTTCAATTGGAG
CAGTCTCTGGAGCGGGCTTAAGAATTTCGGGTCCACGCTCAAAACCTATGGCAACAAGGCGTGGAACAGCAGCACAGGGCAG
GCGCTGAGGGAAAAGCTGAAAGAGCAGAACTTCCAGCAGAAGGTGGTCGATGGCCTGGCCTCGGGCATCAACGGGGTGGTG
GACCTGGCCAACCAGGCCGTGCAGAAACAGATCAACAGCCGCCTGGACGCGGTCCCGCCCGCGGGGTCCGTGGAGATGCCCC
AGGTGGAGGAGGAGCTGCCTCCCCTGGACAAGCGCGGCGACAAGCGACCGCGTCCCGACGCGGAGGAGACGCTGCTGACGC
ACACGGACGAGCCGCCCCCGTACGAGGAGGCGGTGAAACTGGGTCTGCCCACCACGCGGCCCGTGGCGCCTCTGGCCACCGG
GGTGCTGAAACCCAGCAGCAGCAGCCAGCCCGCGACCCTGGACTTGCCTCCGCCTGCTTCCCGCCCCTCCACAGTGGCTAAGC
CCCTGCCGCCGGTGGCCGTCGCGTCGCGCGCCCCCCGAGGCCGCCCCCAGGCGAACTGGCAGAGCACTCTGAACAGCATCGT
GGGTCTGGGAGTGCAGAGTGTGAAGCGCCGCCGCTGCTATTAAAAGACACTGTAGCGCTTAACTTGCTTGTCTGTGTGTATAT
GTATGTCCGCCGACCAGAAGGAGGAAGAGGCGCGTCGCCGAGTTGCAAGATGGCCACCCCATCGATGCTGCCCCAGTGGGC
GTACATGCACATCGCCGGACAGGACGCTTCGGAGTACCTGAGTCCGGGTCTGGTGCAGTTCGCCCGCGCCACAGACACCTACT
TCAGTCTGGGGAACAAGTTTAGGAACCCCACGGTGGCGCCCACGCACGATGTGACCACCGACCGCAGCCAGCGGCTGACGCT
GCGCTTCGTGCCCGTGGACCGCGAGGACAACACCTACTCGTACAAAGTGCGCTACACGCTGGCCGTGGGCGACAACCGCGTG
CTGGACATGGCCAGCACCTACTTTGACATCCGCGGCGTGCTGGATCGGGGGCCCAGCTTCAAACCCTACTCCGGCACCGCCTA
CAACAGCCTGGCTCCCAAGGGAGCGCCCAACACTTGCCAGTGGACATATAAAGCTGGTGATACTGATACAGAAAAAACCTATA
CATATGGAAATGCACCTGTGCAAGGCATTAGCATTACAAAGGATGGTATTCAACTTGGAACTGACAGCGATGGTCAGGCAATC
TATGCAGACGAAACTTATCAACCAGAGCCTCAAGTGGGTGATGCTGAATGGCATGACATCACTGGTACTGATGAAAAATATGG
AGGCAGAGCTCTTAAGCCTGACACCAAAATGAAGCCTTGCTATGGTTCTTTTGCCAAGCCTACCAATAAAGAAGGAGGCCAGG
CAAATGTGAAAACCGAAACAGGCGGTACCAAAGAATATGACATTGACATGGCATTCTTCGATAATCGAAGTGCAGCTGCCGCC
GGCCTAGCCCCAGAAATTGTTTTGTATACTGAGAATGTGGATCTGGAAACTCCAGATACCCATATTGTATACAAGGCAGGTAC
AGATGACAGTAGCTCTTCTATCAATTTGGGTCAGCAGTCCATGCCCAACAGACCCAACTACATTGGCTTCAGAGACAACTTTAT
CGGTCTGATGTACTACAACAGCACTGGCAATATGGGTGTACTGGCTGGACAGGCCTCCCAGCTGAATGCTGTGGTGGACTTGC
AGGACAGAAACACCGAACTGTCCTACCAGCTCTTGCTTGACTCTCTGGGTGACAGAACCAGGTATTTCAGTATGTGGAATCAG
GCGGTGGACAGTTATGACCCCGATGTGCGCATTATTGAAAATCACGGTGTGGAGGATGAACTTCCTAACTATTGCTTCCCCCTG
GATGCTGTGGGTAGAACTGATACTTACCAGGGAATTAAGGCCAATGGTGATAATCAAACCACCTGGACCAAAGATGATACTGT
TAATGATGCTAATGAATTGGGCAAGGGCAATCCTTTCGCCATGGAGATCAACATCCAGGCCAACCTGTGGCGGAACTTCCTCT
ACGCGAACGTGGCGCTGTACCTGCCCGACTCCTACAAGTACACGCCGGCCAACATCACGCTGCCCACCAACACCAACACCTAC
GATTACATGAACGGCCGCGTGGTGGCGCCCTCGCTGGTGGACGCCTACATCAACATCGGGGCGCGCTGGTCGCTGGACCCCA
TGGACAACGTCAACCCCTTCAACCACCACCGCAACGCGGGCCTGCGATACCGCTCCATGCTCCTGGGCAACGGGCGCTACGTG
CCCTTCCACATCCAGGTGCCCCAAAAGTTTTTCGCCATCAAGAGCCTCCTGCTCCTGCCCGGGTCCTACACCTACGAGTGGAACT
TCCGCAAGGACGTCAACATGATCCTGCAGAGCTCCCTCGGCAACGACCTGCGCACGGACGGGGCCTCCATCGCCTTCACCAGC
ATCAACCTCTACGCCACCTTCTTCCCCATGGCGCACAACACCGCCTCCACGCTCGAGGCCATGCTGCGCAACGACACCAACGAC

Fig. 22F

CAGTCCTTCAACGACTACCTCTCGGCGGCCAACATGCTCTACCCCATCCCGGCCAACGCCACCAACGTGCCCATCTCCATCCCCT
CGCGCAACTGGGCCGCCTTCCGCGGCTGGTCCTTCACGCGCCTCAAGACCCGCGAGACGCCCTCGCTCGGCTCCGGGTTCGAC
CCCTACTTCGTCTACTCGGGCTCCATCCCCTACCTCGACGGCACCTTCTACCTCAACCACACCTTCAAGAAGGTCTCCATCACCTT
CGACTCCTCCGTCAGCTGGCCCGGCAACGACCGCCTCCTGACGCCCAACGAGTTCGAAATCAAGCGCACCGTCGACGGAGAG
GGGTACAACGTGGCCCAGTGCAACATGACCAAGGACTGGTTCCTGGTCCAGATGCTGGCCCACTACAACATCGGCTACCAGG
GCTTCTACGTGCCCGAGGGCTACAAGGACCGCATGTACTCCTTCTTCCGCAACTTCCAGCCCATGAGCCGCCAGGTCGTGGAC
GAGGTCAACTACAAGGACTACCAGGCCGTCACCCTGGCCTACCAGCACAACAACTCGGGCTTCGTCGGCTACCTCGCGCCCAC
CATGCGCCAGGGCCAGCCCTACCCCGCCAACTACCCCTACCCGCTCATCGGCAAGAGCGCCGTCGCCAGCGTCACCCAGAAAA
AGTTCCTCTGCGACCGGGTCATGTGGCGCATCCCCTTCTCCAGCAACTTCATGTCCATGGGCGCGCTCACCGACCTCGGCCAGA
ACATGCTCTACGCCAACTCCGCCCACGCGCTAGACATGAATTTCGAAGTCGACCCCATGGATGAGTCCACCCTTCTCTATGTTGT
CTTCGAAGTCTTCGACGTCGTCCGAGTGCACCAGCCCCACCGCGGCGTCATCGAGGCCGTCTACCTGCGCACGCCCTTCTCGGC
CGGCAACGCCACCACCTAAGCCTCTTGCTTCTTGCAAGATGACGGCCTGCGCGGGCTCCGGCGAGCAGGAGCTCAGGGCCATC
CTCCGCGACCTGGGCTGCGGGCCCTGCTTCCTGGGCACCTTCGACAAGCGCTTCCCGGGATTCATGGCCCCGCACAAGCTGGC
CTGCGCCATCGTCAACACGGCCGGCCGCGAGACCGGGGGCGAGCACTGGCTGGCCTTCGCCTGGAACCCGCGCTCCCACACC
TGCTACCTCTTCGACCCCTTCGGGTTCTCGGACGAGCGCCTCAAGCAGATCTACCAGTTCGAGTACGAGGGCCTGCTGCGTCGC
AGCGCCCTGGCCACCGAGGACCGCTGCGTCACCCTGGAAAAGTCCACCCAGACCGTGCAGGGTCCGCGCTCGGCCGCCTGCG
GGCTCTTCTGCTGCATGTTCCTGCACGCCTTCGTGCACTGGCCCGACCGCCCCATGGACAAGAACCCCACCATGAACTTGCTGA
CGGGGGTGCCCAACGGCATGCTCCAGTCGCCCCAGGTGGAACCCACCCTGCGCCGCAACCAGGAGGCGCTCTACCGCTTCCTC
AACGCCCACTCCGCCTACTTTCGCTCCCACCGCGCGCGCATCGAGAAGGCCACCGCCTTCGACCGCATGAATCAAGACATGTAA
TCCGGTGTGTGTATGTGAATGCTTTATTCATCATAATAAACAGCACATGTTTATGCCACCTTCTCTGAGGCTCTGACTTTATTTA
GAAATCGAAGGGGTTCTGCCGGCTCTCGGCATGGCCCGCGGGCAGGGATACGTTGCGGAACTGGTACTTGGGCAGCCACTTG
AACTCGGGGATCAGCAGCTTCGGCACGGGGAGGTCGGGGAACGAGTCGCTCCACAGCTTGCGCGTGAGTTGCAGGGCGCCC
AGCAGGTCGGGCGCGGAGATCTTGAAATCGCAGTTGGGACCCGCGTTCTGCGCGCGAGAGTTACGGTACACGGGGTTGCAG
CACTGGAACACCATCAGGGCCGGGTGCTTCACGCTCGCCAGCACCGTCGCGTCGGTGATGCCCTCCACGTCCAGATCCTCGGC
GTTGGCCATCCCGAAGGGGGTCATCTTGCAGGTCTGCCGCCCCATGCTGGGCACGCAGCCGGGCTTGTGGTTGCAATCGCAGT
GCAGGGGGATCAGCATCATCTGGGCCTGCTCGGAGCTCATGCCCGGGTACATGGCCTTCATGAAAGCCTCCAGCTGGCGGAA
GGCCTGCTGCGCCTTGCCGCCCTCGGTGAAGAAGACCCCGCAGGACTTGCTAGAGAACTGGTTGGTGGCGCAGCCAGCGTCG
TGCACGCAGCAGCGCGCGTCGTTGTTGGCCAGCTGCACCACGCTGCGCCCCCAGCGGTTCTGGGTGATCTTGGCCCGGTCGG
GGTTCTCCTTCAGCGCGCGCTGCCCGTTCTCGCTCGCCACATCCATCTCGATCGTGTGCTCCTTCTGGATCATCACGGTCCCGTG
CAGGCACCGCAGCTTGCCCTCGGCCTCGGTGCACCCGTGCAGCCACAGCGCGCAGCCGGTGCTCTCCCAGTTCTTGTGGGCGA
TCTGGGAGTGCGAGTGCACGAAGCCCTGCAGGAAGCGGCCCATCATCGTGGTCAGGGTCTTGTTGCTGGTGAAGGTCAGCGG
AATGCCGCGGTGCTCCTCGTTCACATACAGGTGGCAGATACGGCGGTACACCTCGCCCTGCTCGGGCATCAGCTGGAAGGCG
GACTTCAGGTCGCTCTCCACGCGGTACCGGTCCATCAGCAGCGTCATCACTTCCATGCCCTTCTCCCAGGCCGAAACGATCGGC
AGGCTCAGGGGGTTCTTCACCGTTGTCATCTTAGTCGCCGCCGCCGAAGTCAGGGGGTCGTTCTCGTCCAGGGTCTCAAACAC
TCGCTTGCCGTCCTTCTCGGTGATGCGCACGGGGGGAAAGCTGAAGCCCACGGCCGCCAGCTCCTCCTCGGCCTGCCTTTCGT
CCTCGCTGTCCTGGCTGATGTCTTGCAAAGGCACATGCTTGGTCTTGCGGGGTTTCTTTTTGGGCGGCAGAGGCGGCGGCGGA
GACGTGCTGGGCGAGCGCGAGTTCTCGCTCACCACGACTATTTCTTCTCCTTGGCCGTCGTCCGAGACCACGCGGCGGTAGGC
ATGCCTCTTCTGGGGCAGAGGCGGAGGCGACGGGCTCTCGCGGTTCGGCGGGCGGCTGGCAGAGCCCCTTCCGCGTTCGGG
GGTGCGCTCCTGGCGGCGCTGCTCTGACTGACTTCCTCCGCGGCCGGCCATTGTGTTCTCCTAGGGAGCAAGCATGGAGACTC
AGCCATCGTCGCCAACATCGCCATCTGCCCCCGCCGCCGCCGACGAGAACCAGCAGCAGCAGAATGAAAGCTTAACCGCCCCG
CCGCCCAGCCCCACCTCCGACGCCGCAGCCCCAGACATGCAAGAGATGGAGGAATCCATCGAGATTGACCTGGGCTACGTGA
CGCCCGCGGAGCACGAGGAGGAGCTGGCAGCGCGCTTTTCAGCCCCGGAAGAGAACCACCAAGAGCAGCCAGAGCAGGAAG
CAGAGAGCGAGCAGAACCAGGCTGGGCTCGAGCATGGCGACTACCTGAGCGGGGCAGAGGACGTGCTCATCAAGCATCTGG
CCCGCCAATGCATCATCGTCAAGGACGCGCTGCTCGACCGCGCCGAGGTGCCCCTCAGCGTGGCGGAGCTCAGCCGCGCCTAC
GAGCGCAACCTCTTCTCGCCGCGCGTGCCCCCCAAGCGCCAGCCCAACGGCACCTGCGAGCCCAACCCGCGCCTCAACTTCTAC
CCGGTCTTCGCGGTGCCCGAGGCCCTGGCCACCTACCACCTCTTTTTCAAGAACCAAAGGATCCCCGTCTCCTGCCGCGCCAAC
CGCACCCGCGCCGACGCCCTGCTCAACCTGGGCCCCGGCGCCCGCCTACCTGATATCGCCTCCTTGGAAGAGGTTCCCAAGAT
CTTCGAGGGTCTGGGCAGCGACGAGACTCGGGCCGCGAACGCTCTGCAAGGAAGCGGAGAGGAGCATGAGCACCACAGCGC
CCTGGTGGAGTTGGAAGGCGACAACGCGCGCCTGGCGGTCCTCAAGCGCACGGTCGAGCTGACCCACTTCGCCTACCCGGCG
CTCAACCTGCCCCCCAAGGTCATGAGCGCCGTCATGGACCAGGTGCTCATCAAGCGCGCCTCGCCCCTCTCGGAGGAGGAGAT
GCAGGACCCCGAGAGCTCGGACGAGGGCAAGCCCGTGGTCAGCGACGAGCAGCTGGCGCGCTGGCTGGGAGCGAGTAGCA

Fig. 22G

CCCCCCAGAGCCTGGAAGAGCGGCGCAAGCTCATGATGGCCGTGGTCCTGGTGACCGTGGAGCTGGAGTGTCTGCGCCGCTT
CTTCGCCGACGCGGAGACCCTGCGCAAGGTCGAGGAGAACCTGCACTACCTCTTCAGACACGGGTTCGTGCGCCAGGCCTGC
AAGATCTCCAACGTGGAGCTGACCAACCTGGTCTCCTACATGGGCATCCTGCACGAGAACCGCCTGGGGCAGAACGTGCTGCA
CACCACCCTGCGCGGGGAGGCCCGCCGCGACTACATCCGCGACTGCGTCTACCTGTACCTCTGCCACACCTGGCAGACGGGCA
TGGGCGTGTGGCAGCAGTGCCTGGAGGAGCAGAACCTGAAAGAGCTCTGCAAGCTCCTGCAGAAGAACCTCAAGGCCCTGTG
GACCGGGTTCGACGAGCGCACCACCGCCGCGGACCTGGCCGACCTCATCTTCCCCGAGCGCCTGCGGCTGACGCTGCGCAAC
GGGCTGCCCGACTTTATGAGCCAAAGCATGTTGCAAAACTTTCGCTCTTTCATCCTCGAACGCTCCGGGATCCTGCCCGCCACC
TGCTCCGCGCTGCCCTCGGACTTCGTGCCGCTGACCTTCCGCGAGTGCCCCCCGCCGCTCTGGAGCCACTGCTACCTGCTGCGC
CTGGCCAACTACCTGGCCTACCACTCGGACGTGATCGAGGACGTCAGCGGCGAGGGCCTGCTCGAGTGCCACTGCCGCTGCA
ACCTCTGCACGCCGCACCGCTCCCTGGCCTGCAACCCCCAGCTGCTGAGCGAGACCCAGATCATCGGCACCTTCGAGTTGCAA
GGCCCCGGCGAGGGCAAGGGGGGTCTGAAACTCACCCCGGGGCTGTGGACCTCGGCCTACTTGCGCAAGTTCGTGCCCGAG
GACTACCATCCCTTCGAGATCAGGTTCTACGAGGACCAATCCCAGCCGCCCAAGGCCGAGCTGTCGGCCTGCGTCATCACCCA
GGGGGCCATCCTGGCCCAATTGCAAGCCATCCAGAAATCCCGCCAAGAATTTCTGCTGAAAAAGGGCCACGGGGTCTACTTGG
ACCCCCAGACCGGAGAGGAGCTCAACCCCAGCTTCCCCCAGGATGCCCCGAGGAAGCAGCAAGAAGCTGAAAGTGGAGCTGC
CGCCGCCGCCGGAGGATTTGGAGGAAGACTGGGAGAGCAGTCAGGCAGAGGAGGAGGAGATGGAAGACTGGGACAGCACT
CAGGCAGAGGAGGACAGCCTGCAAGACAGTCTGGAGGAGGAAGACGAGGTGGAGGAGGCAGAGGAAGAAGCAGCCGCCG
CCAGACCGTCGTCCTCGGCGGAGGAGGAGAAAGCAAGCAGCACGGATACCATCTCCGCTCCGGGTCGGGGTCGCGGCGGCC
GGGCCCACAGTAGATGGGACGAGACCGGGCGCTTCCCGAACCCCACCACCCAGACCGGTAAGAAGGAGCGGCAGGGATACA
AGTCCTGGCGGGGGCACAAAAACGCCATCGTCTCCTGCTTGCAAGCCTGCGGGGGCAACATCTCCTTCACCCGGCGCTACCTG
CTCTTCCACCGCGGGGTGAACTTCCCCCGCAACATCTTGCATTACTACCGTCACCTCCACAGCCCCTACTACTGTTTCCAAGAAG
AGGCAGAAACCCAGCAGCAGCAGCAGCAGCAGAAAACCAGCGGCAGCAGCTAGAAAATCCACAGCGGCGGCAGGTGGACT
GAGGATCGCGGCGAACGAGCCGGCGCAGACCCGGGAGCTGAGGAACCGGATCTTTCCCACCCTCTATGCCATCTTCCAGCAG
AGTCGGGGGCAAGAGCAGGAACTGAAAGTCAAGAACCGTTCTCTGCGCTCGCTCACCCGCAGTTGTCTGTATCACAAGAGCG
AAGACCAACTTCAGCGCACTCTCGAGGACGCCGAGGCTCTCTTCAACAAGTACTGCGCGCTCACTCTTAAAGAGTAGCCCGCG
CCCGCCCACACACGGAAAAAGGCGGGAATTACGTCACCACCTGCGCCCTTCGCCCGACCATCATCATGAGCAAAGAGATTCCC
ACGCCTTACATGTGGAGCTACCAGCCCCAGATGGGCCTGGCCGCCGGCGCCGCCCAGGACTACTCCACCCGCATGAACTGGCT
CAGTGCCGGGCCCGCGATGATCTCACGGGTGAATGACATCCGCGCCCACCGAAACCAGATACTCCTAGAACAGTCAGCGATCA
CCGCCACGCCCCGCCATCACCTTAATCCGCGTAATTGGCCCGCCGCCCTGGTGTACCAGGAAATTCCCCAGCCCACGACCGTAC
TACTTCCGCGAGACGCCCAGGCCGAAGTCCAGCTGACTAACTCAGGTGTCCAGCTGGCCGGCGGCGCCGCCCTGTGTCGTCAC
CGCCCCGCTCAGGGTATAAAGCGGCTGGTGATCCGAGGCAGAGGCACACAGCTCAACGACGAGGTGGTGAGCTCTTCGCTGG
GTCTGCGACCTGACGGAGTCTTCCAACTCGCCGGATCGGGGAGATCTTCCTTCACGCCTCGTCAGGCCGTCCTGACTTTGGAG
AGTTCGTCCTCGCAGCCCCGCTCGGGTGGCATCGGCACTCTCCAGTTCGTGGAGGAGTTCACTCCCTCGGTCTACTTCAACCCC
TTCTCCGGCTCCCCCGGCCACTACCCGGACGAGTTCATCCCGAACTTCGACGCCATCAGCGAGTCGGTGGACGGCTACGATTG
AATGTCCCATGGTGGCGCGGCTGACCTAGCTCGGCTTCGACACCTGGACCACTGCCGCCGCTTCCGCTGCTTCGCTCGGGATCT
CGCCGAGTTTGCCTACTTTGAGCTGCCCGAGGAGCACCCTCAGGGCCCGGCCCACGGAGTGCGGATCGTCGTCGAAGGGGGT
CTCGACTCCCACCTGCTTCGGATCTTCAGCCAGCGTCCGATCCTGGCCGAGCGCGAGCAAGGACAGACCCTTCTGACCCTGTAC
TGCATCTGCAACCACCCCGGCCTGCATGAAAGTCTTTGTTGTCTGCTGTGTACTGAGTATAATAAAAGCTGAGATCAGCGACTA
CTCCGGACTTCCGTGTGTTCCTGCTATCAACCAGTCCCTGTTCTTCACCGGGAACGAGACCGAGCTCCAGCTCCAGTGTAAGCC
CCACAAGAAGTACCTCACCTGGCTGTTCCAGGGCTCTCCGATCGCCGTTGTCAACCACTGCGACAACGACGGAGTCCTGCTGA
GCGGCCCTGCCAACCTTACTTTTTCCACCCGCAGAAGCAAGCTCCAGCTCTTCCAACCCTTCCTCCCCGGGACCTATCAGTGCGT
CTCGGGACCCTGCCATCACACCTTCCACCTGATCCCGAATACCACAGCGTCGCTCCCCGCTACTAACAACCAAACTACCCACCAA
CGCCACCGTCGCGACCGCGGACATGTACAGAGCTCGAGAAGTACTAGGCCACAATACATGCCCATATTAGACTATGAGGCCGA
GCCACAGCGACCCATGCTCCCCGCTATTAGTTACTTCAATCTAACCGGCGGAGATGACTGACCCACTGGCCAACAACAACGTCA
ACGACCTTCTCCTGGACATGGACGGCCGCGCCTCGGAGCAGCGACTCGCCCAACTTCGCATTCGCCAGCAGCAGGAGAGAGC
CGTCAAGGAGCTGCAGGACGGCATAGCCATCCACCAGTGCAAGAAAGGCATCTTCTGCCTGGTGAAACAGGCCAAGATCTCC
TACGAGGTCACCCCGACCGACCATCGCCTCTCCTACGAGCTCCTGCAGCAGCGCCAGAAGTTCACCTGCCTGGTCGGAGTCAA
CCCCATCGTCATCACCCAGCAGTCGGGCGATACCAAGGGGTGCATCCACTGCTCCTGCGACTCCCCCGACTGCGTCCACACTCT
GATCAAGACCCTCTGCGGCCTCCGCGACCTCCTCCCCATGAACTAATCACCCCCTTATCCAGTGAAATAAATATCATATTGATGA
TGATTTAAATAAAAAATAATCATTTGATTTGAAATAAAGATACAATCATATTGATGATTTGAGTTTTAAAAAATAAAGAATCACT
TACTTGAAATCTGATACCAGGTCTCTGTCCATGTTTTCTGCCAACACCACCTCACTCCCCTCTTCCCAGCTCTGGTACTGCAGACC
CCGGCGGGCTGCAAACTTCCTCCACACGCTGAAGGGGATGTCAAATTCCTCCTGTCCCTCAATCTTCATTTTATCTTCTATCAGA

Fig. 22H

TGTCCAAAAAGCGCGTCCGGGTGGATGATGACTTCGACCCCGTCTACCCCTACGATGCAGACAACGCACCGACCGTGCCCTTC
ATCAACCCCCCCTTCGTCTCTTCAGATGGATTCCAAGAGAAGCCCCTGGGGGTGCTGTCCCTGCGACTGGCTGACCCCGTCACC
ACCAAGAACGGGGAAATCACCCTCAAGCTGGGAGAGGGGGTGGACCTCGACTCCTCGGGAAAACTCATCTCCAACACGGCCA
CCAAGGCCGCCGCCCCTCTCAGTTTTTCCAACAACACCATTTCCCTTAACATGGATACCCCTCTTTATACCAAAGATGGAAAATT
ATCCTTACAAGTTTCTCCACCGTTAAACATATTAAAATCAACCATTCTGAACACATTAGCTGTAGCTTATGGATCAGGTTTAGGA
CTGAGTGGTGGCACTGCTCTTGCAGTACAGTTGGCCTCTCCACTCACTTTTGATGAAAAAGGAAATATTAAAATTAACCTAGCC
AGTGGTCCATTAACAGTTGATGCAAGTCGACTTAGTATCAACTGCAAAAGAGGGGTCACTGTCACTACCTCAGGAGATGCAAT
TGAAAGCAACATAAGCTGGCCTAAAGGTATAAGATTTGAAGGTAATGGCATAGCTGCAAACATTGGCAGAGGATTGGAATTT
GGAACCACTAGTACAGAGACTGATGTCACAGATGCATACCCAATTCAAGTTAAATTGGGTACTGGCCTTACCTTTGACAGTACA
GGCGCCATTGTTGCTTGGAACAAAGAGGATGATAAACTTACATTATGGACCACAGCCGACCCCTCGCCAAATTGCAAAATATA
CTCTGAAAAAGATGCCAAACTCACACTTTGCTTGACAAAGTGTGGAAGTCAAATTCTGGGTACTGTGACTGTATTGGCAGTGA
ATAATGGAAGTCTCAACCCAATCACAAACACAGTAAGCACTGCACTCGTCTCCCTCAAGTTTGATGCAAGTGGAGTTTTGCTAA
GCAGCTCCACATTAGACAAAGAATATTGGAACTTCAGAAAGGGAGATGTTACACCTGCTGAGCCCTATACTAATGCTATAGGT
TTTATGCCTAACATAAAGGCCTATCCTAAAAACACATCTGCAGCTTCAAAAAGCCATATTGTCAGTCAAGTTTATCTCAATGGG
GATGAGGCCAAACCACTGATGCTGATTATTACTTTTAATGAAACTGAGGATGCAACTTGCACCTACAGTATCACTTTTCAATGG
AAATGGGATAGTACTAAGTACACAGGTGAAACACTTGCTACCAGCTCCTTCACCTTCTCCTACATCGCCCAAGAATGAACACTG
TATCCCACCCTGCATGCCAACCCTTCCCACCCCACTCTGTCTATGGAAAAAACTCTGAAGCACAAAATAAAATAAAGTTCAAGT
GTTTTATTGATTCAACAGTTTTACAGGATTCGAGCAGTTATTTTTCCTCCACCCTCCCAGGACATGGAATACACCACCCTCTCCCC
CCGCACAGCCTTGAACATCTGAATGCCATTGGTGATGGACATGCTTTTGGTCTCCACGTTCCACACAGTTTCAGAGCGAGCCAG
TCTCGGGTCGGTCAGGGAGATGAAACCCTCCGGGCACTCCCGCATCTGCACCTCACAGCTCAACAGCTGAGGATTGTCCTCGG
TGGTCGGGATCACGGTTATCTGGAAGAAGCAGAAGAGCGGCGGTGGGAATCATAGTCCGCGAACGGGATCGGCCGGTGGTG
TCGCATCAGGCCCCGCAGCAGTCGCTGCCGCCGCCGCTCCGTCAAGCTGCTGCTCAGGGGGTCCGGGTCCAGGGACTCCCTCA
GCATGATGCCCACGGCCCTCAGCATCAGTCGTCTGGTGCGGCGGGCGCAGCAGCGCATGCGGATCTCGCTCAGGTCGCTGCA
GTACGTGCAACACAGGACCACCAGGTTGTTCAACAGTCCATAGTTCAACACGCTCCAGCCGAAACTCATCGCGGGAAGGATGC
TACCCACGTGGCCGTCGTACCAGATCCTCAGGTAAATCAAGTGGCGCTCCCTCCAGAACACGCTGCCCACGTACATGATCTCCT
TGGGCATGTGGCGGTTCACCACCTCCCGGTACCACATCACCCTCTGGTTGAACATGCAGCCCCGGATGATCCTGCGGAACCAC
AGGGCCAGCACCGCCCCGCCCGCCATGCAGCGAAGAGACCCCGGGTCCCGGCAATGGCAATGGAGGACCCACCGCTCGTACC
CGTGGATCATCTGGGAGCTGAACAAGTCTATGTTGGCACAGCACAGGCATATGCTCATGCATCTCTTCAGCACTCTCAGCTCCT
CGGGGGTCAAAACCATATCCCAGGGCACGGGGAACTCTTGCAGGACAGCGAACCCCGCAGAACAGGGCAATCCTCGCACATA
ACTTACATTGTGCATGGACAGGGTATCGCAATCAGGCAGCACCGGGTGATCCTCCACCAGAGAAGCGCGGGTCTCGGTCTCCT
CACAGCGTGGTAAGGGGGCCGGCCGATACGGGTGATGGCGGGACGCGGCTGATCGTGTTCGCGACCGTGTCATGATGCAGT
TGCTTTCGGACATTTTCGTACTTGCTGTAGCAGAACCTGGTCCGGGCGCTGCACACCGATCGCCGGCGGCGGTCCCGGCGCTT
GGAACGCTCGGTGTTGAAATTGTAAAACAGCCACTCTCTCAGACCGTGCAGCAGATCTAGGGCCTCAGGAGTGATGAAGATCC
CATCATGCCTGATAGCTCTGATCACATCGACCACCGTGGAATGGGCCAGACCCAGCCAGATGATGCAATTTTGTTGGGTTTCG
GTGACGGCGGGGGAGGGAAGAACAGGAAGAACCATGATTAACTTTTAATCCAAACGGTCTCGGAGCACTTCAAAATGAAGGT
CGCGGAGATGGCACCTCTCGCCCCCGCTGTGTTGGTGGAAAATAACAGCCAGGTCAAAGGTGATACGGTTCTCGAGATGTTCC
ACGGTGGCTTCCAGCAAAGCCTCCACGCGCACATCCAGAAACAAGACAATAGCGAAAGCGGGAGGGTTCTCTAATTCCTCAAT
CATCATGTTACACTCCTGCACCATCCCCAGATAATTTTCATTTTTCCAGCCTTGAATGATTCGAACTAGTTCCTGAGGTAAATCCA
AGCCAGCCATGATAAAGAGCTCGCGCAGAGCGCCCTCCACCGGCATTCTTAAGCACACCCTCATAATTCCAAGATATTCTGCTC
CTGGTTCACCTGCAGCAGATTGACAAGCGGAATATCAAAATCTCTGCCGCGATCCCTAAGCTCCTCCCTCAGCAATAACTGTAA
GTACTCTTTCATATCCTCTCCGAAATTTTTAGCCATAGGACCACCAGGAATAAGATTAGGGCAAGCCACAGTACAGATAAACCG
AAGTCCTCCCCAGTGAGCATTGCCAAATGCAAGACTGCTATAAGCATGCTGGCTAGACCCGGTGATATCTTCCAGATAACTGG
ACAGAAAATCACCCAGGCAATTTTTAAGAAAATCAACAAAAGAAAAATCCTCCAGGTGCACGTTTAGAGCCTCGGGAACAACG
ATGAAGTAAATGCAAGCGGTGCGTTCCAGCATGGTTAGTTAGCTGATCTGTAAAAAACAAAAAATAAAACATTAAACCATGCT
AGCCTGGCGAACAGGTGGGTAAATCGTTCTCTCCAGCACCAGGCAGGCCACGGGGTCTCCGGCGCGACCCTCGTAAAAATTG
TCGCTATGATTGAAAACCATCACAGAGAGACGTTCCCGGTGGCCGGCGTGAATGATTCGACAAGATGAATACACCCCCGGAAC
ATTGGCGTCCGCGAGTGAAAAAAAGCGCCCGAGGAAGCAATAAGGCACTACAATGCTCAGTCTCAAGTCCAGCAAAGCGATG
CCATGCGGATGAAGCACAAAATCCTCAGGTGCGTACAAAATGTAATTACTCCCCTCCTGCACAGGCAGCGAAGCCCCCGATCC
CTCCAGATACACATACAAAGCCTCAGCGTCCATAGCTTACCGAGCAGCAGCACACAACAGGCGCAAGAGTCAGAGAAAGGCT
GAGCTCTAACCTGTCCACCCGCTCTCTGCTCAATATATAGCCCAGATCTACACTGACGTAAAGGCCAAAGTCTAAAAATACCCG
CCAAATAATCACACACGCCCAGCACACGCCCAGAAACCGGTGACACACTCAAAAAAATACGCGCACTTCCTCAAACGCCCAAA
CTGCCGTCATTTCCGGGTTCCCACGCTACGTCATCGGAATTCGACTTTCAAATTCCGTCGACCGTTAAAAACGTCACCCGCCCCG
CCCCTAACGGTCGCCCGTCTCTCGGCCAATCACCTTCCTCCCTCCCCAAATTCAAACAGCTCATTTGCATATTAACGCGCACCAA
AAGTTTGAGGTATATTATTGATGATG

Fig. 22I

AdC7 010-HIVgp140(E1469) Amino acids – SEQ ID NO: 11
The symbol " * " refers herein to stop codons in the non coding regions

HHQ*YTSNFWCALICK*AV*IWGGRKVIGRETGDR*GRGG*RFDDVAVRRSRFASSRGKSDVKRGVV*TRKYSIFPRSLTGNEVFLG
GCK*KRAIFARKLNEEVKI*VISRLWQGGVFAEGRVDFDRLRGGFDYRIFHLNFRVRCQSPVFLRTISFPRKCHLTVTITVLR*RKLRSP
DPLWCTLSTICSDAA*LSQYLLPACVLEVAE*CASKI*ATTRQGLTDNCMKNLLRVRRFALLRDVRARYTR*H*LLTSMPSTPPIDVND
GKWPAWHYAQYMTLWDFPTWQYIYVLVIAITMVMRFWQYINGRG*RFDSRGFPSLHPIDVNGSLFWHQNQRDFPKCRNNSAP
LTQMGGRRVRWEVYISRARLVNRQITRSFIAVVYHS*IANAVSASDTTVSNLRLEYLIRLTIG*LRLEFDATMRVMGILRSYQQWWI
WGILGFWMLMICNVWGNLWVTVYYGVPVWKEAKTTLFCASDAKAHKEEVHNIWATHACVPTDPNPQEIVLKNVTENFNMWK
NDMVDQMHEDIISLWDQSLKPCVKLTPLCVTLNCSDVKIKGTNATYNNATYNNNNTISDMKNCSFNTTTEITDKKKKEYALFYKLDV
VALDGKETNSTNSSEYRLINCNTSAVTQACPKVSFDPIPIHYCAPAGYAILKCNNKTFNGTGPCNNVSTVQCTHGIKPVVSTQLLLNG
SLAEEEVVIRFENLTNNAKIIIVHLNESVEINCTRPSNNTRKSVRIGPGQTFFATGDIIGDIRQAHCNISRKKWNTTLQRVKEKLKEKFPN
KTIQFAPSSGGDLEITTHSFNCRGEFFYCYTSDLFNSTYMSNNTGGANITLQCRIKQIIRMWQGVGQAMYAPPIAGNITCKSNITGLL
LTRDGGKEKNDTETFRPGGGDMRDNWRSELYKYKVVEIKPLGIAPDKAKLTVQARQLLSGIVQQQSNLLRAIEAQQHMLQLTVWG
IKQLQTRVLAIERYLKDQQLLGIWGCSGKLICTTAVPWNASWSNKSYEEIWGNMTWMQWDREINNYTNTIYSLLEESQNQQEKNE
KDLLALDSWESLWSWFNITNWLW*GTSRVDPGGQTADQPRLCLLVASHLLFAPPPCLP*PWKVPLPLSFPNKMRKLHRIV*VGVIL
FWGVGWGRTARGRIGKTIAGMLGMRWALWLLRRKEPADLQI*IHLCRVRRKR**NGIMGIMGLH**IGQISICWPPCM*PRTPA
RHGPSSSTTS*PDAMCTWGPAEACSCPTSATCNL*RCCWSPMPCPE*A*RGCLT*MWSCGKF*DMMNPRPGAGPANAEASTP
GFSPCVWR*RRTCDPIIWCCPATGRSSAPAGKNLTRVSSVWGRWRACMRGRMTKICVFLCVAAA*AEAPPLREGYSALI*RGVSPP
GRECVRM*WDPRWTAGPCSPRTLQP*PTRP*APRPWTQLPPQLLLPPPAPCAEWPWAPATTALWWPTRLPPIIPPA*TRRSCCC
*WPSSRP*PSAWAS*PSRWLSCRRRRGPRLPR*KPNKK*INK*TETVVDFNTES*IFI*FFARGRPWTTGLDH*APGGFFPGPGRGG
LGC*GTWA*ARPGGGGSSIAGPRARGWCCKSPSHSRGAGRGAARCP*GGD*WPRAAPWCRC*RTC*AGRDACGGR*DASWP
GS*DWRCSRPDPAGGSCCAGPPARCIRRTWGICHATWKGRRERIWRRPCDRPGFPCTHP**WRWARGRRPGQRRFGGRTHRSC
GPG*ARHRPF**IWGGGCPTGGRRCPRSRGRSCPRRSASPRP*ARRGGSCPPAGR*KKRFPGRGR*AGPKAGSGAAGTCRSRWG
RR*PR*PAAGGS*GRDSCRPRGGGGPPRSSSRAHACSRARVPPGGARPPARGALAARRSFSAA*XRRPWAFWRGSVARVPDGPR
AR*CALGHLDPADLLVSRVGATAGVGHQAMGVQRGQGPVLPGSQGPRQRGLRHGEGVRAGLGACEGALQAHPAGREPLPVGA
LRVGQVAIEHEFVVERLGRVALGAELTFGSVSADGTEEGLEGVELGGEEDGLGGVGVRAAAGADGLALHEPGEVGPVGVKNEVSSV
LFDAFLTSGLHELVSPLGDKEAVRVPVDRLYGPVLERGAAVLVVEEPRPLRDEGPGPGQHEGGHVGGVAVVVHQRVHLLQGMQA
HVPLVHIQEGDWLVSVGHVTGGPGRGGIKGGGPLLVLTVFRIAVQERQLLG*VFPLEGWHNLGTQVVSF*KRGGFDIDGAVGDAF
HEPLVHLVRKDDLFVVELGGEGAVEGVGEELGDGAHGLVLFLVGALLGGDVELHVLARHALPFGEDGGELVGHDSDPPAAVVQGD
EVHAGGHLAAQGLVGPAEAPALARAEGGQRVQHELVGGVGVHGEDAGQKLGVEVADAGVQIVQRRLPVAHGQRALVGAEGRA
PGHGVRERGGVHAADVVDVEGLLEDADVGGVAAPPADAGAHVVVQLVRGREEPRAEVGALRLFGAVDDLAEDGVGVGGDGGP
LEDVEVGVGQADRVPDEVGVGVLQLGDELGGDEDVQGAVVEGLLDDVVLELALLLPQLAVEKELFAVLPVLFEGEPVLIGTVRAHH
VELVDGLVGAAALLHGEGVSLCGLAQGGVGEGEGVAHHDLEELVLEVEVVAAALLPELEVRALLVGGVGQSESNIVEEDLARAGHE
VASDAERLGHLGPVVDDLGGEDDLVEAVDVVPDDVEFHESRAALNVGQLLELVVGELGGVAEPVLLEGPVGDVGVGAEEGSPEIH
GQGGLQAVPVLTELLAHGHFFGGDAVEGAGVAVPAVPLELEGEVVGELDERRVPGEFHDQHEGDELLAEGPHPGVGFHIVGEEEP
FGARMRADGEELDLLPPVGGMAVDVMEVEMPTARRALVLVFIQASAVLATLHGMHVLHELYLGSFDEEFQWAVERWRLHLVLYY
VLAIGVAIVCLDGGHADEPAREAGPDFGSDGSESEDEGAQAGAVQGPETLRSQVSGQRRRAVDLQELFQGAREVQMVLDLHGAV
GGDVHGLQGPVPLGRHHRAPFLLGRCFHAGQKRRRGRAPGGRGGSGPGGRGGRGTSAPRAGRFWYCARRRLA*ATTRRLTSWI
*RLWVKATGPVSLNLKESSTESISVSLTAACRRISCTSPELSW*AISVMNCSISSS*RSPRPARSTVAARSLEMRPMSCEKAFMPASFQ
TRL*TTAPSGSRARMTTWARLSSTWRVKTA*LQRRW*R*LSVVAMCSVTKKYMIQRRSGISLTSPRASKRSMAS*KSTAKLKNWEL
RAETVNSSSRRRMSSAMVARTSRSKAPGGSSSSISSSSTNISSTSSSGGGGGGGALRRRRRTGRRSMKRSMVSPRRRRMVSVTARP
SSRGRSVKTPPRISRWPPGGSPLGRERALTMHLINWPVGTPRKDLSVSRSTGSENR*TKASSQSQSQGRLSPVSCSSGISGGGRAML
LVMKLK*AVLRRRMVARSTRSLGPACWMRRRSAMPQAWS*HLARSL**SCMSRSTGTSSSPARPCMRVSPNPRWGWTSARSAT
TRSARMACCIWVRVVWKSSKSTKRW*APVLMV*EQLAMTDQLTVWWPGRTSSWYLRRE*ARVSKM*SLQVRTRYWYPTRKCG
GGWR*SGHRSVAGAPGARSSSMRRW*P*MYLDIQVMPAAVVEARGNSRTRFQMLRSGRK*FMVAAVWPVRRAQSWML*TY
GQKRKRSAARLRGLEAKRTGWAARVPRFESRIRLEPQLTWYWHSRLDPSLLTKPPGYGGGSFFGLGRWS*KTSKRGKRPPAMARC
RSLEKESPGLRCGVPRFEPQRSAPAGFRG*RGRGCPVVSKTP*PADFSSYGASPSFSCVFARCIPYCGRCAPTLHLNRPYRRSSSNSRR
FCPRPSSSQPLPRRPP*AEPAFSMTWPWKRARGWRGWGRRRRSGTRACR*KGTLARPTCPSRTCSETGAARSPRRCAPPASTRG
GSCGAAWTESGC*GTRISRRTS*RGSAPRARTWPRPTWSRRTSRP*RRRATSKNPSTTTCAR*SRARR*PWA*CTCGTCWRPSCR
TPRASR*RRSCFWWCSTVGTTRRSGRRC*ISPSPRAAGSWTW*TFCRASWCRSAGCRCPRSWRLSTSRC*AWASTTLGRSTRPRT

Fig. 22J

CP*TRR*RSTGFTCA*P*KC*P*ATIWGCTATTGCTAR*APAAGAS*ATRS*CTACSGP*PGPGPRGRATLTWARTCAGSPAAGPW
KLPAVPPTWRRWTMRRRRASTWKTDGATVFLLDAATATAS*SRDAGGAAEPAVRH*LLGRLDPGHATHHGADDPQSRSL*TAAS
GQPALGHPGGRGALALEPHAREGAGHRERAGGEQGHPRRRGRAGVQRAAGARGPLQQHQRADEPGPHGDRRARGGVAARAV
PPRVEPGLHGGAERLPEHAARQRAPGPGGLHQLHQRAAADGGRGAPERGVPVGAGLLLPDQSPGLADREPEPGFQELAGTVGRA
GPGRGPRDGVEPADAELAPAAAAGGALHGQRQREPRLVPGLPA*PVPRGHRAGARGRADLPGDHPREPRAGPGGPGQPGGHP
ELPADQPVAEDPAPVRAEHRGGAHPALRAAERGAVPDAGGGHAQRRARHDRAQHGAQHVRSQPPVHQ*ADGLLASGGRHELG
LLYQRHLEPALAPAARVLHGRVRHARPQRRVPVGRRGQQRVLAAPRHHRVEERGRGPAAVLGAVRSRGCCRGGA*GRQPLPEPA
LFAEQRAQQRAGSADAAAPAGRGGVPERLLVEARAREELPQ*RDREPGGQDEPLEDVRARAQGRAPS*QQRRHP*TPATRQAAG
SGVGR*GFRRRQQRVGLGWEWWW*PVRSLAPPYRAPDVRI*KNKKRYSPRPWRPACVLLCCL**YDEARVPGGSSSLVRERDAA
GGGGGDAAPAGGALRAPAVPGAYGGAEQHSLLGAGTLVRYHPVVPGGQQVGGHRLAELPERPQQLPDHRGAEQRFHPHGGQH
PDHQL*RALAVGRPAENHHAHQHAQRERVHVQQQVQGAGDGLAQDPQWGRGG*EL*W*SGRADLRVGGV*AARGQLLGDH
DHRSDEQRHHRQLLGGGASERGAGERHRREVRHAQLPAGLGPRDRAGDAGRVHQRGLPPRHRPAARLRRGLHREPPQQPAGHP
QAAALPGGLPDPVRGPGGGQHPRALGCRSL*EKQGGGRRSGDRSRGHRLYRGAGR*FC*RRGSGRGG*NRK*DSHPAGGEGQQ
GQELQRARGQEKHRLPQLVPGLQLRRPREGRALLDAAHHLGRHLRRGASLLVAARHDARPGHLPLHASS*QLPGGGRRAPARLLQ
ELLQRAGRLLAAAARLHLAHARLQPLPREPDPRPPARAHHYHRQ*KRSCSHRSRDPAAAQQYPGSPARDRH*RQTPHLPLRLQGP
GRSRAARPLEPHLLKNVHSHLAQ**HRLGPARAQQDVRRRSPTLHATPRARARALPRSLGRPQGPRALAHHRRRRDRPGGGRRAQ
LHARRRARLHRGRRHRQRGGRCAPVRPRQEPAAAHRPAAPEHPRHARGASLAAQGQAHGTQGHAQGGQTRGLRQQQRRQDP
QTRGHGGGGGHRQHVPPAARQRVLGARRRHRCARARAHPPPSHLKMLTSRC*CVPAARRMSKRKYKEEMLQVIAPEIYGPAVKE
ERKPRKLKRVKKDKKEEEDVDGLVEFVREFAPRRRVQWRGRKVKPVLRPGTTVVFTPGERSGSASKRSYDEVYGDEDILEQAVERLG
EFAYGKRSRPAPLKEEAVSIPLDHGNPTPSLKPVTLQQVLPSAAPRRGFKREGGEDLYPTMQLMVPKRQKLEDVLEHMKVDPEVQP
EVKVRPIKQVAPGLGVQTVDIKIPTEPMETQTEPVKPSTSTMEVQTDPWMPAPASTTRRRRKYGAASLLMPNYALHPSIIPTPGYRG
TRFYRGYTSSRRKTTTRRRRRRTRRSSTATSAAALVRRVYRSGREPLTLPRARYHPSIAI*LCRRLLLADMALTCRLRVPITGYRGRKPRR
RRLTGNGLRRHHHRRRRAISKRLGGGFLPALIPIIAAAIGAIPGIASVAVQASQRH*DTAWKICNKKMD*RSWSCDVCF*MEDINFSS
LAPRHGTRPFMGTWSDIGNSQLNGGAFNWSSLWSGLKNFGSTLKTYGNKAWNSSTGQALREKLKEQNFQQKVVDGLASGINGV
VDLANQAVQKQINSRLDAVPPAGSVEMPQVEEELPPLDKRGDKRPRPDAEETLLTHTDEPPPYEEAVKLGLPTTRPVAPLATGVLKP
SSSSQPATLDLPPPASRPSTVAKPLPPVAVASRAPRGRPQANWQSTLNSIVGLGVQSVKRRRCY*KTL*RLTCLSVCICMSADQKEEE
ARRRVARWPPHRCCPSGRTCTSPDRTLRST*VRVWCSSPAPQTPTSVWGTSLGTPRWRPRTM*PPTAASG*RCASCPWTARTTP
TRTKCATRWPWATTACWTWPAPTLTSAACWIGGPASNPTPAPPTTAWLPRERPTLASGHIKLVILIQKKPIHMEMHLCKALALQR
MVFNLELTAMVRQSMQTKLINQSLKWVMLNGMTSLVLMKNMEAELLSLTPK*SLAMVLLPSLPIKKEARQM*KPKQAVPKNMTL
TWHSSIIEVQLPPA*PQKLFCILRMWIWKLQIPILYTRQVQMTVALLSIWVSSPCPTDPTTLASETTLSV*CTTTALAIWVYWLDRPPS
*MLWWTCRTETPNCPTSSCLTLWVTEPGISVCGIRRWTVMTPMCALLKITVWRMNFLTIASPWMLWVELILTRELRPMVIIKPPGP
KMILLMMLMNWARAILSPWRSTSRPTCGGTSSTRTWRCTCPTPTSTRRPTSRCPPTPTPTIT*TAAWWRPRWWTPTSTSGRAGR
WTPWTTSTPSTTTATRACDTAPCSWATGATCPSTSRCPKSFSPSRASCSCPGPTPTSGTSARTST*SCRAPSATTCARTGPPSPSPAS
TSTPPSSPWRTTPPPRSRPCCATTPTTSPSTTTSRRPTCSTPSRPTPPTCPSPSPRATGPPSAAGPSRASRPARRPRSAPGSTPTSSTRA
PSPTSTAPSTSTTPSRRSPSPSTPPSAGPATTAS*RPTSSKSSAPSTERGTTWPSAT*PRTGSWSRCWPTTTSATRASTCPRATRTACT
PSSATSSP*AARSWTRSTTRTTRPSPWPTSTTTRASSATSRPPCARASPTPPTTPTRSSARAPSPASPRKSSSATGSCGASPSPATSCP
WARSPTSARTCSTPTPPTR*T*ISKSTPWMSPPFSMLSSKSSTSSECTSPTAASSRPSTCARPSRPATPPPKPLASCKMTACAGSGEQE
LRAILRDLGCGPCFLGTFDKRFPGFMAPHKLACAIVNTAGRETGGEHWLAFAWNPRSHTCYLFDPFGFSDERLKQIYQFEYEGLLRR
SALATEDRCVTLEKSTQTVQGPRSAACGLFCCMFLHAFVHWPDRPMDKNPTMNLLTGVPNGMLQSPQVEPTLRRNQEALYRFLN
AHSAYFRSHRARIEKATAFDRMNQDM*SGVCM*MLYSS**TAHVYATFSEALTLFRNRRGSAGSRHGPRAGIRCGTGTWAAT*TR
GSAASARGGRGTSRSTACA*VAGRPAGRARRS*NRSWDPRSARESYGTRGCSTGTPSGPGASRSPAPSRR*CPPRPDPRRWPSRR
GSSCRSAAPCWARSRACGCNRSAGGSASSGPARSSCPGTWPS*KPPAGGRPAAPCRPR*RRPRRTC*RTGWWRSQRRARSSARR
CWPAAPRCAPSGSG*SWPGRGSPSARAARSRSPHPSRSCAPSGSSRSRAGTAACPRPRCTRAATARSRCSPSSCGRSGSASARSPA
GSGPSSWSGSCCW*RSAECRGAPRSHTGGRYGGTPRPARASAGRRTSGRSPRGTGPSAASSLPCPSPRPKRSAGSGGSSPLSS*SPP
PKSGGRSRPGSQTLACRPSR*CARGES*SPRPPAPPRPAFRPRCPG*CLAKAHAWSCGVSFWAAEAAAETCWASASSRSPRLFLLL
GRRPRPRGGRHASSGAEAEATGSRGSAGGWQSPFRVRGCAPGGAALTDFLRGRPLCSPREQAWRLSHRRQHRHLPPPPPTRTSSS
RMKA*PPRRPAPPPTPQPQTCKRWRNPSRLTWAT*RPRSTRRSWQRAFQPRKRTTKSSQSRKQRASRTRLGSSMATT*AGQRTC
SSSIWPANASSSRTRCSTAPRCPSAWRSSAAPTSATSSRRACPPSASPTAPASPTRASTSTRSSRCPRPWPPTTSFSRTKGSPSPAAPT
APAPTPCSTWAPAPAYLISPPWKRFPRSSRVWAATRLGPRTLCKEAERSMSTTAPWWSWKATTRAWRSSSARSS*PTSPTRRSTCP
PRS*APSWTRCSSSAPRPSRRRRCRTPRARTRASPWSATSSWRAGWERVAPPRAWKSGASS*WPWSW*PWSWSVCAASSPTR
RPCARSRRTCTTSSDTGSCARPARSPTWS*PTWSPTWASCTRTAWGRTCCTPPCAGRPAATTSATASTCTSATPGRRAWACGSSA

Fig. 22K

WRSRT*KSSASSCRRTSRPCGPGSTSAPPPRTWPTSSSPSACG*RCATGCPTL*AKACCKTFALSSSNAPGSCPPPAPRCPRTSCR*P
SASAPRRSGATATCCAWPTTWPTTRT*SRTSAARACSSATAAATSARRTAPWPATPSC*ARPRSSAPSSCKAPARARGV*NSPRGC
GPRPTCASSCPRTTIPSRSGSTRTNPSRPRPSCRPASSPRGPSWPNCKPSRNPAKNFC*KRATGSTWTPRPERSSTPASPRMPRGSS
KKLKVELPPPPEDLEEDWESSQAEEEEMEDWDSTQAEEDSLQDSLEEEDEVEEAEEEAAAARPSSSAEEEKASSTDTISAPGRGRGG
RAHSRWDETGRFPNPTTQTGKKERQGYKSWRGHKNAIVSCLQACGGNISFTRRYLLFHRGVNFPRNILHYYRHLHSPYYCFQEEAE
TQQQQQQQKTSGSS*KIHSGGRWTEDRGERAGADPGAEEPDLSHPLCHLPAESGARAGTESQEPFSALAHPQLSVSQERRPTSAH
SRGRRGSLQQVLRAHS*RVARARPHTEKGGNYVTTCALRPTIIMSKEIPTPYMWSYQPQMGLAAGAAQDYSTRMNWLSAGPAMI
SRVNDIRAHRNQILLEQSAITATPRHHLNPRNWPAALVYQEIPQPTTVLLPRDAQAEVQLTNSGVQLAGGAALCRHRPAQGIKRLVI
RGRGTQLNDEVVSSSLGLRPDGVFQLAGSGRSSFTPRQAVLTLESSSSQPRSGGIGTLQFVEEFTPSVYFNPFSGSPGHYPDEFIPNFD
AISESVDGYD*MSHGGAADLARLRHLDHCRRFRCFARDLAEFAYFELPEEHPQGPAHGVRIVVEGGLDSHLLRIFSQRPILAEREQG
QTLLTLYCICNHPGLHESLCCLLCTEYNKS*DQRLLRTSVCSCYQPVPVLHRERDRAPAPV*APQEVPHLAVPGLSDRRCQPLRQRRS
PAERPCQPYFFHPQKQAPALPTLPPRDLSVRLGTLPSHLPPDPEYHSVAPRY*QPNYPPTPPSRPRTCTELEKY*ATIHAHIRL*GRAT
ATHAPRY*LLQSNRRR*LTHWPTTTSTTFSWTWTAAPRSSDSPNFAFASSRREPSRSCRTA*PSTSARKASSAW*NRPRSPTRSPRP
TIASPTSSCSSARSSPAWSESTPSSSPSSRAIPRGASTAPATPPTASTL*SRPSAASATSSP*TNHPLIQ*NKYHIDDDLNKK*SFDLK*R
YNHIDDLSFKK*RITYLKSDTRSLSMFSANTTSLPSSQLWYCRPRRAANFLHTLKGMSNSSCPSIFILSSIRCPKSASGWMMTSTPSTPT
MQTTHRPCPSSTPPSSLQMDSKRSPWGCCPCDWLTPSPPRTGKSPSSWERGWTSTPRENSSPTRPPRPPPLSVFPTTPFPLTWIPLF
IPKMENYPYKFLHR*TY*NQPF*TH*L*LMDQV*D*VVALLLQYSWPLHSLLMKKEILKLT*PVVH*QLMQVDLVSTAKEGSLSLPQ
EMQLKAT*AGLKV*DLKVMA*LQTLAEDWNLEPLVQRLMSQMHTQFKLNWVLALPLTVQAPLLLGTKRMINLHYGPQPTPRQIA
KYTLKKMPNSHFA*QSVEVKFWVL*LYWQ*IMEVSTQSQTQ*ALHSSPSSLMQVEFC*AAPH*TKNIGTSEREMLHLLSPILML*VL
CLT*RPILKTHLQLQKAILSVKFISMGMRPNH*C*LLLLMKLRMQLAPTVSLFNGNGIVLSTQVKHLLPAPSPSPTSPKNEHCIPPCMP
TLPTPLCLWKKL*STK*NKVQVFY*FNSFTGFEQLFFLHPPRTWNTPPSPPAQP*TSECHW*WTCFWSPRSTQFQSEPVSGRSGR*
NPPGTPASAPHSSTAEDCPRWSGSRLSGRSRRAAVGIIVRERDRPVVSHQAPQQSLPPPLRQAAAQGVRVQGLPQHDAHGPQHQ
SSGAAGAAAHADLAQVAAVRATQDHQVVQQSIVQHAPAETHRGKDATHVAVVPDPQVNQVALPPEHAAHVHDLLGHVAVHHL
PVPHHPLVEHAAPDDPAEPQGQHRPARHAAKRPRVPAMAMEDPPLVPVDHLGAEQVYVGTAQAYAHASLQHSQLLGGQNHIP
GHGELLQDSEPRRTGQSSHITYIVHGQGIAIRQHRVILHQRSAGLGLLTAW*GGRPIRVMAGRG*SCSRPCHDAVAFGHFRTCCSRT
WSGRCTPIAGGGPGAWNARC*NCKTATLSDRAADLGPQE**RSHHA**L*SHRPPWNGPDPAR*CNFVGFR*RRGREEQEEP*L
TFNPNGLGALQNEGRGDGTSRPRCVGGK*QPGQR*YGSRDVPRWLPAKPPRAHPETRQ*RKREGSLIPQSSCYTPAPSPDNFHFS
SLE*FELVPEVNPSQP**RARAERPPPAFLSTPS*FQDILLLVHLQQIDKRNIKISAAIPKLLPQQ*L*VLFHILSEIFSHRTTRNKIRASHS
TDKPKSSPVSIAKCKTAISMLARPGDIFQITGQKITQAIFKKINKRKILQVHV*SLGNNDEVNASGAFQHG*LADL*KTKNKTLNHASL
ANRWVNRSLQHQAGHGVSGATLVKIVAMIENHHRETFPVAGVNDSTR*IHPRNIGVRE*KKAPEEAIRHYNAQSQVQQSDAMR
MKHKILRCVQNVITPLLHRQRSPRSLQIHIQSLSVHSLPSSSTQQAQESEKG*ALTCPPALCSIYSPDLH*RKGQSLKIPAK*SHTPSTRP
ETGDTLKKIRALPQTPKLPSFPGSHATSSEFDFQIPSTVKNVTRPAPNGRPSLGQSPSSLPKFKQLICILTRTKSLRYIIDD

Fig. 23A

AdC7 010-HIVgag(E1048) Nucleic Acids – SEQ ID NO: 4

CATCATCAATAATATACCTCAAACTTTTGGTGCGCGTTAATATGCAAATGAGCTGTTTGAATTTGGGGAGGGAGGAAGGTGAT
TGGCCGAGAGACGGGCGACCGTTAGGGGCGGGGCGGGTGACGTTTTGATGACGTGGCCGTGAGGCGGAGCCGGTTTGCAA
GTTCTCGTGGGAAAAGTGACGTCAAACGAGGTGTGGTTTGAACACGGAAATACTCAATTTTCCCGCGCTCTCTGACAGGAAAT
GAGGTGTTTCTGGGCGGATGCAAGTGAAAACGGGCCATTTTCGCGCGAAAACTGAATGAGGAAGTGAAAATCTGAGTAATTT
CGCGTTTATGGCAGGGAGGAGTATTTGCCGAGGGCCGAGTAGACTTTGACCGATTACGTGGGGGTTTCGATTACCGTATTTTT
CACCTAAATTTCCGCGTACGGTGTCAAAGTCCGGTGTTTTTACGTACGATATCATTTCCCCGAAAGTGCCACCTGACCGTAACTA
TAACGGTCCTAAGGTAGCGAAAGCTCAGATCTCCCGATCCCCTATGGTGCACTCTCAGTACAATCTGCTCTGATGCCGCATAGT
TAAGCCAGTATCTGCTCCCTGCTTGTGTGTTGGAGGTCGCTGAGTAGTGCGCGAGCAAAATTTAAGCTACAACAAGGCAAGGC
TTGACCGACAATTGCATGAAGAATCTGCTTAGGGTTAGGCGTTTTGCGCTGCTTCGCGATGTACGGGCCAGATATACGCGTTG
ACATTGATTATTGACTAGTTATTAATAGTAATCAATTACGGGGTCATTAGTTCATAGCCCATATATGGAGTTCCGCGTTACATAA
CTTACGGTAAATGGCCCGCCTGGCTGACCGCCCAACGACCCCCGCCCATTGACGTCAATAATGACGTATGTTCCCATAGTAACG
CCAATAGGGACTTTCCATTGACGTCAATGGGTGGAGTATTTACGGTAAACTGCCCACTTGGCAGTACATCAAGTGTATCATATG
CCAAGTACGCCCCCTATTGACGTCAATGACGGTAAATGGCCCGCCTGGCATTATGCCCAGTACATGACCTTATGGGACTTTCCT
ACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCATGGTGATGCGGTTTTGGCAGTACATCAATGGGCGTGGATAGCG
GTTTGACTCACGGGGATTTCCAAGTCTCCACCCCATTGACGTCAATGGGAGTTTGTTTTGGCACCAAAATCAACGGGACTTTCC
AAAATGTCGTAACAACTCCGCCCCATTGACGCAAATGGGCGGTAGGCGTGTACGGTGGGAGGTCTATATAAGCAGAGCTCGT
TTAGTGAACCGTCAGATCACTAGAAGCTTTATTGCGGTAGTTTATCACAGTTAAATTGCTAACGCAGTCAGTGCTTCTGACACA
ACAGTCTCGAACTTAAGCTGCAGAAGTTGGTCGTGAGGCACTGGGCAGGTAAGTATCAAGGTTACAAGACAGGTTTAAGGAG
ACCAATAGAAACTGGGCTTGTCGAGACAGAGAAGACTCTTGCGTTTCTGATAGGCACCTATTGGTCTTACTGACATCCACTTTG
CCTTTCTCTCCACAGGTGTCCACTCCCAGTTCAATTACAGCTCTTAAGGCTAGAGTACTTAATACGACTCACTATAGGCTAGCGC
CACCATGGGCGCCAGAGCCAGCGTGCTGAGCGGGGGAGAGCTGGATCGCTGGGAAAAGATTAGACTGAGGCCCGGAGGGA
AGAAAAAGTACAAGCTGAAACACATCGTGTGGGCCAGCAGGGAGCTGGAGCGCTTCGCCGTGAACCCCGGACTGCTGGAGA
CCTCCGAAGGCTGTCGGCAGATCCTGGGGCAGCTGCAGCCTTCCCTGCAGACAGGCTCCGAGGAGCTGCGGTCTCTGTATAAT
ACAGTGGCCACACTGTACTGTGTGCACCAGCGGATTGAGGTGAAGGATACAAAAGAGGCCCTGGAGAAGATTGAGGAGGAG
CAGAACAAGAGCAAGAAGAAAGCCCAGCAGGCCGCCGCCGACACCGGCAATAGCTCCCAGGTGAGCCAGAACTATCCAATTG
TGCAGAATCTGCAGGGCCAGATGGTGCACCAGGCCATTTCCCCACGGACACTGAACGCCTGGGTGAAGGTGGTGGAGGAGA
AGGCCTTCAGCCCCGAAGTGATCCCTATGTTTTCCGCCCTGTCCGAAGGCGCCACCCCTCAGGACCTGAACACCATGCTGAACA
CAGTGGGGGGACACCAGGCCGCCATGCAGATGCTGAAGGAAACCATCAACGAGGAGGCCGCCGAGTGGGATCGGCTGCACC
CCGTGCACGCCGGGCCAATCGCCCCTGGCCAGATGAGGGAGCCCAGAGGCTCTGACATCGCCGGCACCACATCTACCCTGCA
GGAACAGATCGGGTGGATGACCAATAACCCACCAATCCCAGTGGGCGAGATCTACAAGAGGTGGATTATTCTGGGACTGAAC
AAAATTGTGCGCATGTATTCCCCTACATCCATCCTGGACATCAGGCAGGGCCCTAAGGAACCTTTCCGCGACTACGTGGATCGG
TTCTACAAAACCCTGCGCGCCGAGCAGGCCAGCCAGGAAGTGAAGAATTGGATGACAGAGACCCTGCTGGTGCAGAACGCCA
ATCCTGACTGTAAAACCATCCTGAAGGCCCTGGGCCCTGCCGCCACACTGGAGGAAATGATGACCGCCTGCCAGGGCGTGGG
CGGCCCTGGCCACAAAGCCAGGGTGCTGGCCGAGGCCATGTCTCAGGTGACCAACTCTGCCACAATTATGATGCAGCGGGGG
AACTTTCGGAACCAGAGGAAGACCGTGAAGTGCTTCAACTGTGGCAAGGAGGGACACATCGCCAAGAATTGCCGCGCCCCAC
GGAAGAAGGGGTGTTGGAAATGCGGGAAGGAGGGCCACCAGATGAAAGACTGCACAGAGCGGCAGGCCAACTTTCTGGGC
AAGATTTGGCCCAGCCACAAGGGCCGCCCCGGAAACTTTCTGCAGTCCAGGCCTGAGCCTACCGCCCCCCCTGAGGAATCCTT
CCGGTTCGGCGAGGAGACAACCACCCCAAGCCAGAAGCAGGAACCCATCGACAAAGAGCTGTACCCCCTGGCCAGCCTGAGA
TCCCTGTTCGGGAATGACCCCAGCTCTCAGTGATGATCTAGCGTTTAAACGGGCCCTCTAGAGTCGACCCGGGCGGCCAAACC
GCTGATCAGCCTCGACTGTGCCTTCTAGTTGCCAGCCATCTGTTGTTTGCCCCTCCCCCGTGCCTTCCTTGACCCTGGAAGGTGC
CACTCCCACTGTCCTTTCCTAATAAAATGAGGAAATTGCATCGCATTGTCTGAGTAGGTGTCATTCTATTCTGGGGGGTGGGGT
GGGGCAGGACAGCAAGGGGGAGGATTGGGAAGACAATAGCAGGCATGCTGGGGATGCGGTGGGCTCTATGGCTTCTGAGG
CGGAAAGAACCAGCAGATCTGCAGATCTGAATTCATCTATGTCGGGTGCGGAGAAAGAGGTAATGAAATGGCATTATGGGTA
TTATGGGTCTGCATTAATGAATCGGCCAGATATGCTGGCCACCGTGCATGTGACCTCGCACCCCCGCAAGACATGGCCCGAGT
TCGAGCACAACGTCATGACCCGATGCAATGTGCACCTGGGGTCCCGCCGAGGCATGTTCATGCCCTACCAGTGCAACATGCAA
TTTGTGAAGGTGCTGCTGGAGCCCGATGCCATGTCCAGAGTGAGCCTGACGGGGGTGTTTGACATGAATGTGGAGCTGTGGA
AAATTCTGAGATATGATGAATCCAAGACCAGGTGCCGGGCCTGCGAATGCGGAGGCAAGCACGCCAGGCTTCAGCCCGTGTG
TGTGGAGGTGACGGAGGACCTGCGACCCGATCATTTGGTGTTGTCCTGCAACGGGACGGAGTTCGGCTCCAGCGGGGAAGA
ATCTGACTAGAGTGAGTAGTGTTTGGGGGAGGTGGAGGGCTTGTATGAGGGGCAGAATGACTAAAATCTGTGTTTTTCTGTG

Fig. 23B

TGTTGCAGCAGCATGAGCGGAAGCGCCTCCTTTGAGGGAGGGGTATTCAGCCCTTATCTGACGGGGCGTCTCCCCTCCTGGGC
GGGAGTGCGTCAGAATGTGATGGGATCCACGGTGGACGGCCGGCCCGTGCAGCCCGCGAACTCTTCAACCCTGACCTACGCG
ACCCTGAGCTCCTCGTCCGTGGACGCAGCTGCCGCCGCAGCTGCTGCTTCCGCCGCCAGCGCCGTGCGCGGAATGGCCCTGGG
CGCCGGCTACTACAGCTCTCTGGTGGCCAACTCGACTTCCACCAATAATCCCGCCAGCCTGAACGAGGAGAAGCTGCTGCTGC
TGATGGCCCAGCTCGAGGCCCTGACCCAGCGCCTGGGCGAGCTGACCCAGCAGGTGGCTCAGCTGCAGGCGGAGACGCGGG
CCGCGGTTGCCACGGTGAAAACCAAATAAAAAATGAATCAATAAATAAACGGAGACGGTTGTTGATTTTAACACAGAGTCTTG
AATCTTTATTTGATTTTTCGCGCGCGGTAGGCCCTGGACCACCGGTCTCGATCATTGAGCACCCGGTGGATTTTTTCCAGGACC
CGGTAGAGGTGGGCTTGGATGTTGAGGTACATGGGCATGAGCCCGTCCCGGGGGTGGAGGTAGCTCCATTGCAGGGCCTCG
TGCTCGGGGGTGGTGTTGTAAATCACCCAGTCATAGCAGGGGCGCAGGGCGTGGTGCTGCACGATGTCCTTGAGGAGGAGA
CTGATGGCCACGGGCAGCCCCTTGGTGTAGGTGTTGACGAACCTGTTGAGCTGGGAGGGATGCATGCGGGGGGAGATGAGA
TGCATCTTGGCCTGGATCTTGAGATTGGCGATGTTCCCGCCCAGATCCCGCCGGGGGTTCATGTTGTGCAGGACCACCAGCAC
GGTGTATCCGGCGCACTTGGGGAATTTGTCATGCAACTTGGAAGGGAAGGCGTGAAAGAATTTGGAGACGCCCTTGTGACCG
CCCAGGTTTTCCATGCACTCATCCATGATGATGGCGATGGGCCCGTGGGCGGCGGCCTGGGCAAAGACGTTTCGGGGGTCGG
ACACATCGTAGTTGTGGTCCTGGGTGAGCTCGTCATAGGCCATTTTAATGAATTTGGGGCGGAGGGTGCCCGACTGGGGGAC
GAAGGTGCCCTCGATCCCGGGGGCGTAGTTGCCCTCGCAGATCTGCATCTCCCAGGCCTTGAGCTCGGAGGGGGGGATCATG
TCCACCTGCGGGGCGATGAAAAAAACGGTTTCCGGGGCGGGGGAGATGAGCTGGGCCGAAAGCAGGTTCCGGAGCAGCTG
GGACTTGCCGCAGCCGGTGGGGCCGTAGATGACCCCGATGACCGGCTGCAGGTGGTAGTTGAGGGAGAGACAGCTGCCGTC
CTCGCGGAGGAGGGGGGCCACCTCGTTCATCATCTCGCGCACATGCATGTTCTCGCGCACGAGTTCCGCCAGGAGGCGCTCGC
CCCCCAGCGAGAGGAGCTCTTGCAGCGAGGCGAAGTTTTTCAGCGGCTTGAGCCCGTCGGCCATGGGCATTTTGGAGAGGGT
CTGTTGCAAGAGTTCCAGACGGTCCCAGAGCTCGGTGATGTGCTCTAGGGCATCTCGATCCAGCAGACCTCCTCGTTTCGCGG
GTTGGGGCGACTGCGGGAGTAGGGCACCAGGCGATGGGCGTCCAGCGAGGCCAGGGTCCGGTCCTTCCAGGGTCGCAGGGT
CCGCGTCAGCGTGGTCTCCGTCACGGTGAAGGGGTGCGCGCCGGGCTGGGCGCTTGCGAGGGTGCGCTTCAGGCTCATCCGG
CTGGTCGAGAACCGCTCCCGGTCGGCGCCCTGCGCGTCGGCCAGGTAGCAATTGAGCATGAGTTCGTAGTTGAGCGCCTCGG
CCGCGTGGCCCTTGGCGCGGAGCTTACCTTTGGAAGTGTGTCCGCAGACGGGACAGAGGAGGGACTTGAGGGCGTAGAGCT
TGGGGGCGAGGAAGACGGACTCGGGGGCGTAGGCGTCCGCGCCGCAGCTGGCGCAGACGGTCTCGCACTCCACGAGCCAG
GTGAGGTCGGGCCGGTTGGGGTCAAAAACGAGGTTTCCTCCGTGCTTTTTGATGCGTTTCTTACCTCTGGTCTCCATGAGCTCG
TGTCCCCGCTGGGTGACAAAGAGGCTGTCCGTGTCCCCGTAGACCGACTTTATGGGCCGGTCCTCGAGCGGGGTGCCGCGGT
CCTCGTCGTAGAGGAACCCCGCCCACTCCGAGACGAAGGCCCGGGTCCAGGCCAGCACGAAGGAGGCCACGTGGGAGGGGT
AGCGGTCGTTGTCCACCAGCGGGTCCACCTTCTCCAGGGTATGCAAGCACATGTCCCCCTCGTCCACATCCAGGAAGGTGATT
GGCTTGTAAGTGTAGGCCACGTGACCGGGGGTCCCGGCCGGGGGGGTATAAAAGGGGGCGGGCCCCTGCTCGTCCTCACTG
TCTTCCGGATCGCTGTCCAGGAGCGCCAGCTGTTGGGGTAGGTATTCCCTCTCGAAGGCTGGCATAACCTCGGCACTCAGGTT
GTCAGTTTCTAGAAACGAGGAGGATTTGATATTGACGGTGCCGTTGGAGACGCCTTTCATGAGCCCCTCGTCCATCTGGTCAG
AAAAGACGATCTTTTTGTTGTCGAGCTTGGTGGCGAAGGAGCCGTAGAGGGCGTTGGAGAGGAGCTTGGCGATGGAGCGCA
TGGTCTGGTTCTTTTCCTTGTCGGCGCGCTCCTTGGCGGCGATGTTGAGCTGCACGTACTCGCGCGCCACGCACTTCCATTCGG
GGAAGACGGTGGTGAGCTCGTCGGGCACGATTCTGACCCGCCAGCCGCGGTTGTGCAGGGTGATGAGGTCCACGCTGGTGG
CCACCTCGCCGCGCAGGGGCTCGTTGGTCCAGCAGAGGCGCCCGCCCTTGCGCGAGCAGAAGGGGGGCAGCGGGTCCAGCA
TGAGCTCGTCGGGGGGGTCGGCGTCCACGGTGAAGATGCCGGGCAGAAGCTCGGGGTCGAAGTAGCTGATGCAGGTGTCCA
GATCGTCCAGCGCCGCTTGCCAGTCGCGCACGGCCAGCGCGCGCTCGTAGGGGCTGAGGGGCGTGCCCCAGGGCATGGGGT
GCGTGAGCGCGGAGGCGTACATGCCGCAGATGTCGTAGACGTAGAGGGGCTCCTCGAGGACGCCGATGTAGGTGGGGTAGC
AGCGCCCCCCGCGGATGCTGGCGCGCACGTAGTCGTACAGCTCGTGCGAGGGCGCGAGGAGCCCCGTGCCGAGGTTGGAGC
GTTGCGGCTTTTCGGCGCGGTAGACGATCTGGCGGAAGATGGCGTGGGAGTTGGAGGAGATGGTGGGCCTCTGGAAGATGT
TGAAGTGGGCGTGGGGCAGGCCGACCGAGTCCCTGATGAAGTGGGCGTAGGAGTCCTGCAGCTTGGCGACGAGCTCGGCGG
TGACGAGGACGTCCAGGGCGCAGTAGTCGAGGGTCTCTTGGATGATGTCGTACTTGAGCTGGCCCTTCTGCTTCCACAGCTCG
CGGTTGAGAAGGAACTCTTCGCGGTCCTTCCAGTACTCTTCGAGGGGGAACCCGTCCTGATCGGCACGGTAAGAGCCCACCAT
GTAGAACTGGTTGACGGCCTTGTAGGCGCAGCAGCCCTTCTCCACGGGGAGGGCGTAAGCTTGTGCGGCCTTGCGCAGGGAG
GTGTGGGTGAGGGCGAAGGTGTCGCGCACCATGACCTTGAGGAACTGGTGCTTGAAGTCGAGGTCGTCGCAGCCGCCCTGCT
CCCAGAGCTGGAAGTCCGTGCGCTTCTTGTAGGCGGGGTTGGGCAAAGCGAAAGTAACATCGTTGAAGAGGATCTTGCCCGC
GCGGGGCATGAAGTTGCGAGTGATGCGGAAAGGCTGGGGCACCTCGGCCCGGTTGTTGATGACCTGGGCGGCGAGGACGAT
CTCGTCGAAGCCGTTGATGTTGTGCCCGACGATGTAGAGTTCCACGAATCGCGGGCGGCCCTTAACGTGGGGCAGCTTCTTGA
GCTCGTCGTAGGTGAGCTCGGCGGGGTCGCTGAGCCCGTGCTGCTCGAGGGCCCAGTCGGCGACGTGGGGGTTGGCGCTGA
GGAAGGAAGTCCAGAGATCCACGGCCAGGGCGGTCTGCAAGCGGTCCCGGTACTGACGGAACTGCTGGCCCACGGCCATTTT

Fig. 23C

TTCGGGGGTGACGCAGTAGAAGGTGCGGGGGTCGCCGTGCCAGCGGTCCCACTTGAGCTGGAGGGCGAGGTCGTGGGCGA
GCTCGACGAGCGGCGGGTCCCCGGAGAGTTTCATGACCAGCATGAAGGGGACGAGCTGCTTGCCGAAGGACCCCATCCAGGT
GTAGGTTTCCACATCGTAGGTGAGGAAGAGCCTTTCGGTGCGAGGATGCGAGCCGATGGGGAAGAACTGGATCTCCTGCCAC
CAGTTGGAGGAATGGCTGTTGATGTGATGGAAGTAGAAATGCCGACGGCGCGCCGAGCACTCGTGCTTGTGTTTATACAAGC
GTCCGCAGTGCTCGCAACGCTGCACGGGATGCACGTGCTGCACGAGCTGTACCTGGGTTCCTTTGACGAGGAATTTCAGTGGG
CAGTGGAGCGCTGGCGGCTGCATCTGGTGCTGTACTACGTCCTGGCCATCGGCGTGGCCATCGTCTGCCTCGATGGTGGTCAT
GCTGACGAGCCCGCGCGGGAGGCAGGTCCAGACTTCGGCTCGGACGGGTCGGAGAGCGAGGACGAGGGCGCGCAGGCCGG
AGCTGTCCAGGGTCCTGAGACGCTGCGGAGTCAGGTCAGTGGGCAGCGGCGGCGCGCGGTTGACTTGCAGGAGCTTTTCCAG
GGCGCGCGGGAGGTCCAGATGGTACTTGATCTCCACGGCGCCGTTGGTGGCGACGTCCACGGCTTGCAGGGTCCCGTGCCCC
TGGGGCGCCACCACCGTGCCCCGTTTCTTCTTGGGCGCTGCTTCCATGCCGGTCAGAAGCGGCGGCGAGGACGCGCGCCGGG
CGGCAGGGGCGGCTCGGGACCCGGAGGCAGGGGCGGCAGGGGCACGTCGGCGCCGCGCGCGGGCAGGTTCTGGTACTGCG
CCCGGAGAAGACTGGCGTGAGCGACGACGCGACGGTTGACGTCCTGGATCTGACGCCTCTGGGTGAAGGCCACGGGACCCG
TGAGTTTGAACCTGAAAGAGAGTTCGACAGAATCAATCTCGGTATCGTTGACGGCGGCCTGCCGCAGGATCTCTTGCACGTCG
CCCGAGTTGTCCTGGTAGGCGATCTCGGTCATGAACTGCTCGATCTCCTCCTCCTGAAGGTCTCCGCGGCCGGCGCGCTCGAC
GGTGGCCGCGAGGTCGTTGGAGATGCGGCCCATGAGCTGCGAGAAGGCGTTCATGCCGGCCTCGTTCCAGACGCGGCTGTA
GACCACGGCTCCGTCGGGGTCGCGCGCGCGCATGACCACCTGGGCGAGGTTGAGCTCGACGTGGCGCGTGAAGACCGCGTA
GTTGCAGAGGCGCTGGTAGAGGTAGTTGAGCGTGGTGGCGATGTGCTCGGTGACGAAGAAGTACATGATCCAGCGGCGGAG
CGGCATCTCGCTGACGTCGCCCAGGGCTTCCAAGCGCTCCATGGCCTCGTAGAAGTCCACGGCGAAGTTGAAAAACTGGGAG
TTGCGCGCCGAGACGGTCAACTCCTCCTCCAGAAGACGGATGAGCTCAGCGATGGTGGCGCGCACCTCGCGCTCGAAGGCCC
CGGGGGGCTCCTCTTCTTCCATCTCTTCCTCCTCCACTAACATCTCTTCTACTTCCTCCTCAGGAGGCGGCGGCGGGGGAGGGG
CCCTGCGTCGCCGGCGGCGCACGGGCAGACGGTCGATGAAGCGCTCGATGGTCTCCCCGCGCCGGCGACGCATGGTCTCGGT
GACGGCGCGCCCGTCCTCGCGGGGCCGCAGCGTGAAGACGCCGCCGCGCATCTCCAGGTGGCCGCCGGGGGGGTCTCCGTT
GGGCAGGGAGAGGGCGCTGACGATGCATCTTATCAATTGGCCCGTAGGGACTCCGCGCAAGGACCTGAGCGTCTCGAGATCC
ACGGGATCCGAAAACCGCTGAACGAAGGCTTCGAGCCAGTCGCAGTCGCAAGGTAGGCTGAGCCCGGTTTCTTGTTCTTCGG
GGATTTCGGGAGGCGGGCGGGCGATGCTGCTGGTGATGAAGTTGAAGTAGGCGGTCCTGAGACGGCGGATGGTGGCGAGG
AGCACCAGGTCCTTGGGCCCGGCTTGCTGGATGCGCAGACGGTCGGCCATGCCCCAGGCGTGGTCCTGACACCTGGCGAGGT
CCTTGTAGTAGTCCTGCATGAGCCGCTCCACGGGCACCTCCTCCTCGCCCGCGCGGCCGTGCATGCGCGTGAGCCCGAACCCG
CGCTGGGGCTGGACGAGCGCCAGGTCGGCGACGACGCGCTCGGCGAGGATGGCCTGCTGTATCTGGGTGAGGGTGGTCTGG
AAGTCGTCGAAGTCGACGAAGCGGTGGTAGGCTCCGGTGTTGATGGTATAGGAGCAGTTGGCCATGACGGACCAGTTGACG
GTCTGGTGGCCGGGTCGCACGAGCTCGTGGTACTTGAGGCGCGAGTAGGCGCGCGTGTCGAAGATGTAGTCGTTGCAGGTG
CGCACGAGGTACTGGTATCCGACGAGGAAGTGCGGCGGCGGCTGGCGGTAGAGCGGCCATCGCTCGGTGGCGGGGGCGCC
GGGCGCGAGGTCCTCGAGCATGAGGCGGTGGTAGCCGTAGATGTACCTGGACATCCAGGTGATGCCGGCGGCGGTGGTGGA
GGCGCGCGGGAACTCGCGGACGCGGTTCCAGATGTTGCGCAGCGGCAGGAAGTAGTTCATGGTGGCCGCGGTCTGGCCCGT
GAGGCGCGCGCAGTCGTGGATGCTCTAGACATACGGGCAAAAACGAAAGCGGTCAGCGGCTCGACTCCGTGGCCTGGAGGC
TAAGCGAACGGGTTGGGCTGCGCGTGTACCCCGGTTCGAATCTCGAATCAGGCTGGAGCCGCAGCTAACGTGGTACTGGCAC
TCCCGTCTCGACCCAAGCCTGCTAACGAAACCTCCAGGATACGGAGGCGGGTCGTTTTTTGGCCTTGGTCGCTGGTCATGAAA
AACTAGTAAGCGCGGAAAGCGACCGCCCGCGATGGCTCGCTGCCGTAGTCTGGAGAAAGAATCGCCAGGGTTGCGTTGCGGT
GTGCCCCGGTTCGAGCCTCAGCGCTCGGCGCCGGCCGGATTCCGCGGCTAACGTGGGCGTGGCTGCCCCGTCGTTTCCAAGAC
CCCTTAGCCAGCCGACTTCTCCAGTTACGGAGCGAGCCCCTCTTTTTCTTGTGTTTTTGCCAGATGCATCCCGTACTGCGGCAGA
TGCGCCCCCACCCTCCACCTCAACCGCCCCTACCGCCGCAGCAGCAGCAACAGCCGGCGCTTCTGCCCCCGCCCCAGCAGCAGC
CAGCCACTACCGCGGCGGCCGCCGTGAGCGGAGCCGGCGTTCAGTATGACCTGGCCTTGGAAGAGGGCGAGGGGCTGGCGC
GGCTGGGGGCGTCGTCGCCGGAGCGGCACCCGCGCGTGCAGATGAAAAGGGACGCTCGCGAGGCCTACGTGCCCAAGCAGA
ACCTGTTCAGAGACAGGAGCGGCGAGGAGCCCGAGGAGATGCGCGCCTCCCGCTTCCACGCGGGGCGGGAGCTGCGGCGCG
GCCTGGACCGAAAGCGGGTGCTGAGGGACGAGGATTTCGAGGCGGACGAGCTGACGGGGATCAGCCCCGCGCGCGCGCAC
GTGGCCGCGGCCAACCTGGTCACGGCGTACGAGCAGACCGTGAAGGAGGAGAGCAACTTCCAAAAATCCTTCAACAACCACG
TGCGCACGCTGATCGCGCGCGAGGAGGTGACCCTGGGCCTGATGCACCTGTGGGACCTGCTGGAGGCCATCGTGCAGAACCC
CACGAGCAAGCCGCTGACGGCGCAGCTGTTTCTGGTGGTGCAGCACAGTCGGGACAACGAGACGTTCAGGGAGGCGCTGCT
GAATATCACCGAGCCCGAGGGCCGCTGGCTCCTGGACCTGGTGAACATTCTGCAGAGCATCGTGGTGCAGGAGCGCGGGCTG
CCGCTGTCCGAGAAGCTGGCGGCTATCAACTTCTCGGTGCTGAGCCTGGGCAAGTACTACGCTAGGAAGATCTACAAGACCCC
GTACGTGCCCATAGACAAGGAGGTGAAGATCGACGGGTTTTACATGCGCATGACCCTGAAAGTGCTGACCCTGAGCGACGAT
CTGGGGGTGTACCGCAACGACAGGATGCACCGCGCGGTGAGCGCCAGCCGCCGGCGCGAGCTGAGCGACCAGGAGCTGATG

Fig. 23D

CACAGCCTGCAGCGGGCCCTGACCGGGGCCGGGACCGAGGGGGAGAGCTACTTTGACATGGGCGCGGACCTGCGCTGGCAG
CCCAGCCGCCGGGCCTTGGAAGCTGCCGGCGGTTCCCCCTACGTGGAGGAGGTGGACGATGAGGAGGAGGAGGGCGAGTAC
CTGGAAGACTGATGGCGCGACCGTATTTTTGCTAGATGCAGCAACAGCCACCGCCTCCTGATCCCGCGATGCGGGCGGCGCTG
CAGAGCCAGCCGTCCGGCATTAACTCCTCGGACGATTGGACCCAGGCCATGCAACGCATCATGGCGCTGACGACCCGCAATCC
CGAAGCCTTTAGACAGCAGCCTCAGGCCAACCGGCTCTCGGCCATCCTGGAGGCCGTGGTGCCCTCGCGCTCGAACCCCACGC
ACGAGAAGGTGCTGGCCATCGTGAACGCGCTGGTGGAGAACAAGGCCATCCGCGGCGACGAGGCCGGGCTGGTGTACAACG
CGCTGCTGGAGCGCGTGGCCCGCTACAACAGCACCAACGTGCAGACGAACCTGGACCGCATGGTGACCGACGTGCGCGAGG
CGGTGTCGCAGCGCGAGCGGTTCCACCGCGAGTCGAACCTGGGCTCCATGGTGGCGCTGAACGCCTTCCTGAGCACGCAGCC
CGCCAACGTGCCCCGGGGCCAGGAGGACTACACCAACTTCATCAGCGCGCTGCGGCTGATGGTGGCCGAGGTGCCCCAGAGC
GAGGTGTACCAGTCGGGGCCGGACTACTTCTTCCAGACCAGTCGCCAGGGCTTGCAGACCGTGAACCTGAGCCAGGCTTTCAA
GAACTTGCAGGGACTGTGGGGCGTGCAGGCCCCGGTCGGGGACCGCGCGACGGTGTCGAGCCTGCTGACGCCGAACTCGCG
CCTGCTGCTGCTGCTGGTGGCGCCCTTCACGGACAGCGGCAGCGTGAGCCGCGACTCGTACCTGGGCTACCTGCTTAACCTGT
ACCGCGAGGCCATCGGGCAGGCGCACGTGGACGAGCAGACCTACCAGGAGATCACCCACGTGAGCCGCGCGCTGGGCCAGG
AGGACCCGGGCAACCTGGAGGCCACCCTGAACTTCCTGCTGACCAACCGGTCGCAGAAGATCCCGCCCCAGTACGCGCTGAG
CACCGAGGAGGAGCGCATCCTGCGCTACGTGCAGCAGAGCGTGGGGCTGTTCCTGATGCAGGAGGGGGCCACGCCCAGCGC
CGCGCTCGACATGACCGCGCGCAACATGGAGCCCAGCATGTACGCTCGCAACCGCCCGTTCATCAATAAGCTGATGGACTACT
TGCATCGGGCGGCCGCCATGAACTCGGACTACTTTACCAACGCCATCTTGAACCCGCACTGGCTCCCGCCGCCCGGGTTCTACA
CGGGCGAGTACGACATGCCCGACCCCAACGACGGGTTCCTGTGGGACGACGTGGACAGCAGCGTGTTCTCGCCGCGCCCCGC
CACCACCGTGTGGAAGAAAGAGGGCGGGGACCGGCGGCCGTCCTCGGCGCTGTCCGGTCGCGCGGGTGCTGCCGCGGCGGT
GCCTGAGGCCGCCAGCCCCTTCCCGAGCCTGCCCTTTTCGCTGAACAGCGTGCGCAGCAGCGAGCTGGGTCGGCTGACGCGG
CCGCGCCTGCTGGGCGAGGAGGAGTACCTGAACGACTCCTTGTTGAGGCCCGAGCGCGAGAAGAACTTCCCCAATAACGGGA
TAGAGAGCCTGGTGGACAAGATGAGCCGCTGGAAGACGTACGCGCACGAGCACAGGGACGAGCCCCGAGCTAGCAGCAGCG
CAGGCACCCGTAGACGCCAGCGACACGACAGGCAGCGGGGTCTGGTGTGGGACGATGAGGATTCCGCCGACGACAGCAGCG
TGTTGGACTTGGGTGGGAGTGGTGGTGGTAACCCGTTCGCTCACTTGCGCCCCCGTATCGGGCGCCTGATGTAAGAATCTGAA
AAAATAAAAAACGGTACTCACCAAGGCCATGGCGACCAGCGTGCGTTCTTCTCTGTTGTTTGTAGTAGTATGATGAGGCGCGT
GTACCCGGAGGGTCCTCCTCCCTCGTACGAGAGCGTGATGCAGCAGGCGGTGGCGGCGGCGATGCAGCCCCCGCTGGAGGC
GCCTTACGTGCCCCCGCGGTACCTGGCGCCTACGGAGGGGCGGAACAGCATTCGTTACTCGGAGCTGGCACCCTTGTACGATA
CCACCCGGTTGTACCTGGTGGACAACAAGTCGGCGGACATCGCCTCGCTGAACTACCAGAACGACCACAGCAACTTCCTGACC
ACCGTGGTGCAGAACAACGATTTCACCCCCACGGAGGCCAGCACCCAGACCATCAACTTTGACGAGCGCTCGCGGTGGGGCG
GCCAGCTGAAAACCATCATGCACACCAACATGCCCAACGTGAACGAGTTCATGTACAGCAACAAGTTCAAGGCGCGGGTGAT
GGTCTCGCGCAAGACCCCCAATGGGGTCGCGGTGGATGAGAATTATGATGGTAGTCAGGACGAGCTGACTTACGAGTGGGTG
GAGTTTGAGCTGCCCGAGGGCAACTTCTCGGTGACCATGACCATCGATCTGATGAACAACGCCATCATCGACAACTACTTGGC
GGTGGGGCGTCAGAACGGGGTGCTGGAGAGCGACATCGGCGTGAAGTTCGACACGCGCAACTTCCGGCTGGGCTGGGACCC
CGTGACCGAGCTGGTGATGCCGGGCGTGTACACCAACGAGGCCTTCCACCCCGACATCGTCCTGCTGCCCGGCTGCGGCGTG
GACTTCACCGAGAGCCGCCTCAGCAACCTGCTGGGCATCCGCAAGCGGCAGCCCTTCCAGGAGGGCTTCCAGATCCTGTACGA
GGACCTGGAGGGGGGCAACATCCCCGCGCTCTTGGATGTCGAAGCCTATGAGAAAAGCAAGGAGGAGGCCGCCGCAGCGGC
GACCGCAGCCGTGGCCACCGCCTCTACCGAGGTGCGGGGCGATAATTTTGCTAGCGCCGCGGCAGTGGCCGAGGCGGCTGAA
ACCGAAAGTAAGATAGTCATCCAGCCGGTGGAGAAGGACAGCAAGGACAGGAGCTACAACGTGCTCGCGGACAAGAAAAAC
ACCGCCTACCGCAGCTGGTACCTGGCCTACAACTACGGCGACCCCGAGAAGGGCGTGCGCTCCTGGACGCTGCTCACCACCTC
GGACGTCACCTGCGGCGTGGAGCAAGTCTACTGGTCGCTGCCCGACATGATGCAAGACCCGGTCACCTTCCGCTCCACGCGTC
AAGTTAGCAACTACCCGGTGGTGGGCGCCGAGCTCCTGCCCGTCTACTCCAAGAGCTTCTTCAACGAGCAGGCCGTCTACTCG
CAGCAGCTGCGCGCCTTCACCTCGCTCACGCACGTCTTCAACCGCTTCCCCGAGAACCAGATCCTCGTCCGCCCGCCCGCGCCC
ACCATTACCACCGTCAGTGAAAACGTTCCTGCTCTCACAGATCACGGGACCCTGCCGCTGCGCAGCAGTATCCGGGGAGTCCA
GCGCGTGACCGTCACTGACGCCAGACGCCGCACCTGCCCCTACGTCTACAAGGCCCTGGGCGTAGTCGCGCCGCGCGTCCTCT
CGAGCCGCACCTTCTAAAAAATGTCCATTCTCATCTCGCCCAGTAATAACACCGGTTGGGGCCTGCGCGCGCCCAGCAAGATGT
ACGGAGGCGCTCGCCAACGCTCCACGCAACACCCCGTGCGCGTGCGCGGGCACTTCCGCGCTCCCTGGGGCGCCCTCAAGGG
CCGCGTGCGCTCGCGCACCACCGTCGACGACGTGATCGACCAGGTGGTGGCCGACGCGCGCAACTACACGCCCGCCGCCGCG
CCCGCCTCCACCGTGGACGCCGTCATCGACAGCGTGGTGGCCGATGCGCGCCGGTACGCCCGCGCCAAGAGCCGGCGGCGGC
GCATCGCCCGGCGGCACCGGAGCACCCCCGCCATGCGCGCGGCGCGAGCCTTGCTGCGCAGGGCCAGGCGCACGGGACGCA
GGGCCATGCTCAGGGCGGCCAGACGCGCGGCCTCCGGCAGCAGCAGCGCCGGCAGGACCCGCAGACGCGCGGCCACGGCG
GCGGCGGCGGCCATCGCCAGCATGTCCCGCCCGCGGCGCGGCAACGTGTACTGGGTGCGCGACGCCGCCACCGGTGTGCGC

Fig. 23E

GTGCCCGTGCGCACCCGCCCCCCTCGCACTTGAAGATGCTGACTTCGCGATGTTGATGTGTCCCAGCGGCGAGGAGGATGTCC
AAGCGCAAATACAAGGAAGAGATGCTCCAGGTCATCGCGCCTGAGATCTACGGCCCCGCGGTGAAGGAGGAAAGAAAGCCC
CGCAAACTGAAGCGGGTCAAAAAGGACAAAAAGGAGGAGGAAGATGTGGACGGACTGGTGGAGTTTGTGCGCGAGTTCGC
CCCCCGGCGGCGCGTGCAGTGGCGCGGGCGGAAAGTGAAACCGGTGCTGCGGCCCGGCACCACGGTGGTCTTCACGCCCGG
CGAGCGTTCCGGCTCCGCCTCCAAGCGCTCCTACGACGAGGTGTACGGGGACGAGGACATCCTCGAGCAGGCGGTCGAGCGT
CTGGGCGAGTTTGCTTACGGCAAGCGCAGCCGCCCCGCGCCCTTGAAAGAGGAGGCGGTGTCCATCCCGCTGGACCACGGCA
ACCCCACGCCGAGCCTGAAGCCGGTGACCCTGCAGCAGGTGCTGCCGAGCGCGGCGCCGCGCCGGGGCTTCAAGCGCGAGG
GCGGCGAGGATCTGTACCCGACCATGCAGCTGATGGTGCCCAAGCGCCAGAAGCTGGAGGACGTGCTGGAGCACATGAAGG
TGGACCCCGAGGTGCAGCCCGAGGTCAAGGTGCGGCCCATCAAGCAGGTGGCCCCGGGCCTGGGCGTGCAGACCGTGGACA
TCAAGATCCCCACGGAGCCCATGGAAACGCAGACCGAGCCCGTGAAGCCCAGCACCAGCACCATGGAGGTGCAGACGGATCC
CTGGATGCCGGCGCCGGCTTCCACCACTCGCCGAAGACGCAAGTACGGCGCGGCCAGCCTGCTGATGCCCAACTACGCGCTG
CATCCTTCCATCATCCCCACGCCGGGCTACCGCGGCACGCGCTTCTACCGCGGCTACACCAGCAGCCGCCGCAAGACCACCACC
CGCCGCCGCCGTCGTCGCACCCGCCGCAGCAGCACCGCGACTTCCGCCGCCGCCCTGGTGCGGAGAGTGTACCGCAGCGGGC
GCGAGCCTCTGACCCTGCCGCGCGCGCGCTACCACCCGAGCATCGCCATTTAACTCTGCCGTCGCCTCCTACTTGCAGATATGG
CCCTCACATGCCGCCTCCGCGTCCCCATTACGGGCTACCGAGGAAGAAAGCCGCGCCGTAGAAGGCTGACGGGGAACGGGCT
GCGTCGCCATCACCACCGGCGGCGGCGCGCCATCAGCAAGCGGTTGGGGGGAGGCTTCCTGCCCGCGCTGATCCCCATCATC
GCCGCGGCGATCGGGGCGATCCCCGGCATAGCTTCCGTGGCGGTGCAGGCCTCTCAGCGCCACTGAGACACAGCTTGGAAAA
TTTGTAATAAAAAAATGGACTGACGCTCCTGGTCCTGTGATGTGTGTTTTTAGATGGAAGACATCAATTTTTCGTCCCTGGCAC
CGCGACACGGCACGCGGCCGTTTATGGGCACCTGGAGCGACATCGGCAACAGCCAACTGAACGGGGGCGCCTTCAATTGGAG
CAGTCTCTGGAGCGGGCTTAAGAATTTCGGGTCCACGCTCAAAACCTATGGCAACAAGGCGTGGAACAGCAGCACAGGGCAG
GCGCTGAGGGAAAAGCTGAAAGAGCAGAACTTCCAGCAGAAGGTGGTCGATGGCCTGGCCTCGGGCATCAACGGGGTGGTG
GACCTGGCCAACCAGGCCGTGCAGAAACAGATCAACAGCCGCCTGGACGCGGTCCCGCCCGCGGGGTCCGTGGAGATGCCCC
AGGTGGAGGAGGAGCTGCCTCCCCTGGACAAGCGCGGCGACAAGCGACCGCGTCCCGACGCGGAGGAGACGCTGCTGACGC
ACACGGACGAGCCGCCCCCGTACGAGGAGGCGGTGAAACTGGGTCTGCCCACCACGCGGCCCGTGGCGCCTCTGGCCACCGG
GGTGCTGAAACCCAGCAGCAGCAGCCAGCCCGCGACCCTGGACTTGCCTCCGCCTGCTTCCCGCCCCTCCACAGTGGCTAAGC
CCCTGCCGCCGGTGGCCGTCGCGTCGCGCGCCCCCCGAGGCCGCCCCCAGGCGAACTGGCAGAGCACTCTGAACAGCATCGT
GGGTCTGGGAGTGCAGAGTGTGAAGCGCCGCCGCTGCTATTAAAAGACACTGTAGCGCTTAACTTGCTTGTCTGTGTGTATAT
GTATGTCCGCCGACCAGAAGGAGGAAGAGGCGCGTCGCCGAGTTGCAAGATGGCCACCCCATCGATGCTGCCCCAGTGGGC
GTACATGCACATCGCCGGACAGGACGCTTCGGAGTACCTGAGTCCGGGTCTGGTGCAGTTCGCCCGCGCCACAGACACCTACT
TCAGTCTGGGGAACAAGTTTAGGAACCCCACGGTGGCGCCCACGCACGATGTGACCACCGACCGCAGCCAGCGGCTGACGCT
GCGCTTCGTGCCCGTGGACCGCGAGGACAACACCTACTCGTACAAAGTGCGCTACACGCTGGCCGTGGGCGACAACCGCGTG
CTGGACATGGCCAGCACCTACTTTGACATCCGCGGCGTGCTGGATCGGGGGCCCAGCTTCAAACCCTACTCCGGCACCGCCTA
CAACAGCCTGGCTCCCAAGGGAGCGCCCAACACTTGCCAGTGGACATATAAAGCTGGTGATACTGATACAGAAAAAACCTATA
CATATGGAAATGCACCTGTGCAAGGCATTAGCATTACAAAGGATGGTATTCAACTTGGAACTGACAGCGATGGTCAGGCAATC
TATGCAGACGAAACTTATCAACCAGAGCCTCAAGTGGGTGATGCTGAATGGCATGACATCACTGGTACTGATGAAAAATATGG
AGGCAGAGCTCTTAAGCCTGACACCAAAATGAAGCCTTGCTATGGTTCTTTTGCCAAGCCTACCAATAAAGAAGGAGGCCAGG
CAAATGTGAAAACCGAAACAGGCGGTACCAAAGAATATGACATTGACATGGCATTCTTCGATAATCGAAGTGCAGCTGCCGCC
GGCCTAGCCCCAGAAATTGTTTTGTATACTGAGAATGTGGATCTGGAAACTCCAGATACCCATATTGTATACAAGGCAGGTAC
AGATGACAGTAGCTCTTCTATCAATTTGGGTCAGCAGTCCATGCCCAACAGACCCAACTACATTGGCTTCAGAGACAACTTTAT
CGGTCTGATGTACTACAACAGCACTGGCAATATGGGTGTACTGGCTGGACAGGCCTCCCAGCTGAATGCTGTGGTGGACTTGC
AGGACAGAAACACCGAACTGTCCTACCAGCTCTTGCTTGACTCTCTGGGTGACAGAACCAGGTATTTCAGTATGTGGAATCAG
GCGGTGGACAGTTATGACCCCGATGTGCGCATTATTGAAAATCACGGTGTGGAGGATGAACTTCCTAACTATTGCTTCCCCCTG
GATGCTGTGGGTAGAACTGATACTTACCAGGGAATTAAGGCCAATGGTGATAATCAAACCACCTGGACCAAAGATGATACTGT
TAATGATGCTAATGAATTGGGCAAGGGCAATCCTTTCGCCATGGAGATCAACATCCAGGCCAACCTGTGGCGGAACTTCCTCT
ACGCGAACGTGGCGCTGTACCTGCCCGACTCCTACAAGTACACGCCGGCCAACATCACGCTGCCCACCAACACCAACACCTAC
GATTACATGAACGGCCGCGTGGTGGCGCCCTCGCTGGTGGACGCCTACATCAACATCGGGGCGCGCTGGTCGCTGGACCCCA
TGGACAACGTCAACCCCTTCAACCACCACCGCAACGCGGGCCTGCGATACCGCTCCATGCTCCTGGGCAACGGGCGCTACGTG
CCCTTCCACATCCAGGTGCCCCAAAAGTTTTTCGCCATCAAGAGCCTCCTGCTCCTGCCCGGGTCCTACACCTACGAGTGGAACT
TCCGCAAGGACGTCAACATGATCCTGCAGAGCTCCCTCGGCAACGACCTGCGCACGGACGGGGCCTCCATCGCCTTCACCAGC
ATCAACCTCTACGCCACCTTCTTCCCCATGGCGCACAACACCGCCTCCACGCTCGAGGCCATGCTGCGCAACGACACCAACGAC
CAGTCCTTCAACGACTACCTCTCGGCGGCCAACATGCTCTACCCCATCCCGGCCAACGCCACCAACGTGCCCATCTCCATCCCCT

Fig. 23F

CGCGCAACTGGGCCGCCTTCCGCGGCTGGTCCTTCACGCGCCTCAAGACCCGCGAGACGCCCTCGCTCGGCTCCGGGTTCGAC
CCCTACTTCGTCTACTCGGGCTCCATCCCCTACCTCGACGGCACCTTCTACCTCAACCACACCTTCAAGAAGGTCTCCATCACCTT
CGACTCCTCCGTCAGCTGGCCCGGCAACGACCGCCTCCTGACGCCCAACGAGTTCGAAATCAAGCGCACCGTCGACGGAGAG
GGGTACAACGTGGCCCAGTGCAACATGACCAAGGACTGGTTCCTGGTCCAGATGCTGGCCCACTACAACATCGGCTACCAGG
GCTTCTACGTGCCCGAGGGCTACAAGGACCGCATGTACTCCTTCTTCCGCAACTTCCAGCCCATGAGCCGCCAGGTCGTGGAC
GAGGTCAACTACAAGGACTACCAGGCCGTCACCCTGGCCTACCAGCACAACAACTCGGGCTTCGTCGGCTACCTCGCGCCCAC
CATGCGCCAGGGCCAGCCCTACCCCGCCAACTACCCCTACCCGCTCATCGGCAAGAGCGCCGTCGCCAGCGTCACCCAGAAAA
AGTTCCTCTGCGACCGGGTCATGTGGCGCATCCCCTTCTCCAGCAACTTCATGTCCATGGGCGCGCTCACCGACCTCGGCCAGA
ACATGCTCTACGCCAACTCCGCCCACGCGCTAGACATGAATTTCGAAGTCGACCCCATGGATGAGTCCACCCTTCTCTATGTTGT
CTTCGAAGTCTTCGACGTCGTCCGAGTGCACCAGCCCCACCGCGGCGTCATCGAGGCCGTCTACCTGCGCACGCCCTTCTCGGC
CGGCAACGCCACCACCTAAGCCTCTTGCTTCTTGCAAGATGACGGCCTGCGCGGGCTCCGGCGAGCAGGAGCTCAGGGCCATC
CTCCGCGACCTGGGCTGCGGGCCCTGCTTCCTGGGCACCTTCGACAAGCGCTTCCCGGGATTCATGGCCCCGCACAAGCTGGC
CTGCGCCATCGTCAACACGGCCGGCCGCGAGACCGGGGGCGAGCACTGGCTGGCCTTCGCCTGGAACCCGCGCTCCCACACC
TGCTACCTCTTCGACCCCTTCGGGTTCTCGGACGAGCGCCTCAAGCAGATCTACCAGTTCGAGTACGAGGGCCTGCTGCGTCGC
AGCGCCCTGGCCACCGAGGACCGCTGCGTCACCCTGGAAAAGTCCACCCAGACCGTGCAGGGTCCGCGCTCGGCCGCCTGCG
GGCTCTTCTGCTGCATGTTCCTGCACGCCTTCGTGCACTGGCCCGACCGCCCCATGGACAAGAACCCCACCATGAACTTGCTGA
CGGGGGTGCCCAACGGCATGCTCCAGTCGCCCCAGGTGGAACCCACCCTGCGCCGCAACCAGGAGGCGCTCTACCGCTTCCTC
AACGCCCACTCCGCCTACTTTCGCTCCCACCGCGCGCGCATCGAGAAGGCCACCGCCTTCGACCGCATGAATCAAGACATGTAA
TCCGGTGTGTGTATGTGAATGCTTTATTCATCATAATAAACAGCACATGTTTATGCCACCTTCTCTGAGGCTCTGACTTTATTTA
GAAATCGAAGGGGTTCTGCCGGCTCTCGGCATGGCCCGCGGGCAGGGATACGTTGCGGAACTGGTACTTGGGCAGCCACTTG
AACTCGGGGATCAGCAGCTTCGGCACGGGGAGGTCGGGGAACGAGTCGCTCCACAGCTTGCGCGTGAGTTGCAGGGCGCCC
AGCAGGTCGGGCGCGGAGATCTTGAAATCGCAGTTGGGACCCGCGTTCTGCGCGCGAGAGTTACGGTACACGGGGTTGCAG
CACTGGAACACCATCAGGGCCGGGTGCTTCACGCTCGCCAGCACCGTCGCGTCGGTGATGCCCTCCACGTCCAGATCCTCGGC
GTTGGCCATCCCGAAGGGGGTCATCTTGCAGGTCTGCCGCCCCATGCTGGGCACGCAGCCGGGCTTGTGGTTGCAATCGCAGT
GCAGGGGGATCAGCATCATCTGGGCCTGCTCGGAGCTCATGCCCGGGTACATGGCCTTCATGAAAGCCTCCAGCTGGCGGAA
GGCCTGCTGCGCCTTGCCGCCCTCGGTGAAGAAGACCCCGCAGGACTTGCTAGAGAACTGGTTGGTGGCGCAGCCAGCGTCG
TGCACGCAGCAGCGCGCGTCGTTGTTGGCCAGCTGCACCACGCTGCGCCCCCAGCGGTTCTGGGTGATCTTGGCCCGGTCGG
GGTTCTCCTTCAGCGCGCGCTGCCCGTTCTCGCTCGCCACATCCATCTCGATCGTGTGCTCCTTCTGGATCATCACGGTCCCGTG
CAGGCACCGCAGCTTGCCCTCGGCCTCGGTGCACCCGTGCAGCCACAGCGCGCAGCCGGTGCTCTCCCAGTTCTTGTGGGCGA
TCTGGGAGTGCGAGTGCACGAAGCCCTGCAGGAAGCGGCCCATCATCGTGGTCAGGGTCTTGTTGCTGGTGAAGGTCAGCGG
AATGCCGCGGTGCTCCTCGTTCACATACAGGTGGCAGATACGGCGGTACACCTCGCCCTGCTCGGGCATCAGCTGGAAGGCG
GACTTCAGGTCGCTCTCCACGCGGTACCGGTCCATCAGCAGCGTCATCACTTCCATGCCCTTCTCCCAGGCCGAAACGATCGGC
AGGCTCAGGGGGTTCTTCACCGTTGTCATCTTAGTCGCCGCCGCCGAAGTCAGGGGGTCGTTCTCGTCCAGGGTCTCAAACAC
TCGCTTGCCGTCCTTCTCGGTGATGCGCACGGGGGGAAAGCTGAAGCCCACGGCCGCCAGCTCCTCCTCGGCCTGCCTTTCGT
CCTCGCTGTCCTGGCTGATGTCTTGCAAAGGCACATGCTTGGTCTTGCGGGGTTTCTTTTTGGGCGGCAGAGGCGGCGGCGGA
GACGTGCTGGGCGAGCGCGAGTTCTCGCTCACCACGACTATTTCTTCTCCTTGGCCGTCGTCCGAGACCACGCGGCGGTAGGC
ATGCCTCTTCTGGGGCAGAGGCGGAGGCGACGGGCTCTCGCGGTTCGGCGGGCGGCTGGCAGAGCCCCTTCCGCGTTCGGG
GGTGCGCTCCTGGCGGCGCTGCTCTGACTGACTTCCTCCGCGGCCGGCCATTGTGTTCTCCTAGGGAGCAAGCATGGAGACTC
AGCCATCGTCGCCAACATCGCCATCTGCCCCCGCCGCCGCCGACGAGAACCAGCAGCAGCAGAATGAAAGCTTAACCGCCCCG
CCGCCCAGCCCCACCTCCGACGCCGCAGCCCCAGACATGCAAGAGATGGAGGAATCCATCGAGATTGACCTGGGCTACGTGA
CGCCCGCGGAGCACGAGGAGGAGCTGGCAGCGCGCTTTTCAGCCCCGGAAGAGAACCACCAAGAGCAGCCAGAGCAGGAAG
CAGAGAGCGAGCAGAACCAGGCTGGGCTCGAGCATGGCGACTACCTGAGCGGGGCAGAGGACGTGCTCATCAAGCATCTGG
CCCGCCAATGCATCATCGTCAAGGACGCGCTGCTCGACCGCGCCGAGGTGCCCCTCAGCGTGGCGGAGCTCAGCCGCGCCTAC
GAGCGCAACCTCTTCTCGCCGCGCGTGCCCCCCAAGCGCCAGCCCAACGGCACCTGCGAGCCCAACCCGCGCCTCAACTTCTAC
CCGGTCTTCGCGGTGCCCGAGGCCCTGGCCACCTACCACCTCTTTTTCAAGAACCAAAGGATCCCCGTCTCCTGCCGCGCCAAC
CGCACCCGCGCCGACGCCCTGCTCAACCTGGGCCCCGGCGCCCGCCTACCTGATATCGCCTCCTTGGAAGAGGTTCCCAAGAT
CTTCGAGGGTCTGGGCAGCGACGAGACTCGGGCCGCGAACGCTCTGCAAGGAAGCGGAGAGGAGCATGAGCACCACAGCGC
CCTGGTGGAGTTGGAAGGCGACAACGCGCGCCTGGCGGTCCTCAAGCGCACGGTCGAGCTGACCCACTTCGCCTACCCGGCG
CTCAACCTGCCCCCCAAGGTCATGAGCGCCGTCATGGACCAGGTGCTCATCAAGCGCGCCTCGCCCCTCTCGGAGGAGGAGAT
GCAGGACCCCGAGAGCTCGGACGAGGGCAAGCCCGTGGTCAGCGACGAGCAGCTGGCGCGCTGGCTGGGAGCGAGTAGCA
CCCCCCAGAGCCTGGAAGAGCGGCGCAAGCTCATGATGGCCGTGGTCCTGGTGACCGTGGAGCTGGAGTGTCTGCGCCGCTT

Fig. 23G

CTTCGCCGACGCGGAGACCCTGCGCAAGGTCGAGGAGAACCTGCACTACCTCTTCAGACACGGGTTCGTGCGCCAGGCCTGC
AAGATCTCCAACGTGGAGCTGACCAACCTGGTCTCCTACATGGGCATCCTGCACGAGAACCGCCTGGGGCAGAACGTGCTGCA
CACCACCCTGCGCGGGGAGGCCCGCCGCGACTACATCCGCGACTGCGTCTACCTGTACCTCTGCCACACCTGGCAGACGGGCA
TGGGCGTGTGGCAGCAGTGCCTGGAGGAGCAGAACCTGAAAGAGCTCTGCAAGCTCCTGCAGAAGAACCTCAAGGCCCTGTG
GACCGGGTTCGACGAGCGCACCACCGCCGCGGACCTGGCCGACCTCATCTTCCCCGAGCGCCTGCGGCTGACGCTGCGCAAC
GGGCTGCCCGACTTTATGAGCCAAAGCATGTTGCAAAACTTTCGCTCTTTCATCCTCGAACGCTCCGGGATCCTGCCCGCCACC
TGCTCCGCGCTGCCCTCGGACTTCGTGCCGCTGACCTTCCGCGAGTGCCCCCCGCCGCTCTGGAGCCACTGCTACCTGCTGCGC
CTGGCCAACTACCTGGCCTACCACTCGGACGTGATCGAGGACGTCAGCGGCGAGGGCCTGCTCGAGTGCCACTGCCGCTGCA
ACCTCTGCACGCCGCACCGCTCCCTGGCCTGCAACCCCCAGCTGCTGAGCGAGACCCAGATCATCGGCACCTTCGAGTTGCAA
GGCCCCGGCGAGGGCAAGGGGGGTCTGAAACTCACCCCGGGGCTGTGGACCTCGGCCTACTTGCGCAAGTTCGTGCCCGAG
GACTACCATCCCTTCGAGATCAGGTTCTACGAGGACCAATCCCAGCCGCCCAAGGCCGAGCTGTCGGCCTGCGTCATCACCCA
GGGGGCCATCCTGGCCCAATTGCAAGCCATCCAGAAATCCCGCCAAGAATTTCTGCTGAAAAAGGGCCACGGGGTCTACTTGG
ACCCCCAGACCGGAGAGGAGCTCAACCCCAGCTTCCCCCAGGATGCCCCGAGGAAGCAGCAAGAAGCTGAAAGTGGAGCTGC
CGCCGCCGCCGGAGGATTTGGAGGAAGACTGGGAGAGCAGTCAGGCAGAGGAGGAGGAGATGGAAGACTGGGACAGCACT
CAGGCAGAGGAGGACAGCCTGCAAGACAGTCTGGAGGAGGAAGACGAGGTGGAGGAGGCAGAGGAAGAAGCAGCCGCCG
CCAGACCGTCGTCCTCGGCGGAGGAGGAGAAAGCAAGCAGCACGGATACCATCTCCGCTCCGGGTCGGGGTCGCGGCGGCC
GGGCCCACAGTAGATGGGACGAGACCGGGCGCTTCCCGAACCCCACCACCCAGACCGGTAAGAAGGAGCGGCAGGGATACA
AGTCCTGGCGGGGGCACAAAAACGCCATCGTCTCCTGCTTGCAAGCCTGCGGGGGCAACATCTCCTTCACCCGGCGCTACCTG
CTCTTCCACCGCGGGGTGAACTTCCCCCGCAACATCTTGCATTACTACCGTCACCTCCACAGCCCCTACTACTGTTTCCAAGAAG
AGGCAGAAACCCAGCAGCAGCAGCAGCAGCAGAAAACCAGCGGCAGCAGCTAGAAAATCCACAGCGGCGGCAGGTGGACT
GAGGATCGCGGCGAACGAGCCGGCGCAGACCCGGGAGCTGAGGAACCGGATCTTTCCCACCCTCTATGCCATCTTCCAGCAG
AGTCGGGGGCAAGAGCAGGAACTGAAAGTCAAGAACCGTTCTCTGCGCTCGCTCACCCGCAGTTGTCTGTATCACAAGAGCG
AAGACCAACTTCAGCGCACTCTCGAGGACGCCGAGGCTCTCTTCAACAAGTACTGCGCGCTCACTCTTAAAGAGTAGCCCGCG
CCCGCCCACACACGGAAAAAGGCGGGAATTACGTCACCACCTGCGCCCTTCGCCCGACCATCATCATGAGCAAAGAGATTCCC
ACGCCTTACATGTGGAGCTACCAGCCCCAGATGGGCCTGGCCGCCGGCGCCGCCCAGGACTACTCCACCCGCATGAACTGGCT
CAGTGCCGGGCCCGCGATGATCTCACGGGTGAATGACATCCGCGCCCACCGAAACCAGATACTCCTAGAACAGTCAGCGATCA
CCGCCACGCCCCGCCATCACCTTAATCCGCGTAATTGGCCCGCCGCCCTGGTGTACCAGGAAATTCCCCAGCCCACGACCGTAC
TACTTCCGCGAGACGCCCAGGCCGAAGTCCAGCTGACTAACTCAGGTGTCCAGCTGGCCGGCGGCGCCGCCCTGTGTCGTCAC
CGCCCCGCTCAGGGTATAAAGCGGCTGGTGATCCGAGGCAGAGGCACACAGCTCAACGACGAGGTGGTGAGCTCTTCGCTGG
GTCTGCGACCTGACGGAGTCTTCCAACTCGCCGGATCGGGGAGATCTTCCTTCACGCCTCGTCAGGCCGTCCTGACTTTGGAG
AGTTCGTCCTCGCAGCCCCGCTCGGGTGGCATCGGCACTCTCCAGTTCGTGGAGGAGTTCACTCCCTCGGTCTACTTCAACCCC
TTCTCCGGCTCCCCCGGCCACTACCCGGACGAGTTCATCCCGAACTTCGACGCCATCAGCGAGTCGGTGGACGGCTACGATTG
AATGTCCCATGGTGGCGCGGCTGACCTAGCTCGGCTTCGACACCTGGACCACTGCCGCCGCTTCCGCTGCTTCGCTCGGGATCT
CGCCGAGTTTGCCTACTTTGAGCTGCCCGAGGAGCACCCTCAGGGCCCGGCCCACGGAGTGCGGATCGTCGTCGAAGGGGGT
CTCGACTCCCACCTGCTTCGGATCTTCAGCCAGCGTCCGATCCTGGCCGAGCGCGAGCAAGGACAGACCCTTCTGACCCTGTAC
TGCATCTGCAACCACCCCGGCCTGCATGAAAGTCTTTGTTGTCTGCTGTGTACTGAGTATAATAAAAGCTGAGATCAGCGACTA
CTCCGGACTTCCGTGTGTTCCTGCTATCAACCAGTCCCTGTTCTTCACCGGGAACGAGACCGAGCTCCAGCTCCAGTGTAAGCC
CCACAAGAAGTACCTCACCTGGCTGTTCCAGGGCTCTCCGATCGCCGTTGTCAACCACTGCGACAACGACGGAGTCCTGCTGA
GCGGCCCTGCCAACCTTACTTTTTCCACCCGCAGAAGCAAGCTCCAGCTCTTCCAACCCTTCCTCCCCGGGACCTATCAGTGCGT
CTCGGGACCCTGCCATCACACCTTCCACCTGATCCCGAATACCACAGCGTCGCTCCCCGCTACTAACAACCAAACTACCCACCAA
CGCCACCGTCGCGACCGCGGACATGTACAGAGCTCGAGAAGTACTAGGCCACAATACATGCCCATATTAGACTATGAGGCCGA
GCCACAGCGACCCATGCTCCCCGCTATTAGTTACTTCAATCTAACCGGCGGAGATGACTGACCCACTGGCCAACAACAACGTCA
ACGACCTTCTCCTGGACATGGACGGCCGCGCCTCGGAGCAGCGACTCGCCCAACTTCGCATTCGCCAGCAGCAGGAGAGAGC
CGTCAAGGAGCTGCAGGACGGCATAGCCATCCACCAGTGCAAGAAAGGCATCTTCTGCCTGGTGAAACAGGCCAAGATCTCC
TACGAGGTCACCCCGACCGACCATCGCCTCTCCTACGAGCTCCTGCAGCAGCGCCAGAAGTTCACCTGCCTGGTCGGAGTCAA
CCCCATCGTCATCACCCAGCAGTCGGGCGATACCAAGGGGTGCATCCACTGCTCCTGCGACTCCCCCGACTGCGTCCACACTCT
GATCAAGACCCTCTGCGGCCTCCGCGACCTCCTCCCCATGAACTAATCACCCCCTTATCCAGTGAAATAAATATCATATTGATGA
TGATTTAAATAAAAAATAATCATTTGATTTGAAATAAAGATACAATCATATTGATGATTTGAGTTTTAAAAAATAAAGAATCACT
TACTTGAAATCTGATACCAGGTCTCTGTCCATGTTTTCTGCCAACACCACCTCACTCCCCTCTTCCCAGCTCTGGTACTGCAGACC
CCGGCGGGCTGCAAACTTCCTCCACACGCTGAAGGGGATGTCAAATTCCTCCTGTCCCTCAATCTTCATTTTATCTTCTATCAGA
TGTCCAAAAAGCGCGTCCGGGTGGATGATGACTTCGACCCCGTCTACCCCTACGATGCAGACAACGCACCGACCGTGCCCTTC

Fig. 23H

ATCAACCCCCCCTTCGTCTCTTCAGATGGATTCCAAGAGAAGCCCCTGGGGGTGCTGTCCCTGCGACTGGCTGACCCCGTCACC
ACCAAGAACGGGGAAATCACCCTCAAGCTGGGAGAGGGGGTGGACCTCGACTCCTCGGGAAAACTCATCTCCAACACGGCCA
CCAAGGCCGCCGCCCCTCTCAGTTTTTCCAACAACACCATTTCCCTTAACATGGATACCCCTCTTTATACCAAAGATGGAAAATT
ATCCTTACAAGTTTCTCCACCGTTAAACATATTAAAATCAACCATTCTGAACACATTAGCTGTAGCTTATGGATCAGGTTTAGGA
CTGAGTGGTGGCACTGCTCTTGCAGTACAGTTGGCCTCTCCACTCACTTTTGATGAAAAAGGAAATATTAAAATTAACCTAGCC
AGTGGTCCATTAACAGTTGATGCAAGTCGACTTAGTATCAACTGCAAAAGAGGGGTCACTGTCACTACCTCAGGAGATGCAAT
TGAAAGCAACATAAGCTGGCCTAAAGGTATAAGATTTGAAGGTAATGGCATAGCTGCAAACATTGGCAGAGGATTGGAATTT
GGAACCACTAGTACAGAGACTGATGTCACAGATGCATACCCAATTCAAGTTAAATTGGGTACTGGCCTTACCTTTGACAGTACA
GGCGCCATTGTTGCTTGGAACAAAGAGGATGATAAACTTACATTATGGACCACAGCCGACCCCTCGCCAAATTGCAAAATATA
CTCTGAAAAAGATGCCAAACTCACACTTTGCTTGACAAAGTGTGGAAGTCAAATTCTGGGTACTGTGACTGTATTGGCAGTGA
ATAATGGAAGTCTCAACCCAATCACAAACACAGTAAGCACTGCACTCGTCTCCCTCAAGTTTGATGCAAGTGGAGTTTTGCTAA
GCAGCTCCACATTAGACAAAGAATATTGGAACTTCAGAAAGGGAGATGTTACACCTGCTGAGCCCTATACTAATGCTATAGGT
TTTATGCCTAACATAAAGGCCTATCCTAAAAACACATCTGCAGCTTCAAAAAGCCATATTGTCAGTCAAGTTTATCTCAATGGG
GATGAGGCCAAACCACTGATGCTGATTATTACTTTTAATGAAACTGAGGATGCAACTTGCACCTACAGTATCACTTTTCAATGG
AAATGGGATAGTACTAAGTACACAGGTGAAACACTTGCTACCAGCTCCTTCACCTTCTCCTACATCGCCCAAGAATGAACACTG
TATCCCACCCTGCATGCCAACCCTTCCCACCCCACTCTGTCTATGGAAAAAACTCTGAAGCACAAAATAAAATAAAGTTCAAGT
GTTTTATTGATTCAACAGTTTTACAGGATTCGAGCAGTTATTTTTCCTCCACCCTCCCAGGACATGGAATACACCACCCTCTCCCC
CCGCACAGCCTTGAACATCTGAATGCCATTGGTGATGGACATGCTTTTGGTCTCCACGTTCCACACAGTTTCAGAGCGAGCCAG
TCTCGGGTCGGTCAGGGAGATGAAACCCTCCGGGCACTCCCGCATCTGCACCTCACAGCTCAACAGCTGAGGATTGTCCTCGG
TGGTCGGGATCACGGTTATCTGGAAGAAGCAGAAGAGCGGCGGTGGGAATCATAGTCCGCGAACGGGATCGGCCGGTGGTG
TCGCATCAGGCCCCGCAGCAGTCGCTGCCGCCGCCGCTCCGTCAAGCTGCTGCTCAGGGGGTCCGGGTCCAGGGACTCCCTCA
GCATGATGCCCACGGCCCTCAGCATCAGTCGTCTGGTGCGGCGGGCGCAGCAGCGCATGCGGATCTCGCTCAGGTCGCTGCA
GTACGTGCAACACAGGACCACCAGGTTGTTCAACAGTCCATAGTTCAACACGCTCCAGCCGAAACTCATCGCGGGAAGGATGC
TACCCACGTGGCCGTCGTACCAGATCCTCAGGTAAATCAAGTGGCGCTCCCTCCAGAACACGCTGCCCACGTACATGATCTCCT
TGGGCATGTGGCGGTTCACCACCTCCCGGTACCACATCACCCTCTGGTTGAACATGCAGCCCCGGATGATCCTGCGGAACCAC
AGGGCCAGCACCGCCCCGCCCGCCATGCAGCGAAGAGACCCCGGGTCCCGGCAATGGCAATGGAGGACCCACCGCTCGTACC
CGTGGATCATCTGGGAGCTGAACAAGTCTATGTTGGCACAGCACAGGCATATGCTCATGCATCTCTTCAGCACTCTCAGCTCCT
CGGGGGTCAAAACCATATCCCAGGGCACGGGGAACTCTTGCAGGACAGCGAACCCCGCAGAACAGGGCAATCCTCGCACATA
ACTTACATTGTGCATGGACAGGGTATCGCAATCAGGCAGCACCGGGTGATCCTCCACCAGAGAAGCGCGGGTCTCGGTCTCCT
CACAGCGTGGTAAGGGGGCCGGCCGATACGGGTGATGGCGGGACGCGGCTGATCGTGTTCGCGACCGTGTCATGATGCAGT
TGCTTTCGGACATTTTCGTACTTGCTGTAGCAGAACCTGGTCCGGGCGCTGCACACCGATCGCCGGCGGCGGTCCCGGCGCTT
GGAACGCTCGGTGTTGAAATTGTAAAACAGCCACTCTCTCAGACCGTGCAGCAGATCTAGGGCCTCAGGAGTGATGAAGATCC
CATCATGCCTGATAGCTCTGATCACATCGACCACCGTGGAATGGGCCAGACCCAGCCAGATGATGCAATTTTGTTGGGTTTCG
GTGACGGCGGGGGAGGGAAGAACAGGAAGAACCATGATTAACTTTTAATCCAAACGGTCTCGGAGCACTTCAAAATGAAGGT
CGCGGAGATGGCACCTCTCGCCCCCGCTGTGTTGGTGGAAAATAACAGCCAGGTCAAAGGTGATACGGTTCTCGAGATGTTCC
ACGGTGGCTTCCAGCAAAGCCTCCACGCGCACATCCAGAAACAAGACAATAGCGAAAGCGGGAGGGTTCTCTAATTCCTCAAT
CATCATGTTACACTCCTGCACCATCCCCAGATAATTTTCATTTTTCCAGCCTTGAATGATTCGAACTAGTTCCTGAGGTAAATCCA
AGCCAGCCATGATAAAGAGCTCGCGCAGAGCGCCCTCCACCGGCATTCTTAAGCACACCCTCATAATTCCAAGATATTCTGCTC
CTGGTTCACCTGCAGCAGATTGACAAGCGGAATATCAAAATCTCTGCCGCGATCCCTAAGCTCCTCCCTCAGCAATAACTGTAA
GTACTCTTTCATATCCTCTCCGAAATTTTTAGCCATAGGACCACCAGGAATAAGATTAGGGCAAGCCACAGTACAGATAAACCG
AAGTCCTCCCCAGTGAGCATTGCCAAATGCAAGACTGCTATAAGCATGCTGGCTAGACCCGGTGATATCTTCCAGATAACTGG
ACAGAAAATCACCCAGGCAATTTTTAAGAAAATCAACAAAAGAAAAATCCTCCAGGTGCACGTTTAGAGCCTCGGGAACAACG
ATGAAGTAAATGCAAGCGGTGCGTTCCAGCATGGTTAGTTAGCTGATCTGTAAAAAACAAAAAATAAAACATTAAACCATGCT
AGCCTGGCGAACAGGTGGGTAAATCGTTCTCTCCAGCACCAGGCAGGCCACGGGGTCTCCGGCGCGACCCTCGTAAAAATTG
TCGCTATGATTGAAAACCATCACAGAGAGACGTTCCCGGTGGCCGGCGTGAATGATTCGACAAGATGAATACACCCCCGGAAC
ATTGGCGTCCGCGAGTGAAAAAAAGCGCCCGAGGAAGCAATAAGGCACTACAATGCTCAGTCTCAAGTCCAGCAAAGCGATG
CCATGCGGATGAAGCACAAAATCCTCAGGTGCGTACAAAATGTAATTACTCCCCTCCTGCACAGGCAGCGAAGCCCCCGATCC
CTCCAGATACACATACAAAGCCTCAGCGTCCATAGCTTACCGAGCAGCAGCACACAACAGGCGCAAGAGTCAGAGAAAGGCT
GAGCTCTAACCTGTCCACCCGCTCTCTGCTCAATATATAGCCCAGATCTACACTGACGTAAAGGCCAAAGTCTAAAAATACCCG
CCAAATAATCACACACGCCCAGCACACGCCCAGAAACCGGTGACACACTCAAAAAAATACGCGCACTTCCTCAAACGCCCAAA
CTGCCGTCATTTCCGGGTTCCCACGCTACGTCATCGGAATTCGACTTTCAAATTCCGTCGACCGTTAAAAACGTCACCCGCCCCG
CCCCTAACGGTCGCCCGTCTCTCGGCCAATCACCTTCCTCCCTCCCCAAATTCAAACAGCTCATTTGCATATTAACGCGCACCAA
AAGTTTGAGGTATATTATTGATGATG

Fig. 23I

AdC7 010-HIVgag(E1048) Amino acids – SEQ ID NO: 12
The symbol " * " refers herein to stop codons in the non coding regions

HHQ*YTSNFWCALICK*AV*IWGGRKVIGRETGDR*GRGG*RFDDVAVRRSRFASSRGKSDVKRGVV*TRKYSIFPRSLTGNEVFLG
GCK*KRAIFARKLNEEVKI*VISRLWQGGVFAEGRVDFDRLRGGFDYRIFHLNFRVRCQSPVFLRTISFPRKCHLTVTITVLR*RKLRSP
DPLWCTLSTICSDAA*LSQYLLPACVLEVAE*CASKI*ATTRQGLTDNCMKNLLRVRRFALLRDVRARYTR*H*LLTSY***SITGSLVH
SPYMEFRVT*LTVNGPPG*PPNDPRPLTSIMTYVPIVTPIGTFH*RQWVEYLR*TAHLAVHQVYHMPSTPPIDVNDGKWPAWHYA
QYMTLWDFPTWQYIYVLVIAITMVMRFWQYINGRG*RFDSRGFPSLHPIDVNGSLFWHQNQRDFPKCRNNSAPLTQMGGRRVR
WEVYISRARLVNRQITRSFIAVVYHS*IANAVSASDTTVSNLSCRSWS*GTGQVSIKVTRQV*GDQ*KLGLSRQRRLLRF**APIGLTD
IHFAFLSTGVHSQFNYSS*G*ST*YDSL*ASATMGARASVLSGGELDRWEKIRLRPGGKKKYKLKHIVWASRELERFAVNPGLLETSE
GCRQILGQLQPSLQTGSEELRSLYNTVATLYCVHQRIEVKDTKEALEKIEEEQNKSKKKAQQAAADTGNSSQVSQNYPIVQNLQGQ
MVHQAISPRTLNAWVKVVEEKAFSPEVIPMFSALSEGATPQDLNTMLNTVGGHQAAMQMLKETINEEAAEWDRLHPVHAGPIA
PGQMREPRGSDIAGTTSTLQEQIGWMTNNPPIPVGEIYKRWIILGLNKIVRMYSPTSILDIRQGPKEPFRDYVDRFYKTLRAEQASQE
VKNWMTETLLVQNANPDCKTILKALGPAATLEEMMTACQGVGGPGHKARVLAEAMSQVTNSATIMMQRGNFRNQRKTVKCFN
CGKEGHIAKNCRAPRKKGCWKCGKEGHQMKDCTERQANFLGKIWPSHKGRPGNFLQSRPEPTAPPEESFRFGEETTTPSQKQEPI
DKELYPLASLRSLFGNDPSSQ**SSV*TGPLESTRAAKPLISLDCAF*LPAICCLPLPRAFLDPGRCHSHCPFLIK*GNCIALSE*VSFYSG
GWGGAGQQGGGLGRQ*QACWGCGGLYGF*GGKNQQICRSEFIYVGCGERGNEMALWVLWVCINESARYAGHRACDLAPPQD
MARVRAQRHDPMQCAPGVPPRHVHALPVQHAICEGAAGARCHVQSEPDGGV*HECGAVENSEI**IQDQVPGLRMRRQARQA
SARVCGGDGGPATRSFGVVLQRDGVRLQRGRI*LE*VVFGGGGGLV*GAE*LKSVFFCVLQQHERKRLL*GRGIQPLSDGASPLLG
GSASECDGIHGGRPARAARELFNPDLRDPELLVRGRSCRRSCCFRRQRRARNGPGRRLLQLSGGQLDFHQ*SRQPERGEAAAADG
PARGPDPAPGRADPAGGSAAGGDAGRGCHGENQIKNESINKRRRLLILTQSLESLFDFSRAVGPGPPVSIIEHPVDFFQDPVEVGLD
VEVHGHEPVPGVEVAPLQGLVLGGGVVNHPVIAGAQGVVLHDVLEEETDGHGQPLGVGVDEPVELGGMHAGGDEMHLGLDLEI
GDVPAQIPPGVHVVQDHQHGVSGALGEFVMQLGREGVKEFGDALVTAQVFHALIHDDGDGPVGGGLGKDVSGVGHIVVVVLGE
LVIGHFNEFGAEGARLGDEGALDPGGVVALADLHLPGLELGGGDHVHLRGDEKNGFRGGGDELGRKQVPEQLGLAAAGGAVDDP
DDRLQVVVEGETAAVLAEEGGHLVHHLAHMHVLAHEFRQEALAPQREELLQRGEVFQRLEPVGHGHFGEGLLQEFQTVPELGDVL
*GISIQQTSSFRGLGRLRE*GTRRWASSEARVRSFQGRRVRVSVVSVTVKGCAPGWALARVRFRLIRLVENRSRSAPCASAR*QLSM
SS*LSASAAWPLARSLPLEVCPQTGQRRDLRA*SLGARKTDSGA*ASAPQLAQTVSHSTSQVRSGRLGSKTRFPPCFLMRFLPLVSM
SSCPRWVTKRLSVSP*TDFMGRSSSGVPRSSS*RNPAHSETKARVQASTKEATWEG*RSLSTSGSTFSRVCKHMSPSSTSRKVIGL*V
*AT*PGVPAGGV*KGAGPCSSSLSSGSLSRSASCWGRYSLSKAGITSALRLSVSRNEEDLILTVPLETPFMSPSSIWSEKTIFLLSSLVAK
EP*RALERSLAMERMVWFFSLSARSLAAMLSCTYSRATHFHSGKTVVSSSGTILTRQPRLCRVMRSTLVATSPRRGSLVQQRRPPLR
EQKGGSGSSMSSSGGSASTVKMPGRSSGSK*LMQVSRSSSAACQSRTASARS*GLRGVPQGMGCVSAEAYMPQMS*T*RGSSRT
PM*VG*QRPPRMLART*SYSSCEGARSPVPRLERCGFSAR*TIWRKMAWELEEMVGLWKMLKWAWGRPTESLMKWA*ESCSL
ATSSAVTRTSRAQ*SRVSWMMSYLSWPFCFHSSRLRRNSSRSFQYSSRGNPS*SAR*EPTM*NWLTAL*AQQPFSTGRA*ACAAL
RREVWVRAKVSRTMTLRNWCLKSRSSQPPCSQSWKSVRFL*AGLGKAKVTSLKRILPARGMKLRVMRKGWGTSARLLMTWAAR
TISSKPLMLCPTM*SSTNRGRPLTWGSFLSSS*VSSAGSLSPCCSRAQSATWGLALRKEVQRSTARAVCKRSRY*RNCWPTAIFSGVT
Q*KVRGSPCQRSHLSWRARSWASSTSGGSPESFMTSMKGTSCLPKDPIQV*VSTS*VRKSLSVRGCEPMGKNWISCHQLEEWLLM
*WK*KCRRRAEHSCLCLYKRPQCSQRCTGCTCCTSCTWVPLTRNFSGQWSAGGCIWCCTTSWPSAWPSSASMVVMLTSPRGRQ
VQTSARTGRRARTRARRPELSRVLRRCGVRSVGSGGARLTCRSFSRARGRSRWYLISTAPLVATSTACRVPCPWGATTVPRFFLGAA
SMPVRSGGEDARRAAGAARDPEAGAAGARRRRARAGSGTAPGEDWRERRRDG*RPGSDASG*RPRDP*V*T*KRVRQNQSRYR
*RRPAAGSLARRPSCPGRRSRS*TARSPPPEGLRGRRARRWPRGRWRCGP*AARRRSCRPRSRRGCRPRLRRGRARA*PPGRG*A
RRGA*RPRSCRGAGRGS*AWWRCAR*RRST*SSGGAASR*RRPGLPSAPWPRRSPRRS*KTGSCAPRRSTPPPEDG*AQRWWRA
PRARRPRGAPLLPSLPPPLTSLLLPPQEAAAGEGPCVAGGARADGR*SARWSPRAGDAWSR*RRARPRGAAA*RRRRASPGGRRG
GLRWAGRGR*RCILSIGP*GLRART*ASRDPRDPKTAERRLRASRSRKVG*ARFLVLRGFREAGGRCCW**S*SRRS*DGGWWRG
APGPWARLAGCADGRPCPRRGPDTWRGPCSSPA*AAPRAPPPRPRGRACA*ARTRAGAGRAPGRRRRARRGWPAVSG*GWSG
SRRSRRSGGRLRC*WYRSSWP*RTS*RSGGRVARARGT*GASRRACRRCSRCRCARGTGIRRGSAAAAGGRAAIARWRGRRARGP
RA*GGGSRRCTWTSR*CRRRWWRRAGTRGRGSRCCAAAGSSSWWPRSGP*GARSRGCSRHTGKNESGQRLDSVAWRLSERVG
LRVYPGSNLESGWSRS*RGTGTPVSTQAC*RNLQDTEAGRFLALVAGHEKLVSAESDRPRWLAAVVWRKNRQGCVAVCPGSSLSA
RRRPDSAANVGVAAPSFPRPLSQPTSPVTERAPLFLVFLPDASRTAADAPPPSTSTAPTAAAAATAGASAPAPAAASHYRGGRRERS
RRSV*PGLGRGRGAGAAGGVVAGAAPARADEKGRSRGLRAQAEPVQRQERRGARGDARLPLPRGAGAAARPGPKAGAEGRGFR
GGRADGDQPRARARGRGQPGHGVRADREGGEQLPKILQQPRAHADRARGGDPGPDAPVGPAGGHRAEPHEQAADGAAVSGG
AAQSGQRDVQGGAAEYHRARGPLAPGPGEHSAEHRGAGARAAAVREAGGYQLLGAEPGQVLR*EDLQDPVRAHRQGGEDRRV

Fig. 23J

LHAHDPESADPERRSGGVPQRQDAPRGERQPPARAERPGADAQPAAGPDRGRDRGGELL*HGRGPALAAQPPGLGSCRRFPLRG
GGGR*GGGGRVPGRLMARPYFC*MQQQPPPPDPAMRAALQSQPSGINSSDDWTQAMQRIMALTTRNPEAFRQQPQANRLSA
ILEAVVPSRSNPTHEKVLAIVNALVENKAIRGDEAGLVYNALLERVARYNSTNVQTNLDRMVTDVREAVSQRERFHRESNLGSMVAL
NAFLSTQPANVPRGQEDYTNFISALRLMVAEVPQSEVYQSGPDYFFQTSRQGLQTVNLSQAFKNLQGLWGVQAPVGDRATVSSLL
TPNSRLLLLLVAPFTDSGSVSRDSYLGYLLNLYREAIGQAHVDEQTYQEITHVSRALGQEDPGNLEATLNFLLTNRSQKIPPQYALSTEE
ERILRYVQQSVGLFLMQEGATPSAALDMTARNMEPSMYARNRPFINKLMDYLHRAAAMNSDYFTNAILNPHWLPPPGFYTGEYD
MPDPNDGFLWDDVDSSVFSPRPATTVWKKEGGDRRPSSALSGRAGAAAAVPEAASPFPSLPFSLNSVRSSELGRLTRPRLLGEEEYL
NDSLLRPEREKNFPNNGIESLVDKMSRWKTYAHEHRDEPRASSSAGTRRRQRHDRQRGLVWDDEDSADDSSVLDLGGSGGGNPF
AHLRPRIGRLM*ESEKIKNGTHQGHGDQRAFFSVVCSSMMRRVYPEGPPPSYESVMQQAVAAAMQPPLEAPYVPPRYLAPTEGR
NSIRYSELAPLYDTTRLYLVDNKSADIASLNYQNDHSNFLTTVVQNNDFTPTEASTQTINFDERSRWGGQLKTIMHTNMPNVNEFM
YSNKFKARVMVSRKTPNGVAVDENYDGSQDELTYEWVEFELPEGNFSVTMTIDLMNNAIIDNYLAVGRQNGVLESDIGVKFDTRN
FRLGWDPVTELVMPGVYTNEAFHPDIVLLPGCGVDFTESRLSNLLGIRKRQPFQEGFQILYEDLEGGNIPALLDVEAYEKSKEEAAAA
ATAAVATASTEVRGDNFASAAAVAEAAETESKIVIQPVEKDSKDRSYNVLADKKNTAYRSWYLAYNYGDPEKGVRSWTLLTTSDVTC
GVEQVYWSLPDMMQDPVTFRSTRQVSNYPVVGAELLPVYSKSFFNEQAVYSQQLRAFTSLTHVFNRFPENQILVRPPAPTITTVSE
NVPALTDHGTLPLRSSIRGVQRVTVTDARRRTCPYVYKALGVVAPRVLSSRTF*KMSILISPSNNTGWGLRAPSKMYGGARQRSTQH
PVRVRGHFRAPWGALKGRVRSRTTVDDVIDQVVADARNYTPAAAPASTVDAVIDSVVADARRYARAKSRRRRIARRHRSTPAMRA
ARALLRRARRTGRRAMLRAARRAASGSSSAGRTRRRAATAAAAAIASMSRPRRGNVYWVRDAATGVRVPVRTRPPRT*RC*LRDV
DVSQRRGGCPSANTRKRCSRSSRLRSTAPR*RRKESPAN*SGSKRTKRRRKMWTDWWSLCASSPPGGACSGAGGK*NRCCGPAP
RWSSRPASVPAPPPSAPTTRCTGTRTSSSRRSSVWASLLTASAAAPRP*KRRRCPSRWTTATPRRA*SR*PCSRCCRARRRAGASSA
RAARICTRPCS*WCPSARSWRTCWST*RWTPRCSPRSRCGPSSRWPRAWACRPWTSRSPRSPWKRRPSP*SPAPAPWRCRRIPG
CRRRLPPLAEDASTARPAC*CPTTRCILPSSPRRATAARASTAATPAAAARPPPAAAVVAPAAAAPRLPPPPWCGECTAAGASL*PC
RARATTRASPFNSAVASYLQIWPSHAASASPLRATEEESRAVEG*RGTGCVAITTGGGAPSASGWGEASCPR*SPSSPRRSGRSPA*
LPWRCRPLSATETQLGKFVIKKWTDAPGPVMCVFRWKTSIFRPWHRDTARGRLWAPGATSATAN*TGAPSIGAVSGAGLRISGPR
SKPMATRRGTAAQGRR*GKS*KSRTSSRRWSMAWPRASTGWWTWPTRPCRNRSTAAWTRSRPRGPWRCPRWRRSCLPWTSA
ATSDRVPTRRRRC*RTRTSRPRTRRR*NWVCPPRGPWRLWPPGC*NPAAAASPRPWTCLRLLPAPPQWLSPCRRWPSRRAPPEA
APRRTGRAL*TASWVWECRV*SAAAAIKRHCSA*LACLCVYVCPPTRRRKRRVAELQDGHPIDAAPVGVHAHRRTGRFGVPESGS
GAVRPRHRHLLQSGEQV*EPHGGAHARCDHRPQPAADAALRARGPRGQHLLVQSALHAGRGRQPRAGHGQHLL*HPRRAGSG
AQLQTLLRHRLQQPGSQGSAQHLPVDI*SW*Y*YRKNLYIWKCTCARH*HYKGWYSTWN*QRWSGNLCRRNLSTRASSG*C*M
A*HHWY**KIWRQSS*A*HQNEALLWFFCQAYQ*RRRPGKCENRNRRYQRI*H*HGILR*SKCSCRRPSPRNCFVY*ECGSGNSRY
PYCIQGRYR*Q*LFYQFGSAVHAQQTQLHWLQRQLYRSDVLQQHWQYGCTGWTGLPAECCGGLAGQKHRTVLPALA*LSG*QN
QVFQYVESGGGQL*PRCAHY*KSRCGG*TS*LLLPPGCCG*N*YLPGN*GQW**SNHLDQR*YC**C**IGQGQSFRHGDQHPG
QPVAELPLRERGAVPARLLQVHAGQHHAAHQHQHLRLHERPRGGALAGGRLHQHRGALVAGPHGQRQPLQPPPQRGPAIPLHA
PGQRALRALPHPGAPKVFRHQEPPAPARVLHLRVELPQGRQHDPAELPRQRPAHGRGLHRLHQHQPLRHLLPHGAQHRLHARGH
AAQRHQRPVLQRLPLGGQHALPHPGQRHQRAHLHPLAQLGRLPRLVLHAPQDPRDALARLRVRPLLRLLGLHPLPRRHLLPQPHL
QEGLHHLRLLRQLARQRPPPDAQRVRNQAHRRRRGVQRGPVQHDQGLVPGPDAGPLQHRLPGLLRARGLQGPHVLLLPQLPAH
EPPGRGRGQLQGLPGRHPGLPAQQLGLRRLPRAHHAPGPALPRQLPLPAHRQERRRQRHPEKVPLRPGHVAHPLLQQLHVHGRA
HRPRPEHALRQLRPRARHEFRSRPHG*VHPSLCCLRSLRRRPSAPAPPRRHRGRLPAHALLGRQRHHLSLLLLAR*RPARAPASRSSG
PSSATWAAGPASWAPSTSASRDSWPRTSWPAPSSTRPAARPGASTGWPSPGTRAPTPATSSTPSGSRTSASSRSTSSSTRACCVAA
PWPPRTAASPWKSPPRPCRVRARPPAGSSAACSCTPSCTGPTAPWTRTPP*TC*RGCPTACSSRPRWNPPCAATRRRSTASSTPTP
PTFAPTARASRRPPPSTA*IKTCNPVCVCECFIHHNKQHMFMPPSLRL*LYLEIEGVLPALGMARGQGYVAELVLGQPLELGDQQLR
HGEVGERVAPQLARELQGAQQVGRGDLEIAVGTRVLRARVTVHGVAALEHHQGRVLHARQHRRVGDALHVQILGVGHPEGGHL
AGLPPHAGHAAGLVVAIAVQGDQHHLGLLGAHARVHGLHESLQLAEGLLRLAALGEEDPAGLARELVGGAASVVHAAARVVVGQ
LHHAAPPAVLGDLGPVGVLLQRALPVLARHIHLDRVLLLDHHGPVQAPQLALGLGAPVQPQRAAGALPVLVGDLGVRVHEALQEA
AHHRGQGLVAGEGQRNAAVLLVHIQVADTAVHLALLGHQLEGGLQVALHAVPVHQQRHHFHALLPGRNDRQAQGVLHRCHLSR
RRRSQGVVLVQGLKHSLAVLLGDAHGGKAEAHGRQLLLGLPFVLAVLADVLQRHMLGLAGFLFGRQRRRRRRAGRARVLAHHDYF
FSLAVVRDHAAVGMPLLGQRRRRRALAVRRAAGRAPSAFGGALLAALL*LTSSAAGHCVLLGSKHGDSAIVANIAICPRRRRREPAA
AE*KLNRPAAQPHLRRRSPRHARDGGIHRD*PGLRDARGARGGAGSALFSPGREPPRAARAGSRERAEPGWARAWRLPERGRGR
AHQASGPPMHHRQGRAARPRRGAPQRGGAQPRLRAQPLLAARAPQAPAQRHLRAQPAPQLLPGLRGARGPGHLPPLFQEPKDP
RLLPRQPHPRRRPAQPGPRRPPT*YRLLGRGSQDLRGSGQRRDSGRERSARKRRGA*APQRPGGVGRRQRAPGGPQAHGRADPL
RLPGAQPAPQGHERRHGPGAHQARLAPLGGGDAGPRELGRGQARGQRRAAGALAGSE*HPPEPGRAAQAHDGRGPGDRGAG
VSAPLLRRRGDPAQGRGEPALPLQTRVRAPGLQDLQRGADQPGLLHGHPAREPPGAERAAHHPARGGPPRLHPRLRLPVPLPHLA

Fig. 23K

DGHGRVAAVPGGAEPERALQAPAEEPQGPVDRVRRAHHRRGPGRPHLPRAPAADAAQRAARLYEPKHVAKLSLFHPRTLRDPAR
HLLRAALGLRAADLPRVPPAALEPLLPAAPGQLPGLPLGRDRGRQRRGPARVPLPLQPLHAAPLPGLQPPAAERDPDHRHLRVARP
RRGQGGSETHPGAVDLGLLAQVRARGLPSLRDQVLRGPIPAAQGRAVGLRHHPGGHPGPIASHPEIPPRISAEKGPRGLLGPPDRR
GAQPQLPPGCPEEAARS*KWSCRRRRRIWRKTGRAVRQRRRRWKTGTALRQRRTACKTVWRRKTRWRRQRKKQPPPDRRPRRR
RRKQAARIPSPLRVGVAAAGPTVDGTRPGASRTPPPRPVRRSGRDTSPGGGTKTPSSPACKPAGATSPSPGATCSSTAG*TSPATSCI
TTVTSTAPTTVSKKRQKPSSSSSSRKPAAAARKSTAAAGGLRIAANEPAQTRELRNRIFPTLYAIFQQSRGQEQELKVKNRSLRSLTRSC
LYHKSEDQLQRTLEDAEALFNKYCALTLKE*PAPAHTRKKAGITSPPAPFARPSS*AKRFPRLTCGATSPRWAWPPAPPRTTPPA*TG
SVPGPR*SHG*MTSAPTETRYS*NSQRSPPRPAITLIRVIGPPPWCTRKFPSPRPYYFRETPRPKSS*LTQVSSWPAAPPCVVTAPLRV
*SGW*SEAEAHSSTTRW*ALRWVCDLTESSNSPDRGDLPSRLVRPS*LWRVRPRSPARVASALSSSWRSSLPRSTSTPSPAPPATTR
TSSSRTSTPSASRWTATIECPMVARLT*LGFDTWTTAAASAASLGISPSLPTLSCPRSTLRARPTECGSSSKGVSTPTCFGSSASVRSWP
SASKDRPF*PCTASATTPACMKVFVVCCVLSIIKAEISDYSGLPCVPAINQSLFFTGNETELQLQCKPHKKYLTWLFQGSPIAVVNHCD
NDGVLLSGPANLTFSTRRSKLQLFQPFLPGTYQCVSGPCHHTFHLIPNTTASLPATNNQTTHQRHRRDRGHVQSSRSTRPQYMPILD
YEAEPQRPMLPAISYFNLTGGDD*PTGQQQRQRPSPGHGRPRLGAATRPTSHSPAAGESRQGAAGRHSHPPVQERHLLPGETGQ
DLLRGHPDRPSPLLRAPAAAPEVHLPGRSQPHRHHPAVGRYQGVHPLLLRLPRLRPHSDQDPLRPPRPPPHELITPLSSEINIILMMI*
IKNNHLI*NKDTIILMI*VLKNKESLT*NLIPGLCPCFLPTPPHSPLPSSGTADPGGLQTSSTR*RGCQIPPVPQSSFYLLSDVQKARPGG
**LRPRLPLRCRQRTDRALHQPPLRLFRWIPREAPGGAVPATG*PRHHQERGNHPQAGRGGGPRLLGKTHLQHGHQGRRPSQFF
QQHHFP*HGYPSLYQRWKIILTSFSTVKHIKINHSEHISCSLWIRFRTEWWHCSCSTVGLSTHF**KRKY*N*PSQWSINS*CKST*YQ
LQKRGHCHYLRRCN*KQHKLA*RYKI*R*WHSCKHWQRIGIWNH*YRD*CHRCIPNSS*IGYWPYL*QYRRHCCLEQRG**TYIMD
HSRPLAKLQNIL*KRCQTHTLLDKVWKSNSGYCDCIGSE*WKSQPNHKHSKHCTRLPQV*CKWSFAKQLHIRQRILELQKGRCYTC*
ALY*CYRFYA*HKGLS*KHICSFKKPYCQSSLSQWG*GQTTDADYYF**N*GCNLHLQYHFSMEMG*Y*VHR*NTCYQLLHLLLHRP
RMNTVSHPACQPFPPHSVYGKNSEAQNKIKFKCFIDSTVLQDSSSYFSSTLPGHGIHHPLPPHSLEHLNAIGDGHAFGLHVPHSFRAS
QSRVGQGDETLRALPHLHLTAQQLRIVLGGRDHGYLEEAEERRWES*SANGIGRWCRIRPRSSRCRRRSVKLLLRGSGSRDSLSMM
PTALSISRLVRRAQQRMRISLRSLQYVQHRTTRLFNSP*FNTLQPKLIAGRMLPTWPSYQILR*IKWRSLQNTLPTYMISLGMWRFTT
SRYHITLWLNMQPRMILRNHRASTAPPAMQRRDPGSRQWQWRTHRSYPWIIWELNKSMLAQHRHMLMHLFSTLSSSGVKTISQ
GTGNSCRTANPAEQGNPRT*LTLCMDRVSQSGSTG*SSTREARVSVSSQRGKGAGRYG*WRDAADRVRDRVMMQLLSDIFVLAV
AEPGPGAAHRSPAAVPALGTLGVEIVKQPLSQTVQQI*GLRSDEDPIMPDSSDHIDHRGMGQTQPDDAILLGFGDGGGGKNRKN
HD*LLIQTVSEHFKMKVAEMAPLAPAVLVENNSQVKGDTVLEMFHGGFQQSLHAHIQKQDNSESGRVL*FLNHHVTLLHHPQIIFI
FPALNDSN*FLR*IQASHDKELAQSALHRHS*AHPHNSKIFCSWFTCSRLTSGISKSLPRSLSSSLSNNCKYSFISSPKFLAIGPPGIRLGQ
ATVQINRSPPQ*ALPNARLL*ACWLDPVISSR*LDRKSPRQFLRKSTKEKSSRCTFRASGTTMK*MQAVRSSMVS*LICKKQKIKH*T
MLAWRTGG*IVLSSTRQATGSPARPS*KLSL*LKTITERRSRWPA*MIRQDEYTPGTLASASEKKRPRKQ*GTTMLSLKSSKAMPCG
*STKSSGAYKM*LLPSCTGSEAPDPSRYTYKASASIAYRAAAHNRRKSQRKAEL*PVHPLSAQYIAQIYTDVKAKV*KYPPNNHTRPA
HAQKPVTHSKKYAHFLKRPNCRHFRVPTLRHRNSTFKFRRPLKTSPAPPLTVARLSANHLPPSPNSNSSFAY*RAPKV*GILLMM

Fig. 24A

AdC6 020-DU172gp160(E1620) Nucleic Acids – SEQ ID NO: 5

CATCATCAATAATATACCTCAAACTTTTGGTGCGCGTTAATATGCAAATGAGCTGTTTGAATTTGGGGAGGGAGGAAGGTGAT
TGGCTGCGGGAGCGGCGACCGTTAGGGGCGGGGCGGGTGACGTTTTGATGACGTGGCTATGAGGCGGAGCCGGTTTGCAAG
TTCTCGTGGGAAAAGTGACGTCAAACGAGGTGTGGTTTGAACACGGAAATACTCAATTTTCCCGCGCTCTCTGACAGGAAATG
AGGTGTTTCTGGGCGGATGCAAGTGAAAACGGGCCATTTTCGCGCGAAAACTGAATGAGGAAGTGAAAATCTGAGTAATTTC
GCGTTTATGGCAGGGAGGAGTATTTGCCGAGGGCCGAGTAGACTTTGACCGATTACGTGGGGGTTTCGATTACCGTATTTTTC
ACCTAAATTTCCGCGTACGGTGTCAAAGTCCGGTGTTTTTACGTACGATATCATTTCCCCGAAAGTGCCACCTGACCGTAACTAT
AACGGTCCTAAGGTAGCGAAAGCTCAGATCTCCCGATCCCCTATGGTGCACTCTCAGTACAATCTGCTCTGATGCCGCATAGTT
AAGCCAGTATCTGCTCCCTGCTTGTGTGTTGGAGGTCGCTGAGTAGTGCGCGAGCAAAATTTAAGCTACAACAAGGCAAGGCT
TGACCGACAATTGCATGAAGAATCTGCTTAGGGTTAGGCGTTTTGCGCTGCTTCGCGATGTACGGGCCAGATATACGCGTTGA
CATTGATTATTGACTAGTATGCCAAGTACGCCCCCTATTGACGTCAATGACGGTAAATGGCCCGCCTGGCATTATGCCCAGTAC
ATGACCTTATGGGACTTTCCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCATGGTGATGCGGTTTTGGCAGTACA
TCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATTTCCAAGTCTCCACCCCATTGACGTCAATGGGAGTTTGTTTTGGCACC
AAAATCAACGGGACTTTCCAAAATGTCGTAACAACTCCGCCCCATTGACGCAAATGGGCGGTAGGCGTGTACGGTGGGAGGT
CTATATAAGCAGAGCTCGTTTAGTGAACCGTCAGATCACTAGAAGCTTTATTGCGGTAGTTTATCACAGTTAAATTGCTAACGC
AGTCAGTGCTTCTGACACAACAGTCTCGAACTTAAGGCTAGAGTACTTAATACGACTCACTATAGGCTAGTTAAGGCTAGAGTT
CGACGCCACCATGCGCGTGATGGGCATCCTGCGCTCCTACCAGCAGTGGTGGATCTGGGGCATCCTGGGCTTCTGGATGCTGA
TGATCTGCAACGTGTGGGGCAACCTGTGGGTGACCGTGTACTACGGCGTGCCCGTGTGGAAGGAGGCCAAGACCACCCTGTT
CTGCGCCTCCGACGCCAAGGCCCACAAGGAGGAGGTGCACAACATCTGGGCCACCCACGCCTGCGTGCCCACCGACCCCAAC
CCCCAGGAGATCGTGCTGAAGAACGTGACCGAGAACTTCAACATGTGGAAGAACGACATGGTGGACCAGATGCACGAGGAC
ATCATCTCCCTGTGGGACCAGTCCCTGAAGCCCTGCGTGAAGCTGACCCCCCTGTGCGTGACCCTGAACTGCTCCGACGTGAA
GATCAAGGGCACCAACGCCACCTACAACAACGCCACCTACAACAACAACAACACCATCTCCGACATGAAGAACTGCTCCTTCAA
CACCACCACCGAGATCACCGACAAGAAGAAGAAGGAGTACGCCCTGTTCTACAAGCTGGACGTGGTGGCCCTGGACGGCAAG
GAGACCAACTCCACCAACTCCTCCGAGTACCGCCTGATCAACTGCAACACCTCCGCCGTGACCCAGGCCTGCCCCAAGGTGTCC
TTCGACCCCATCCCCATCCACTACTGCGCCCCCGCCGGCTACGCCATCCTGAAGTGCAACAACAAGACCTTCAACGGCACCGGC
CCCTGCAACAACGTGTCCACCGTGCAGTGCACCCACGGCATCAAGCCCGTGGTGTCCACCCAGCTGCTGCTGAACGGCTCCCT
GGCCGAGGAGGAGGTGGTGATCCGCTTCGAGAACCTGACCAACAACGCCAAGATCATCATCGTGCACCTGAACGAGTCCGTG
GAGATCAACTGCACCCGCCCCTCCAACAACACCCGCAAGTCCGTGCGCATCGGCCCCGGCCAGACCTTCTTCGCCACCGGCGA
CATCATCGGCGACATCCGCCAGGCCCACTGCAACATCTCCCGCAAGAAGTGGAACACCACCCTGCAGCGCGTGAAGGAGAAG
CTGAAGGAGAAGTTCCCCAACAAGACCATCCAGTTCGCCCCCTCCTCCGGCGGCGACCTGGAGATCACCACCCACTCCTTCAAC
TGCCGCGGCGAGTTCTTCTACTGCTACACCTCCGACCTGTTCAACTCCACCTACATGTCCAACAACACCGGCGGCGCCAACATC
ACCCTGCAGTGCCGCATCAAGCAGATCATCCGCATGTGGCAGGGCGTGGGCCAGGCCATGTACGCCCCCCCCATCGCCGGCA
ACATCACCTGCAAGTCCAACATCACCGGCCTGCTGCTGACCCGCGACGGCGGCAAGGAGAAGAACGACACCGAGACCTTCCG
CCCCGGCGGCGGCGACATGCGCGACAACTGGCGCTCCGAGCTGTACAAGTACAAGGTGGTGGAGATCAAGCCCCTGGGCATC
GCCCCCGACAAGGCCAAGCGCCGCGTGGTGGAGCGCGAGAAGCGCGCCGTGGGCATCGGCGCCGTGTTCCTGGGCTTCCTG
GGCGCCGCCGGCAGCACCATGGGCGCCGCCAGCATGACCCTGACCGTGCAGGCCCGCCAGCTGCTGAGCGGCATCGTGCAGC
AGCAGAGCAACCTGCTGCGCGCCATCGAGGCCCAGCAGCACATGCTGCAGCTGACCGTGTGGGGCATCAAGCAGCTGCAGAC
CCGCGTGCTGGCCATCGAGCGCTACCTGAAGGACCAGCAGCTGCTGGGCATCTGGGGCTGCAGCGGCAAGCTGATCTGCACC
ACCGCCGTGCCCTGGAACGCCAGCTGGAGCAACAAGAGCTACGAGGAGATCTGGGGCAACATGACCTGGATGCAGTGGGAC
CGCGAGATCAACAACTACACCAACACCATCTACAGCCTGCTGGAGGAGAGCCAGAACCAGCAGGAGAAGAACGAGAAGGAC
CTGCTGGCCCTGGACAGCTGGGAGAGCCTGTGGAGCTGGTTCAACATCACCAACTGGCTGTGGTACATCCGCATCTTCATCAT
CATCGTGGGCGGCCTGATCGGCCTGCGCATCATCTTCGCCGTGCTGAGCATCGTGAACCGCGTGCGCCAGGGCTACAGCCCCC
TGAGCTTCCAGACCCTGACCCCCAGCCCCCGCGAGCCCGACCGCCTGGGCCGCATCGAGGAGGAGGGCGGCGAGCAGGACC
GCGCCCGCAGCGTGCGCCTGGTGAACGGCTTCCTGGCCCTGGCCTGGGAGGACCTGCGCAGCCTGTGCCTGTTCAGCTACCAC
CGCCTGCGCGACCTGATCCTGATCGCCGCCCGCGCCGCCGCCCTGCTGGGCCGCAGCAGCCTGTGGGGCCTGCAGAAGGGCT
GGGAGGCCCTGAAGTACCTGGGCAGCCTGGTGCAGTACTGGGGCCTGGAGCTGAAGAAGAGCGCCATCAGCCTGTTCGACG
CCATCGCCATCACCGTGGCCGAGGGCACCGACCGCATCATCAACATCGTGCAGCGCATCAGCCGCGCCTTCTACAACATCCCCC
GCCGCATCCGCCAGGGCTTCGAGGCCACCCTGCAGTAAGGTACCTCTAGAGTCGACCCGGGCGGCCAAACCGCTGATCAGCCT
CGACTGTGCCTTCTAGTTGCCAGCCATCTGTTGTTTGCCCCTCCCCCGTGCCTTCCTTGACCCTGGAAGGTGCCACTCCCACTGT
CCTTTCCTAATAAAATGAGGAAATTGCATCGCATTGTCTGAGTAGGTGTCATTCTATTCTGGGGGGTGGGGTGGGGCAGGACA

Fig. 24B

GCAAGGGGGAGGATTGGGAAGACAATAGCAGGCATGCTGGGGATGCGGTGGGCTCTATGGCTTCTGAGGCGGAAAGAACC
AGCAGATCTGCAGATCTGAATTCATCTATGTCGGGTGCGGAGAAAGAGGTAATGAAATGGCATTATGGGTATTATGGGTCTGC
ATTAATGAATCGGTCAGATATCGACATATGCTGGCCACCGTGCATGTGGCCTCGCACCCCCGCAAGACATGGCCCGAGTTCGA
GCACAACGTCATGACCCGCTGCAATGTGCACCTGGGCTCCCGCCGAGGCATGTTCATGCCCTACCAGTGCAACATGCAATTTGT
GAAGGTGCTGCTGGAGCCCGATGCCATGTCCAGAGTGAGCCTGACGGGGGTGTTTGACATGAATGTGGAGCTGTGGAAAATT
CTGAGATATGATGAATCCAAGACCAGGTGCCGGGCCTGCGAATGCGGAGGCAAGCACGCCAGGCTTCAGCCCGTGTGTGTGG
AGGTGACGGAGGACCTGCGACCCGATCATTTGGTGTTGTCCTGCAACGGGACGGAGTTCGGCTCCAGCGGGGAAGAATCTGA
CTAGAGTGAGTAGTGTTTGGGGCTGGGTGTGAGCCTGCATGAGGGGCAGAATGACTAAAATCTGTGGTTTTCTGTGTGTTGC
AGCAGCATGAGCGGAAGCGCCTCCTTTGAGGGAGGGGTATTCAGCCCTTATCTGACGGGGCGTCTCCCCTCCTGGGCGGGAG
TGCGTCAGAATGTGATGGGATCCACGGTGGACGGCCGGCCCGTGCAGCCCGCGAACTCTTCAACCCTGACCTACGCGACCCTG
AGCTCCTCGTCCGTGGACGCAGCTGCCGCCGCAGCTGCTGCTTCCGCCGCCAGCGCCGTGCGCGGAATGGCCCTGGGCGCCG
GCTACTACAGCTCTCTGGTGGCCAACTCGAGTTCCACCAATAATCCCGCCAGCCTGAACGAGGAGAAGCTGCTGCTGCTGATG
GCCCAGCTCGAGGCCCTGACCCAGCGCCTGGGCGAGCTGACCCAGCAGGTGGCTCAGCTGCAGGCGGAGACGCGGGCCGCG
GTTGCCACGGTGAAAACCAAATAAAAAATGAATCAATAAATAAACGGAGACGGTTGTTGATTTTAACACAGAGTCTTGAATCT
TTATTTGATTTTTCGCGCGCGGTAGGCCCTGGACCACCGGTCTCGATCATTGAGCACCCGGTGGATCTTTTCCAGGACCCGGTA
GAGGTGGGCTTGGATGTTGAGGTACATGGGCATGAGCCCGTCCCGGGGGTGGAGGTAGCTCCATTGCAGGGCCTCGTGCTC
GGGGATGGTGTTGTAAATCACCCAGTCATAGCAGGGGCGCAGGGCGTGGTGCTGCACGATGTCCTTGAGGAGGAGACTGAT
GGCCACGGGCAGCCCCTTGGTGTAGGTGTTGACGAACCTGTTGAGCTGGGAGGGATGCATGCGGGGGGAGATGAGATGCAT
CTTGGCCTGGATCTTGAGATTGGCGATGTTCCCGCCCAGATCCCGCCGGGGGTTCATGTTGTGCAGGACCACCAGCACGGTGT
ATCCGGTGCACTTGGGGAATTTGTCATGCAACTTGGAAGGGAAGGCGTGAAAGAATTTGGAGACGCCCTTGTGACCGCCCAG
GTTTTCCATGCACTCATCCATGATGATGGCGATGGGCCCGTGGGCGGCGGCCTGGGCAAAGACGTTTCGGGGGTCGGACACA
TCGTAGTTGTGGTCCTGGGTGAGCTCGTCATAGGCCATTTTAATGAATTTGGGGCGGAGGGTGCCCGACTGGGGGACGAAGG
TGCCCTCGATCCCGGGGGCGTAGTTGCCCTCGCAGATCTGCATCTCCCAGGCCTTGAGCTCGGAGGGGGGGATCATGTCCACC
TGCGGGGCGATGAAAAAAACGGTTTCCGGGGCGGGGGAGATGAGCTGGGCCGAAAGCAGGTTCCGGAGCAGCTGGGACTT
GCCGCAACCGGTGGGGCCGTAGATGACCCCGATGACCGGCTGCAGGTGGTAGTTGAGGGAGAGACAGCTGCCGTCCTCGCG
GAGGAGGGGGGCCACCTCGTTCATCATCTCGCGCACATGCATGTTCTCGCGCACGAGTTCCGCCAGGAGGCGCTCGCCCCCCA
GCGAGAGGAGCTCTTGCAGCGAGGCGAAGTTTTTCAGCGGCTTGAGTCCGTCGGCCATGGGCATTTTGGAGAGGGTCTGTTG
CAAGAGTTCCAGACGGTCCCAGAGCTCGGTGATGTGCTCTAGGGCATCTCGATCCAGCAGACCTCCTCGTTTCGCGGGTTGGG
GCGACTGCGGGAGTAGGGCACCAGGCGATGGGCGTCCAGCGAGGCCAGGGTCCGGTCCTTCCAGGGCCGCAGGGTCCGCGT
CAGCGTGGTCTCCGTCACGGTGAAGGGGTGCGCGCCGGGCTGGGCGCTTGCGAGGGTGCGCTTCAGGCTCATCCGGCTGGTC
GAGAACCGCTCCCGGTCGGCGCCCTGCGCGTCGGCCAGGTAGCAATTGAGCATGAGTTCGTAGTTGAGCGCCTCGGCCGCGT
GGCCCTTGGCGCGGAGCTTACCTTTGGAAGTGTGTCCGCAGACGGGACAGAGGAGGGACTTGAGGGCGTAGAGCTTGGGGG
CGAGGAAGACGGACTCGGGGGCGTAGGCGTCCGCGCCGCAGCTGGCGCAGACGGTCTCGCACTCCACGAGCCAGGTGAGGT
CGGGGCGGTTGGGGTCAAAAACGAGGTTTCCTCCGTGCTTTTTGATGCGTTTCTTACCTCTGGTCTCCATGAGCTCGTGTCCCC
GCTGGGTGACAAAGAGGCTGTCCGTGTCCCCGTAGACCGACTTTATGGGCCGGTCCTCGAGCGGGGTGCCGCGGTCCTCGTC
GTAGAGGAACCCCGCCCACTCCGAGACGAAGGCCCGGGTCCAGGCCAGCACGAAGGAGGCCACGTGGGAGGGGTAGCGGT
CGTTGTCCACCAGCGGGTCCACCTTCTCCAGGGTATGCAAGCACATGTCCCCCTCGTCCACATCCAGGAAGGTGATTGGCTTGT
AAGTGTAGGCCACGTGACCGGGGGTCCCGGCCGGGGGGGGTATAAAAGGGGGCGGGCCCCTGCTCGTCCTCACTGTCTTCCG
GATCGCTGTCCAGGAGCGCCAGCTGTTGGGGTAGGTATTCCCTCTCGAAGGCGGGCATGACCTCGGCACTCAGGTTGTCAGTT
TCTAGAAACGAGGAGGATTTGATATTGACGGTGCCGTTGGAGACGCCTTTCATGAGCCCCTCGTCCATTTGGTCAGAAAAGAC
GATCTTTTTGTTGTCGAGCTTGGTGGCGAAGGAGCCGTAGAGGGCGTTGGAGAGCAGCTTGGCGATGGAGCGCATGGTCTGG
TTCTTTTCCTTGTCGGCGCGCTCCTTGGCGGCGATGTTGAGCTGCACGTACTCGCGCGCCACGCACTTCCATTCGGGGAAGACG
GTGGTGAGCTCGTCGGGCACGATTCTGACCCGCCAGCCGCGGTTGTGCAGGGTGATGAGGTCCACGCTGGTGGCCACCTCGC
CGCGCAGGGGCTCGTTGGTCCAGCAGAGGCGCCCGCCCTTGCGCGAGCAGAAGGGGGGCAGCGGGTCCAGCATGAGCTCGT
CGGGGGGGTCGGCGTCCACGGTGAAGATGCCGGGCAGGAGCTCGGGGTCGAAGTAGCTGATGCAGGTGCCCAGATTGTCCA
GCGCCGCTTGCCAGTCGCGCACGGCCAGCGCGCGCTCGTAGGGGCTGAGGGGCGTGCCCCAGGGCATGGGGTGCGTGAGCG
CGGAGGCGTACATGCCGCAGATGTCGTAGACGTAGAGGGGCTCCTCGAGGACGCCGATGTAGGTGGGGTAGCAGCGCCCCC
CGCGGATGCTGGCGCGCACGTAGTCGTACAGCTCGTGCGAGGGCGCGAGGAGCCCCGTGCCGAGGTTGGAGCGTTGCGGCT
TTTCGGCGCGGTAGACGATCTGGCGGAAGATGGCGTGGGAGTTGGAGGAGATGGTGGGCCTTTGGAAGATGTTGAAGTGGG
CGTGGGGCAGGCCGACCGAGTCCCTGATGAAGTGGGCGTAGGAGTCCTGCAGCTTGGCGACGAGCTCGGCGGTGACGAGGA
CGTCCAGGGCGCAGTAGTCGAGGGTCTCTTGGATGATGTCATACTTGAGCTGGCCCTTCTGCTTCCACAGCTCGCGGTTGAGA

Fig. 24C

AGGAACTCTTCGCGGTCCTTCCAGTACTCTTCGAGGGGGAACCCGTCCTGATCGGCACGGTAAGAGCCCACCATGTAGAACTG
GTTGACGGCCTTGTAGGCGCAGCAGCCCTTCTCCACGGGGAGGGCGTAAGCTTGCGCGGCCTTGCGCAGGGAGGTGTGGGT
GAGGGCGAAGGTGTCGCGCACCATGACCTTGAGGAACTGGTGCTTGAAGTCGAGGTCGTCGCAGCCGCCCTGCTCCCAGAGT
TGGAAGTCCGTGCGCTTCTTGTAGGCGGGGTTAGGCAAAGCGAAAGTAACATCGTTGAAGAGGATCTTGCCCGCGCGGGGCA
TGAAGTTGCGAGTGATGCGGAAAGGCTGGGGCACCTCGGCCCGGTTGTTGATGACCTGGGCGGCGAGGACGATCTCGTCGA
AGCCGTTGATGTTGTGCCCGACGATGTAGAGTTCCACGAATCGCGGGCGGCCCTTGACGTGGGGCAGCTTCTTGAGCTCGTCG
TAGGTGAGCTCGGCGGGGTCGCTGAGCCCGTGCTGCTCGAGGGCCCAGTCGGCGACGTGGGGGTTGGCGCTGAGGAAGGA
AGTCCAGAGATCCACGGCCAGGGCGGTCTGCAAGCGGTCCCGGTACTGACGGAACTGTTGGCCCACGGCCATTTTTTCGGGG
GTGACGCAGTAGAAGGTGCGGGGGTCGCCGTGCCAGCGGTCCCACTTGAGCTGGAGGGCGAGGTCGTGGGCGAGCTCGACG
AGCGGCGGGTCCCCGGAGAGTTTCATGACCAGCATGAAGGGGACGAGCTGCTTGCCGAAGGACCCCATCCAGGTGTAGGTTT
CCACATCGTAGGTGAGGAAGAGCCTTTCGGTGCGAGGATGCGAGCCGATGGGGAAGAACTGGATCTCCTGCCACCAGTTGGA
GGAATGGCTGTTGATGTGATGGAAGTAGAAATGCCGACGGCGCGCCGAGCACTCGTGCTTGTGTTTATACAAGCGTCCGCAG
TGCTCGCAACGCTGCACGGGATGCACGTGCTGCACGAGCTGTACCTGGGTTCCTTTGGCGAGGAATTTCAGTGGGCAGTGGA
GCGCTGGCGGCTGCATCTCGTGCTGTACTACGTCTTGGCCATCGGCGTGGCCATCGTCTGCCTCGATGGTGGTCATGCTGACG
AGCCCGCGCGGGAGGCAGGTCCAGACCTCGGCTCGGACGGGTCGGAGAGCGAGGACGAGGGCGCGCAGGCCGGAGCTGTC
CAGGGTCCTGAGACGCTGCGGAGTCAGGTCAGTGGGCAGCGGCGGCGCGCGGTTGACTTGCAGGAGCTTTTCCAGGGCGCG
CGGGAGGTCCAGATGGTACTTGATCTCCACGGCGCCGTTGGTGGCTACGTCCACGGCTTGCAGGGTGCCGTGCCCCTGGGGC
GCCACCACCGTGCCCCGTTTCTTCTTGGGCGCTGCTTCCATGTCGGTCAGAAGCGGCGGCGAGGACGCGCGCCGGGCGGCAG
GGGCGGCTCGGGGCCCGGAGGCAGGGGCGGCAGGGGCACGTCGGCGCCGCGCGCGGGCAGGTTCTGGTACTGCGCCCGGA
GAAGACTGGCGTGAGCGACGACGCGACGGTTGACGTCCTGGATCTGACGCCTCTGGGTGAAGGCCACGGGACCCGTGAGTTT
GAACCTGAAAGAGAGTTCGACAGAATCAATCTCGGTATCGTTGACGGCGGCCTGCCGCAGGATCTCTTGCACGTCGCCCGAGT
TGTCCTGGTAGGCGATCTCGGTCATGAACTGCTCGATCTCCTCCTCCTGAAGGTCTCCGCGGCCGGCGCGCTCGACGGTGGCC
GCGAGGTCGTTGGAGATGCGGCCCATGAGCTGCGAGAAGGCGTTCATGCCGGCCTCGTTCCAGACGCGGCTGTAGACCACGG
CTCCGTCGGGGTCGCGCGCGCGCATGACCACCTGGGCGAGGTTGAGCTCGACGTGGCGCGTGAAGACCGCGTAGTTGCAGA
GGCGCTGGTAGAGGTAGTTGAGCGTGGTGGCGATGTGCTCGGTGACGAAGAAGTACATGATCCAGCGGCGGAGCGGCATCT
CGCTGACGTCGCCCAGGGCTTCCAAGCGTTCCATGGCCTCGTAGAAGTCCACGGCGAAGTTGAAAAACTGGGAGTTGCGCGC
CGAGACGGTCAACTCCTCCTCCAGAAGACGGATGAGCTCGGCGATGGTGGCGCGCACCTCGCGCTCGAAGGCCCCGGGGGG
CTCCTCTTCCATCTCCTCCTCTTCCTCCTCCACTAACATCTCTTCTACTTCCTCCTCAGGAGGCGGTGGCGGGGGAGGGGCCCTG
CGTCGCCGGCGGCGCACGGGCAGACGGTCGATGAAGCGCTCGATGGTCTCCCCGCGCCGGCGACGCATGGTCTCGGTGACG
GCGCGCCCGTCCTCGCGGGGCCGCAGCATGAAGACGCCGCCGCGCATCTCCAGGTGGCCGCCGGGGGGGTCTCCGTTGGGC
AGGGAGAGGGCGCTGACGATGCATCTTATCAATTGACCCGTAGGGACTCCGCGCAAGGACCTGAGCGTCTCGAGATCCACGG
GATCCGAAAACCGCTGAACGAAGGCTTCGAGCCAGTCGCAGTCGCAAGGTAGGCTGAGCCCGGTTTCTTGTTCTTCGGGTATT
TGGTCGGGAGGCGGGCGGGCGATGCTGCTGGTGATGAAGTTGAAGTAGGCGGTCCTGAGACGGCGGATGGTGGCGAGGAG
CACCAGGTCCTTGGGCCCGGCTTGCTGGATGCGCAGACGGTCGGCCATGCCCCAGGCGTGGTCCTGACACCTGGCGAGGTCC
TTGTAGTAGTCCTGCATGAGCCGCTCCACGGGCACCTCCTCCTCGCCCGCGCGGCCGTGCATGCGCGTGAGCCCGAACCCGCG
CTGCGGCTGGACGAGCGCCAGGTCGGCGACGACGCGCTCGGTGAGGATGGCCTGCTGGATCTGGGTGAGGGTGGTCTGGAA
GTCGTCGAAGTCGACGAAGCGGTGGTAGGCTCCGGTGTTGATGGTGTAGGAGCAGTTGGCCATGACGGACCAGTTGACGGT
CTGGTGGCCGGGTCGCACGAGCTCGTGGTACTTGAGGCGCGAGTAGGCGCGCGTGTCGAAGATGTAGTCGTTGCAGGCGCG
CACGAGGTACTGGTATCCGACGAGGAAGTGCGGCGGCGGCTGGCGGTAGAGCGGCCATCGCTCGGTGGCGGGGGCGCCGG
GCGCGAGGTCCTCGAGCATGAGGCGGTGGTAGCCGTAGATGTACCTGGACATCCAGGTGATGCCGGCGGCGGTGGTGGAGG
CGCGCGGGAACTCGCGGACGCGGTTCCAGATGTTGCGCAGCGGCAGGAAGTAGTTCATGGTGGCCGCGGTCTGGCCCGTGA
GGCGCGCGCAGTCGTGGATGCTCTAGACATACGGGCAAAAACGAAAGCGGTCAGCGGCTCGACTCCGTGGCCTGGAGGCTA
AGCGAACGGGTTGGGCTGCGCGTGTACCCCGGTTCGAATCTCGAATCAGGCTGGAGCCGCAGCTAACGTGGTACTGGCACTC
CCGTCTCGACCCAAGCCTGCTAACGAAACCTCCAGGATACGGAGGCGGGTCGTTTTTTGGCCTTGGTCGCTGGTCATGAAAAA
CTAGTAAGCGCGGAAAGCGGCCGCCCGCGATGGCTCGCTGCCGTAGTCTGGAGAAAGAATCGCCAGGGTTGCGTTGCGGTGT
GCCCCGGTTCGAGCCTCAGCGCTCGGCGCCGGCCGGATTCCGCGGCTAACGTGGGCGTGGCTGCCCCGTCGTTTCCAAGACCC
CTTAGCCAGCCGACTTCTCCAGTTACGGAGCGAGCCCCTCTTTTTTTTTCTTGTGTTTTTGCCAGATGCATCCCGTACTGCGGCA
GATGCGCCCCCACCCTCCACCACAACCGCCCCTACCGCAGCAGCAGCAACAGCCGGCGCTTCTGCCCCCGCCCCAGCAGCAGC
CAGCCACTACCGCGGCGGCCGCCGTGAGCGGAGCCGGCGTTCAGTATGACCTGGCCTTGGAAGAGGGCGAGGGGCTGGCGC
GGCTGGGGGCGTCGTCGCCGGAGCGGCACCCGCGCGTGCAGATGAAAAGGGACGCTCGCGAGGCCTACGTGCCCAAGCAGA
ACCTGTTCAGAGACAGGAGCGGCGAGGAGCCCGAGGAGATGCGCGCCTCCCGCTTCCACGCGGGGCGGGAGCTGCGGCGCG

Fig. 24D

GCCTGGACCGAAAGCGGGTGCTGAGGGACGAGGATTTCGAGGCGGACGAGCTGACGGGGATCAGCCCCGCGCGCGCGCAC
GTGGCCGCGGCCAACCTGGTCACGGCGTACGAGCAGACCGTGAAGGAGGAGAGCAACTTCCAAAAATCCTTCAACAACCACG
TGCGCACGCTGATCGCGCGCGAGGAGGTGACCCTGGGCCTGATGCACCTGTGGGACCTGCTGGAGGCCATCGTGCAGAACCC
CACGAGCAAGCCGCTGACGGCGCAGCTGTTTCTGGTGGTGCAGCACAGTCGGGACAACGAGACGTTCAGGGAGGCGCTGCT
GAATATCACCGAGCCCGAGGGCCGCTGGCTCCTGGACCTGGTGAACATTTTGCAGAGCATCGTGGTGCAGGAGCGCGGGCTG
CCGCTGTCCGAGAAGCTGGCGGCCATCAACTTCTCGGTGCTGAGTCTGGGCAAGTACTACGCTAGGAAGATCTACAAGACCCC
GTACGTGCCCATAGACAAGGAGGTGAAGATCGACGGGTTTTACATGCGCATGACCCTGAAAGTGCTGACCCTGAGCGACGAT
CTGGGGGTGTACCGCAACGACAGGATGCACCGCGCGGTGAGCGCCAGCCGCCGGCGCGAGCTGAGCGACCAGGAGCTGATG
CACAGCCTGCAGCGGGCCCTGACCGGGGCCGGGACCGAGGGGGAGAGCTACTTTGACATGGGCGCGGACCTGCGCTGGCAG
CCCAGCCGCCGGGCCTTGGAAGCTGCCGGCGGTTCCCCCTACGTGGAGGAGGTGGACGATGAGGAGGAGGAGGGCGAGTAC
CTGGAAGACTGATGGCGCGACCGTATTTTTGCTAGATGCAGCAACAGCCACCGCCGCCGCCTCCTGATCCCGCGATGCGGGCG
GCGCTGCAGAGCCAGCCGTCCGGCATTAACTCCTCGGACGATTGGACCCAGGCCATGCAACGCATCATGGCGCTGACGACCC
GCAATCCCGAAGCCTTTAGACAGCAGCCTCAGGCCAACCGGCTCTCGGCCATCCTGGAGGCCGTGGTGCCCTCGCGCTCGAAC
CCCACGCACGAGAAGGTGCTGGCCATCGTGAACGCGCTGGTGGAGAACAAGGCCATCCGCGGTGACGAGGCCGGGCTGGTG
TACAACGCGCTGCTGGAGCGCGTGGCCCGCTACAACAGCACCAACGTGCAGACGAACCTGGACCGCATGGTGACCGACGTGC
GCGAGGCGGTGTCGCAGCGCGAGCGGTTCCACCGCGAGTCGAACCTGGGCTCCATGGTGGCGCTGAACGCCTTCCTGAGCAC
GCAGCCCGCCAACGTGCCCCGGGGCCAGGAGGACTACACCAACTTCATCAGCGCGCTGCGGCTGATGGTGGCCGAGGTGCCC
CAGAGCGAGGTGTACCAGTCGGGGCCGGACTACTTCTTCCAGACCAGTCGCCAGGGCTTGCAGACCGTGAACCTGAGCCAGG
CTTTCAAGAACTTGCAGGGACTGTGGGGCGTGCAGGCCCCGGTCGGGGACCGCGCGACGGTGTCGAGCCTGCTGACGCCGA
ACTCGCGCCTGCTGCTGCTGCTGGTGGCGCCCTTCACGGACAGCGGCAGCGTGAGCCGCGACTCGTACCTGGGCTACCTGCTT
AACCTGTACCGCGAGGCCATCGGACAGGCGCACGTGGACGAGCAGACCTACCAGGAGATCACCCACGTGAGCCGCGCGCTG
GGCCAGGAGGACCCGGGCAACCTGGAGGCCACCCTGAACTTCCTGCTGACCAACCGGTCGCAGAAGATCCCGCCCCAGTACG
CGCTGAGCACCGAGGAGGAGCGCATCCTGCGCTACGTGCAGCAGAGCGTGGGGCTGTTCCTGATGCAGGAGGGGGCCACGC
CCAGCGCGGCGCTCGACATGACCGCGCGCAACATGGAGCCCAGCATGTACGCCCGCAACCGCCCGTTCATCAATAAGCTGATG
GACTACTTGCATCGGGCGGCCGCCATGAACTCGGACTACTTTACCAACGCCATCTTGAACCCGCACTGGCTCCCGCCGCCCGG
GTTCTACACGGGCGAGTACGACATGCCCGACCCCAACGACGGGTTCCTGTGGGACGACGTGGACAGCAGCGTGTTCTCGCCG
CGTCCAGGAACCAATGCCGTGTGGAAGAAAGAGGGCGGGGACCGGCGGCCGTCCTCGGCGCTGTCCGGTCGCGCGGGTGCT
GCCGCGGCGGTGCCCGAGGCCGCCAGCCCCTTCCCGAGCCTGCCCTTTTCGCTGAACAGCGTGCGCAGCAGCGAGCTGGGTC
GGCTGACGCGACCGCGCCTGCTGGGCGAGGAGGAGTACCTGAACGACTCCTTGTTGAGGCCCGAGCGCGAGAAGAACTTCCC
CAATAACGGGATAGAGAGCCTGGTGGACAAGATGAGCCGCTGGAAGACGTACGCGCACGAGCACAGGGACGAGCCCCGAGC
TAGCAGCGCAGGCACCCGTAGACGCCAGCGGCACGACAGGCAGCGGGGACTGGTGTGGGACGATGAGGATTCCGCCGACGA
CAGCAGCGTGTTGGACTTGGGTGGGAGTGGTGGTAACCCGTTCGCTCACCTGCGCCCCCGTATCGGGCGCCTGATGTAAGAA
TCTGAAAAAATAAAAGACGGTACTCACCAAGGCCATGGCGACCAGCGTGCGTTCTTCTCTGTTGTTTGTAGTAGTATGATGAG
GCGCGTGTACCCGGAGGGTCCTCCTCCCTCGTACGAGAGCGTGATGCAGCAGGCGGTGGCGGCGGCGATGCAGCCCCCGCTG
GAGGCGCCTTACGTGCCCCCGCGGTACCTGGCGCCTACGGAGGGGCGGAACAGCATTCGTTACTCGGAGCTGGCACCCTTGT
ACGATACCACCCGGTTGTACCTGGTGGACAACAAGTCGGCAGACATCGCCTCGCTGAACTACCAGAACGACCACAGCAACTTC
CTGACCACCGTGGTGCAGAACAACGATTTCACCCCCACGGAGGCCAGCACCCAGACCATCAACTTTGACGAGCGCTCGCGGTG
GGGCGGCCAGCTGAAAACCATCATGCACACCAACATGCCCAACGTGAACGAGTTCATGTACAGCAACAAGTTCAAGGCGCGG
GTGATGGTCTCGCGCAAGACCCCCAACGGGGTGGATGATGATTATGATGGTAGTCAGGACGAGCTGACCTACGAGTGGGTGG
AGTTTGAGCTGCCCGAGGGCAACTTCTCGGTGACCATGACCATCGATCTGATGAACAACGCCATCATCGACAACTACTTGGCG
GTGGGGCGGCAGAACGGGGTGCTGGAGAGCGACATCGGCGTGAAGTTCGACACGCGCAACTTCCGGCTGGGCTGGGACCCC
GTGACCGAGCTGGTGATGCCGGGCGTGTACACCAACGAGGCCTTCCACCCCGACATCGTCCTGCTGCCCGGCTGCGGCGTGG
ACTTCACCGAGAGCCGCCTCAGCAACCTGCTGGGCATCCGCAAGCGGCAGCCCTTCCAGGAGGGCTTCCAGATCCTGTACGAG
GACCTGGAGGGGGGCAACATCCCCGCGCTCTTGGATGTCGAAGCCTACGAGAAAAGCAAGGAGGATAGCACCGCCGCGGCG
ACCGCAGCCGTGGCCACCGCCTCTACCGAGGTGCGGGGCGATAATTTTGCTAGCGCTGCGGCAGCGGCCGAGGCGGCTGAAA
CCGAAAGTAAGATAGTCATCCAGCCGGTGGAGAAGGACAGCAAGGACAGGAGCTACAACGTGCTCGCGGACAAGAAAAACA
CCGCCTACCGCAGCTGGTACCTGGCCTACAACTACGGCGACCCCGAGAAGGGCGTGCGCTCCTGGACGCTGCTCACCACCTCG
GACGTCACCTGCGGCGTGGAGCAAGTCTACTGGTCGCTGCCCGACATGATGCAAGACCCGGTCACCTTCCGCTCCACGCGTCA
AGTTAGCAACTACCCGGTGGTGGGCGCCGAGCTCCTGCCCGTCTACTCCAAGAGCTTCTTCAACGAGCAGGCCGTCTACTCGC
AGCAGCTGCGCGCCTTCACCTCGCTCACGCACGTCTTCAACCGCTTCCCCGAGAACCAGATCCTCGTCCGCCCGCCCGCGCCCA
CCATTACCACCGTCAGTGAAAACGTTCCTGCTCTCACAGATCACGGGACCCTGCCGCTGCGCAGCAGTATCCGGGGAGTCCAG

Fig. 24E

CGCGTGACCGTCACTGACGCCAGACGCCGCACCTGCCCCTACGTCTACAAGGCCCTGGGCGTAGTCGCGCCGCGCGTCCTCTC
GAGCCGCACCTTCTAAAAAATGTCCATTCTCATCTCGCCCAGTAATAACACCGGTTGGGGCCTGCGCGCGCCCAGCAAGATGT
ACGGAGGCGCTCGCCAACGCTCCACGCAACACCCCGTGCGCGTGCGCGGGCACTTCCGCGCTCCCTGGGGCGCCCTCAAGGG
CCGCGTGCGCTCGCGCACCACCGTCGACGACGTGATCGACCAGGTGGTGGCCGACGCGCGCAACTACACGCCCGCCGCCGCG
CCCGTCTCCACCGTGGACGCCGTCATCGACAGCGTGGTGGCCGACGCGCGCCGGTACGCCCGCACCAAGAGCCGGCGGCGGC
GCATCGCCCGGCGGCACCGGAGCACCCCCGCCATGCGCGCGGCGCGAGCCTTGCTGCGCAGGGCCAGGCGCACGGGACGCA
GGGCCATGCTCAGGGCGGCCAGACGCGCGGCCTCCGGCAGCAGCAGCGCCGGCAGGACCCGCAGACGCGCGGCCACGGCG
GCGGCGGCGGCCATCGCCAGCATGTCCCGCCCGCGGCGCGGCAACGTGTACTGGGTGCGCGACGCCGCCACCGGTGTGCGC
GTGCCCGTGCGCACCCGCCCCCCTCGCACTTGAAGATGCTGACTTCGCGATGTTGATGTGTCCCAGCGGCGAGGAGGATGTCC
AAGCGCAAATACAAGGAAGAGATGCTCCAGGTCATCGCGCCTGAGATCTACGGCCCCGCGGCGGCGGTGAAGGAGGAAAGA
AAGCCCCGCAAACTGAAGCGGGTCAAAAAGGACAAAAAGGAGGAGGAAGATGACGGACTGGTGGAGTTTGTGCGCGAGTTC
GCCCCCCGGCGGCGCGTGCAGTGGCGCGGGCGGAAAGTGAAACCGGTGCTGCGGCCCGGCACCACGGTGGTCTTCACGCCC
GGCGAGCGTTCCGGCTCCGCCTCCAAGCGCTCCTACGACGAGGTGTACGGGGACGAGGACATCCTCGAGCAGGCGGTCGAGC
GTCTGGGCGAGTTTGCGTACGGCAAGCGCAGCCGCCCCGCGCCCTTGAAAGAGGAGGCGGTGTCCATCCCGCTGGACCACGG
CAACCCCACGCCGAGCCTGAAGCCGGTGACCCTGCAGCAGGTGCTACCGAGCGCGGCGCCGCGCCGGGGCTTCAAGCGCGA
GGGCGGCGAGGATCTGTACCCGACCATGCAGCTGATGGTGCCCAAGCGCCAGAAGCTGGAGGACGTGCTGGAGCACATGAA
GGTGGACCCCGAGGTGCAGCCCGAGGTCAAGGTGCGGCCCATCAAGCAGGTGGCCCCGGGCCTGGGCGTGCAGACCGTGGA
CATCAAGATCCCCACGGAGCCCATGGAAACGCAGACCGAGCCCGTGAAGCCCAGCACCAGCACCATGGAGGTGCAGACGGAT
CCCTGGATGCCAGCACCAGCTTCCACCAGCACTCGCCGAAGACGCAAGTACGGCGCGGCCAGCCTGCTGATGCCCAACTACGC
GCTGCATCCTTCCATCATCCCCACGCCGGGCTACCGCGGCACGCGCTTCTACCGCGGCTACACCAGCAGCCGCCGCCGCAAGA
CCACCACCCGCCGCCGTCGTCGCAGCCGCCGCAGCAGCACCGCGACTTCCGCCTTGGTGCGGAGAGTGTATCGCAGCGGGCG
CGAGCCTCTGACCCTGCCGCGCGCGCGCTACCACCCGAGCATCGCCATTTAACTACCGCCTCCTACTTGCAGATATGGCCCTCA
CATGCCGCCTCCGCGTCCCCATTACGGGCTACCGAGGAAGAAAGCCGCGCCGTAGAAGGCTGACGGGGAACGGGCTGCGTC
GCCATCACCACCGGCGGCGGCGCGCCATCAGCAAGCGGTTGGGGGGAGGCTTCCTGCCCGCGCTGATCCCCATCATCGCCGC
GGCGATCGGGGCGATCCCCGGCATAGCTTCCGTGGCGGTGCAGGCCTCTCAGCGCCACTGAGACACAAAAAAGCATGGATTT
GTAATAAAAAAAAAAATGGACTGACGCTCCTGGTCCTGTGATGTGTGTTTTTAGATGGAAGACATCAATTTTTCGTCCCTGGCA
CCGCGACACGGCACGCGGCCGTTTATGGGCACCTGGAGCGACATCGGCAACAGCCAACTGAACGGGGGCGCCTTCAATTGGA
GCAGTCTCTGGAGCGGGCTTAAGAATTTCGGGTCCACGCTCAAAACCTATGGCAACAAGGCGTGGAACAGCAGCACAGGGCA
GGCGCTGAGGGAAAAGCTGAAAGAACAGAACTTCCAGCAGAAGGTGGTTGATGGCCTGGCCTCAGGCATCAACGGGGTGGT
TGACCTGGCCAACCAGGCCGTGCAGAAACAGATCAACAGCCGCCTGGACGCGGTCCCGCCCGCGGGGTCCGTGGAGATGCCC
CAGGTGGAGGAGGAGCTGCCTCCCCTGGACAAGCGCGGCGACAAGCGACCGCGTCCCGACGCGGAGGAGACGCTGCTGACG
CACACGGACGAGCCGCCCCCGTACGAGGAGGCGGTGAAACTGGGCCTGCCCACCACGCGGCCCGTGGCGCCTCTGGCCACCG
GAGTGCTGAAACCCAGCAGCAGCCAGCCCGCGACCCTGGACTTGCCTCCGCCTCGCCCCTCCACAGTGGCTAAGCCCCTGCCG
CCGGTGGCCGTCGCGTCGCGCGCCCCCCGAGGCCGCCCCCAGGCGAACTGGCAGAGCACTCTGAACAGCATCGTGGGTCTGG
GAGTGCAGAGTGTGAAGCGCCGCCGCTGCTATTAAAAGACACTGTAGCGCTTAACTTGCTTGTCTGTGTGTATATGTATGTCC
GCCGACCAGAAGGAGGAGTGTGAAGAGGCGCGTCGCCGAGTTGCAAGATGGCCACCCCATCGATGCTGCCCCAGTGGGCGT
ACATGCACATCGCCGGACAGGACGCTTCGGAGTACCTGAGTCCGGGTCTGGTGCAGTTCGCCCGCGCCACAGACACCTACTTC
AGTCTGGGGAACAAGTTTAGGAACCCCACGGTGGCGCCCACGCACGATGTGACCACCGACCGCAGCCAGCGGCTGACGCTGC
GCTTCGTGCCCGTGGACCGCGAGGACAACACCTACTCGTACAAAGTGCGCTACACGCTGGCCGTGGGCGACAACCGCGTGCT
GGACATGGCCAGCACCTACTTTGACATCCGCGGCGTGCTGGACCGGGGCCCTAGCTTCAAACCCTACTCTGGCACCGCCTACA
ACAGCCTAGCTCCCAAGGGAGCTCCCAATTCCAGCCAGTGGGAGCAAGCAAAAACAGGCAATGGGGGAACTATGGAAACACA
CACATATGGTGTGGCCCCAATGGGCGGAGAGAATATTACAAAAGATGGTCTTCAAATTGGAACTGACGTTACAGCGAATCAG
AATAAACCAATTTATGCCGACAAAACATTTCAACCAGAACCGCAAGTAGGAGAAGAAAATTGGCAAGAAACTGAAAACTTTTA
TGGCGGTAGAGCTCTTAAAAAAGACACAAACATGAAACCTTGCTATGGCTCCTATGCTAGACCCACCAATGAAAAAGGAGGTC
AAGCTAAACTTAAAGTTGGAGATGATGGAGTTCCAACCAAAGAATTCGACATAGACCTGGCTTTCTTTGATACTCCCGGTGGC
ACCGTGAACGGTCAAGACGAGTATAAAGCAGACATTGTCATGTATACCGAAAACACGTATTTGGAAACTCCAGACACGCATGT
GGTATACAAACCAGGCAAGGATGATGCAAGTTCTGAAATTAACCTGGTTCAGCAGTCTATGCCCAACAGACCCAACTACATTG
GGTTCAGGGACAACTTTATCGGTCTTATGTACTACAACAGCACTGGCAATATGGGTGTGCTTGCTGGTCAGGCCTCCCAGCTGA
ATGCTGTGGTTGATTTGCAAGACAGAAACACCGAGCTGTCCTACCAGCTCTTGCTTGACTCTTTGGGTGACAGAACCCGGTATT
TCAGTATGTGGAACCAGGCGGTGGACAGTTATGACCCCGATGTGCGCATCATCGAAAACCATGGTGTGGAGGATGAATTGCC
AAACTATTGCTTCCCCTTGGACGGCTCTGGCACTAACGCCGCATACCAAGGTGTGAAAGTAAAAGATGGTCAAGATGGTGATG

Fig. 24F

TTGAGAGTGAATGGGAAAATGACGATACTGTTGCAGCTCGAAATCAATTATGTAAAGGTAACATTTTCGCCATGGAGATTAAT
CTCCAGGCTAACCTGTGGAGAAGTTTCCTCTACTCGAACGTGGCCCTGTACCTGCCCGACTCCTACAAGTACACGCCGACCAAC
GTCACGCTGCCGACCAACACCAACACCTACGATTACATGAATGGCAGAGTGACACCTCCCTCGCTGGTAGACGCCTACCTCAAC
ATCGGGGCGCGCTGGTCGCTGGACCCCATGGACAACGTCAACCCCTTCAACCACCACCGCAACGCGGGCCTGCGCTACCGCTC
CATGCTCCTGGGCAACGGGCGCTACGTGCCCTTCCACATCCAGGTGCCCCAAAAGTTTTTCGCCATCAAGAGCCTCCTGCTCCT
GCCCGGGTCCTACACCTACGAGTGGAACTTCCGCAAGGACGTCAACATGATCCTGCAGAGCTCCCTAGGCAACGACCTGCGCA
CGGACGGGGCCTCCATCGCCTTCACCAGCATCAACCTCTACGCCACCTTCTTCCCCATGGCGCACAACACCGCCTCCACGCTCG
AGGCCATGCTGCGCAACGACACCAACGACCAGTCCTTCAACGACTACCTCTCGGCGGCCAACATGCTCTACCCCATCCCGGCCA
ACGCCACCAACGTGCCCATCTCCATCCCCTCGCGCAACTGGGCCGCCTTCCGCGGATGGTCCTTCACGCGCCTGAAGACCCGCG
AGACGCCCTCGCTCGGCTCCGGGTTCGACCCCTACTTCGTCTACTCGGGCTCCATCCCCTACCTAGACGGCACCTTCTACCTCAA
CCACACCTTCAAGAAGGTCTCCATCACCTTCGACTCCTCCGTCAGCTGGCCCGGCAACGACCGCCTCCTGACGCCCAACGAGTT
CGAAATCAAGCGCACCGTCGACGGAGAGGGATACAACGTGGCCCAGTGCAACATGACCAAGGACTGGTTCCTGGTCCAGATG
CTGGCCCACTACAACATCGGCTACCAGGGCTTCTACGTGCCCGAGGGCTACAAGGACCGCATGTACTCCTTCTTCCGCAACTTC
CAGCCCATGAGCCGCCAGGTCGTGGACGAGGTCAACTACAAGGACTACCAGGCCGTCACCCTGGCCTACCAGCACAACAACTC
GGGCTTCGTCGGCTACCTCGCGCCCACCATGCGCCAGGGCCAGCCCTACCCCGCCAACTACCCCTACCCGCTCATCGGCAAGA
GCGCCGTCGCCAGCGTCACCCAGAAAAAGTTCCTCTGCGACCGGGTCATGTGGCGCATCCCCTTCTCCAGCAACTTCATGTCCA
TGGGCGCGCTCACCGACCTCGGCCAGAACATGCTCTACGCCAACTCCGCCCACGCGCTAGACATGAATTTCGAAGTCGACCCC
ATGGATGAGTCCACCCTTCTCTATGTTGTCTTCGAAGTCTTCGACGTCGTCCGAGTGCACCAGCCCCACCGCGGCGTCATCGAA
GCCGTCTACCTGCGCACGCCCTTCTCGGCCGGCAACGCCACCACCTAAGCCGCTCTTGCTTCTTGCAAGATGACGGCGGGCTCC
GGCGAGCAGGAGCTCAGGGCCATCCTCCGCGACCTGGGCTGCGGGCCCTGCTTCCTGGGCACCTTCGACAAGCGCTTCCCTG
GATTCATGGCCCCGCACAAGCTGGCCTGCGCCATCGTGAACACGGCCGGCCGCGAGACCGGGGGCGAGCACTGGCTGGCCTT
CGCCTGGAACCCGCGCTCCCACACATGCTACCTCTTCGACCCCTTCGGGTTCTCGGACGAGCGCCTCAAGCAGATCTACCAGTT
CGAGTACGAGGGCCTGCTGCGTCGCAGCGCCCTGGCCACCGAGGACCGCTGCGTCACCCTGGAAAAGTCCACCCAGACCGTG
CAGGGTCCGCGCTCGGCCGCCTGCGGGCTCTTCTGCTGCATGTTCCTGCACGCCTTCGTGCACTGGCCCGACCGCCCCATGGAC
AAGAACCCCACCATGAACTTACTGACGGGGGTGCCCAACGGCATGCTCCAGTCGCCCCAGGTGGAACCCACCCTGCGCCGCAA
CCAGGAAGCGCTCTACCGCTTCCTCAATGCCCACTCCGCCTACTTTCGCTCCCACCGCGCGCGCATCGAGAAGGCCACCGCCTT
CGACCGCATGAATCAAGACATGTAAAAAACCGGTGTGTGTATGTGAATGCTTTATTCATAATAAACAGCACATGTTTATGCCAC
CTTCTCTGAGGCTCTGACTTTATTTAGAAATCGAAGGGGTTCTGCCGGCTCTCGGCATGGCCCGCGGGCAGGGATACGTTGCG
GAACTGGTACTTGGGCAGCCACTTGAACTCGGGGATCAGCAGCTTGGGCACGGGGAGGTCGGGGAACGAGTCGCTCCACAG
CTTGCGCGTGAGTTGCAGGGCGCCCAGCAGGTCGGGCGCGGAGATCTTGAAATCGCAGTTGGGACCCGCGTTCTGCGCGCGA
GAGTTGCGGTACACGGGGTTGCAGCACTGGAACACCATCAGGGCCGGGTGCTTCACGCTTGCCAGCACCGTCGCGTCGGTGA
TGCCCTCCACGTCCAGATCCTCGGCGTTGGCCATCCCGAAGGGGGTCATCTTGCAGGTCTGCCGCCCCATGCTGGGCACGCAG
CCGGGCTTGTGGTTGCAATCGCAGTGCAGGGGGATCAGCATCATCTGGGCCTGCTCGGAGCTCATGCCCGGGTACATGGCCTT
CATGAAAGCCTCCAGCTGGCGGAAGGCCTGCTGCGCCTTGCCGCCCTCGGTGAAGAAGACCCCGCAGGACTTGCTAGAGAAC
TGGTTGGTGGCGCAGCCGGCGTCGTGCACGCAGCAGCGCGCGTCGTTGTTGGCCAGCTGCACCACGCTGCGCCCCCAGCGGT
TCTGGGTGATCTTGGCCCGGTTGGGGTTCTCCTTCAGCGCGCGCTGCCCGTTCTCGCTCGCCACATCCATCTCGATAGTGTGCT
CCTTCTGGATCATCACGGTCCCGTGCAGGCACCGCAGCTTGCCCTCGGCTTCGGTGCAGCCGTGCAGCCACAGCGCGCAGCCG
GTGCACTCCCAGTTCTTGTGGGCGATCTGGGAGTGCGAGTGCACGAAGCCCTGCAGGAAGCGGCCCATCATCGCGGTCAGGG
TCTTGTTGCTGGTGAAGGTCAGCGGGATGCCGCGGTGCTCCTCGTTCACATACAGGTGGCAGATGCGGCGGTACACCTCGCCC
TGCTCGGGCATCAGCTGGAAGGCGGACTTCAGGTCGCTCTCCACGCGGTACCGGTCCATCAGCAGCGTCATCACTTCCATGCC
CTTCTCCCAGGCCGAAACGATCGGCAGGCTCAGGGGGTTCTTCACCGCCATTGTCATCTTAGTCGCCGCCGCCGAGGTCAGGG
GGTCGTTCTCGTCCAGGGTCTCAAACACTCGCTTGCCGTCCTTCTCGATGATGCGCACGGGGGGAAAGCTGAAGCCCACGGCC
GCCAGCTCCTCCTCGGCCTGCCTTTCGTCCTCGCTGTCCTGGCTGATGTCTTGCAAAGGCACATGCTTGGTCTTGCGGGGTTTCT
TTTTGGGCGGCAGAGGCGGCGGCGATGTGCTGGGAGAGCGCGAGTTCTCGTTCACCACGACTATTTCTTCTTCTTGGCCGTCG
TCCGAGACCACGCGGCGGTAGGCATGCCTCTTCTGGGGCAGAGGCGGAGGCGACGGGCTCTCGCGGTTCGGCGGGCGGCTG
GCAGAGCCCCTTCCGCGTTCGGGGGTGCGCTCCTGGCGGCGCTGCTCTGACTGACTTCCTCCGCGGCCGGCCATTGTGTTCTCC
TAGGGAGCAACAACAAGCATGGAGACTCAGCCATCGTCGCCAACATCGCCATCTGCCCCCGCCGCCACCGCCGACGAGAACCA
GCAGCAGAATGAAAGCTTAACCGCCCCGCCGCCCAGCCCCACCTCCGACGCCGCGGCCCCAGACATGCAAGAGATGGAGGAA
TCCATCGAGATTGACCTGGGCTACGTGACGCCCGCGGAGCACGAGGAGGAGCTGGCAGCGCGCTTTTCAGCCCCGGAAGAGA
ACCACCAAGAGCAGCCAGAGCAGGAAGCAGAGAACGAGCAGAACCAGGCTGGGCACGAGCATGGCGACTACCTGAGCGGG
GCAGAGGACGTGCTCATCAAGCATCTGGCCCGCCAATGCATCATCGTCAAGGACGCGCTGCTCGACCGCGCCGAGGTGCCCCT

Fig. 24G

CAGCGTGGCGGAGCTCAGCCGCGCCTACGAGCGCAACCTCTTCTCGCCGCGCGTGCCCCCCAAGCGCCAGCCCAACGGCACCT
GTGAGCCCAACCCGCGCCTCAACTTCTACCCGGTCTTCGCGGTGCCCGAGGCCCTGGCCACCTACCACCTCTTTTTCAAGAACC
AAAGGATCCCCGTCTCCTGCCGCGCCAACCGCACCCGCGCCGACGCCCTGCTCAACCTGGGCCCCGGCGCCCGCCTACCTGAT
ATCACCTCCTTGGAAGAGGTTCCCAAGATCTTCGAGGGTCTGGGCAGCGACGAGACTCGGGCCGCGAACGCTCTGCAAGGAA
GCGGAGAGGAGCATGAGCACCACAGCGCCCTGGTGGAGTTGGAAGGCGACAACGCGCGCCTGGCGGTCCTCAAGCGCACGG
TCGAGCTGACCCACTTCGCCTACCCGGCGCTCAACCTGCCCCCCAAGGTCATGAGCGCCGTCATGGACCAGGTGCTCATCAAG
CGCGCCTCGCCCCTCTCGGAGGAGGAGATGCAGGACCCCGAGAGTTCGGACGAGGGCAAGCCCGTGGTCAGCGACGAGCAG
CTGGCGCGCTGGCTGGGAGCGAGTAGCACCCCCCAGAGCCTGGAAGAGCGGCGCAAGCTCATGATGGCCGTGGTCCTGGTG
ACCGTGGAGCTGGAGTGTCTGCGCCGCTTCTTTGCCGACGCGGAGACCCTGCGCAAGGTCGAGGAGAACCTGCACTACCTCTT
CAGGCACGGGTTCGTGCGCCAGGCCTGCAAGATCTCCAACGTGGAGCTGACCAACCTGGTCTCCTACATGGGCATCCTGCACG
AGAACCGCCTGGGGCAAAACGTGCTGCACACCACCCTGCGCGGGGAGGCCCGCCGCGACTACATCCGCGACTGCGTCTACCT
GTACCTCTGCCACACCTGGCAGACGGGCATGGGCGTGTGGCAGCAGTGCCTGGAGGAGCAGAACCTGAAAGAGCTCTGCAA
GCTCCTGCAGAAGAACCTCAAGGCCCTGTGGACCGGGTTCGACGAGCGTACCACCGCCTCGGACCTGGCCGACCTCATCTTCC
CCGAGCGCCTGCGGCTGACGCTGCGCAACGGGCTGCCCGACTTTATGAGCCAAAGCATGTTGCAAAACTTTCGCTCTTTCATCC
TCGAACGCTCCGGGATCCTGCCCGCCACCTGCTCCGCGCTGCCCTCGGACTTCGTGCCGCTGACCTTCCGCGAGTGCCCCCCGC
CGCTCTGGAGCCACTGCTACTTGCTGCGCCTGGCCAACTACCTGGCCTACCACTCGGACGTGATCGAGGACGTCAGCGGCGAG
GGTCTGCTGGAGTGCCACTGCCGCTGCAACCTCTGCACGCCGCACCGCTCCCTGGCCTGCAACCCCCAGCTGCTGAGCGAGAC
CCAGATCATCGGCACCTTCGAGTTGCAAGGCCCCGGCGACGGCGAGGGCAAGGGGGGTCTGAAACTCACCCCGGGGCTGTG
GACCTCGGCCTACTTGCGCAAGTTCGTGCCCGAGGACTACCATCCCTTCGAGATCAGGTTCTACGAGGACCAATCCCAGCCGCC
CAAGGCCGAGCTGTCGGCCTGCGTCATCACCCAGGGGGCCATCCTGGCCCAATTGCAAGCCATCCAGAAATCCCGCCAAGAAT
TTCTGCTGAAAAAGGGCCACGGGGTCTACTTGGACCCCCAGACCGGAGAGGAGCTCAACCCCAGCTTCCCCCAGGATGCCCCG
AGGAAGCAGCAAGAAGCTGAAAGTGGAGCTGCCGCCGCCGGAGGATTTGGAGGAAGACTGGGAGAGCAGTCAGGCAGAGG
AGGAGGAGATGGAAGACTGGGACAGCACTCAGGCAGAGGAGGACAGCCTGCAAGACAGTCTGGAGGAGGAAGACGAGGT
GGAGGAGGCAGAGGAAGAAGCAGCCGCCGCCAGACCGTCGTCCTCGGCGGAGAAAGCAAGCAGCACGGATACCATCTCCGC
TCCGGGTCGGGGTCGCGGCGGCCGGGCCCACAGTAGGTGGGACGAGACCGGGCGCTTCCCGAACCCCACCACCCAGACCGG
TAAGAAGGAGCGGCAGGGATACAAGTCCTGGCGGGGGCACAAAAACGCCATCGTCTCCTGCTTGCAAGCCTGCGGGGGCAA
CATCTCCTTCACCCGGCGCTACCTGCTCTTCCACCGCGGGGTGAACTTCCCCCGCAACATCTTGCATTACTACCGTCACCTCCAC
AGCCCCTACTACTGTTTCCAAGAAGAGGCAGAAACCCAGCAGCAGCAGAAAACCAGCGGCAGCAGCAGCTAGAAAATCCACA
GCGGCGGCAGGTGGACTGAGGATCGCGGCGAACGAGCCGGCGCAGACCCGGGAGCTGAGGAACCGGATCTTTCCCACCCTC
TATGCCATCTTCCAGCAGAGTCGGGGGCAGGAGCAGGAACTGAAAGTCAAGAACCGTTCTCTGCGCTCGCTCACCCGCAGTTG
TCTGTATCACAAGAGCGAAGACCAACTTCAGCGCACTCTCGAGGACGCCGAGGCTCTCTTCAACAAGTACTGCGCGCTCACTCT
TAAAGAGTAGCCCGCGCCCGCCCACACACGGAAAAAGGCGGGAATTACGTCACCACCTGCGCCCTTCGCCCGACCATCATGAG
CAAAGAGATTCCCACGCCTTACATGTGGAGCTACCAGCCCCAGATGGGCCTGGCCGCCGGCGCCGCCCAGGACTACTCCACCC
GCATGAACTGGCTCAGTGCCGGGCCCGCGATGATCTCACGGGTGAATGACATCCGCGCCCACCGAAACCAGATACTCCTAGAA
CAGTCAGCGATCACCGCCACGCCCCGCCATCACCTTAATCCGCGTAATTGGCCCGCCGCCCTGGTGTACCAGGAAATTCCCCAG
CCCACGACCGTACTACTTCCGCGAGACGCCCAGGCCGAAGTCCAGCTGACTAACTCAGGTGTCCAGCTGGCCGGCGGCGCCGC
CCTGTGTCGTCACCGCCCCGCTCAGGGTATAAAGCGGCTGGTGATCCGAGGCAGAGGCACACAGCTCAACGACGAGGTGGTG
AGCTCTTCGCTGGGTCTGCGACCTGACGGAGTCTTCCAACTCGCCGGATCGGGGAGATCTTCCTTCACGCCTCGTCAGGCCGTC
CTGACTTTGGAGAGTTCGTCCTCGCAGCCCCGCTCGGGCGGCATCGGCACTCTCCAGTTCGTGGAGGAGTTCACTCCCTCGGTC
TACTTCAACCCCTTCTCCGGCTCCCCCGGCCACTACCCGGACGAGTTCATCCCGAACTTCGACGCCATCAGCGAGTCGGTGGAC
GGCTACGATTGAATGTCCCATGGTGGCGCAGCTGACCTAGCTCGGCTTCGACACCTGGACCACTGCCGCCGCTTCCGCTGCTTC
GCTCGGGATCTCGCCGAGTTTGCCTACTTTGAGCTGCCCGAGGAGCACCCTCAGGGCCCAGCCCACGGAGTGCGGATCATCGT
CGAAGGGGGCCTCGACTCCCACCTGCTTCGGATCTTCAGCCAGCGACCGATCCTGGTCGAGCGCGAACAAGGACAGACCCTTC
TTACTTTGTACTGCATCTGCAACCACCCCGGCCTGCATGAAAGTCTTTGTTGTCTGCTGTGTACTGAGTATAATAAAAGCTGAGA
TCAGCGACTACTCCGGACTCGATTGTGGTGTTCCTGCTATCAACCGGTCCCTGTTCTTCACCGGGAACGAGACCGAGCTCCAGC
TCCAGTGTAAGCCCCACAAGAAGTACCTCACCTGGCTGTTCCAGGGCTCCCCGATCGCCGTTGTCAACCACTGCGACAACGAC
GGAGTCCTGCTGAGCGGCCCTGCCAACCTTACTTTTTCCACCCGCAGAAGCAAGCTCCAGCTCTTCCAACCCTTCCTCCCCGGG
ACCTATCAGTGCGTCTCAGGACCCTGCCATCACACCTTCCACCTGATCCCGAATACCACAGCGCCGCTCCCCGCTACTAACAACC
AAACTACCCACCAACGCCACCGTCGCGACCTTTCCTCTGAATCTAATACCACTACCGGAGGTGGCTTCTGCTGTTAGTGCTCCCC
CGTCCCGTCGACCCCCGGTCCCCCACTCAGTCCCCCGAGGAGGTTCGCAAATGCAAATTCCAAGAACCCTGGAAATTCCTCAAA
TGCTACCGCCAAAAATCAGACATGCATCCCAGCTGGATCATGATCATTGGGATCGTGAACATTCTGGCCTGCACCCTCATCTCC

Fig. 24H

TTTGTGATTTACCCCTGCTTTGACTTTGGTTGGAACTCGCCAGAGGCGCTCTATCTCCCGCCTGAACCTGACACACCACCACAGC
AGCAACCTCAGGCACACGCACTACCACCACCACAGCCTAGGCCACAATACATGCCCATATTAGACTATGAGGCCGAGCCACAG
CGACCCATGCTCCCCGCTATTAGTTACTTCAATCTAACCGGCGGAGATGACTGACCCACTGGCCAATAACAACGTCAACGACCT
TCTCCTGGACATGGACGGCCGCGCCTCGGAGCAGCGACTCGCCCAACTTCGCATTCGTCAGCAGCAGGAGAGAGCCGTCAAG
GAGCTGCAGGACGGCATAGCCATCCACCAGTGCAAGAGAGGCATCTTCTGCCTGGTGAAACAGGCCAAGATCTCCTACGAGG
TCACCCAGACCGACCATCGCCTCTCCTACGAGCTCCTGCAGCAGCGCCAGAAGTTCACCTGCCTGGTCGGAGTCAACCCCATCG
TCATCACCCAGCAGTCGGGCGATACCAAGGGGTGCATCCACTGCTCCTGCGACTCCCCCGACTGCGTCCACACTCTGATCAAGA
CCCTCTGCGGCCTCCGCGACCTCCTCCCCATGAACTAATCACCCCCTTATCCAGTGAAATAAAGATCATATTGATGATGATTTAA
ATAAAAAAAATAATCATTTGATTTGAAATAAAGATACAATCATATTGATGATTTGAGTTTAACAAAAATAAAGAATCACTTACTT
GAAATCTGATACCAGGTCTCTGTCCATGTTTTCTGCCAACACCACCTCACTCCCCTCTTCCCAGCTCTGGTACTGCAGGCCCCGG
CGGGCTGCAAACTTCCTCCACACGCTGAAGGGGATGTCAAATTCCTCCTGTCCCTCAATCTTCATTTTATCTTCTATCAGATGTC
CAAAAAGCGCGTCCGGGTGGATGATGACTTCGACCCCGTCTACCCCTACGATGCAGACAACGCACCGACCGTGCCCTTCATCA
ACCCCCCCTTCGTCTCTTCAGATGGATTCCAAGAGAAGCCCCTGGGGGTGTTGTCCCTGCGACTGGCTGACCCCGTCACCACCA
AGAACGGGGAAATCACCCTCAAGCTGGGAGAGGGGGTGGACCTCGACTCGTCGGGAAAACTCATCTCCAACACGGCCACCAA
GGCCGCCGCCCCTCTCAGTATTTCAAACAACACCATTTCCCTTAAAACTGCTGCCCCTTTCTACAACAACAATGGAACTTTAAGC
CTCAATGTCTCCACACCATTAGCAGTATTTCCCACATTTAACACTTTAGGCATAAGTCTTGGAAACGGTCTTCAGACTTCAAATA
AGTTGTTGACTGTACAACTAACTCATCCTCTTACATTCAGCTCAAATAGCATCACAGTAAAAACAGACAAAGGGCTATATATTA
ACTCCAGTGGAAACAGAGGACTTGAGGCTAATATAAGCCTAAAAAGAGGACTAGTTTTTGACGGTAATGCTATTGCAACATAT
ATTGGAAATGGCTTAGACTATGGATCTTATGATAGTGATGGAAAAACAAGACCCGTAATTACCAAAATTGGAGCAGGATTAAA
TTTTGATGCTAACAAAGCAATAGCTGTCAAACTAGGCACAGGTTTAAGTTTTGACTCCGCTGGTGCCTTGACAGCTGGAAACAA
ACAGGATGACAAGCTAACACTTTGGACTACCCCTGACCCAAGCCCTAATTGTCAATTACTTTCAGACAGAGATGCCAAATTTAC
TCTCTGTCTTACAAAATGCGGTAGTCAAATACTAGGCACTGTGGCAGTGGCGGCTGTTACTGTAGGATCAGCACTAAATCCAAT
TAATGACACAGTCAAAAGCGCCATAGTTTTCCTTAGATTTGATTCCGATGGTGTACTCATGTCAAACTCATCAATGGTAGGTGA
TTACTGGAACTTTAGGGAGGGACAGACCACTCAAAGTGTAGCCTATACAAATGCTGTGGGATTCATGCCAAATATAGGTGCAT
ATCCAAAAACCCAAAGTAAAACACCTAAAAATAGCATAGTCAGTCAGGTATATTTAACTGGAGAAACTACTATGCCAATGACA
CTAACCATAACTTTCAATGGCACTGATGAAAAAGACACAACCCCAGTTAGCACCTACTCTATGACTTTTACATGGCAGTGGACT
GGAGACTATAAGGACAAAAATATTACCTTTGCTACCAACTCATTCTCTTTTTCCTACATCGCCCAGGAATAATCCCACCCAGCAA
GCCAACCCCTTTTCCCACCACCTTTGTCTATATGGAAACTCTGAAACAGAAAAATAAAGTTCAAGTGTTTTATTGAATCAACAGT
TTTACAGGACTCGAGCAGTTATTTTTCCTCCACCCTCCCAGGACATGGAATACACCACCCTCTCCCCCCGCACAGCCTTGAACAT
CTGAATGCCATTGGTGATGGACATGCTTTTGGTCTCCACGTTCCACACAGTTTCAGAGCGAGCCAGTCTCGGATCGGTCAGGG
AGATGAAACCCTCCGGGCACTCCCGCATCTGCACCTCACAGCTCAACAGCTGAGGATTGTCCTCGGTGGTCGGGATCACGGTT
ATCTGGAAGAAGCAGAAGAGCGGCGGTGGGAATCATAGTCCGCGAACGGGATCGGCCGGTGGTGTCGCATCAGGCCCCGCA
GCAGTCGCTGCCGCCGCCGCTCCGTCAAGCTGCTGCTCAGGGGGTTCGGGTCCAGGGACTCCCTCAGCATGATGCCCACGGCC
CTCAGCATCAGTCGTCTGGTGCGGCGGGCGCAGCAGCGCATGCGAATCTCGCTCAGGTCACTGCAGTACGTGCAACACAGGA
CCACCAGGTTGTTCAACAGTCCATAGTTCAACACGCTCCAGCCGAAACTCATCGCGGGAAGGATGCTACCCACGTGGCCGTCG
TACCAGATCCTCAGGTAAATCAAGTGGCGCTCCCTCCAGAAGACGCTGCCCATGTACATGATCTCCTTGGGCATGTGGCGGTTC
ACCACCTCCCGGTACCACATCACCCTCTGGTTGAACATGCAGCCCCGGATGATCCTGCGGAACCACAGGGCCAGCACCGCCCC
GCCCGCCATGCAGCGAAGAGACCCCGGATCCCGGCAATGACAATGGAGGACCCACCGCTCGTACCCGTGGATCATCTGGGAG
CTGAACAAGTCTATGTTGGCACAGCACAGGCATATGCTCATGCATCTCTTCAGCACTCTCAGCTCCTCGGGGGTCAAAACCATA
TCCCAGGGCACGGGGAACTCTTGCAGGACAGCGAACCCCGCAGAACAGGGCAATCCTCGCACATAACTTACATTGTGCATGG
ACAGGGTATCGCAATCAGGCAGCACCGGGTGATCCTCCACCAGAGAAGCGCGGGTCTCGGTCTCCTCACAGCGTGGTAAGGG
GGCCGGCCGATACGGGTGATGGCGGGACGCGGCTGATCGTGTTCTCGACCGTGTCATGATGCAGTTGCTTTCGGACATTTTCG
TACTTGCTGTAGCAGAACCTGGTCCGGGCGCTGCACACCGATCGCCGGCGGCGGTCTCGGCGCTTGGAACGCTCGGTGTTAA
AGTTGTAAAACAGCCACTCTCTCAGACCGTGCAGCAGATCTAGGGCCTCAGGAGTGATGAAGATCCCATCATGCCTGATAGCT
CTGATCACATCGACCACCGTGGAATGGGCCAGGCCCAGCCAGATGATGCAATTTTGTTGGGTTTCGGTGACGGCGGGGGAGG
GAAGAACAGGAAGAACCATGATTAACTTTTAATCCAAACGGTCTCGGAGCACTTCAAAATGAAGGTCACGGAGATGGCACCTC
TCGCCCCCGCTGTGTTGGTGGAAAATAACAGCCAGGTCAAAGGTGATACGGTTCTCGAGATGTTCCACGGTGGCTTCCAGCAA
AGCCTCCACGCGCACATCCAGAAACAAGACAATAGCGAAAGCGGGAGGGTTCTCTAATTCCTCAACCATCATGTTACACTCCTG
CACCATCCCCAGATAATTTTCATTTTTCCAGCCTTGAATGATTCGAACTAGTTCCTGAGGTAAATCCAAGCCAGCCATGATAAAA
AGCTCGCGCAGAGCACCCTCCACCGGCATTCTTAAGCACACCCTCATAATTCCAAGATATTCTGCTCCTGGTTCACCTGCAGCA
GATTGACAAGCGGAATATCAAAATCTCTGCCGCGATCCCTGAGCTCCTCCCTCAGCAATAACTGTAAGTACTCTTTCATATCGTC
TCCGAAATTTTTAGCCATAGGACCCCCAGGAATAAGAGAAGGGCAAGCCACATTACAGATAAACCGAAGTCCCCCCCAGTGAG
CATTGCCAAATGTAAGATTGAAATAAGCATGCTGGCTAGACCCGGTGATATCTTCCAGATAACTGGACAGAAAATCGGGTAAG
CAATTTTTAAGAAAATCAACAAAAGAAAAATCTTCCAGGTGCACGTTTAGGGCCTCGGGAACAACGATGGAGTAAGTGCAAG
GGGTGCGTTCCAGCATGGTTAGTTAGCTGATCTGTAAAAAAACAAAAAATAAAACATTAAACCATGCTAGCCTGGCGAACAGG
TGGGTAAATCGTTCTCTCCAGCACCAGGCAGGCCACGGGGTCTCCGGCGCGACCCTCGTAAAAATTGTCGCTATGATTGAAAA
CCATCACAGAGAGACGTTCCCGGTGGCCGGCGTGAATGATTCGAGAAGAAGCATACACCCCCGGAACATTGGAGTCCGTGAG
TGAAAAAAAGCGGCCGAGGAAGCAATGAGGCACTACAACGCTCACTCTCAAGTCCAGCAAAGCGATGCCATGCGGATGAAGC
ACAAAATTTTCAGGTGCGTAAAAAATGTAATTACTCCCCTCCTGCACAGGCAGCGAAGCTCCCGATCCCTCCAGATACACATAC
AAAGCCTCAGCGTCCATAGCTTACCGAGCGGCAGCAGCAGCGGCACACAACAGGCGCAAGAGTCAGAGAAAAGACTGAGCT
CTAACCTGTCCGCCCGCTCTCTGCTCAATATATAGCCCCAGATCTACACTGACGTAAAGGCCAAAGTCTAAAAATACCCGCCAA
ATAATCACACACGCCCAGCACACGCCCAGAAACCGGTGACACACTCAGAAAAATACGCGCACTTCCTCAAACGGCCAAACTGC
CGTCATTTCCGGGTTCCCACGCTACGTCATCAAAACACGACTTTCAAATTCCGTCGACCGTTAAAAACATCACCCGCCCCGCCCC
TAACGGTCGCCGCTCCCGCAGCCAATCACCTTCCTCCCTCCCCAAATTCAAACAGCTCATTTGCATATTAACGCGCACCAAAAGT
TTGAGGTATATTATTGATGATG

Fig. 24I

AdC6 020-DU172gp160(E1620) Amino acids – SEQ ID NO: 13
The symbol " * " refers herein to stop codons in the non coding regions

HHQ*YTSNFWCALICK*AV*IWGGRKVIGCGSGDR*GRGG*RFDDVAMRRSRFASSRGKSDVKRGVV*TRKYSIFPRSLTGNEVFL
GGCK*KRAIFARKLNEEVKI*VISRLWQGGVFAEGRVDFDRLRGGFDYRIFHLNFRVRCQSPVFLRTISFPRKCHLTVTITVLR*RKLRS
PDPLWCTLSTICSDAA*LSQYLLPACVLEVAE*CASKI*ATTRQGLTDNCMKNLLRVRRFALLRDVRARYTR*H*LLTSMPSTPPIDVN
DGKWPAWHYAQYMTLWDFPTWQYIYVLVIAITMVMRFWQYINGRG*RFDSRGFPSLHPIDVNGSLFWHQNQRDFPKCRNNSA
PLTQMGGRRVRWEVYISRARLVNRQITRSFIAVVYHS*IANAVSASDTTVSNLRLEYLIRLTIG*LRLEFDATMRVMGILRSYQQWWI
WGILGFWMLMICNVWGNLWVTVYYGVPVWKEAKTTLFCASDAKAHKEEVHNIWATHACVPTDPNPQEIVLKNVTENFNMWK
NDMVDQMHEDIISLWDQSLKPCVKLTPLCVTLNCSDVKIKGTNATYNNATYNNNNTISDMKNCSFNTTTEITDKKKKEYALFYKLDV
VALDGKETNSTNSSEYRLINCNTSAVTQACPKVSFDPIPIHYCAPAGYAILKCNNKTFNGTGPCNNVSTVQCTHGIKPVVSTQLLLNG
SLAEEEVVIRFENLTNNAKIIIVHLNESVEINCTRPSNNTRKSVRIGPGQTFFATGDIIGDIRQAHCNISRKKWNTTLQRVKEKLKEKFPN
KTIQFAPSSGGDLEITTHSFNCRGEFFYCYTSDLFNSTYMSNNTGGANITLQCRIKQIIRMWQGVGQAMYAPPIAGNITCKSNITGLL
LTRDGGKEKNDTETFRPGGGDMRDNWRSELYKYKVVEIKPLGIAPDKAKRRVVEREKRAVGIGAVFLGFLGAAGSTMGAASMTLT
VQARQLLSGIVQQQSNLLRAIEAQQHMLQLTVWGIKQLQTRVLAIERYLKDQQLLGIWGCSGKLICTTAVPWNASWSNKSYEEIW
GNMTWMQWDREINNYTNTIYSLLEESQNQQEKNEKDLLALDSWESLWSWFNITNWLWYIRIFIIIVGGLIGLRIIFAVLSIVNRVRQ
GYSPLSFQTLTPSPREPDRLGRIEEEGGEQDRARSVRLVNGFLALAWEDLRSLCLFSYHRLRDLILIAARAAALLGRSSLWGLQKGWE
ALKYLGSLVQYWGLELKKSAISLFDAIAITVAEGTDRIINIVQRISRAFYNIPRRIRQGFEATLQ*GTSRVDPGGQTADQPRLCLLVASHL
LFAPPPCLP*PWKVPLPLSFPNKMRKLHRIV*VGVILFWGVGWGRTARGRIGKTIAGMLGMRWALWLLRRKEPADLQI*IHLCRVR
RKR**NGIMGIMGLH**IGQISTYAGHRACGLAPPQDMARVRAQRHDPLQCAPGLPPRHVHALPVQHAICEGAAGARCHVQSEP
DGGV*HECGAVENSEI**IQDQVPGLRMRRQARQASARVCGGDGGPATRSFGVVLQRDGVRLQRGRI*LE*VVFGAGCEPA*GA
E*LKSVVFCVLQQHERKRLL*GRGIQPLSDGASPLLGGSASECDGIHGGRPARAARELFNPDLRDPELLVRGRSCRRSCCFRRQRRAR
NGPGRRLLQLSGGQLEFHQ*SRQPERGEAAAADGPARGPDPAPGRADPAGGSAAGGDAGRGCHGENQIKNESINKRRRLLILTQS
LESLFDFSRAVGPGPPVSIIEHPVDLFQDPVEVGLDVEVHGHEPVPGVEVAPLQGLVLGDGVVNHPVIAGAQGVVLHDVLEEETDG
HGQPLGVGVDEPVELGGMHAGGDEMHLGLDLEIGDVPAQIPPGVHVVQDHQHGVSGALGEFVMQLGREGVKEFGDALVTAQV
FHALIHDDGDGPVGGGLGKDVSGVGHIVVVVLGELVIGHFNEFGAEGARLGDEGALDPGGVVALADLHLPGLELGGGDHVHLRGD
EKNGFRGGGDELGRKQVPEQLGLAATGGAVDDPDDRLQVVVEGETAAVLAEEGGHLVHHLAHMHVLAHEFRQEALAPQREELL
QRGEVFQRLESVGHGHFGEGLLQEFQTVPELGDVL*GISIQQTSSFRGLGRLRE*GTRRWASSEARVRSFQGRRVRVSVVSVTVKGC
APGWALARVRFRLIRLVENRSRSAPCASAR*QLSMSS*LSASAAWPLARSLPLEVCPQTGQRRDLRA*SLGARKTDSGA*ASAPQLA
QTVSHSTSQVRSGRLGSKTRFPPCFLMRFLPLVSMSSCPRWVTKRLSVSP*TDFMGRSSSGVPRSSS*RNPAHSETKARVQASTKEA
TWEG*RSLSTSGSTFSRVCKHMSPSSTSRKVIGL*V*AT*PGVPAGGV*KGAGPCSSSLSSGSLSRSASCWGRYSLSKAGMTSALRLS
VSRNEEDLILTVPLETPFMSPSSIWSEKTIFLLSSLVAKEP*RALESSLAMERMVWFFSLSARSLAAMLSCTYSRATHFHSGKTVVSSSG
TILTRQPRLCRVMRSTLVATSPRRGSLVQQRRPPLREQKGGSGSSMSSSGGSASTVKMPGRSSGSK*LMQVPRLSSAACQSRTASA
RS*GLRGVPQGMGCVSAEAYMPQMS*T*RGSSRTPM*VG*QRPPRMLART*SYSSCEGARSPVPRLERCGFSAR*TIWRKMAW
ELEEMVGLWKMLKWAWGRPTESLMKWA*ESCSLATSSAVTRTSRAQ*SRVSWMMSYLSWPFCFHSSRLRRNSSRSFQYSSRGN
PS*SAR*EPTM*NWLTAL*AQQPFSTGRA*ACAALRREVWVRAKVSRTMTLRNWCLKSRSSQPPCSQSWKSVRFL*AGLGKAKVT
SLKRILPARGMKLRVMRKGWGTSARLLMTWAARTISSKPLMLCPTM*SSTNRGRPLTWGSFLSSS*VSSAGSLSPCCSRAQSATW
GLALRKEVQRSTARAVCKRSRY*RNCWPTAIFSGVTQ*KVRGSPCQRSHLSWRARSWASSTSGGSPESFMTSMKGTSCLPKDPIQV
*VSTS*VRKSLSVRGCEPMGKNWISCHQLEEWLLM*WK*KCRRRAEHSCLCLYKRPQCSQRCTGCTCCTSCTWVPLARNFSGQW
SAGGCISCCTTSWPSAWPSSASMVVMLTSPRGRQVQTSARTGRRARTRARRPELSRVLRRCGVRSVGSGGARLTCRSFSRARGRSR
WYLISTAPLVATSTACRVPCPWGATTVPRFFLGAASMSVRSGGEDARRAAGAARGPEAGAAGARRRRARAGSGTAPGEDWRERR
RDG*RPGSDASG*RPRDP*V*T*KRVRQNQSRYR*RRPAAGSLARRPSCPGRRSRS*TARSPPPEGLRGRRARRWPRGRWRCGP*
AARRRSCRPRSRRGCRPRLRRGRARA*PPGRG*ARRGA*RPRSCRGAGRGS*AWWRCAR*RRST*SSGGAASR*RRPGLPSVPW
PRRSPRRS*KTGSCAPRRSTPPPEDG*ARRWWRAPRARRPRGAPLPSPPLPPPLTSLLLPPQEAVAGEGPCVAGGARADGR*SAR
WSPRAGDAWSR*RRARPRGAAA*RRRRASPGGRRGGLRWAGRGR*RCILSIDP*GLRART*ASRDPRDPKTAERRLRASRSRKVG
*ARFLVLRVFGREAGGRCCW**S*SRRS*DGGWWRGAPGPWARLAGCADGRPCPRRGPDTWRGPCSSPA*AAPRAPPPRPRGR
ACA*ARTRAAAGRAPGRRRRAR*GWPAGSG*GWSGSRRSRRSGGRLRC*WCRSSWP*RTS*RSGGRVARARGT*GASRRACRR
CSRCRRARGTGIRRGSAAAAGGRAAIARWRGRRARGPRA*GGGSRRCTWTSR*CRRRWWRRAGTRGRGSRCCAAAGSSSWWP
RSGP*GARSRGCSRHTGKNESGQRLDSVAWRLSERVGLRVYPGSNLESGWSRS*RGTGTPVSTQAC*RNLQDTEAGRFLALVAGH
EKLVSAESGRPRWLAAVVWRKNRQGCVAVCPGSSLSARRRPDSAANVGVAAPSFPRPLSQPTSPVTERAPLFFSCVFARCIPYCGRC
APTLHHNRPYRSSSNSRRFCPRPSSSQPLPRRPP*AEPAFSMTWPWKRARGWRGWGRRRRSGTRACR*KGTLARPTCPSRTCSET

Fig. 24J

GAARSPRRCAPPASTRGGSCGAAWTESGC*GTRISRRTS*RGSAPRARTWPRPTWSRRTSRP*RRRATSKNPSTTTCAR*SRARR*
PWA*CTCGTCWRPSCRTPRASR*RRSCFWWCSTVGTTRRSGRRC*ISPSPRAAGSWTW*TFCRASWCRSAGCRCPRSWRPSTSR
C*VWASTTLGRSTRPRTCP*TRR*RSTGFTCA*P*KC*P*ATIWGCTATTGCTAR*APAAGAS*ATRS*CTACSGP*PGPGPRGRAT
LTWARTCAGSPAAGPWKLPAVPPTWRRWTMRRRRASTWKTDGATVFLLDAATATAAAS*SRDAGGAAEPAVRH*LLGRLDPGH
ATHHGADDPQSRSL*TAASGQPALGHPGGRGALALEPHAREGAGHRERAGGEQGHPR*RGRAGVQRAAGARGPLQQHQRADE
PGPHGDRRARGGVAARAVPPRVEPGLHGGAERLPEHAARQRAPGPGGLHQLHQRAAADGGRGAPERGVPVGAGLLLPDQSPGL
ADREPEPGFQELAGTVGRAGPGRGPRDGVEPADAELAPAAAAGGALHGQRQREPRLVPGLPA*PVPRGHRTGARGRADLPGDH
PREPRAGPGGPGQPGGHPELPADQPVAEDPAPVRAEHRGGAHPALRAAERGAVPDAGGGHAQRGARHDRAQHGAQHVRPQP
PVHQ*ADGLLASGGRHELGLLYQRHLEPALAPAARVLHGRVRHARPQRRVPVGRRGQQRVLAASRNQCRVEERGRGPAAVLGAV
RSRGCCRGGARGRQPLPEPALFAEQRAQQRAGSADATAPAGRGGVPERLLVEARAREELPQ*RDREPGGQDEPLEDVRARAQGR
APS*QRRHP*TPAARQAAGTGVGR*GFRRRQQRVGLGWEWW*PVRSPAPPYRAPDVRI*KNKRRYSPRPWRPACVLLCCL**YD
EARVPGGSSSLVRERDAAGGGGGDAAPAGGALRAPAVPGAYGGAEQHSLLGAGTLVRYHPVVPGGQQVGRHRLAELPERPQQLP
DHRGAEQRFHPHGGQHPDHQL*RALAVGRPAENHHAHQHAQRERVHVQQQVQGAGDGLAQDPQRGG**L*W*SGRADLRV
GGV*AARGQLLGDHDHRSDEQRHHRQLLGGGAAERGAGERHRREVRHAQLPAGLGPRDRAGDAGRVHQRGLPPRHRPAARLR
RGLHREPPQQPAGHPQAAALPGGLPDPVRGPGGGQHPRALGCRSLREKQGG*HRRGDRSRGHRLYRGAGR*FC*RCGSGRGG*
NRK*DSHPAGGEGQQGQELQRARGQEKHRLPQLVPGLQLRRPREGRALLDAAHHLGRHLRRGASLLVAARHDARPGHLPLHASS
*QLPGGGRRAPARLLQELLQRAGRLLAAAARLHLAHARLQPLPREPDPRPPARAHHYHRQ*KRSCSHRSRDPAAAQQYPGSPARD
RH*RQTPHLPLRLQGPGRSRAARPLEPHLLKNVHSHLAQ**HRLGPARAQQDVRRRSPTLHATPRARARALPRSLGRPQGPRALAH
HRRRRDRPGGGRRAQLHARRRARLHRGRRHRQRGGRRAPVRPHQEPAAAHRPAAPEHPRHARGASLAAQGQAHGTQGHAQG
GQTRGLRQQQRRQDPQTRGHGGGGGHRQHVPPAARQRVLGARRRHRCARARAHPPPSHLKMLTSRC*CVPAARRMSKRKYKE
EMLQVIAPEIYGPAAAVKEERKPRKLKRVKKDKKEEEDDGLVEFVREFAPRRRVQWRGRKVKPVLRPGTTVVFTPGERSGSASKRSY
DEVYGDEDILEQAVERLGEFAYGKRSRPAPLKEEAVSIPLDHGNPTPSLKPVTLQQVLPSAAPRRGFKREGGEDLYPTMQLMVPKRQ
KLEDVLEHMKVDPEVQPEVKVRPIKQVAPGLGVQTVDIKIPTEPMETQTEPVKPSTSTMEVQTDPWMPAPASTSTRRRRKYGAASL
LMPNYALHPSIIPTPGYRGTRFYRGYTSSRRRKTTTRRRRRSRRSSTATSALVRRVYRSGREPLTLPRARYHPSIAI*LPPPTCRYGPHM
PPPRPHYGLPRKKAAP*KADGERAASPSPPAAARHQQAVGGRLPARADPHHRRGDRGDPRHSFRGGAGLSAPLRHKKAWICNKK
KNGLTLLVL*CVFLDGRHQFFVPGTATRHAAVYGHLERHRQQPTERGRLQLEQSLERA*EFRVHAQNLWQQGVEQQHRAGAEGK
AERTELPAEGG*WPGLRHQRGG*PGQPGRAETDQQPPGRGPARGVRGDAPGGGGAASPGQARRQATASRRGGDAADAHGRA
APVRGGGETGPAHHAARGASGHRSAETQQQPARDPGLASASPLHSG*APAAGGRRVARPPRPPPGELAEHSEQHRGSGSAECEA
PPLLLKDTVALNLLVCVYMYVRRPEGGV*RGASPSCKMATPSMLPQWAYMHIAGQDASEYLSPGLVQFARATDTYFSLGNKFRNP
TVAPTHDVTTDRSQRLTLRFVPVDREDNTYSYKVRYTLAVGDNRVLDMASTYFDIRGVLDRGPSFKPYSGTAYNSLAPKGAPNSSQ
WEQAKTGNGGTMETHTYGVAPMGGENITKDGLQIGTDVTANQNKPIYADKTFQPEPQVGEENWQETENFYGGRALKKDTNMK
PCYGSYARPTNEKGGQAKLKVGDDGVPTKEFDIDLAFFDTPGGTVNGQDEYKADIVMYTENTYLETPDTHVVYKPGKDDASSEINL
VQQSMPNRPNYIGFRDNFIGLMYYNSTGNMGVLAGQASQLNAVVDLQDRNTELSYQLLLDSLGDRTRYFSMWNQAVDSYDPDV
RIIENHGVEDELPNYCFPLDGSGTNAAYQGVKVKDGQDGDVESEWENDDTVAARNQLCKGNIFAMEINLQANLWRSFLYSNVALY
LPDSYKYTPTNVTLPTNTNTYDYMNGRVTPPSLVDAYLNIGARWSLDPMDNVNPFNHHRNAGLRYRSMLLGNGRYVPFHIQVPQ
KFFAIKSLLLLPGSYTYEWNFRKDVNMILQSSLGNDLRTDGASIAFTSINLYATFFPMAHNTASTLEAMLRNDTNDQSFNDYLSAAN
MLYPIPANATNVPISIPSRNWAAFRGWSFTRLKTRETPSLGSGFDPYFVYSGSIPYLDGTFYLNHTFKKVSITFDSSVSWPGNDRLLTP
NEFEIKRTVDGEGYNVAQCNMTKDWFLVQMLAHYNIGYQGFYVPEGYKDRMYSFFRNFQPMSRQVVDEVNYKDYQAVTLAYQH
NNSGFVGYLAPTMRQGQPYPANYPYPLIGKSAVASVTQKKFLCDRVMWRIPFSSNFMSMGALTDLGQNMLYANSAHALDMNFE
VDPMDESTLLYVVFEVFDVVRVHQPHRGVIEAVYLRTPFSAGNATT*AALASCKMTAGSGEQELRAILRDLGCGPCFLGTFDKRFPG
FMAPHKLACAIVNTAGRETGGEHWLAFAWNPRSHTCYLFDPFGFSDERLKQIYQFEYEGLLRRSALATEDRCVTLEKSTQTVQGPRS
AACGLFCCMFLHAFVHWPDRPMDKNPTMNLLTGVPNGMLQSPQVEPTLRRNQEALYRFLNAHSAYFRSHRARIEKATAFDRMN
QDM*KTGVCM*MLYS**TAHVYATFSEALTLFRNRRGSAGSRHGPRAGIRCGTGTWAAT*TRGSAAWARGGRGTSRSTACA*VA
GRPAGRARRS*NRSWDPRSARESCGTRGCSTGTPSGPGASRLPAPSRR*CPPRPDPRRWPSRRGSSCRSAAPCWARSRACGCNRS
AGGSASSGPARSSCPGTWPS*KPPAGGRPAAPCRPR*RRPRRTC*RTGWWRSRRRARSSARRCWPAAPRCAPSGSG*SWPGWG
SPSARAARSRSPHPSR*CAPSGSSRSRAGTAACPRLRCSRAATARSRCTPSSCGRSGSASARSPAGSGPSSRSGSCCW*RSAGCRGA
PRSHTGGRCGGTPRPARASAGRRTSGRSPRGTGPSAASSLPCPSPRPKRSAGSGGSSPPLSS*SPPPRSGGRSRPGSQTLACRPSR*C
ARGES*SPRPPAPPRPAFRPRCPG*CLAKAHAWSCGVSFWAAEAAAMCWESASSRSPRLFLLLGRRPRPRGGRHASSGAEAEATG
SRGSAGGWQSPFRVRGCAPGGAALTDFLRGRPLCSPREQQQAWRLSHRRQHRHLPPPPPPTRTSSRMKA*PPRRPAPPPTPRPQ
TCKRWRNPSRLTWAT*RPRSTRRSWQRAFQPRKRTTKSSQSRKQRTSRTRLGTSMATT*AGQRTCSSSIWPANASSSRTRCSTAPR
CPSAWRSSAAPTSATSSRRACPPSASPTAPVSPTRASTSTRSSRCPRPWPPTTSFSRTKGSPSPAAPTAPAPTPCSTWAPAPAYLISPP

Fig. 24K

WKRFPRSSRVWAATRLGPRTLCKEAERSMSTTAPWWSWKATTRAWRSSSARSS*PTSPTRRSTCPPRS*APSWTRCSSSAPRPSR
RRRCRTPRVRTRASPWSATSSWRAGWERVAPPRAWKSGASS*WPWSW*PWSWSVCAASLPTRRPCARSRRTCTTSSGTGSCAR
PARSPTWS*PTWSPTWASCTRTAWGKTCCTPPCAGRPAATTSATASTCTSATPGRRAWACGSSAWRSRT*KSSASSCRRTSRPCG
PGSTSVPPPRTWPTSSSPSACG*RCATGCPTL*AKACCKTFALSSSNAPGSCPPPAPRCPRTSCR*PSASAPRRSGATATCCAWPTT
WPTTRT*SRTSAARVCWSATAAATSARRTAPWPATPSC*ARPRSSAPSSCKAPATARARGV*NSPRGCGPRPTCASSCPRTTIPSRS
GSTRTNPSRPRPSCRPASSPRGPSWPNCKPSRNPAKNFC*KRATGSTWTPRPERSSTPASPRMPRGSSKKLKVELPPPEDLEEDWES
SQAEEEEMEDWDSTQAEEDSLQDSLEEEDEVEEAEEEAAAARPSSSAEKASSTDTISAPGRGRGGRAHSRWDETGRFPNPTTQTGK
KERQGYKSWRGHKNAIVSCLQACGGNISFTRRYLLFHRGVNFPRNILHYYRHLHSPYYCFQEEAETQQQQKTSGSSS*KIHSGGRWT
EDRGERAGADPGAEEPDLSHPLCHLPAESGAGAGTESQEPFSALAHPQLSVSQERRPTSAHSRGRRGSLQQVLRAHS*RVARARPH
TEKGGNYVTTCALRPTIMSKEIPTPYMWSYQPQMGLAAGAAQDYSTRMNWLSAGPAMISRVNDIRAHRNQILLEQSAITATPRHH
LNPRNWPAALVYQEIPQPTTVLLPRDAQAEVQLTNSGVQLAGGAALCRHRPAQGIKRLVIRGRGTQLNDEVVSSSLGLRPDGVFQL
AGSGRSSFTPRQAVLTLESSSSQPRSGGIGTLQFVEEFTPSVYFNPFSGSPGHYPDEFIPNFDAISESVDGYD*MSHGGAADLARLRHL
DHCRRFRCFARDLAEFAYFELPEEHPQGPAHGVRIIVEGGLDSHLLRIFSQRPILVEREQGQTLLTLYCICNHPGLHESLCCLLCTEYNKS
*DQRLLRTRLWCSCYQPVPVLHRERDRAPAPV*APQEVPHLAVPGLPDRRCQPLRQRRSPAERPCQPYFFHPQKQAPALPTLPPRD
LSVRLRTLPSHLPPDPEYHSAAPRY*QPNYPPTPPSRPFL*I*YHYRRWLLLLVLPRPVDPRSPTQSPEEVRKCKFQEPWKFLKCYRQK
SDMHPSWIMIIGIVNILACTLISFVIYPCFDFGWNSPEALYLPPEPDTPPQQQPQAHALPPPQPRPQYMPILDYEAEPQRPMLPAISY
FNLTGGDD*PTGQ*QRQRPSPGHGRPRLGAATRPTSHSSAAGESRQGAAGRHSHPPVQERHLLPGETGQDLLRGHPDRPSPLLRA
PAAAPEVHLPGRSQPHRHHPAVGRYQGVHPLLLRLPRLRPHSDQDPLRPPRPPPHELITPLSSEIKIILMMI*IKKIII*FEIKIQSY**FEF
NKNKESLT*NLIPGLCPCFLPTPPHSPLPSSGTAGPGGLQTSSTR*RGCQIPPVPQSSFYLLSDVQKARPGG**LRPRLPLRCRQRTDR
ALHQPPLRLFRWIPREAPGGVVPATG*PRHHQERGNHPQAGRGGGPRLVGKTHLQHGHQGRRPSQYFKQHHFP*NCCPFLQQQ
WNFKPQCLHTISSISHI*HFRHKSWKRSSDFK*VVDCTTNSSSYIQLK*HHSKNRQRAIY*LQWKQRT*G*YKPKKRTSF*R*CYCNIY
WKWLRLWIL***WKNKTRNYQNWSRIKF*C*QSNSCQTRHRFKF*LRWCLDSWKQTG*QANTLDYP*PKP*LSITFRQRCQIYSLS
YKMR*SNTRHCGSGGCYCRISTKSN**HSQKRHSFP*I*FRWCTHVKLINGR*LLEL*GGTDHSKCSLYKCCGIHAKYRCISKNPK*NT
*K*HSQSGIFNWRNYYANDTNHNFQWH**KRHNPS*HLLYDFYMAVDWRL*GQKYYLCYQLILFFLHRPGIIPPSKPTPFPTTFVY
METLKQKNKVQVFY*INSFTGLEQLFFLHPPRTWNTPPSPPAQP*TSECHW*WTCFWSPRSTQFQSEPVSDRSGR*NPPGTPASA
PHSSTAEDCPRWSGSRLSGRSRRAAVGIIVRERDRPVVSHQAPQQSLPPPLRQAAAQGVRVQGLPQHDAHGPQHQSSGAAGAAA
HANLAQVTAVRATQDHQVVQQSIVQHAPAETHRGKDATHVAVVPDPQVNQVALPPEDAAHVHDLLGHVAVHHLPVPHHPLVE
HAAPDDPAEPQGQHRPARHAAKRPRIPAMTMEDPPLVPVDHLGAEQVYVGTAQAYAHASLQHSQLLGGQNHIPGHGELLQDSE
PRRTGQSSHITYIVHGQGIAIRQHRVILHQRSAGLGLLTAW*GGRPIRVMAGRG*SCSRPCHDAVAFGHFRTCCSRTWSGRCTPIA
GGGLGAWNARC*SCKTATLSDRAADLGPQE**RSHHA**L*SHRPPWNGPGPAR*CNFVGFR*RRGREEQEEP*LTFNPNGLGAL
QNEGHGDGTSRPRCVGGK*QPGQR*YGSRDVPRWLPAKPPRAHPETRQ*RKREGSLIPQPSCYTPAPSPDNFHFSSLE*FELVPEV
NPSQP**KARAEHPPPAFLSTPS*FQDILLLVHLQQIDKRNIKISAAIPELLPQQ*L*VLFHIVSEIFSHRTPRNKRRASHITDKPKSPPVSI
AKCKIEISMLARPGDIFQITGQKIG*AIFKKINKRKIFQVHV*GLGNNDGVSARGAFQHG*LADL*KNKK*NIKPC*PGEQVGKSFSPA
PGRPRGLRRDPRKNCRYD*KPSQRDVPGGRRE*FEKKHTPPEHWSP*VKKSGRGSNEALQRSLSSPAKRCHADEAQNFQVRKKCN
YSPPAQAAKLPIPPDTHTKPQRP*LTERQQQRHTTGARVREKTEL*PVRPLSAQYIAPDLH*RKGQSLKIPAK*SHTPSTRPETGDTLR
KIRALPQTAKLPSFPGSHATSSKHDFQIPSTVKNITRPAPNGRRSRSQSPSSLPKFKQLICILTRTKSLRYIIDD

Fig. 25A

AdC6 020-DU422gp160(E1621) Nucleic Acids – SEQ ID NO: 6

CATCATCAATAATATACCTCAAACTTTTGGTGCGCGTTAATATGCAAATGAGCTGTTTGAATTTGGGGAGGGAGGAAGGTGAT
TGGCTGCGGGAGCGGCGACCGTTAGGGGCGGGGCGGGTGACGTTTTGATGACGTGGCTATGAGGCGGAGCCGGTTTGCAAG
TTCTCGTGGGAAAAGTGACGTCAAACGAGGTGTGGTTTGAACACGGAAATACTCAATTTTCCCGCGCTCTCTGACAGGAAATG
AGGTGTTTCTGGGCGGATGCAAGTGAAAACGGGCCATTTTCGCGCGAAAACTGAATGAGGAAGTGAAAATCTGAGTAATTTC
GCGTTTATGGCAGGGAGGAGTATTTGCCGAGGGCCGAGTAGACTTTGACCGATTACGTGGGGGTTTCGATTACCGTATTTTTC
ACCTAAATTTCCGCGTACGGTGTCAAAGTCCGGTGTTTTTACGTACGATATCATTTCCCCGAAAGTGCCACCTGACCGTAACTAT
AACGGTCCTAAGGTAGCGAAAGCTCAGATCTCCCGATCCCCTATGGTGCACTCTCAGTACAATCTGCTCTGATGCCGCATAGTT
AAGCCAGTATCTGCTCCCTGCTTGTGTGTTGGAGGTCGCTGAGTAGTGCGCGAGCAAAATTTAAGCTACAACAAGGCAAGGCT
TGACCGACAATTGCATGAAGAATCTGCTTAGGGTTAGGCGTTTTGCGCTGCTTCGCGATGTACGGGCCAGATATACGCGTTGA
CATTGATTATTGACTAGTATGCCAAGTACGCCCCCTATTGACGTCAATGACGGTAAATGGCCCGCCTGGCATTATGCCCAGTAC
ATGACCTTATGGGACTTTCCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCATGGTGATGCGGTTTTGGCAGTACA
TCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATTTCCAAGTCTCCACCCCATTGACGTCAATGGGAGTTTGTTTTGGCACC
AAAATCAACGGGACTTTCCAAAATGTCGTAACAACTCCGCCCCATTGACGCAAATGGGCGGTAGGCGTGTACGGTGGGAGGT
CTATATAAGCAGAGCTCGTTTAGTGAACCGTCAGATCACTAGAAGCTTTATTGCGGTAGTTTATCACAGTTAAATTGCTAACGC
AGTCAGTGCTTCTGACACAACAGTCTCGAACTTAAGGCTAGAGTTCGACGCCACCATGCGCGTGCGCGGCATCCCCCGCAACT
GGCCCCAGTGGTGGATCTGGGGCATCCTGGGCTTCTGGATGATCATCATCTGCCGCGTGGTGGGCAACCTGGACCTGTGGGT
GACCGTGTACTACGGCGTGCCCGTGTGGAAGGAGGCCAAGACCACCCTGTTCTGCGCCTCCGACGCCAAGGCCTACGACAAG
GAGGTGCACAACGTGTGGGCCACCCACGCCTGCGTGCCCACCGACCCCAACCCCCAGGAGATCGTGCTGGAGAACGTGACCG
AGAACTTCAACATGTGGAAGAACGACATGGTGGACCAGATGCACGAGGACATCATCTCCCTGTGGGACCAGTCCCTGAAGCC
CTGCGTGAAGCTGACCCCCCTGTGCGTGACCCTGAACTGCAAGAACGTGAACATCTCCGCCAACGCCAACGCCACCGCCACCC
TGAACTCCTCCATGAACGGCGAGATCAAGAACTGCTCCTTCAACACCACCACCGAGCTGCGCGACAAGAAGCAGAAGGTGTAC
GCCCTGTTCTACAAGCCCGACGTGGTGCCCCTGAACGGCGGCGAGCACAACGAGACCGGCGAGTACATCCTGATCAACTGCA
ACTCCTCCACCATCACCCAGGCCTGCCCCAAGGTGTCCTTCGACCCCATCCCCATCCACTACTGCGCCCCCGCCGGCTACGCCAT
CCTGAAGTGCAACAACAAGACCTTCAACGGCACCGGCCCCTGCAACAACGTGTCCACCGTGCAGTGCACCCACGGCATCAAGC
CCGTGGTGTCCACCCAGCTGCTGCTGAACGGCTCCCTGGCCGAGGAGGAGATCATCGTGCGCTCCGAGAACCTGACCAACAAC
ATCAAGACCATCATCGTGCACCTGAACAAGTCCGTGGAGATCAAGTGCACCCGCCCCAACAACAACACCCGCAAGTCCGTGCG
CATCGGCCCCGGCCAGACCTTCTACGCCACCGGCGAGATCATCGGCGACATCCGCGAGGCCCACTGCAACATCTCCCGCGAGA
CCTGGAACTCCACCCTGATCCAGGTGAAGGAGAAGCTGCGCGAGCACTACAACAAGACCATCAAGTTCGAGCCCTCCTCCGGC
GGCGACCTGGAGGTGACCACCCACTCCTTCAACTGCCGCGGCGAGTTCTTCTACTGCGACACCACCAAGCTGTTCAACGAGAC
CAAGCTGTTCAACGAGTCCGAGTACGTGGACAACAAGACCATCATCCTGCCCTGCCGCATCAAGCAGATCATCAACATGTGGC
AGGAGGTGGGCCGCGCCATGTACGCCCCCCCCATCGAGGGCAACATCACCTGCAAGTCCAACATCACCGGCCTGCTGCTGACC
TGGGACGGCGGCGAGAACTCCACCGAGGGCGTGTTCCGCCCCGGCGGCGGCAACATGAAGGACAACTGGCGCTCCGAGCTG
TACAAGTACAAGGTGGTGGAGATCAAGCCCCTGGGCGTGGCCCCCACCAAGAGCAAGCGCAAGGTGGTGGGCCGCGAGAAG
CGCGCCGTGGGCCTGGGCGCCGTGCTGCTGGGCTTCCTGGGCGCCGCCGGCAGCACCATGGGCGCCGCCAGCATCACCCTGA
CCGTGCAGGCCCGCCAGCTGCTGAGCGGCATCGTGCAGCAGCAGAGCAACCTGCTGCGCGCCATCGAGGCCCAGCAGCACCT
GCTGCAGCTGACCGTGTGGGGCATCAAGCAGCTGCAGACCCGCGTGCTGGCCATCGAGCGCTACCTGAAGGACCAGCAGCTG
CTGGGCCTGTGGGGCTGCAGCGGCAAGCTGATCTGCGCCACCGCCGTGCCCTGGAACAGCAGCTGGAGCAACAAGAGCCTG
GGCGACATCTGGGACAACATGACCTGGATGCAGTGGGACCGCGAGATCAGCAACTACACCAACACCATCTTCCGCCTGCTGG
AGGACAGCCAGAACCAGCAGGAGAAGAACGAGAAGGACCTGCTGGCCCTGGACAGCTGGAAGAACCTGTGGAACTGGTTCG
ACATCACCAACTGGCTGTGGTACATCAAGATCTTCATCATGATCGTGGGCGGCCTGATCGGCCTGCGCATCATCTTCGGCGTGC
TGGCCATCGTGAAGCGCGTGCGCCAGGGCTACAGCCCCCTGAGCTTCCAGACCCTGATCCCCAACCCCCGCGGCCCCGACCGC
CTGGGCCGCATCGAGGAGGAGGGCGGCGAGCAGGACAAGGACCGCAGCATCCGCCTGGTGAGCGGCTTCCTGGCCCTGGCC
TGGGACGACCTGCGCAGCCTGTGCCTGTTCAGCTACCACCAGCTGCGCGACTTCATCCTGACCGCCGCCCGCGCCGCCGAGCT
GCTGGGCCGCAGCAGCCTGCGCGGCCTGCAGCGCGGCTGGGAGGTGCTGAAGTACCTGGGCAACCTGGTGCAGTACTGGGG
CCTGGAGCTGAAGCGCAGCGCCATCAACCTGTTCGACACCATCGCCATCGCCGTGGCCGAGGGCACCGACCGCATCATCGAG
GTGATCCAGCGCATCTGCCGCGCCATCCGCTACATCCCCACCCGCATCCGCCAGGGCTTCGAGGCCGCCCTGCTGTAAGGTACC
TCTAGAGTCGACCCGGGCGGCCAAACCGCTGATCAGCCTCGACTGTGCCTTCTAGTTGCCAGCCATCTGTTGTTTGCCCCTCCC
CCGTGCCTTCCTTGACCCTGGAAGGTGCCACTCCCACTGTCCTTTCCTAATAAAATGAGGAAATTGCATCGCATTGTCTGAGTA
GGTGTCATTCTATTCTGGGGGGTGGGGTGGGGCAGGACAGCAAGGGGGAGGATTGGGAAGACAATAGCAGGCATGCTGGG

Fig. 25B

GATGCGGTGGGCTCTATGGCTTCTGAGGCGGAAAGAACCAGCAGATCTGCAGATCTGAATTCATCTATGTCGGGTGCGGAGA
AAGAGGTAATGAAATGGCATTATGGGTATTATGGGTCTGCATTAATGAATCGGTCAGATATCGACATATGCTGGCCACCGTGC
ATGTGGCCTCGCACCCCCGCAAGACATGGCCCGAGTTCGAGCACAACGTCATGACCCGCTGCAATGTGCACCTGGGCTCCCGC
CGAGGCATGTTCATGCCCTACCAGTGCAACATGCAATTTGTGAAGGTGCTGCTGGAGCCCGATGCCATGTCCAGAGTGAGCCT
GACGGGGGTGTTTGACATGAATGTGGAGCTGTGGAAAATTCTGAGATATGATGAATCCAAGACCAGGTGCCGGGCCTGCGAA
TGCGGAGGCAAGCACGCCAGGCTTCAGCCCGTGTGTGTGGAGGTGACGGAGGACCTGCGACCCGATCATTTGGTGTTGTCCT
GCAACGGGACGGAGTTCGGCTCCAGCGGGGAAGAATCTGACTAGAGTGAGTAGTGTTTGGGGCTGGGTGTGAGCCTGCATG
AGGGGCAGAATGACTAAAATCTGTGGTTTTCTGTGTGTTGCAGCAGCATGAGCGGAAGCGCCTCCTTTGAGGGAGGGGTATT
CAGCCCTTATCTGACGGGGCGTCTCCCCTCCTGGGCGGGAGTGCGTCAGAATGTGATGGGATCCACGGTGGACGGCCGGCCC
GTGCAGCCCGCGAACTCTTCAACCCTGACCTACGCGACCCTGAGCTCCTCGTCCGTGGACGCAGCTGCCGCCGCAGCTGCTGCT
TCCGCCGCCAGCGCCGTGCGCGGAATGGCCCTGGGCGCCGGCTACTACAGCTCTCTGGTGGCCAACTCGAGTTCCACCAATAA
TCCCGCCAGCCTGAACGAGGAGAAGCTGCTGCTGCTGATGGCCCAGCTCGAGGCCCTGACCCAGCGCCTGGGCGAGCTGACC
CAGCAGGTGGCTCAGCTGCAGGCGGAGACGCGGGCCGCGGTTGCCACGGTGAAAACCAAATAAAAAATGAATCAATAAATA
AACGGAGACGGTTGTTGATTTTAACACAGAGTCTTGAATCTTTATTTGATTTTTCGCGCGCGGTAGGCCCTGGACCACCGGTCT
CGATCATTGAGCACCCGGTGGATCTTTTCCAGGACCCGGTAGAGGTGGGCTTGGATGTTGAGGTACATGGGCATGAGCCCGT
CCCGGGGGTGGAGGTAGCTCCATTGCAGGGCCTCGTGCTCGGGGATGGTGTTGTAAATCACCCAGTCATAGCAGGGGCGCAG
GGCGTGGTGCTGCACGATGTCCTTGAGGAGGAGACTGATGGCCACGGGCAGCCCCTTGGTGTAGGTGTTGACGAACCTGTTG
AGCTGGGAGGGATGCATGCGGGGGGAGATGAGATGCATCTTGGCCTGGATCTTGAGATTGGCGATGTTCCCGCCCAGATCCC
GCCGGGGGTTCATGTTGTGCAGGACCACCAGCACGGTGTATCCGGTGCACTTGGGGAATTTGTCATGCAACTTGGAAGGGAA
GGCGTGAAAGAATTTGGAGACGCCCTTGTGACCGCCCAGGTTTTCCATGCACTCATCCATGATGATGGCGATGGGCCCGTGGG
CGGCGGCCTGGGCAAAGACGTTTCGGGGGTCGGACACATCGTAGTTGTGGTCCTGGGTGAGCTCGTCATAGGCCATTTTAAT
GAATTTGGGGCGGAGGGTGCCCGACTGGGGGACGAAGGTGCCCTCGATCCCGGGGGCGTAGTTGCCCTCGCAGATCTGCAT
CTCCCAGGCCTTGAGCTCGGAGGGGGGGATCATGTCCACCTGCGGGGCGATGAAAAAAACGGTTTCCGGGGCGGGGGAGAT
GAGCTGGGCCGAAAGCAGGTTCCGGAGCAGCTGGGACTTGCCGCAACCGGTGGGGCCGTAGATGACCCCGATGACCGGCTG
CAGGTGGTAGTTGAGGGAGAGACAGCTGCCGTCCTCGCGGAGGAGGGGGGCCACCTCGTTCATCATCTCGCGCACATGCATG
TTCTCGCGCACGAGTTCCGCCAGGAGGCGCTCGCCCCCCAGCGAGAGGAGCTCTTGCAGCGAGGCGAAGTTTTTCAGCGGCTT
GAGTCCGTCGGCCATGGGCATTTTGGAGAGGGTCTGTTGCAAGAGTTCCAGACGGTCCCAGAGCTCGGTGATGTGCTCTAGG
GCATCTCGATCCAGCAGACCTCCTCGTTTCGCGGGTTGGGGCGACTGCGGGAGTAGGGCACCAGGCGATGGGCGTCCAGCGA
GGCCAGGGTCCGGTCCTTCCAGGGCCGCAGGGTCCGCGTCAGCGTGGTCTCCGTCACGGTGAAGGGGTGCGCGCCGGGCTG
GGCGCTTGCGAGGGTGCGCTTCAGGCTCATCCGGCTGGTCGAGAACCGCTCCCGGTCGGCGCCCTGCGCGTCGGCCAGGTAG
CAATTGAGCATGAGTTCGTAGTTGAGCGCCTCGGCCGCGTGGCCCTTGGCGCGGAGCTTACCTTTGGAAGTGTGTCCGCAGAC
GGGACAGAGGAGGGACTTGAGGGCGTAGAGCTTGGGGGCGAGGAAGACGGACTCGGGGGCGTAGGCGTCCGCGCCGCAG
CTGGCGCAGACGGTCTCGCACTCCACGAGCCAGGTGAGGTCGGGGCGGTTGGGGTCAAAAACGAGGTTTCCTCCGTGCTTTT
TGATGCGTTTCTTACCTCTGGTCTCCATGAGCTCGTGTCCCCGCTGGGTGACAAAGAGGCTGTCCGTGTCCCCGTAGACCGACT
TTATGGGCCGGTCCTCGAGCGGGGTGCCGCGGTCCTCGTCGTAGAGGAACCCCGCCCACTCCGAGACGAAGGCCCGGGTCCA
GGCCAGCACGAAGGAGGCCACGTGGGAGGGGTAGCGGTCGTTGTCCACCAGCGGGTCCACCTTCTCCAGGGTATGCAAGCA
CATGTCCCCCTCGTCCACATCCAGGAAGGTGATTGGCTTGTAAGTGTAGGCCACGTGACCGGGGGTCCCGGCCGGGGGGGTA
TAAAAGGGGGCGGGCCCCTGCTCGTCCTCACTGTCTTCCGGATCGCTGTCCAGGAGCGCCAGCTGTTGGGGTAGGTATTCCCT
CTCGAAGGCGGGCATGACCTCGGCACTCAGGTTGTCAGTTTCTAGAAACGAGGAGGATTTGATATTGACGGTGCCGTTGGAG
ACGCCTTTCATGAGCCCCTCGTCCATTTGGTCAGAAAAGACGATCTTTTTGTTGTCGAGCTTGGTGGCGAAGGAGCCGTAGAG
GGCGTTGGAGAGCAGCTTGGCGATGGAGCGCATGGTCTGGTTCTTTTCCTTGTCGGCGCGCTCCTTGGCGGCGATGTTGAGCT
GCACGTACTCGCGCGCCACGCACTTCCATTCGGGGAAGACGGTGGTGAGCTCGTCGGGCACGATTCTGACCCGCCAGCCGCG
GTTGTGCAGGGTGATGAGGTCCACGCTGGTGGCCACCTCGCCGCGCAGGGGCTCGTTGGTCCAGCAGAGGCGCCCGCCCTTG
CGCGAGCAGAAGGGGGGCAGCGGGTCCAGCATGAGCTCGTCGGGGGGGTCGGCGTCCACGGTGAAGATGCCGGGCAGGAG
CTCGGGGTCGAAGTAGCTGATGCAGGTGCCCAGATTGTCCAGCGCCGCTTGCCAGTCGCGCACGGCCAGCGCGCGCTCGTAG
GGGCTGAGGGGCGTGCCCCAGGGCATGGGGTGCGTGAGCGCGGAGGCGTACATGCCGCAGATGTCGTAGACGTAGAGGGG
CTCCTCGAGGACGCCGATGTAGGTGGGGTAGCAGCGCCCCCCGCGGATGCTGGCGCGCACGTAGTCGTACAGCTCGTGCGAG
GGCGCGAGGAGCCCCGTGCCGAGGTTGGAGCGTTGCGGCTTTTCGGCGCGGTAGACGATCTGGCGGAAGATGGCGTGGGAG
TTGGAGGAGATGGTGGGCCTTTGGAAGATGTTGAAGTGGGCGTGGGGCAGGCCGACCGAGTCCCTGATGAAGTGGGCGTAG
GAGTCCTGCAGCTTGGCGACGAGCTCGGCGGTGACGAGGACGTCCAGGGCGCAGTAGTCGAGGGTCTCTTGGATGATGTCAT
ACTTGAGCTGGCCCTTCTGCTTCCACAGCTCGCGGTTGAGAAGGAACTCTTCGCGGTCCTTCCAGTACTCTTCGAGGGGGAACC

Fig. 25C

CGTCCTGATCGGCACGGTAAGAGCCCACCATGTAGAACTGGTTGACGGCCTTGTAGGCGCAGCAGCCCTTCTCCACGGGGAG
GGCGTAAGCTTGCGCGGCCTTGCGCAGGGAGGTGTGGGTGAGGGCGAAGGTGTCGCGCACCATGACCTTGAGGAACTGGTG
CTTGAAGTCGAGGTCGTCGCAGCCGCCCTGCTCCCAGAGTTGGAAGTCCGTGCGCTTCTTGTAGGCGGGGTTAGGCAAAGCG
AAAGTAACATCGTTGAAGAGGATCTTGCCCGCGCGGGGCATGAAGTTGCGAGTGATGCGGAAAGGCTGGGGCACCTCGGCC
CGGTTGTTGATGACCTGGGCGGCGAGGACGATCTCGTCGAAGCCGTTGATGTTGTGCCCGACGATGTAGAGTTCCACGAATC
GCGGGCGGCCCTTGACGTGGGGCAGCTTCTTGAGCTCGTCGTAGGTGAGCTCGGCGGGGTCGCTGAGCCCGTGCTGCTCGAG
GGCCCAGTCGGCGACGTGGGGGTTGGCGCTGAGGAAGGAAGTCCAGAGATCCACGGCCAGGGCGGTCTGCAAGCGGTCCCG
GTACTGACGGAACTGTTGGCCCACGGCCATTTTTTCGGGGGTGACGCAGTAGAAGGTGCGGGGGTCGCCGTGCCAGCGGTCC
CACTTGAGCTGGAGGGCGAGGTCGTGGGCGAGCTCGACGAGCGGCGGGTCCCCGGAGAGTTTCATGACCAGCATGAAGGGG
ACGAGCTGCTTGCCGAAGGACCCCATCCAGGTGTAGGTTTCCACATCGTAGGTGAGGAAGAGCCTTTCGGTGCGAGGATGCG
AGCCGATGGGGAAGAACTGGATCTCCTGCCACCAGTTGGAGGAATGGCTGTTGATGTGATGGAAGTAGAAATGCCGACGGC
GCGCCGAGCACTCGTGCTTGTGTTTATACAAGCGTCCGCAGTGCTCGCAACGCTGCACGGGATGCACGTGCTGCACGAGCTGT
ACCTGGGTTCCTTTGGCGAGGAATTTCAGTGGGCAGTGGAGCGCTGGCGGCTGCATCTCGTGCTGTACTACGTCTTGGCCATC
GGCGTGGCCATCGTCTGCCTCGATGGTGGTCATGCTGACGAGCCCGCGCGGGAGGCAGGTCCAGACCTCGGCTCGGACGGGT
CGGAGAGCGAGGACGAGGGCGCGCAGGCCGGAGCTGTCCAGGGTCCTGAGACGCTGCGGAGTCAGGTCAGTGGGCAGCGG
CGGCGCGCGGTTGACTTGCAGGAGCTTTTCCAGGGCGCGCGGGAGGTCCAGATGGTACTTGATCTCCACGGCGCCGTTGGTG
GCTACGTCCACGGCTTGCAGGGTGCCGTGCCCCTGGGGCGCCACCACCGTGCCCCGTTTCTTCTTGGGCGCTGCTTCCATGTCG
GTCAGAAGCGGCGGCGAGGACGCGCGCCGGGCGGCAGGGGCGGCTCGGGGCCCGGAGGCAGGGGCGGCAGGGGCACGTC
GGCGCCGCGCGCGGGCAGGTTCTGGTACTGCGCCCGGAGAAGACTGGCGTGAGCGACGACGCGACGGTTGACGTCCTGGAT
CTGACGCCTCTGGGTGAAGGCCACGGGACCCGTGAGTTTGAACCTGAAAGAGAGTTCGACAGAATCAATCTCGGTATCGTTG
ACGGCGGCCTGCCGCAGGATCTCTTGCACGTCGCCCGAGTTGTCCTGGTAGGCGATCTCGGTCATGAACTGCTCGATCTCCTCC
TCCTGAAGGTCTCCGCGGCCGGCGCGCTCGACGGTGGCCGCGAGGTCGTTGGAGATGCGGCCCATGAGCTGCGAGAAGGCG
TTCATGCCGGCCTCGTTCCAGACGCGGCTGTAGACCACGGCTCCGTCGGGGTCGCGCGCGCGCATGACCACCTGGGCGAGGT
TGAGCTCGACGTGGCGCGTGAAGACCGCGTAGTTGCAGAGGCGCTGGTAGAGGTAGTTGAGCGTGGTGGCGATGTGCTCGG
TGACGAAGAAGTACATGATCCAGCGGCGGAGCGGCATCTCGCTGACGTCGCCCAGGGCTTCCAAGCGTTCCATGGCCTCGTA
GAAGTCCACGGCGAAGTTGAAAAACTGGGAGTTGCGCGCCGAGACGGTCAACTCCTCCTCCAGAAGACGGATGAGCTCGGCG
ATGGTGGCGCGCACCTCGCGCTCGAAGGCCCCGGGGGGGCTCCTCTTCCATCTCCTCCTCTTCCTCCTCCACTAACATCTCTTCTA
CTTCCTCCTCAGGAGGCGGTGGCGGGGGAGGGGCCCTGCGTCGCCGGCGGCGCACGGGCAGACGGTCGATGAAGCGCTCGA
TGGTCTCCCCGCGCCGGCGACGCATGGTCTCGGTGACGGCGCGCCCGTCCTCGCGGGGCCGCAGCATGAAGACGCCGCCGCG
CATCTCCAGGTGGCCGCCGGGGGGGTCTCCGTTGGGCAGGGAGAGGGCGCTGACGATGCATCTTATCAATTGACCCGTAGGG
ACTCCGCGCAAGGACCTGAGCGTCTCGAGATCCACGGGATCCGAAAACCGCTGAACGAAGGCTTCGAGCCAGTCGCAGTCGC
AAGGTAGGCTGAGCCCGGTTTCTTGTTCTTCGGGTATTTGGTCGGGAGGCGGGCGGGCGATGCTGCTGGTGATGAAGTTGAA
GTAGGCGGTCCTGAGACGGCGGATGGTGGCGAGGAGCACCAGGTCCTTGGGCCCGGCTTGCTGGATGCGCAGACGGTCGGC
CATGCCCCAGGCGTGGTCCTGACACCTGGCGAGGTCCTTGTAGTAGTCCTGCATGAGCCGCTCCACGGGCACCTCCTCCTCGCC
CGCGCGGCCGTGCATGCGCGTGAGCCCGAACCCGCGCTGCGGCTGGACGAGCGCCAGGTCGGCGACGACGCGCTCGGTGAG
GATGGCCTGCTGGATCTGGGTGAGGGTGGTCTGGAAGTCGTCGAAGTCGACGAAGCGGTGGTAGGCTCCGGTGTTGATGGT
GTAGGAGCAGTTGGCCATGACGGACCAGTTGACGGTCTGGTGGCCGGGTCGCACGAGCTCGTGGTACTTGAGGCGCGAGTA
GGCGCGCGTGTCGAAGATGTAGTCGTTGCAGGCGCGCACGAGGTACTGGTATCCGACGAGGAAGTGCGGCGGCGGCTGGCG
GTAGAGCGGCCATCGCTCGGTGGCGGGGGCGCCGGGCGCGAGGTCCTCGAGCATGAGGCGGTGGTAGCCGTAGATGTACCT
GGACATCCAGGTGATGCCGGCGGCGGTGGTGGAGGCGCGCGGGAACTCGCGGACGCGGTTCCAGATGTTGCGCAGCGGCA
GGAAGTAGTTCATGGTGGCCGCGGTCTGGCCCGTGAGGCGCGCGCAGTCGTGGATGCTCTAGACATACGGGCAAAAACGAA
AGCGGTCAGCGGCTCGACTCCGTGGCCTGGAGGCTAAGCGAACGGGTTGGGCTGCGCGTGTACCCCGGTTCGAATCTCGAAT
CAGGCTGGAGCCGCAGCTAACGTGGTACTGGCACTCCCGTCTCGACCCAAGCCTGCTAACGAAACCTCCAGGATACGGAGGC
GGGTCGTTTTTTGGCCTTGGTCGCTGGTCATGAAAAACTAGTAAGCGCGGAAAGCGGCCGCCCGCGATGGCTCGCTGCCGTA
GTCTGGAGAAAGAATCGCCAGGGTTGCGTTGCGGTGTGCCCCGGTTCGAGCCTCAGCGCTCGGCGCCGGCCGGATTCCGCGG
CTAACGTGGGCGTGGCTGCCCCGTCGTTTCCAAGACCCCTTAGCCAGCCGACTTCTCCAGTTACGGAGCGAGCCCCTCTTTTTTT
TTCTTGTGTTTTTGCCAGATGCATCCCGTACTGCGGCAGATGCGCCCCCACCCTCCACCACAACCGCCCCTACCGCAGCAGCAG
CAACAGCCGGCGCTTCTGCCCCCGCCCCAGCAGCAGCCAGCCACTACCGCGGCGGCCGCCGTGAGCGGAGCCGGCGTTCAGT
ATGACCTGGCCTTGGAAGAGGGCGAGGGGCTGGCGCGGCTGGGGGCGTCGTCGCCGGAGCGGCACCCGCGCGTGCAGATG
AAAAGGGACGCTCGCGAGGCCTACGTGCCCAAGCAGAACCTGTTCAGAGACAGGAGCGGCGAGGAGCCCGAGGAGATGCGC
GCCTCCCGCTTCCACGCGGGGCGGGAGCTGCGGCGCGGCCTGGACCGAAAGCGGGTGCTGAGGGACGAGGATTTCGAGGCG

Fig. 25D

GACGAGCTGACGGGGATCAGCCCCGCGCGCGCGCACGTGGCCGCGGCCAACCTGGTCACGGCGTACGAGCAGACCGTGAAG
GAGGAGAGCAACTTCCAAAAATCCTTCAACAACCACGTGCGCACGCTGATCGCGCGCGAGGAGGTGACCCTGGGCCTGATGC
ACCTGTGGGACCTGCTGGAGGCCATCGTGCAGAACCCCACGAGCAAGCCGCTGACGGCGCAGCTGTTTCTGGTGGTGCAGCA
CAGTCGGGACAACGAGACGTTCAGGGAGGCGCTGCTGAATATCACCGAGCCCGAGGGCCGCTGGCTCCTGGACCTGGTGAAC
ATTTTGCAGAGCATCGTGGTGCAGGAGCGCGGGCTGCCGCTGTCCGAGAAGCTGGCGGCCATCAACTTCTCGGTGCTGAGTC
TGGGCAAGTACTACGCTAGGAAGATCTACAAGACCCCGTACGTGCCCATAGACAAGGAGGTGAAGATCGACGGGTTTTACAT
GCGCATGACCCTGAAAGTGCTGACCCTGAGCGACGATCTGGGGGTGTACCGCAACGACAGGATGCACCGCGCGGTGAGCGC
CAGCCGCCGGCGCGAGCTGAGCGACCAGGAGCTGATGCACAGCCTGCAGCGGGCCCTGACCGGGGCCGGGACCGAGGGGG
AGAGCTACTTTGACATGGGCGCGGACCTGCGCTGGCAGCCCAGCCGCCGGGCCTTGGAAGCTGCCGGCGGTTCCCCCTACGT
GGAGGAGGTGGACGATGAGGAGGAGGAGGGCGAGTACCTGGAAGACTGATGGCGCGACCGTATTTTTGCTAGATGCAGCA
ACAGCCACCGCCGCCGCCTCCTGATCCCGCGATGCGGGCGGCGCTGCAGAGCCAGCCGTCCGGCATTAACTCCTCGGACGATT
GGACCCAGGCCATGCAACGCATCATGGCGCTGACGACCCGCAATCCCGAAGCCTTTAGACAGCAGCCTCAGGCCAACCGGCTC
TCGGCCATCCTGGAGGCCGTGGTGCCCTCGCGCTCGAACCCCACGCACGAGAAGGTGCTGGCCATCGTGAACGCGCTGGTGG
AGAACAAGGCCATCCGCGGTGACGAGGCCGGGCTGGTGTACAACGCGCTGCTGGAGCGCGTGGCCCGCTACAACAGCACCA
ACGTGCAGACGAACCTGGACCGCATGGTGACCGACGTGCGCGAGGCGGTGTCGCAGCGCGAGCGGTTCCACCGCGAGTCGA
ACCTGGGCTCCATGGTGGCGCTGAACGCCTTCCTGAGCACGCAGCCCGCCAACGTGCCCCGGGGCCAGGAGGACTACACCAA
CTTCATCAGCGCGCTGCGGCTGATGGTGGCCGAGGTGCCCCAGAGCGAGGTGTACCAGTCGGGGCCGGACTACTTCTTCCAG
ACCAGTCGCCAGGGCTTGCAGACCGTGAACCTGAGCCAGGCTTTCAAGAACTTGCAGGGACTGTGGGGCGTGCAGGCCCCGG
TCGGGGACCGCGCGACGGTGTCGAGCCTGCTGACGCCGAACTCGCGCCTGCTGCTGCTGCTGGTGGCGCCCTTCACGGACAG
CGGCAGCGTGAGCCGCGACTCGTACCTGGGCTACCTGCTTAACCTGTACCGCGAGGCCATCGGACAGGCGCACGTGGACGAG
CAGACCTACCAGGAGATCACCCACGTGAGCCGCGCGCTGGGCCAGGAGGACCCGGGCAACCTGGAGGCCACCCTGAACTTCC
TGCTGACCAACCGGTCGCAGAAGATCCCGCCCCAGTACGCGCTGAGCACCGAGGAGGAGCGCATCCTGCGCTACGTGCAGCA
GAGCGTGGGGCTGTTCCTGATGCAGGAGGGGGCCACGCCCAGCGCGGCGCTCGACATGACCGCGCGCAACATGGAGCCCAG
CATGTACGCCCGCAACCGCCCGTTCATCAATAAGCTGATGGACTACTTGCATCGGGCGGCCGCCATGAACTCGGACTACTTTAC
CAACGCCATCTTGAACCCGCACTGGCTCCCGCCGCCCGGGTTCTACACGGGCGAGTACGACATGCCCGACCCCAACGACGGGT
TCCTGTGGGACGACGTGGACAGCAGCGTGTTCTCGCCGCGTCCAGGAACCAATGCCGTGTGGAAGAAAGAGGGCGGGGACC
GGCGGCCGTCCTCGGCGCTGTCCGGTCGCGCGGGTGCTGCCGCGGCGGTGCCCGAGGCCGCCAGCCCCTTCCCGAGCCTGCC
CTTTTCGCTGAACAGCGTGCGCAGCAGCGAGCTGGGTCGGCTGACGCGACCGCGCCTGCTGGGCGAGGAGGAGTACCTGAAC
GACTCCTTGTTGAGGCCCGAGCGCGAGAAGAACTTCCCCAATAACGGGATAGAGAGCCTGGTGGACAAGATGAGCCGCTGGA
AGACGTACGCGCACGAGCACAGGGACGAGCCCCGAGCTAGCAGCGCAGGCACCCGTAGACGCCAGCGGCACGACAGGCAGC
GGGGACTGGTGTGGGACGATGAGGATTCCGCCGACGACAGCAGCGTGTTGGACTTGGGTGGGAGTGGTGGTAACCCGTTCG
CTCACCTGCGCCCCCGTATCGGGCGCCTGATGTAAGAATCTGAAAAAATAAAAGACGGTACTCACCAAGGCCATGGCGACCAG
CGTGCGTTCTTCTCTGTTGTTTGTAGTAGTATGATGAGGCGCGTGTACCCGGAGGGTCCTCCTCCCTCGTACGAGAGCGTGATG
CAGCAGGCGGTGGCGGCGGCGATGCAGCCCCCGCTGGAGGCGCCTTACGTGCCCCCGCGGTACCTGGCGCCTACGGAGGGG
CGGAACAGCATTCGTTACTCGGAGCTGGCACCCTTGTACGATACCACCCGGTTGTACCTGGTGGACAACAAGTCGGCAGACAT
CGCCTCGCTGAACTACCAGAACGACCACAGCAACTTCCTGACCACCGTGGTGCAGAACAACGATTTCACCCCCACGGAGGCCA
GCACCCAGACCATCAACTTTGACGAGCGCTCGCGGTGGGGCGGCCAGCTGAAAACCATCATGCACACCAACATGCCCAACGT
GAACGAGTTCATGTACAGCAACAAGTTCAAGGCGCGGGTGATGGTCTCGCGCAAGACCCCCAACGGGGTGGATGATGATTAT
GATGGTAGTCAGGACGAGCTGACCTACGAGTGGGTGGAGTTTGAGCTGCCCGAGGGCAACTTCTCGGTGACCATGACCATCG
ATCTGATGAACAACGCCATCATCGACAACTACTTGGCGGTGGGGCGGCAGAACGGGGTGCTGGAGAGCGACATCGGCGTGA
AGTTCGACACGCGCAACTTCCGGCTGGGCTGGGACCCCGTGACCGAGCTGGTGATGCCGGGCGTGTACACCAACGAGGCCTT
CCACCCCGACATCGTCCTGCTGCCCGGCTGCGGCGTGGACTTCACCGAGAGCCGCCTCAGCAACCTGCTGGGCATCCGCAAGC
GGCAGCCCTTCCAGGAGGGCTTCCAGATCCTGTACGAGGACCTGGAGGGGGGCAACATCCCCGCGCTCTTGGATGTCGAAGC
CTACGAGAAAAGCAAGGAGGATAGCACCGCCGCGGCGACCGCAGCCGTGGCCACCGCCTCTACCGAGGTGCGGGGCGATAA
TTTTGCTAGCGCTGCGGCAGCGGCCGAGGCGGCTGAAACCGAAAGTAAGATAGTCATCCAGCCGGTGGAGAAGGACAGCAA
GGACAGGAGCTACAACGTGCTCGCGGACAAGAAAAACACCGCCTACCGCAGCTGGTACCTGGCCTACAACTACGGCGACCCC
GAGAAGGGCGTGCGCTCCTGGACGCTGCTCACCACCTCGGACGTCACCTGCGGCGTGGAGCAAGTCTACTGGTCGCTGCCCG
ACATGATGCAAGACCCGGTCACCTTCCGCTCCACGCGTCAAGTTAGCAACTACCCGGTGGTGGGCGCCGAGCTCCTGCCCGTC
TACTCCAAGAGCTTCTTCAACGAGCAGGCCGTCTACTCGCAGCAGCTGCGCGCCTTCACCTCGCTCACGCACGTCTTCAACCGC
TTCCCCGAGAACCAGATCCTCGTCCGCCCGCCCGCGCCCACCATTACCACCGTCAGTGAAAACGTTCCTGCTCTCACAGATCAC
GGGACCCTGCCGCTGCGCAGCAGTATCCGGGGAGTCCAGCGCGTGACCGTCACTGACGCCAGACGCCGCACCTGCCCCTACG

Fig. 25E

TCTACAAGGCCCTGGGCGTAGTCGCGCCGCGCGTCCTCTCGAGCCGCACCTTCTAAAAAATGTCCATTCTCATCTCGCCCAGTA
ATAACACCGGTTGGGGCCTGCGCGCGCCCAGCAAGATGTACGGAGGCGCTCGCCAACGCTCCACGCAACACCCCGTGCGCGT
GCGCGGGCACTTCCGCGCTCCCTGGGGCGCCCTCAAGGGCCGCGTGCGCTCGCGCACCACCGTCGACGACGTGATCGACCAG
GTGGTGGCCGACGCGCGCAACTACACGCCCGCCGCCGCGCCCGTCTCCACCGTGGACGCCGTCATCGACAGCGTGGTGGCCG
ACGCGCGCCGGTACGCCCGCACCAAGAGCCGGCGGCGGCGCATCGCCCGGCGGCACCGGAGCACCCCCGCCATGCGCGCGG
CGCGAGCCTTGCTGCGCAGGGCCAGGCGCACGGGACGCAGGGCCATGCTCAGGGCGGCCAGACGCGCGGCCTCCGGCAGCA
GCAGCGCCGGCAGGACCCGCAGACGCGCGGCCACGGCGGCGGCGGCGGCCATCGCCAGCATGTCCCGCCCGCGGCGCGGCA
ACGTGTACTGGGTGCGCGACGCCGCCACCGGTGTGCGCGTGCCCGTGCGCACCCGCCCCCCTCGCACTTGAAGATGCTGACTT
CGCGATGTTGATGTGTCCCAGCGGCGAGGAGGATGTCCAAGCGCAAATACAAGGAAGAGATGCTCCAGGTCATCGCGCCTGA
GATCTACGGCCCCGCGGCGGCGGTGAAGGAGGAAAGAAAGCCCCGCAAACTGAAGCGGGTCAAAAAGGACAAAAAGGAGG
AGGAAGATGACGGACTGGTGGAGTTTGTGCGCGAGTTCGCCCCCCGGCGGCGCGTGCAGTGGCGCGGGCGGAAAGTGAAAC
CGGTGCTGCGGCCCGGCACCACGGTGGTCTTCACGCCCGGCGAGCGTTCCGGCTCCGCCTCCAAGCGCTCCTACGACGAGGT
GTACGGGGACGAGGACATCCTCGAGCAGGCGGTCGAGCGTCTGGGCGAGTTTGCGTACGGCAAGCGCAGCCGCCCGCGCC
CTTGAAAGAGGAGGCGGTGTCCATCCCGCTGGACCACGGCAACCCCACGCCGAGCCTGAAGCCGGTGACCCTGCAGCAGGTG
CTACCGAGCGCGGCGCCGCGCCGGGGCTTCAAGCGCGAGGGCGGCGAGGATCTGTACCCGACCATGCAGCTGATGGTGCCC
AAGCGCCAGAAGCTGGAGGACGTGCTGGAGCACATGAAGGTGGACCCCGAGGTGCAGCCCGAGGTCAAGGTGCGGCCCATC
AAGCAGGTGGCCCCGGGCCTGGGCGTGCAGACCGTGGACATCAAGATCCCCACGGAGCCCATGGAAACGCAGACCGAGCCC
GTGAAGCCCAGCACCAGCACCATGGAGGTGCAGACGGATCCCTGGATGCCAGCACCAGCTTCCACCAGCACTCGCCGAAGAC
GCAAGTACGGCGCGGCCAGCCTGCTGATGCCCAACTACGCGCTGCATCCTTCCATCATCCCCACGCCGGGCTACCGCGGCACG
CGCTTCTACCGCGGCTACACCAGCAGCCGCCGCCGCAAGACCACCACCCGCCGCCGTCGTCGCAGCCGCCGCAGCAGCACCGC
GACTTCCGCCTTGGTGCGGAGAGTGTATCGCAGCGGGCGCGAGCCTCTGACCCTGCCGCGCGCGCGCTACCACCCGAGCATC
GCCATTTAACTACCGCCTCCTACTTGCAGATATGGCCCTCACATGCCGCCTCCGCGTCCCCATTACGGGCTACCGAGGAAGAAA
GCCGCGCCGTAGAAGGCTGACGGGGAACGGGCTGCGTCGCCATCACCACCGGCGGCGGCGCGCCATCAGCAAGCGGTTGGG
GGGAGGCTTCCTGCCCGCGCTGATCCCCATCATCGCCGCGGCGATCGGGGCGATCCCCGGCATAGCTTCCGTGGCGGTGCAG
GCCTCTCAGCGCCACTGAGACACAAAAAAGCATGGATTTGTAATAAAAAAAAAAATGGACTGACGCTCCTGGTCCTGTGATGT
GTGTTTTTAGATGGAAGACATCAATTTTTCGTCCCTGGCACCGCGACACGGCACGCGGCCGTTTATGGGCACCTGGAGCGACA
TCGGCAACAGCCAACTGAACGGGGGCGCCTTCAATTGGAGCAGTCTCTGGAGCGGGCTTAAGAATTTCGGGTCCACGCTCAA
AACCTATGGCAACAAGGCGTGGAACAGCAGCACAGGGCAGGCGCTGAGGGAAAAGCTGAAAGAACAGAACTTCCAGCAGAA
GGTGGTTGATGGCCTGGCCTCAGGCATCAACGGGGTGGTTGACCTGGCCAACCAGGCCGTGCAGAAACAGATCAACAGCCGC
CTGGACGCGGTCCCGCCCGCGGGGTCCGTGGAGATGCCCCAGGTGGAGGAGGAGCTGCCTCCCCTGGACAAGCGCGGCGAC
AAGCGACCGCGTCCCGACGCGGAGGAGACGCTGCTGACGCACACGGACGAGCCGCCCCCGTACGAGGAGGCGGTGAAACTG
GGCCTGCCCACCACGCGGCCCGTGGCGCCTCTGGCCACCGGAGTGCTGAAACCCAGCAGCAGCCAGCCCGCGACCCTGGACT
TGCCTCCGCCTCGCCCCTCCACAGTGGCTAAGCCCCTGCCGCCGGTGGCCGTCGCGTCGCGCGCCCCCCGAGGCCGCCCCCAG
GCGAACTGGCAGAGCACTCTGAACAGCATCGTGGGTCTGGGAGTGCAGAGTGTGAAGCGCCGCCGCTGCTATTAAAAGACAC
TGTAGCGCTTAACTTGCTTGTCTGTGTGTATATGTATGTCCGCCGACCAGAAGGAGGAGTGTGAAGAGGCGCGTCGCCGAGTT
GCAAGATGGCCACCCCATCGATGCTGCCCCAGTGGGCGTACATGCACATCGCCGGACAGGACGCTTCGGAGTACCTGAGTCC
GGGTCTGGTGCAGTTCGCCCGCGCCACAGACACCTACTTCAGTCTGGGGAACAAGTTTAGGAACCCCACGGTGGCGCCCACGC
ACGATGTGACCACCGACCGCAGCCAGCGGCTGACGCTGCGCTTCGTGCCCGTGGACCGCGAGGACAACACCTACTCGTACAA
AGTGCGCTACACGCTGGCCGTGGGCGACAACCGCGTGCTGGACATGGCCAGCACCTACTTTGACATCCGCGGCGTGCTGGAC
CGGGGCCCTAGCTTCAAACCCTACTCTGGCACCGCCTACAACAGCCTAGCTCCCAAGGGAGCTCCCAATTCCAGCCAGTGGGA
GCAAGCAAAAACAGGCAATGGGGGAACTATGGAAACACACACATATGGTGTGGCCCCAATGGGCGGAGAGAATATTACAAA
AGATGGTCTTCAAATTGGAACTGACGTTACAGCGAATCAGAATAAACCAATTTATGCCGACAAAACATTTCAACCAGAACCGC
AAGTAGGAGAAGAAAATTGGCAAGAAACTGAAAACTTTTATGGCGGTAGAGCTCTTAAAAAAGACACAAACATGAAACCTTG
CTATGGCTCCTATGCTAGACCCACCAATGAAAAAGGAGGTCAAGCTAAACTTAAAGTTGGAGATGATGGAGTTCCAACCAAAG
AATTCGACATAGACCTGGCTTTCTTTGATACTCCCGGTGGCACCGTGAACGGTCAAGACGAGTATAAAGCAGACATTGTCATGT
ATACCGAAAACACGTATTTGGAAACTCCAGACACGCATGTGGTATACAAACCAGGCAAGGATGATGCAAGTTCTGAAATTAAC
CTGGTTCAGCAGTCTATGCCCAACAGACCCAACTACATTGGGTTCAGGGACAACTTTATCGGTCTTATGTACTACAACAGCACT
GGCAATATGGGTGTGCTTGCTGGTCAGGCCTCCCAGCTGAATGCTGTGGTTGATTTGCAAGACAGAAACACCGAGCTGTCCTA
CCAGCTCTTGCTTGACTCTTTGGGTGACAGAACCCGGTATTTCAGTATGTGGAACCAGGCGGTGGACAGTTATGACCCCGATG
TGCGCATCATCGAAAACCATGGTGTGGAGGATGAATTGCCAAACTATTGCTTCCCCTTGGACGGCTCTGGCACTAACGCCGCA
TACCAAGGTGTGAAAGTAAAAGATGGTCAAGATGGTGATGTTGAGAGTGAATGGGAAAATGACGATACTGTTGCAGCTCGAA

Fig. 25F

ATCAATTATGTAAAGGTAACATTTTCGCCATGGAGATTAATCTCCAGGCTAACCTGTGGAGAAGTTTCCTCTACTCGAACGTGG
CCCTGTACCTGCCCGACTCCTACAAGTACACGCCGACCAACGTCACGCTGCCGACCAACACCAACACCTACGATTACATGAATG
GCAGAGTGACACCTCCCTCGCTGGTAGACGCCTACCTCAACATCGGGGCGCGCTGGTCGCTGGACCCCATGGACAACGTCAAC
CCCTTCAACCACCACCGCAACGCGGGCCTGCGCTACCGCTCCATGCTCCTGGGCAACGGGCGCTACGTGCCCTTCCACATCCAG
GTGCCCCAAAAGTTTTTCGCCATCAAGAGCCTCCTGCTCCTGCCCGGGTCCTACACCTACGAGTGGAACTTCCGCAAGGACGTC
AACATGATCCTGCAGAGCTCCCTAGGCAACGACCTGCGCACGGACGGGGCCTCCATCGCCTTCACCAGCATCAACCTCTACGC
CACCTTCTTCCCCATGGCGCACAACACCGCCTCCACGCTCGAGGCCATGCTGCGCAACGACACCAACGACCAGTCCTTCAACGA
CTACCTCTCGGCGGCCAACATGCTCTACCCCATCCCGGCCAACGCCACCAACGTGCCCATCTCCATCCCCTCGCGCAACTGGGC
CGCCTTCCGCGGATGGTCCTTCACGCGCCTGAAGACCCGCGAGACGCCCTCGCTCGGCTCCGGGTTCGACCCCTACTTCGTCTA
CTCGGGCTCCATCCCCTACCTAGACGGCACCTTCTACCTCAACCACACCTTCAAGAAGGTCTCCATCACCTTCGACTCCTCCGTC
AGCTGGCCCGGCAACGACCGCCTCCTGACGCCCAACGAGTTCGAAATCAAGCGCACCGTCGACGGAGAGGGATACAACGTGG
CCCAGTGCAACATGACCAAGGACTGGTTCCTGGTCCAGATGCTGGCCCACTACAACATCGGCTACCAGGGCTTCTACGTGCCC
GAGGGCTACAAGGACCGCATGTACTCCTTCTTCCGCAACTTCCAGCCCATGAGCCGCCAGGTCGTGGACGAGGTCAACTACAA
GGACTACCAGGCCGTCACCCTGGCCTACCAGCACAACAACTCGGGCTTCGTCGGCTACCTCGCGCCCACCATGCGCCAGGGCC
AGCCCTACCCCGCCAACTACCCCTACCCGCTCATCGGCAAGAGCGCCGTCGCCAGCGTCACCCAGAAAAAGTTCCTCTGCGACC
GGGTCATGTGGCGCATCCCCTTCTCCAGCAACTTCATGTCCATGGGCGCGCTCACCGACCTCGGCCAGAACATGCTCTACGCCA
ACTCCGCCCACGCGCTAGACATGAATTTCGAAGTCGACCCCATGGATGAGTCCACCCTTCTCTATGTTGTCTTCGAAGTCTTCGA
CGTCGTCCGAGTGCACCAGCCCCACCGCGGCGTCATCGAAGCCGTCTACCTGCGCACGCCCTTCTCGGCCGGCAACGCCACCA
CCTAAGCCGCTCTTGCTTCTTGCAAGATGACGGCGGGCTCCGGCGAGCAGGAGCTCAGGGCCATCCTCCGCGACCTGGGCTGC
GGGCCCTGCTTCCTGGGCACCTTCGACAAGCGCTTCCCTGGATTCATGGCCCCGCACAAGCTGGCCTGCGCCATCGTGAACAC
GGCCGGCCGCGAGACCGGGGGCGAGCACTGGCTGGCCTTCGCCTGGAACCCGCGCTCCCACACATGCTACCTCTTCGACCCCT
TCGGGTTCTCGGACGAGCGCCTCAAGCAGATCTACCAGTTCGAGTACGAGGGCCTGCTGCGTCGCAGCGCCCTGGCCACCGA
GGACCGCTGCGTCACCCTGGAAAAGTCCACCCAGACCGTGCAGGGTCCGCGCTCGGCCGCCTGCGGGCTCTTCTGCTGCATGT
TCCTGCACGCCTTCGTGCACTGGCCCGACCGCCCCATGGACAAGAACCCCACCATGAACTTACTGACGGGGGTGCCCAACGGC
ATGCTCCAGTCGCCCCAGGTGGAACCCACCCTGCGCCGCAACCAGGAAGCGCTCTACCGCTTCCTCAATGCCCACTCCGCCTAC
TTTCGCTCCCACCGCGCGCGCATCGAGAAGGCCACCGCCTTCGACCGCATGAATCAAGACATGTAAAAAACCGGTGTGTGTAT
GTGAATGCTTTATTCATAATAAACAGCACATGTTTATGCCACCTTCTCTGAGGCTCTGACTTTATTTAGAAATCGAAGGGGTTCT
GCCGGCTCTCGGCATGGCCCGCGGGCAGGGATACGTTGCGGAACTGGTACTTGGGCAGCCACTTGAACTCGGGGATCAGCAG
CTTGGGCACGGGGAGGTCGGGGAACGAGTCGCTCCACAGCTTGCGCGTGAGTTGCAGGGCGCCCAGCAGGTCGGGCGCGGA
GATCTTGAAATCGCAGTTGGGACCCGCGTTCTGCGCGCGAGAGTTGCGGTACACGGGGTTGCAGCACTGGAACACCATCAGG
GCCGGGTGCTTCACGCTTGCCAGCACCGTCGCGTCGGTGATGCCCTCCACGTCCAGATCCTCGGCGTTGGCCATCCCGAAGGG
GGTCATCTTGCAGGTCTGCCGCCCCATGCTGGGCACGCAGCCGGGCTTGTGGTTGCAATCGCAGTGCAGGGGGATCAGCATC
ATCTGGGCCTGCTCGGAGCTCATGCCCGGGTACATGGCCTTCATGAAAGCCTCCAGCTGGCGGAAGGCCTGCTGCGCCTTGCC
GCCCTCGGTGAAGAAGACCCCGCAGGACTTGCTAGAGAACTGGTTGGTGGCGCAGCCGGCGTCGTGCACGCAGCAGCGCGC
GTCGTTGTTGGCCAGCTGCACCACGCTGCGCCCCCAGCGGTTCTGGGTGATCTTGGCCCGGTTGGGGTTCTCCTTCAGCGCGC
GCTGCCCGTTCTCGCTCGCCACATCCATCTCGATAGTGTGCTCCTTCTGGATCATCACGGTCCCGTGCAGGCACCGCAGCTTGC
CCTCGGCTTCGGTGCAGCCGTGCAGCCACAGCGCGCAGCCGGTGCACTCCCAGTTCTTGTGGGCGATCTGGGAGTGCGAGTG
CACGAAGCCCTGCAGGAAGCGGCCCATCATCGCGGTCAGGGTCTTGTTGCTGGTGAAGGTCAGCGGGATGCCGCGGTGCTCC
TCGTTCACATACAGGTGGCAGATGCGGCGGTACACCTCGCCCTGCTCGGGCATCAGCTGGAAGGCGGACTTCAGGTCGCTCTC
CACGCGGTACCGGTCCATCAGCAGCGTCATCACTTCCATGCCCTTCTCCCAGGCCGAAACGATCGGCAGGCTCAGGGGGTTCT
TCACCGCCATTGTCATCTTAGTCGCCGCCGCCGAGGTCAGGGGGTCGTTCTCGTCCAGGGTCTCAAACACTCGCTTGCCGTCCT
TCTCGATGATGCGCACGGGGGGAAAGCTGAAGCCCACGGCCGCCAGCTCCTCCTCGGCCTGCCTTTCGTCCTCGCTGTCCTGG
CTGATGTCTTGCAAAGGCACATGCTTGGTCTTGCGGGGTTTCTTTTTGGGCGGCAGAGGCGGCGGCGATGTGCTGGGAGAGC
GCGAGTTCTCGTTCACCACGACTATTTCTTCTTCTTGGCCGTCGTCCGAGACCACGCGGCGGTAGGCATGCCTCTTCTGGGGCA
GAGGCGGAGGCGACGGGCTCTCGCGGTTCGGCGGGCGGCTGGCAGAGCCCCTTCCGCGTTCGGGGGTGCGCTCCTGGCGGC
GCTGCTCTGACTGACTTCCTCCGCGGCCGGCCATTGTGTTCTCCTAGGGAGCAACAACAAGCATGGAGACTCAGCCATCGTCG
CCAACATCGCCATCTGCCCCCGCCGCCACCGCCGACGAGAACCAGCAGCAGAATGAAAGCTTAACCGCCCCGCCGCCCAGCCC
CACCTCCGACGCCGCGGCCCCAGACATGCAAGAGATGGAGGAATCCATCGAGATTGACCTGGGCTACGTGACGCCCGCGGAG
CACGAGGAGGAGCTGGCAGCGCGCTTTTCAGCCCCGGAAGAGAACCACCAAGAGCAGCCAGAGCAGGAAGCAGAGAACGA
GCAGAACCAGGCTGGGCACGAGCATGGCGACTACCTGAGCGGGGCAGAGGACGTGCTCATCAAGCATCTGGCCCGCCAATG
CATCATCGTCAAGGACGCGCTGCTCGACCGCGCCGAGGTGCCCCTCAGCGTGGCGGAGCTCAGCCGCGCCTACGAGCGCAAC

Fig. 25G

CTCTTCTCGCCGCGCGTGCCCCCCAAGCGCCAGCCCAACGGCACCTGTGAGCCCAACCCGCGCCTCAACTTCTACCCGGTCTTC
GCGGTGCCCGAGGCCCTGGCCACCTACCACCTCTTTTTCAAGAACCAAAGGATCCCCGTCTCCTGCCGCGCCAACCGCACCCGC
GCCGACGCCCTGCTCAACCTGGGCCCCGGCGCCCGCCTACCTGATATCACCTCCTTGGAAGAGGTTCCCAAGATCTTCGAGGG
TCTGGGCAGCGACGAGACTCGGGCCGCGAACGCTCTGCAAGGAAGCGGAGAGGAGCATGAGCACCACAGCGCCCTGGTGGA
GTTGGAAGGCGACAACGCGCGCCTGGCGGTCCTCAAGCGCACGGTCGAGCTGACCCACTTCGCCTACCCGGCGCTCAACCTGC
CCCCCAAGGTCATGAGCGCCGTCATGGACCAGGTGCTCATCAAGCGCGCCTCGCCCCTCTCGGAGGAGGAGATGCAGGACCC
CGAGAGTTCGGACGAGGGCAAGCCCGTGGTCAGCGACGAGCAGCTGGCGCGCTGGCTGGGAGCGAGTAGCACCCCCCAGAG
CCTGGAAGAGCGGCGCAAGCTCATGATGGCCGTGGTCCTGGTGACCGTGGAGCTGGAGTGTCTGCGCCGCTTCTTTGCCGAC
GCGGAGACCCTGCGCAAGGTCGAGGAGAACCTGCACTACCTCTTCAGGCACGGGTTCGTGCGCCAGGCCTGCAAGATCTCCA
ACGTGGAGCTGACCAACCTGGTCTCCTACATGGGCATCCTGCACGAGAACCGCCTGGGGCAAAACGTGCTGCACACCACCCTG
CGCGGGGAGGCCCGCCGCGACTACATCCGCGACTGCGTCTACCTGTACCTCTGCCACACCTGGCAGACGGGCATGGGCGTGT
GGCAGCAGTGCCTGGAGGAGCAGAACCTGAAAGAGCTCTGCAAGCTCCTGCAGAAGAACCTCAAGGCCCTGTGGACCGGGTT
CGACGAGCGTACCACCGCCTCGGACCTGGCCGACCTCATCTTCCCCGAGCGCCTGCGGCTGACGCTGCGCAACGGGCTGCCCG
ACTTTATGAGCCAAAGCATGTTGCAAAACTTTCGCTCTTTCATCCTCGAACGCTCCGGGATCCTGCCCGCCACCTGCTCCGCGCT
GCCCTCGGACTTCGTGCCGCTGACCTTCCGCGAGTGCCCCCCGCCGCTCTGGAGCCACTGCTACTTGCTGCGCCTGGCCAACTA
CCTGGCCTACCACTCGGACGTGATCGAGGACGTCAGCGGCGAGGGTCTGCTGGAGTGCCACTGCCGCTGCAACCTCTGCACG
CCGCACCGCTCCCTGGCCTGCAACCCCCAGCTGCTGAGCGAGACCCAGATCATCGGCACCTTCGAGTTGCAAGGCCCCGGCGA
CGGCGAGGGCAAGGGGGGTCTGAAACTCACCCCGGGGCTGTGGACCTCGGCCTACTTGCGCAAGTTCGTGCCCGAGGACTAC
CATCCCTTCGAGATCAGGTTCTACGAGGACCAATCCCAGCCGCCCAAGGCCGAGCTGTCGGCCTGCGTCATCACCCAGGGGGC
CATCCTGGCCCAATTGCAAGCCATCCAGAAATCCCGCCAAGAATTTCTGCTGAAAAAGGGCCACGGGGTCTACTTGGACCCCC
AGACCGGAGAGGAGCTCAACCCCAGCTTCCCCCAGGATGCCCCGAGGAAGCAGCAAGAAGCTGAAAGTGGAGCTGCCGCCG
CCGGAGGATTTGGAGGAAGACTGGGAGAGCAGTCAGGCAGAGGAGGAGGAGATGGAAGACTGGGACAGCACTCAGGCAG
AGGAGGACAGCCTGCAAGACAGTCTGGAGGAGGAAGACGAGGTGGAGGAGGCAGAGGAAGAAGCAGCCGCCGCCAGACC
GTCGTCCTCGGCGGAGAAAGCAAGCAGCACGGATACCATCTCCGCTCCGGGTCGGGGTCGCGGCGGCCGGGCCCACAGTAG
GTGGGACGAGACCGGGCGCTTCCCGAACCCCACCACCCAGACCGGTAAGAAGGAGCGGCAGGGATACAAGTCCTGGCGGGG
GCACAAAAACGCCATCGTCTCCTGCTTGCAAGCCTGCGGGGGCAACATCTCCTTCACCCGGCGCTACCTGCTCTTCCACCGCGG
GGTGAACTTCCCCCGCAACATCTTGCATTACTACCGTCACCTCCACAGCCCCTACTACTGTTTCCAAGAAGAGGCAGAAACCCA
GCAGCAGCAGAAAACCAGCGGCAGCAGCAGCTAGAAAATCCACAGCGGCGGCAGGTGGACTGAGGATCGCGGCGAACGAG
CCGGCGCAGACCCGGGAGCTGAGGAACCGGATCTTTCCCACCCTCTATGCCATCTTCCAGCAGAGTCGGGGGCAGGAGCAGG
AACTGAAAGTCAAGAACCGTTCTCTGCGCTCGCTCACCCGCAGTTGTCTGTATCACAAGAGCGAAGACCAACTTCAGCGCACTC
TCGAGGACGCCGAGGCTCTCTTCAACAAGTACTGCGCGCTCACTCTTAAAGAGTAGCCCGCGCCCGCCCACACACGGAAAAAG
GCGGGAATTACGTCACCACCTGCGCCCTTCGCCCGACCATCATGAGCAAAGAGATTCCCACGCCTTACATGTGGAGCTACCAG
CCCCAGATGGGCCTGGCCGCCGGCGCCGCCCAGGACTACTCCACCCGCATGAACTGGCTCAGTGCCGGGCCCGCGATGATCTC
ACGGGTGAATGACATCCGCGCCCACCGAAACCAGATACTCCTAGAACAGTCAGCGATCACCGCCACGCCCCGCCATCACCTTA
ATCCGCGTAATTGGCCCGCCGCCCTGGTGTACCAGGAAATTCCCCAGCCCACGACCGTACTACTTCCGCGAGACGCCCAGGCC
GAAGTCCAGCTGACTAACTCAGGTGTCCAGCTGGCCGGCGGCGCCGCCCTGTGTCGTCACCGCCCCGCTCAGGGTATAAAGCG
GCTGGTGATCCGAGGCAGAGGCACACAGCTCAACGACGAGGTGGTGAGCTCTTCGCTGGGTCTGCGACCTGACGGAGTCTTC
CAACTCGCCGGATCGGGGAGATCTTCCTTCACGCCTCGTCAGGCCGTCCTGACTTTGGAGAGTTCGTCCTCGCAGCCCCGCTCG
GGCGGCATCGGCACTCTCCAGTTCGTGGAGGAGTTCACTCCCTCGGTCTACTTCAACCCCTTCTCCGGCTCCCCCGGCCACTAC
CCGGACGAGTTCATCCCGAACTTCGACGCCATCAGCGAGTCGGTGGACGGCTACGATTGAATGTCCCATGGTGGCGCAGCTG
ACCTAGCTCGGCTTCGACACCTGGACCACTGCCGCCGCTTCCGCTGCTTCGCTCGGGATCTCGCCGAGTTTGCCTACTTTGAGC
TGCCCGAGGAGCACCCTCAGGGCCCAGCCCACGGAGTGCGGATCATCGTCGAAGGGGGCCTCGACTCCCACCTGCTTCGGAT
CTTCAGCCAGCGACCGATCCTGGTCGAGCGCGAACAAGGACAGACCCTTCTTACTTTGTACTGCATCTGCAACCACCCCGGCCT
GCATGAAAGTCTTTGTTGTCTGCTGTGTACTGAGTATAATAAAAGCTGAGATCAGCGACTACTCCGGACTCGATTGTGGTGTTC
CTGCTATCAACCGGTCCCTGTTCTTCACCGGGAACGAGACCGAGCTCCAGCTCCAGTGTAAGCCCCACAAGAAGTACCTCACCT
GGCTGTTCCAGGGCTCCCCGATCGCCGTTGTCAACCACTGCGACAACGACGGAGTCCTGCTGAGCGGCCCTGCCAACCTTACTT
TTTCCACCCGCAGAAGCAAGCTCCAGCTCTTCCAACCCTTCCTCCCCGGGACCTATCAGTGCGTCTCAGGACCCTGCCATCACAC
CTTCCACCTGATCCCGAATACCACAGCGCCGCTCCCCGCTACTAACAACCAAACTACCCACCAACGCCACCGTCGCGACCTTTCC
TCTGAATCTAATACCACTACCGGAGGTGGCTTCTGCTGTTAGTGCTCCCCCGTCCCGTCGACCCCCGGTCCCCCACTCAGTCCCC
CGAGGAGGTTCGCAAATGCAAATTCCAAGAACCCTGGAAATTCCTCAAATGCTACCGCCAAAAATCAGACATGCATCCCAGCT
GGATCATGATCATTGGGATCGTGAACATTCTGGCCTGCACCCTCATCTCCTTTGTGATTTACCCCTGCTTTGACTTTGGTTGGAA
CTCGCCAGAGGCGCTCTATCTCCCGCCTGAACCTGACACACCACCACAGCAGCAACCTCAGGCACACGCACTACCACCACCACA
GCCTAGGCCACAATACATGCCCATATTAGACTATGAGGCCGAGCCACAGCGACCCATGCTCCCCGCTATTAGTTACTTCAATCT
AACCGGCGGAGATGACTGACCCACTGGCCAATAACAACGTCAACGACCTTCTCCTGGACATGGACGGCCGCGCCTCGGAGCA
GCGACTCGCCCAACTTCGCATTCGTCAGCAGCAGGAGAGAGCCGTCAAGGAGCTGCAGGACGGCATAGCCATCCACCAGTGC
AAGAGAGGCATCTTCTGCCTGGTGAAACAGGCCAAGATCTCCTACGAGGTCACCCAGACCGACCATCGCCTCTCCTACGAGCT
CCTGCAGCAGCGCCAGAAGTTCACCTGCCTGGTCGGAGTCAACCCCATCGTCATCACCCAGCAGTCGGGCGATACCAAGGGGT

Fig. 25H

GCATCCACTGCTCCTGCGACTCCCCCGACTGCGTCCACACTCTGATCAAGACCCTCTGCGGCCTCCGCGACCTCCTCCCCATGAA
CTAATCACCCCCTTATCCAGTGAAATAAAGATCATATTGATGATGATTTAAATAAAAAAAATAATCATTTGATTTGAAATAAAGA
TACAATCATATTGATGATTTGAGTTTAACAAAAATAAAGAATCACTTACTTGAAATCTGATACCAGGTCTCTGTCCATGTTTTCT
GCCAACACCACCTCACTCCCCTCTTCCCAGCTCTGGTACTGCAGGCCCCGGCGGGCTGCAAACTTCCTCCACACGCTGAAGGGG
ATGTCAAATTCCTCCTGTCCCTCAATCTTCATTTTATCTTCTATCAGATGTCCAAAAAGCGCGTCCGGGTGGATGATGACTTCGA
CCCCGTCTACCCCTACGATGCAGACAACGCACCGACCGTGCCCTTCATCAACCCCCCCTTCGTCTCTTCAGATGGATTCCAAGAG
AAGCCCCTGGGGGTGTTGTCCCTGCGACTGGCTGACCCCGTCACCACCAAGAACGGGGAAATCACCCTCAAGCTGGGAGAGG
GGGTGGACCTCGACTCGTCGGGAAAACTCATCTCCAACACGGCCACCAAGGCCGCCGCCCCTCTCAGTATTTCAAACAACACC
ATTTCCCTTAAAACTGCTGCCCCTTTCTACAACAACAATGGAACTTTAAGCCTCAATGTCTCCACACCATTAGCAGTATTTCCCAC
ATTTAACACTTTAGGCATAAGTCTTGGAAACGGTCTTCAGACTTCAAATAAGTTGTTGACTGTACAACTAACTCATCCTCTTACA
TTCAGCTCAAATAGCATCACAGTAAAAACAGACAAAGGGCTATATATTAACTCCAGTGGAAACAGAGGACTTGAGGCTAATAT
AAGCCTAAAAAGAGGACTAGTTTTTGACGGTAATGCTATTGCAACATATATTGGAAATGGCTTAGACTATGGATCTTATGATAG
TGATGGAAAAACAAGACCCGTAATTACCAAAATTGGAGCAGGATTAAATTTTGATGCTAACAAAGCAATAGCTGTCAAACTAG
GCACAGGTTTAAGTTTTGACTCCGCTGGTGCCTTGACAGCTGGAAACAAACAGGATGACAAGCTAACACTTTGGACTACCCCT
GACCCAAGCCCTAATTGTCAATTACTTTCAGACAGAGATGCCAAATTTACTCTCTGTCTTACAAAATGCGGTAGTCAAATACTAG
GCACTGTGGCAGTGGCGGCTGTTACTGTAGGATCAGCACTAAATCCAATTAATGACACAGTCAAAAGCGCCATAGTTTTCCTTA
GATTTGATTCCGATGGTGTACTCATGTCAAACTCATCAATGGTAGGTGATTACTGGAACTTTAGGGAGGGACAGACCACTCAA
AGTGTAGCCTATACAAATGCTGTGGGATTCATGCCAAATATAGGTGCATATCCAAAAACCCAAAGTAAAACACCTAAAAATAG
CATAGTCAGTCAGGTATATTTAACTGGAGAAACTACTATGCCAATGACACTAACCATAACTTTCAATGGCACTGATGAAAAAGA
CACAACCCCAGTTAGCACCTACTCTATGACTTTTACATGGCAGTGGACTGGAGACTATAAGGACAAAAATATTACCTTTGCTAC
CAACTCATTCTCTTTTTCCTACATCGCCCAGGAATAATCCCACCCAGCAAGCCAACCCCTTTTCCCACCACCTTTGTCTATATGGA
AACTCTGAAACAGAAAAATAAAGTTCAAGTGTTTTATTGAATCAACAGTTTTACAGGACTCGAGCAGTTATTTTTCCTCCACCCT
CCCAGGACATGGAATACACCACCCTCTCCCCCCGCACAGCCTTGAACATCTGAATGCCATTGGTGATGGACATGCTTTTGGTCT
CCACGTTCCACACAGTTTCAGAGCGAGCCAGTCTCGGATCGGTCAGGGAGATGAAACCCTCCGGGCACTCCCGCATCTGCACC
TCACAGCTCAACAGCTGAGGATTGTCCTCGGTGGTCGGGATCACGGTTATCTGGAAGAAGCAGAAGAGCGGCGGTGGGAATC
ATAGTCCGCGAACGGGATCGGCCGGTGGTGTCGCATCAGGCCCCGCAGCAGTCGCTGCCGCCGCCGCTCCGTCAAGCTGCTG
CTCAGGGGGTTCGGGTCCAGGGACTCCCTCAGCATGATGCCCACGGCCCTCAGCATCAGTCGTCTGGTGCGGCGGGCGCAGC
AGCGCATGCGAATCTCGCTCAGGTCACTGCAGTACGTGCAACACAGGACCACCAGGTTGTTCAACAGTCCATAGTTCAACACG
CTCCAGCCGAAACTCATCGCGGGAAGGATGCTACCCACGTGGCCGTCGTACCAGATCCTCAGGTAAATCAAGTGGCGCTCCCT
CCAGAAGACGCTGCCCATGTACATGATCTCCTTGGGCATGTGGCGGTTCACCACCTCCCGGTACCACATCACCCTCTGGTTGAA
CATGCAGCCCCGGATGATCCTGCGGAACCACAGGGCCAGCACCGCCCCGCCCGCCATGCAGCGAAGAGACCCCGGATCCCGG
CAATGACAATGGAGGACCCACCGCTCGTACCCGTGGATCATCTGGGAGCTGAACAAGTCTATGTTGGCACAGCACAGGCATAT
GCTCATGCATCTCTTCAGCACTCTCAGCTCCTCGGGGGTCAAAACCATATCCCAGGGCACGGGGAACTCTTGCAGGACAGCGA
ACCCCGCAGAACAGGGCAATCCTCGCACATAACTTACATTGTGCATGGACAGGGTATCGCAATCAGGCAGCACCGGGTGATCC
TCCACCAGAGAAGCGCGGGTCTCGGTCTCCTCACAGCGTGGTAAGGGGGCCGGCCGATACGGGTGATGGCGGGACGCGGCT
GATCGTGTTCTCGACCGTGTCATGATGCAGTTGCTTTCGGACATTTTCGTACTTGCTGTAGCAGAACCTGGTCCGGGCGCTGCA
CACCGATCGCCGGCGGCGGTCTCGGCGCTTGGAACGCTCGGTGTTAAAGTTGTAAAACAGCCACTCTCTCAGACCGTGCAGCA
GATCTAGGGCCTCAGGAGTGATGAAGATCCCATCATGCCTGATAGCTCTGATCACATCGACCACCGTGGAATGGGCCAGGCCC
AGCCAGATGATGCAATTTTGTTGGGTTTCGGTGACGGCGGGGGAGGGAAGAACAGGAAGAACCATGATTAACTTTTAATCCA
AACGGTCTCGGAGCACTTCAAAATGAAGGTCACGGAGATGGCACCTCTCGCCCCCGCTGTGTTGGTGGAAAATAACAGCCAG
GTCAAAGGTGATACGGTTCTCGAGATGTTCCACGGTGGCTTCCAGCAAAGCCTCCACGCGCACATCCAGAAACAAGACAATAG
CGAAAGCGGGAGGGTTCTCTAATTCCTCAACCATCATGTTACACTCCTGCACCATCCCCAGATAATTTTCATTTTTCCAGCCTTG
AATGATTCGAACTAGTTCCTGAGGTAAATCCAAGCCAGCCATGATAAAAAGCTCGCGCAGAGCACCCTCCACCGGCATTCTTAA
GCACACCCTCATAATTCCAAGATATTCTGCTCCTGGTTCACCTGCAGCAGATTGACAAGCGGAATATCAAAATCTCTGCCGCGA
TCCCTGAGCTCCTCCCTCAGCAATAACTGTAAGTACTCTTTCATATCGTCTCCGAAATTTTTAGCCATAGGACCCCCAGGAATAA
GAGAAGGGCAAGCCACATTACAGATAAACCGAAGTCCCCCCCAGTGAGCATTGCCAAATGTAAGATTGAAATAAGCATGCTG
GCTAGACCCGGTGATATCTTCCAGATAACTGGACAGAAAATCGGGTAAGCAATTTTTAAGAAAATCAACAAAAGAAAAATCTT
CCAGGTGCACGTTTAGGGCCTCGGGAACAACGATGGAGTAAGTGCAAGGGGTGCGTTCCAGCATGGTTAGTTAGCTGATCTG
TAAAAAAACAAAAAATAAAACATTAAACCATGCTAGCCTGGCGAACAGGTGGGTAAATCGTTCTCTCCAGCACCAGGCAGGCC
ACGGGGTCTCCGGCGCGACCCTCGTAAAAATTGTCGCTATGATTGAAAACCATCACAGAGAGACGTTCCCGGTGGCCGGCGT
GAATGATTCGAGAAGAAGCATACACCCCCGGAACATTGGAGTCCGTGAGTGAAAAAAAGCGGCCGAGGAAGCAATGAGGCA
CTACAACGCTCACTCTCAAGTCCAGCAAAGCGATGCCATGCGGATGAAGCACAAAATTTTCAGGTGCGTAAAAAATGTAATTA
CTCCCCTCCTGCACAGGCAGCGAAGCTCCCGATCCCTCCAGATACACATACAAAGCCTCAGCGTCCATAGCTTACCGAGCGGCA
GCAGCAGCGGCACACAACAGGCGCAAGAGTCAGAGAAAAGACTGAGCTCTAACCTGTCCGCCCGCTCTCTGCTCAATATATAG
CCCCAGATCTACACTGACGTAAAGGCCAAAGTCTAAAAATACCCGCCAAATAATCACACACGCCCAGCACACGCCCAGAAACC
GGTGACACACTCAGAAAAATACGCGCACTTCCTCAAACGGCCAAACTGCCGTCATTTCCGGGTTCCCACGCTACGTCATCAAAA
CACGACTTTCAAATTCCGTCGACCGTTAAAAACATCACCCGCCCCGCCCCTAACGGTCGCCGCTCCCGCAGCCAATCACCTTCCT
CCCTCCCCAAATTCAAACAGCTCATTTGCATATTAACGCGCACCAAAAGTTTGAGGTATATTATTGATGATG

Fig. 25I

AdC6 020-DU422gp160(E1621) Amino acids – SEQ ID NO: 14
The symbol " * " refers herein to stop codons in the non coding regions

HHQ*YTSNFWCALICK*AV*IWGGRKVIGCGSGDR*GRGG*RFDDVAMRRSRFASSRGKSDVKRGVV*TRKYSIFPRSLTGNEVFL
GGCK*KRAIFARKLNEEVKI*VISRLWQGGVFAEGRVDFDRLRGGFDYRIFHLNFRVRCQSPVFLRTISFPRKCHLTVTITVLR*RKLRS
PDPLWCTLSTICSDAA*LSQYLLPACVLEVAE*CASKI*ATTRQGLTDNCMKNLLRVRRFALLRDVRARYTR*H*LLTSMPSTPPIDVN
DGKWPAWHYAQYMTLWDFPTWQYIYVLVIAITMVMRFWQYINGRG*RFDSRGFPSLHPIDVNGSLFWHQNQRDFPKCRNNSA
PLTQMGGRRVRWEVYISRARLVNRQITRSFIAVVYHS*IANAVSASDTTVSNLRLEFDATMRVRGIPRNWPQWWIWGILGFWMIII
CRVVGNLDLWVTVYYGVPVWKEAKTTLFCASDAKAYDKEVHNVWATHACVPTDPNPQEIVLENVTENFNMWKNDMVDQMHE
DIISLWDQSLKPCVKLTPLCVTLNCKNVNISANANATATLNSSMNGEIKNCSFNTTTELRDKKQKVYALFYKPDVVPLNGGEHNETGE
YILINCNSSTITQACPKVSFDPIPIHYCAPAGYAILKCNNKTFNGTGPCNNVSTVQCTHGIKPVVSTQLLLNGSLAEEEIIVRSENLTNNIK
TIIVHLNKSVEIKCTRPNNNTRKSVRIGPGQTFYATGEIIGDIREAHCNISRETWNSTLIQVKEKLREHYNKTIKFEPSSGGDLEVTTHSF
NCRGEFFYCDTTKLFNETKLFNESEYVDNKTIILPCRIKQIINMWQEVGRAMYAPPIEGNITCKSNITGLLLTWDGGENSTEGVFRPG
GGNMKDNWRSELYKYKVVEIKPLGVAPTKSKRKVVGREKRAVGLGAVLLGFLGAAGSTMGAASITLTVQARQLLSGIVQQQSNLLR
AIEAQQHLLQLTVWGIKQLQTRVLAIERYLKDQQLLGLWGCSGKLICATAVPWNSSWSNKSLGDIWDNMTWMQWDREISNYTN
TIFRLLEDSQNQQEKNEKDLLALDSWKNLWNWFDITNWLWYIKIFIMIVGGLIGLRIIFGVLAIVKRVRQGYSPLSFQTLIPNPRGPDR
LGRIEEEGGEQDKDRSIRLVSGFLALAWDDLRSLCLFSYHQLRDFILTAARAAELLGRSSLRGLQRGWEVLKYLGNLVQYWGLELKRS
AINLFDTIAIAVAEGTDRIIEVIQRICRAIRYIPTRIRQGFEAALL*GTSRVDPGGQTADQPRLCLLVASHLLFAPPPCLP*PWKVPLPLSF
PNKMRKLHRIV*VGVILFWGVGWGRTARGRIGKTIAGMLGMRWALWLLRRKEPADLQI*IHLCRVRRKR**NGIMGIMGLH**IG
QISTYAGHRACGLAPPQDMARVRAQRHDPLQCAPGLPPRHVHALPVQHAICEGAAGARCHVQSEPDGGV*HECGAVENSEI**I
QDQVPGLRMRRQARQASARVCGGDGGPATRSFGVVLQRDGVRLQRGRI*LE*VVFGAGCEPA*GAE*LKSVVFCVLQQHERKRL
L*GRGIQPLSDGASPLLGGSASECDGIHGGRPARAARELFNPDLRDPELLVRGRSCRRSCCFRRQRRARNGPGRRLLQLSGGQLEFH
Q*SRQPERGEAAAADGPARGPDPAPGRADPAGGSAAGGDAGRGCHGENQIKNESINKRRRLLILTQSLESLFDFSRAVGPGPPVSII
EHPVDLFQDPVEVGLDVEVHGHEPVPGVEVAPLQGLVLGDGVVNHPVIAGAQGVVLHDVLEEETDGHGQPLGVGVDEPVELGG
MHAGGDEMHLGLDLEIGDVPAQIPPGVHVVQDHQHGVSGALGEFVMQLGREGVKEFGDALVTAQVFHALIHDDGDGPVGGGL
GKDVSGVGHIVVVVLGELVIGHFNEFGAEGARLGDEGALDPGGVVALADLHLPGLELGGGDHVHLRGDEKNGFRGGGDELGRKQ
VPEQLGLAATGGAVDDPDDRLQVVVEGETAAVLAEEGGHLVHHLAHMHVLAHEFRQEALAPQREELLQRGEVFQRLESVGHGHF
GEGLLQEFQTVPELGDVL*GISIQQTSSFRGLGRLRE*GTRRWASSEARVRSFQGRRVRVSVVSVTVKGCAPGWALARVRFRLIRLV
ENRSRSAPCASAR*QLSMSS*LSASAAWPLARSLPLEVCPQTGQRRDLRA*SLGARKTDSGA*ASAPQLAQTVSHSTSQVRSGRLGS
KTRFPPCFLMRFLPLVSMSSCPRWVTKRLSVSP*TDFMGRSSSGVPRSSS*RNPAHSETKARVQASTKEATWEG*RSLSTSGSTFSR
VCKHMSPSSTSRKVIGL*V*AT*PGVPAGGV*KGAGPCSSSLSSGSLSRSASCWGRYSLSKAGMTSALRLSVSRNEEDLILTVPLETPF
MSPSSIWSEKTIFLLSSLVAKEP*RALESSLAMERMVWFFSLSARSLAAMLSCTYSRATHFHSGKTVVSSSGTILTRQPRLCRVMRSTL
VATSPRRGSLVQQRRPPLREQKGGSGSSMSSSGGSASTVKMPGRSSGSK*LMQVPRLSSAACQSRTASARS*GLRGVPQGMGCV
SAEAYMPQMS*T*RGSSRTPM*VG*QRPPRMLART*SYSSCEGARSPVPRLERCGFSAR*TIWRKMAWELEEMVGLWKMLKWA
WGRPTESLMKWA*ESCSLATSSAVTRTSRAQ*SRVSWMMSYLSWPFCFHSSRLRRNSSRSFQYSSRGNPS*SAR*EPTM*NWLTA
L*AQQPFSTGRA*ACAALRREVWVRAKVSRTMTLRNWCLKSRSSQPPCSQSWKSVRFL*AGLGKAKVTSLKRILPARGMKLRVMR
KGWGTSARLLMTWAARTISSKPLMLCPTM*SSTNRGRPLTWGSFLSSS*VSSAGSLSPCCSRAQSATWGLALRKEVQRSTARAVCK
RSRY*RNCWPTAIFSGVTQ*KVRGSPCQRSHLSWRARSWASSTSGGSPESFMTSMKGTSCLPKDPIQV*VSTS*VRKSLSVRGCEP
MGKNWISCHQLEEWLLM*WK*KCRRRAEHSCLCLYKRPQCSQRCTGCTCCTSCTWVPLARNFSGQWSAGGCISCCTTSWPSAW
PSSASMVVMLTSPRGRQVQTSARTGRRARTRARRPELSRVLRRCGVRSVGSGGARLTCRSFSRARGRSRWYLISTAPLVATSTACRV
PCPWGATTVPRFFLGAASMSVRSGGEDARRAAGAARGPEAGAAGARRRRARAGSGTAPGEDWRERRRDG*RPGSDASG*RPR
DP*V*T*KRVRQNQSRYR*RRPAAGSLARRPSCPGRRSRS*TARSPPPEGLRGRRARRWPRGRWRCGP*AARRRSCRPRSRRGCR
PRLRRGRARA*PPGRG*ARRGA*RPRSCRGAGRGS*AWWRCAR*RRST*SSGGAASR*RRPGLPSVPWPRRSPRRS*KTGSCAPR
RSTPPPEDG*ARRWWRAPRARRPRGAPLPSPPLPPPLTSLLLPPQEAVAGEGPCVAGGARADGR*SARWSPRAGDAWSR*RRAR
PRGAAA*RRRRASPGGRRGGLRWAGRGR*RCILSIDP*GLRART*ASRDPRDPKTAERRLRASRSRKVG*ARFLVLRVFGREAGGRC
CW**S*SRRS*DGGWWRGAPGPWARLAGCADGRPCPRRGPDTWRGPCSSPA*AAPRAPPPRPRGRACA*ARTRAAAGRAPGR
RRRAR*GWPAGSG*GWSGSRRSRRSGGRLRC*WCRSSWP*RTS*RSGGRVARARGT*GASRRACRRCSRCRRARGTGIRRGSAA
AAGGRAAIARWRGRRARGPRA*GGGSRRCTWTSR*CRRRWWRRAGTRGRGSRCCAAAGSSSWWPRSGP*GARSRGCSRHTG
KNESGQRLDSVAWRLSERVGLRVYPGSNLESGWSRS*RGTGTPVSTQAC*RNLQDTEAGRFLALVAGHEKLVSAESGRPRWLAAV
VWRKNRQGCVAVCPGSSLSARRRPDSAANVGVAAPSFPRPLSQPTSPVTERAPLFFSCVFARCIPYCGRCAPTLHHNRPYRSSSNSR
RFCPRPSSSQPLPRRPP*AEPAFSMTWPWKRARGWRGWGRRRRSGTRACR*KGTLARPTCPSRTCSETGAARSPRRCAPPASTRG

Fig. 25J

GSCGAAWTESGC*GTRISRRTS*RGSAPRARTWPRPTWSRRTSRP*RRRATSKNPSTTTCAR*SRARR*PWA*CTCGTCWRPSCR
TPRASR*RRSCFWWCSTVGTTRRSGRRC*ISPSPRAAGSWTW*TFCRASWCRSAGCRCPRSWRPSTSRC*VWASTTLGRSTRPRT
CP*TRR*RSTGFTCA*P*KC*P*ATIWGCTATTGCTAR*APAAGAS*ATRS*CTACSGP*PGPGPRGRATLTWARTCAGSPAAGPW
KLPAVPPTWRRWTMRRRRASTWKTDGATVFLLDAATATAAAS*SRDAGGAAEPAVRH*LLGRLDPGHATHHGADDPQSRSL*TA
ASGQPALGHPGGRGALALEPHAREGAGHRERAGGEQGHPR*RGRAGVQRAAGARGPLQQHQRADEPGPHGDRRARGGVAAR
AVPPRVEPGLHGGAERLPEHAARQRAPGPGGLHQLHQRAAADGGRGAPERGVPVGAGLLLPDQSPGLADREPEPGFQELAGTVG
RAGPGRGPRDGVEPADAELAPAAAAGGALHGQRQREPRLVPGLPA*PVPRGHRTGARGRADLPGDHPREPRAGPGGPGQPGG
HPELPADQPVAEDPAPVRAEHRGGAHPALRAAERGAVPDAGGGHAQRGARHDRAQHGAQHVRPQPPVHQ*ADGLLASGGRH
ELGLLYQRHLEPALAPAARVLHGRVRHARPQRRVPVGRRGQQRVLAASRNQCRVEERGRGPAAVLGAVRSRGCCRGGARGRQPL
PEPALFAEQRAQQRAGSADATAPAGRGGVPERLLVEARAREELPQ*RDREPGGQDEPLEDVRARAQGRAPS*QRRHP*TPAARQ
AAGTGVGR*GFRRRQQRVGLGWEWW*PVRSPAPPYRAPDVRI*KNKRRYSPRPWRPACVLLCCL**YDEARVPGGSSSLVRERD
AAGGGGGDAAPAGGALRAPAVPGAYGGAEQHSLLGAGTLVRYHPVVPGGQQVGRHRLAELPERPQQLPDHRGAEQRFHPHGG
QHPDHQL*RALAVGRPAENHHAHQHAQRERVHVQQQVQGAGDGLAQDPQRGG**L*W*SGRADLRVGGV*AARGQLLGDH
DHRSDEQRHHRQLLGGGAAERGAGERHRREVRHAQLPAGLGPRDRAGDAGRVHQRGLPPRHRPAARLRRGLHREPPQQPAGH
PQAAALPGGLPDPVRGPGGGQHPRALGCRSLREKQGG*HRRGDRSRGHRLYRGAGR*FC*RCGSGRGG*NRK*DSHPAGGEGQ
QGQELQRARGQEKHRLPQLVPGLQLRRPREGRALLDAAHHLGRHLRRGASLLVAARHDARPGHLPLHASS*QLPGGGRRAPARLL
QELLQRAGRLLAAAARLHLAHARLQPLPREPDPRPPARAHHYHRQ*KRSCSHRSRDPAAAQQYPGSPARDRH*RQTPHLPLRLQG
PGRSRAARPLEPHLLKNVHSHLAQ**HRLGPARAQQDVRRRSPTLHATPRARARALPRSLGRPQGPRALAHHRRRRDRPGGGRRA
QLHARRRARLHRGRRHRQRGGRRAPVRPHQEPAAAHRPAAPEHPRHARGASLAAQGQAHGTQGHAQGGQTRGLRQQQRRQD
PQTRGHGGGGGHRQHVPPAARQRVLGARRRHRCARARAHPPPSHLKMLTSRC*CVPAARRMSKRKYKEEMLQVIAPEIYGPAAA
VKEERKPRKLKRVKKDKKEEEDDGLVEFVREFAPRRRVQWRGRKVKPVLRPGTTVVFTPGERSGSASKRSYDEVYGDEDILEQAVER
LGEFAYGKRSRPAPLKEEAVSIPLDHGNPTPSLKPVTLQQVLPSAAPRRGFKREGGEDLYPTMQLMVPKRQKLEDVLEHMKVDPEV
QPEVKVRPIKQVAPGLGVQTVDIKIPTEPMETQTEPVKPSTSTMEVQTDPWMPAPASTSTRRRRKYGAASLLMPNYALHPSIIPTPG
YRGTRFYRGYTSSRRRKTTTRRRRRSRRSSTATSALVRRVYRSGREPLTLPRARYHPSIAI*LPPPTCRYGPHMPPPRPHYGLPRKKAAP
*KADGERAASPSPPAAARHQQAVGGRLPARADPHHRRGDRGDPRHSFRGGAGLSAPLRHKKAWICNKKKNGLTLLVL*CVFLDGR
HQFFVPGTATRHAAVYGHLERHRQQPTERGRLQLEQSLERA*EFRVHAQNLWQQGVEQQHRAGAEGKAERTELPAEGG*WPGL
RHQRGG*PGQPGRAETDQQPPGRGPARGVRGDAPGGGGAASPGQARRQATASRRGGDAADAHGRAAPVRGGGETGPAHHA
ARGASGHRSAETQQQPARDPGLASASPLHSG*APAAGGRRVARPPRPPPGELAEHSEQHRGSGSAECEAPPLLLKDTVALNLLVCV
YMYVRRPEGGV*RGASPSCKMATPSMLPQWAYMHIAGQDASEYLSPGLVQFARATDTYFSLGNKFRNPTVAPTHDVTTDRSQRL
TLRFVPVDREDNTYSYKVRYTLAVGDNRVLDMASTYFDIRGVLDRGPSFKPYSGTAYNSLAPKGAPNSSQWEQAKTGNGGTMETH
TYGVAPMGGENITKDGLQIGTDVTANQNKPIYADKTFQPEPQVGEENWQETENFYGGRALKKDTNMKPCYGSYARPTNEKGGQ
AKLKVGDDGVPTKEFDIDLAFFDTPGGTVNGQDEYKADIVMYTENTYLETPDTHVVYKPGKDDASSEINLVQQSMPNRPNYIGFRD
NFIGLMYYNSTGNMGVLAGQASQLNAVVDLQDRNTELSYQLLLDSLGDRTRYFSMWNQAVDSYDPDVRIIENHGVEDELPNYCFP
LDGSGTNAAYQGVKVKDGQDGDVESEWENDDTVAARNQLCKGNIFAMEINLQANLWRSFLYSNVALYLPDSYKYTPTNVTLPTN
TNTYDYMNGRVTPPSLVDAYLNIGARWSLDPMDNVNPFNHHRNAGLRYRSMLLGNGRYVPFHIQVPQKFFAIKSLLLLPGSYTYE
WNFRKDVNMILQSSLGNDLRTDGASIAFTSINLYATFFPMAHNTASTLEAMLRNDTNDQSFNDYLSAANMLYPIPANATNVPISIPS
RNWAAFRGWSFTRLKTRETPSLGSGFDPYFVYSGSIPYLDGTFYLNHTFKKVSITFDSSVSWPGNDRLLTPNEFEIKRTVDGEGYNVA
QCNMTKDWFLVQMLAHYNIGYQGFYVPEGYKDRMYSFFRNFQPMSRQVVDEVNYKDYQAVTLAYQHNNSGFVGYLAPTMRQ
GQPYPANYPYPLIGKSAVASVTQKKFLCDRVMWRIPFSSNFMSMGALTDLGQNMLYANSAHALDMNFEVDPMDESTLLYVVFEV
FDVVRVHQPHRGVIEAVYLRTPFSAGNATT*AALASCKMTAGSGEQELRAILRDLGCGPCFLGTFDKRFPGFMAPHKLACAIVNTA
GRETGGEHWLAFAWNPRSHTCYLFDPFGFSDERLKQIYQFEYEGLLRRSALATEDRCVTLEKSTQTVQGPRSAACGLFCCMFLHAFV
HWPDRPMDKNPTMNLLTGVPNGMLQSPQVEPTLRRNQEALYRFLNAHSAYFRSHRARIEKATAFDRMNQDM*KTGVCM*MLY
S**TAHVYATFSEALTLFRNRRGSAGSRHGPRAGIRCGTGTWAAT*TRGSAAWARGGRGTSRSTACA*VAGRPAGRARRS*NRS
WDPRSARESCGTRGCSTGTPSGPGASRLPAPSRR*CPPRPDPRRWPSRRGSSCRSAAPCWARSRACGCNRSAGGSASSGPARSSC
PGTWPS*KPPAGGRPAAPCRPR*RRPRRTC*RTGWWRSRRRARSSARRCWPAAPRCAPSGSG*SWPGWGSPSARAARSRSPHP
SR*CAPSGSSRSRAGTAACPRLRCSRAATARSRCTPSSCGRSGSASARSPAGSGPSSRSGSCCW*RSAGCRGAPRSHTGGRCGGTP
RPARASAGRRTSGRSPRGTGPSAASSLPCPSPRPKRSAGSGGSSPPLSS*SPPPRSGGRSRPGSQTLACRPSR*CARGES*SPRPPAPP
RPAFRPRCPG*CLAKAHAWSCGVSFWAAEAAAMCWESASSRSPRLFLLLGRRPRPRGGRHASSGAEAEATGSRGSAGGWQSPFR
VRGCAPGGAALTDFLRGRPLCSPREQQQAWRLSHRRQHRHLPPPPPPTRTSSRMKA*PPRRPAPPPTPRPQTCKRWRNPSRLTW
AT*RPRSTRRSWQRAFQPRKRTTKSSQSRKQRTSRTRLGTSMATT*AGQRTCSSSIWPANASSSRTRCSTAPRCPSAWRSSAAPTS
ATSSRRACPPSASPTAPVSPTRASTSTRSSRCPRPWPPTTSFSRTKGSPSPAAPTAPAPTPCSTWAPAPAYLISPPWKRFPRSSRVWA

Fig. 25K

ATRLGPRTLCKEAERSMSTTAPWWSWKATTRAWRSSSARSS*PTSPTRRSTCPPRS*APSWTRCSSSAPRPSRRRRCRTPRVRTRA
SPWSATSSWRAGWERVAPPRAWKSGASS*WPWSW*PWSWSVCAASLPTRRPCARSRRTCTTSSGTGSCARPARSPTWS*PTW
SPTWASCTRTAWGKTCCTPPCAGRPAATTSATASTCTSATPGRRAWACGSSAWRSRT*KSSASSCRRTSRPCGPGSTSVPPPRTW
PTSSSPSACG*RCATGCPTL*AKACCKTFALSSSNAPGSCPPPAPRCPRTSCR*PSASAPRRSGATATCCAWPTTWPTTRT*SRTSAA
RVCWSATAAATSARRTAPWPATPSC*ARPRSSAPSSCKAPATARARGV*NSPRGCGPRPTCASSCPRTTIPSRSGSTRTNPSRPRPS
CRPASSPRGPSWPNCKPSRNPAKNFC*KRATGSTWTPRPERSSTPASPRMPRGSSKKLKVELPPPEDLEEDWESSQAEEEEMEDW
DSTQAEEDSLQDSLEEEDEVEEAEEEAAAARPSSSAEKASSTDTISAPGRGRGGRAHSRWDETGRFPNPTTQTGKKERQGYKSWRG
HKNAIVSCLQACGGNISFTRRYLLFHRGVNFPRNILHYYRHLHSPYYCFQEEAETQQQQKTSGSSS*KIHSGGRWTEDRGERAGADP
GAEEPDLSHPLCHLPAESGAGAGTESQEPFSALAHPQLSVSQERRPTSAHSRGRRGSLQQVLRAHS*RVARARPHTEKGGNYVTTC
ALRPTIMSKEIPTPYMWSYQPQMGLAAGAAQDYSTRMNWLSAGPAMISRVNDIRAHRNQILLEQSAITATPRHHLNPRNWPAAL
VYQEIPQPTTVLLPRDAQAEVQLTNSGVQLAGGAALCRHRPAQGIKRLVIRGRGTQLNDEVVSSSLGLRPDGVFQLAGSGRSSFTPR
QAVLTLESSSSQPRSGGIGTLQFVEEFTPSVYFNPFSGSPGHYPDEFIPNFDAISESVDGYD*MSHGGAADLARLRHLDHCRRFRCFA
RDLAEFAYFELPEEHPQGPAHGVRIIVEGGLDSHLLRIFSQRPILVEREQGQTLLTLYCICNHPGLHESLCCLLCTEYNKS*DQRLLRTRL
WCSCYQPVPVLHRERDRAPAPV*APQEVPHLAVPGLPDRRCQPLRQRRSPAERPCQPYFFHPQKQAPALPTLPPRDLSVRLRTLPS
HLPPDPEYHSAAPRY*QPNYPPTPPSRPFL*I*YHYRRWLLLLVLPRPVDPRSPTQSPEEVRKCKFQEPWKFLKCYRQKSDMHPSWI
MIIGIVNILACTLISFVIYPCFDFGWNSPEALYLPPEPDTPPQQQPQAHALPPPQPRPQYMPILDYEAEPQRPMLPAISYFNLTGGDD
*PTGQ*QRQRPSPGHGRPRLGAATRPTSHSSAAGESRQGAAGRHSHPPVQERHLLPGETGQDLLRGHPDRPSPLLRAPAAAPEVH
LPGRSQPHRHHPAVGRYQGVHPLLLRLPRLRPHSDQDPLRPPRPPPHELITPLSSEIKIILMMI*IKKIII*FEIKIQSY**FEFNKNKESLT
*NLIPGLCPCFLPTPPHSPLPSSGTAGPGGLQTSSTR*RGCQIPPVPQSSFYLLSDVQKARPGG**LRPRLPLRCRQRTDRALHQPPLR
LFRWIPREAPGGVVPATG*PRHHQERGNHPQAGRGGGPRLVGKTHLQHGHQGRRPSQYFKQHHFP*NCCPFLQQQWNFKPQC
LHTISSISHI*HFRHKSWKRSSDFK*VVDCTTNSSSYIQLK*HHSKNRQRAIY*LQWKQRT*G*YKPKKRTSF*R*CYCNIYWKWLRL
WIL***WKNKTRNYQNWSRIKF*C*QSNSCQTRHRFKF*LRWCLDSWKQTG*QANTLDYP*PKP*LSITFRQRCQIYSLSYKMR*S
NTRHCGSGGCYCRISTKSN**HSQKRHSFP*I*FRWCTHVKLINGR*LLEL*GGTDHSKCSLYKCCGIHAKYRCISKNPK*NT*K*HSQ
SGIFNWRNYYANDTNHNFQWH**KRHNPS*HLLYDFYMAVDWRL*GQKYYLCYQLILFFLHRPGIIPPSKPTPFPTTFVYMETLKQK
NKVQVFY*INSFTGLEQLFFLHPPRTWNTPPSPPAQP*TSECHW*WTCFWSPRSTQFQSEPVSDRSGR*NPPGTPASAPHSSTAED
CPRWSGSRLSGRSRRAAVGIIVRERDRPVVSHQAPQQSLPPPLRQAAAQGVRVQGLPQHDAHGPQHQSSGAAGAAAHANLAQV
TAVRATQDHQVVQQSIVQHAPAETHRGKDATHVAVVPDPQVNQVALPPEDAAHVHDLLGHVAVHHLPVPHHPLVEHAAPDDP
AEPQGQHRPARHAAKRPRIPAMTMEDPPLVPVDHLGAEQVYVGTAQAYAHASLQHSQLLGGQNHIPGHGELLQDSEPRRTGQSS
HITYIVHGQGIAIRQHRVILHQRSAGLGLLTAW*GGRPIRVMAGRG*SCSRPCHDAVAFGHFRTCCSRTWSGRCTPIAGGGLGAW
NARC*SCKTATLSDRAADLGPQE**RSHHA**L*SHRPPWNGPGPAR*CNFVGFR*RRGREEQEEP*LTFNPNGLGALQNEGHGD
GTSRPRCVGGK*QPGQR*YGSRDVPRWLPAKPPRAHPETRQ*RKREGSLIPQPSCYTPAPSPDNFHFSSLE*FELVPEVNPSQP**K
ARAEHPPPAFLSTPS*FQDILLLVHLQQIDKRNIKISAAIPELLPQQ*L*VLFHIVSEIFSHRTPRNKRRASHITDKPKSPPVSIAKCKIEIS
MLARPGDIFQITGQKIG*AIFKKINKRKIFQVHV*GLGNNDGVSARGAFQHG*LADL*KNKK*NIKPC*PGEQVGKSFSPAPGRPRG
LRRDPRKNCRYD*KPSQRDVPGGRRE*FEKKHTPPEHWSP*VKKSGRGSNEALQRSLSSPAKRCHADEAQNFQVRKKCNYSPPAQ
AAKLPIPPDTHTKPQRP*LTERQQQRHTTGARVREKTEL*PVRPLSAQYIAPDLH*RKGQSLKIPAK*SHTPSTRPETGDTLRKIRALP
QTAKLPSFPGSHATSSKHDFQIPSTVKNITRPAPNGRRSRSQSPSSLPKFKQLICILTRTKSLRYIIDD

Fig. 26A

AdC7 010-DU172gp160(E1622) Nucleic Acids – SEQ ID NO: 7

CATCATCAATAATATACCTCAAACTTTTGGTGCGCGTTAATATGCAAATGAGCTGTTTGAATTTGGGGAGGGAGGAAGGTGAT
TGGCCGAGAGACGGGCGACCGTTAGGGGCGGGGCGGGTGACGTTTTGATGACGTGGCCGTGAGGCGGAGCCGGTTTGCAA
GTTCTCGTGGGAAAAGTGACGTCAAACGAGGTGTGGTTTGAACACGGAAATACTCAATTTTCCCGCGCTCTCTGACAGGAAAT
GAGGTGTTTCTGGGCGGATGCAAGTGAAAACGGGCCATTTTCGCGCGAAAACTGAATGAGGAAGTGAAAATCTGAGTAATTT
CGCGTTTATGGCAGGGAGGAGTATTTGCCGAGGGCCGAGTAGACTTTGACCGATTACGTGGGGGTTTCGATTACCGTATTTTT
CACCTAAATTTCCGCGTACGGTGTCAAAGTCCGGTGTTTTTACGTACGATATCATTTCCCCGAAAGTGCCACCTGACCGTAACTA
TAACGGTCCTAAGGTAGCGAAAGCTCAGATCTCCCGATCCCCTATGGTGCACTCTCAGTACAATCTGCTCTGATGCCGCATAGT
TAAGCCAGTATCTGCTCCCTGCTTGTGTGTTGGAGGTCGCTGAGTAGTGCGCGAGCAAAATTTAAGCTACAACAAGGCAAGGC
TTGACCGACAATTGCATGAAGAATCTGCTTAGGGTTAGGCGTTTTGCGCTGCTTCGCGATGTACGGGCCAGATATACGCGTTG
ACATTGATTATTGACTAGTATGCCAAGTACGCCCCCTATTGACGTCAATGACGGTAAATGGCCCGCCTGGCATTATGCCCAGTA
CATGACCTTATGGGACTTTCCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCATGGTGATGCGGTTTTGGCAGTAC
ATCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATTTCCAAGTCTCCACCCCATTGACGTCAATGGGAGTTTGTTTTGGCA
CCAAAATCAACGGGACTTTCCAAAATGTCGTAACAACTCCGCCCCATTGACGCAAATGGGCGGTAGGCGTGTACGGTGGGAG
GTCTATATAAGCAGAGCTCGTTTAGTGAACCGTCAGATCACTAGAAGCTTTATTGCGGTAGTTTATCACAGTTAAATTGCTAAC
GCAGTCAGTGCTTCTGACACAACAGTCTCGAACTTAAGGCTAGAGTACTTAATACGACTCACTATAGGCTAGTTAAGGCTAGA
GTTCGACGCCACCATGCGCGTGATGGGCATCCTGCGCTCCTACCAGCAGTGGTGGATCTGGGGCATCCTGGGCTTCTGGATGC
TGATGATCTGCAACGTGTGGGGCAACCTGTGGGTGACCGTGTACTACGGCGTGCCCGTGTGGAAGGAGGCCAAGACCACCCT
GTTCTGCGCCTCCGACGCCAAGGCCCACAAGGAGGAGGTGCACAACATCTGGGCCACCCACGCCTGCGTGCCCACCGACCCCA
ACCCCCAGGAGATCGTGCTGAAGAACGTGACCGAGAACTTCAACATGTGGAAGAACGACATGGTGGACCAGATGCACGAGG
ACATCATCTCCCTGTGGGACCAGTCCCTGAAGCCCTGCGTGAAGCTGACCCCCCTGTGCGTGACCCTGAACTGCTCCGACGTGA
AGATCAAGGGCACCAACGCCACCTACAACAACGCCACCTACAACAACAACAACACCATCTCCGACATGAAGAACTGCTCCTTCA
ACACCACCACCGAGATCACCGACAAGAAGAAGAAGGAGTACGCCCTGTTCTACAAGCTGGACGTGGTGGCCCTGGACGGCAA
GGAGACCAACTCCACCAACTCCTCCGAGTACCGCCTGATCAACTGCAACACCTCCGCCGTGACCCAGGCCTGCCCCAAGGTGTC
CTTCGACCCCATCCCCATCCACTACTGCGCCCCCGCCGGCTACGCCATCCTGAAGTGCAACAACAAGACCTTCAACGGCACCGG
CCCCTGCAACAACGTGTCCACCGTGCAGTGCACCCACGGCATCAAGCCCGTGGTGTCCACCCAGCTGCTGCTGAACGGCTCCCT
GGCCGAGGAGGAGGTGGTGATCCGCTTCGAGAACCTGACCAACAACGCCAAGATCATCATCGTGCACCTGAACGAGTCCGTG
GAGATCAACTGCACCCGCCCCTCCAACAACACCCGCAAGTCCGTGCGCATCGGCCCCGGCCAGACCTTCTTCGCCACCGGCGA
CATCATCGGCGACATCCGCCAGGCCCACTGCAACATCTCCCGCAAGAAGTGGAACACCACCCTGCAGCGCGTGAAGGAGAAG
CTGAAGGAGAAGTTCCCCAACAAGACCATCCAGTTCGCCCCCTCCTCCGGCGGCGACCTGGAGATCACCACCCACTCCTTCAAC
TGCCGCGGCGAGTTCTTCTACTGCTACACCTCCGACCTGTTCAACTCCACCTACATGTCCAACAACACCGGCGGCGCCAACATC
ACCCTGCAGTGCCGCATCAAGCAGATCATCCGCATGTGGCAGGGCGTGGGCCAGGCCATGTACGCCCCCCCCATCGCCGGCA
ACATCACCTGCAAGTCCAACATCACCGGCCTGCTGCTGACCCGCGACGGCGGCAAGGAGAAGAACGACACCGAGACCTTCCG
CCCCGGCGGCGGCGACATGCGCGACAACTGGCGCTCCGAGCTGTACAAGTACAAGGTGGTGGAGATCAAGCCCCTGGGCATC
GCCCCCGACAAGGCCAAGCGCCGCGTGGTGGAGCGCGAGAAGCGCGCCGTGGGCATCGGCGCCGTGTTCCTGGGCTTCCTG
GGCGCCGCCGGCAGCACCATGGGCGCCGCCAGCATGACCCTGACCGTGCAGGCCCGCCAGCTGCTGAGCGGCATCGTGCAGC
AGCAGAGCAACCTGCTGCGCGCCATCGAGGCCCAGCAGCACATGCTGCAGCTGACCGTGTGGGGCATCAAGCAGCTGCAGAC
CCGCGTGCTGGCCATCGAGCGCTACCTGAAGGACCAGCAGCTGCTGGGCATCTGGGGCTGCAGCGGCAAGCTGATCTGCACC
ACCGCCGTGCCCTGGAACGCCAGCTGGAGCAACAAGAGCTACGAGGAGATCTGGGGCAACATGACCTGGATGCAGTGGGAC
CGCGAGATCAACAACTACACCAACACCATCTACAGCCTGCTGGAGGAGAGCCAGAACCAGCAGGAGAAGAACGAGAAGGAC
CTGCTGGCCCTGGACAGCTGGGAGAGCCTGTGGAGCTGGTTCAACATCACCAACTGGCTGTGGTACATCCGCATCTTCATCAT
CATCGTGGGCGGCCTGATCGGCCTGCGCATCATCTTCGCCGTGCTGAGCATCGTGAACCGCGTGCGCCAGGGCTACAGCCCCC
TGAGCTTCCAGACCCTGACCCCCAGCCCCCGCGAGCCCGACCGCCTGGGCCGCATCGAGGAGGAGGGCGGCGAGCAGGACC
GCGCCCGCAGCGTGCGCCTGGTGAACGGCTTCCTGGCCCTGGCCTGGGAGGACCTGCGCAGCCTGTGCCTGTTCAGCTACCAC
CGCCTGCGCGACCTGATCCTGATCGCCGCCCGCGCCGCCGCCCTGCTGGGCCGCAGCAGCCTGTGGGGCCTGCAGAAGGGCT
GGGAGGCCCTGAAGTACCTGGGCAGCCTGGTGCAGTACTGGGGCCTGGAGCTGAAGAAGAGCGCCATCAGCCTGTTCGACG
CCATCGCCATCACCGTGGCCGAGGGCACCGACCGCATCATCAACATCGTGCAGCGCATCAGCCGCGCCTTCTACAACATCCCCC
GCCGCATCCGCCAGGGCTTCGAGGCCACCCTGCAGTAAGGTACCTCTAGAGTCGACCCGGGCGGCCAAACCGCTGATCAGCCT
CGACTGTGCCTTCTAGTTGCCAGCCATCTGTTGTTTGCCCCTCCCCCGTGCCTTCCTTGACCCTGGAAGGTGCCACTCCCACTGT
CCTTTCCTAATAAAATGAGGAAATTGCATCGCATTGTCTGAGTAGGTGTCATTCTATTCTGGGGGGTGGGGTGGGGCAGGACA

Fig. 26B

GCAAGGGGGAGGATTGGGAAGACAATAGCAGGCATGCTGGGGATGCGGTGGGCTCTATGGCTTCTGAGGCGGAAAGAACC
AGCAGATCTGCAGATCTGAATTCATCTATGTCGGGTGCGGAGAAAGAGGTAATGAAATGGCATTATGGGTATTATGGGTCTGC
ATTAATGAATCGGCCAGATATCGATATGCTGGCCACCGTGCATGTGACCTCGCACCCCCGCAAGACATGGCCCGAGTTCGAGC
ACAACGTCATGACCCGATGCAATGTGCACCTGGGGTCCCGCCGAGGCATGTTCATGCCCTACCAGTGCAACATGCAATTTGTG
AAGGTGCTGCTGGAGCCCGATGCCATGTCCAGAGTGAGCCTGACGGGGGTGTTTGACATGAATGTGGAGCTGTGGAAAATTC
TGAGATATGATGAATCCAAGACCAGGTGCCGGGCCTGCGAATGCGGAGGCAAGCACGCCAGGCTTCAGCCCGTGTGTGTGGA
GGTGACGGAGGACCTGCGACCCGATCATTTGGTGTTGTCCTGCAACGGGACGGAGTTCGGCTCCAGCGGGGAAGAATCTGAC
TAGAGTGAGTAGTGTTTGGGGGAGGTGGAGGGCTTGTATGAGGGGCAGAATGACTAAAATCTGTGTTTTTCTGTGTGTTGCA
GCAGCATGAGCGGAAGCGCCTCCTTTGAGGGAGGGGTATTCAGCCCTTATCTGACGGGGCGTCTCCCCTCCTGGGCGGGAGT
GCGTCAGAATGTGATGGGATCCACGGTGGACGGCCGGCCCGTGCAGCCCGCGAACTCTTCAACCCTGACCTACGCGACCCTG
AGCTCCTCGTCCGTGGACGCAGCTGCCGCCGCAGCTGCTGCTTCCGCCGCCAGCGCCGTGCGCGGAATGGCCCTGGGCGCCG
GCTACTACAGCTCTCTGGTGGCCAACTCGACTTCCACCAATAATCCCGCCAGCCTGAACGAGGAGAAGCTGCTGCTGCTGATG
GCCCAGCTCGAGGCCCTGACCCAGCGCCTGGGCGAGCTGACCCAGCAGGTGGCTCAGCTGCAGGCGGAGACGCGGGCCGCG
GTTGCCACGGTGAAAACCAAATAAAAAATGAATCAATAAATAAACGGAGACGGTTGTTGATTTTAACACAGAGTCTTGAATCT
TTATTTGATTTTTCGCGCGCGGTAGGCCCTGGACCACCGGTCTCGATCATTGAGCACCCGGTGGATTTTTTCCAGGACCCGGTA
GAGGTGGGCTTGGATGTTGAGGTACATGGGCATGAGCCCGTCCCGGGGGTGGAGGTAGCTCCATTGCAGGGCCTCGTGCTC
GGGGGTGGTGTTGTAAATCACCCAGTCATAGCAGGGGCGCAGGGCGTGGTGCTGCACGATGTCCTTGAGGAGGAGACTGAT
GGCCACGGGCAGCCCCTTGGTGTAGGTGTTGACGAACCTGTTGAGCTGGGAGGGATGCATGCGGGGGGAGATGAGATGCAT
CTTGGCCTGGATCTTGAGATTGGCGATGTTCCCGCCCAGATCCCGCCGGGGGTTCATGTTGTGCAGGACCACCAGCACGGTGT
ATCCGGCGCACTTGGGGAATTTGTCATGCAACTTGGAAGGGAAGGCGTGAAAGAATTTGGAGACGCCCTTGTGACCGCCCAG
GTTTTCCATGCACTCATCCATGATGATGGCGATGGGCCCGTGGGCGGCGGCCTGGGCAAAGACGTTTCGGGGGTCGGACACA
TCGTAGTTGTGGTCCTGGGTGAGCTCGTCATAGGCCATTTTAATGAATTTGGGGCGGAGGGTGCCCGACTGGGGGACGAAGG
TGCCCTCGATCCCGGGGGCGTAGTTGCCCTCGCAGATCTGCATCTCCCAGGCCTTGAGCTCGGAGGGGGGGATCATGTCCACC
TGCGGGGCGATGAAAAAAACGGTTTCCGGGGCGGGGGAGATGAGCTGGGCCGAAAGCAGGTTCCGGAGCAGCTGGGACTT
GCCGCAGCCGGTGGGGCCGTAGATGACCCCGATGACCGGCTGCAGGTGGTAGTTGAGGGAGAGACAGCTGCCGTCCTCGCG
GAGGAGGGGGGCCACCTCGTTCATCATCTCGCGCACATGCATGTTCTCGCGCACGAGTTCCGCCAGGAGGCGCTCGCCCCCCA
GCGAGAGGAGCTCTTGCAGCGAGGCGAAGTTTTTCAGCGGCTTGAGYCCGTCGGCCATGGGCATTTTGGAGAGGGTCTGTTG
CAAGAGTTCCAGACGGTCCCAGAGCTCGGTGATGTGCTCTAGGGCATCTCGATCCAGCAGACCTCCTCGTTTCGCGGGTTGGG
GCGACTGCGGGAGTAGGGCACCAGGCGATGGGCGTCCAGCGAGGCCAGGGTCCGGTCCTTCCAGGGTCGCAGGGTCCGCGT
CAGCGTGGTCTCCGTCACGGTGAAGGGGTGCGCGCCGGGCTGGGCGCTTGCGAGGGTGCGCTTCAGGCTCATCCGGCTGGTC
GAGAACCGCTCCCGGTCGGCGCCCTGCGCGTCGGCCAGGTAGCAATTGAGCATGAGTTCGTAGTTGAGCGCCTCGGCCGCGT
GGCCCTTGGCGCGGAGCTTACCTTTGGAAGTGTGTCCGCAGACGGGACAGAGGAGGGACTTGAGGGCGTAGAGCTTGGGGG
CGAGGAAGACGGACTCGGGGGCGTAGGCGTCCGCGCCGCAGCTGGCGCAGACGGTCTCGCACTCCACGAGCCAGGTGAGGT
CGGGCCGGTTGGGGTCAAAAACGAGGTTTCCTCCGTGCTTTTTGATGCGTTTCTTACCTCTGGTCTCCATGAGCTCGTGTCCCC
GCTGGGTGACAAAGAGGCTGTCCGTGTCCCCGTAGACCGACTTTATGGGCCGGTCCTCGAGCGGGGTGCCGCGGTCCTCGTC
GTAGAGGAACCCCGCCCACTCCGAGACGAAGGCCCGGGTCCAGGCCAGCACGAAGGAGGCCACGTGGGAGGGGTAGCGGT
CGTTGTCCACCAGCGGGTCCACCTTCTCCAGGGTATGCAAGCACATGTCCCCCTCGTCCACATCCAGGAAGGTGATTGGCTTGT
AAGTGTAGGCCACGTGACCGGGGGTCCCGGCCGGGGGGGTATAAAAGGGGGCGGGCCCCTGCTCGTCCTCACTGTCTTCCG
GATCGCTGTCCAGGAGCGCCAGCTGTTGGGGTAGGTATTCCCTCTCGAAGGCTGGCATAACCTCGGCACTCAGGTTGTCAGTT
TCTAGAAACGAGGAGGATTTGATATTGACGGTGCCGTTGGAGACGCCTTTCATGAGCCCCTCGTCCATCTGGTCAGAAAAGAC
GATCTTTTTGTTGTCGAGCTTGGTGGCGAAGGAGCCGTAGAGGGCGTTGGAGAGGAGCTTGGCGATGGAGCGCATGGTCTG
GTTCTTTTCCTTGTCGGCGCGCTCCTTGGCGGCGATGTTGAGCTGCACGTACTCGCGCGCCACGCACTTCCATTCGGGGAAGAC
GGTGGTGAGCTCGTCGGGCACGATTCTGACCCGCCAGCCGCGGTTGTGCAGGGTGATGAGGTCCACGCTGGTGGCCACCTCG
CCGCGCAGGGGCTCGTTGGTCCAGCAGAGGCGCCCGCCCTTGCGCGAGCAGAAGGGGGGCAGCGGGTCCAGCATGAGCTCG
TCGGGGGGGTCGGCGTCCACGGTGAAGATGCCGGGCAGAAGCTCGGGGTCGAAGTAGCTGATGCAGGTGTCCAGATCGTCC
AGCGCCGCTTGCCAGTCGCGCACGGCCAGCGCGCGCTCGTAGGGGCTGAGGGGCGTGCCCCAGGGCATGGGGTGCGTGAGC
GCGGAGGCGTACATGCCGCAGATGTCGTAGACGTAGAGGGGCTCCTCGAGGACGCCGATGTAGGTGGGGTAGCAGCGCCCC
CCGCGGATGCTGGCGCGCACGTAGTCGTACAGCTCGTGCGAGGGCGCGAGGAGCCCCGTGCCGAGGTTGGAGCGTTGCGGC
TTTTCGGCGCGGTAGACGATCTGGCGGAAGATGGCGTGGGAGTTGGAGGAGATGGTGGGCCTCTGGAAGATGTTGAAGTGG
GCGTGGGGCAGGCCGACCGAGTCCCTGATGAAGTGGGCGTAGGAGTCCTGCAGCTTGGCGACGAGCTCGGCGGTGACGAGG
ACGTCCAGGGCGCAGTAGTCGAGGGTCTCTTGGATGATGTCGTACTTGAGCTGGCCCTTCTGCTTCCACAGCTCGCGGTTGAG

Fig. 26C

AAGGAACTCTTCGCGGTCCTTCCAGTACTCTTCGAGGGGGAACCCGTCCTGATCGGCACGGTAAGAGCCCACCATGTAGAACT
GGTTGACGGCCTTGTAGGCGCAGCAGCCCTTCTCCACGGGGAGGGCGTAAGCTTGTGCGGCCTTGCGCAGGGAGGTGTGGG
TGAGGGCGAAGGTGTCGCGCACCATGACCTTGAGGAACTGGTGCTTGAAGTCGAGGTCGTCGCAGCCGCCCTGCTCCCAGAG
CTGGAAGTCCGTGCGCTTCTTGTAGGCGGGGTTGGGCAAAGCGAAAGTAACATCGTTGAAGAGGATCTTGCCCGCGCGGGGC
ATGAAGTTGCGAGTGATGCGGAAAGGCTGGGGCACCTCGGCCCGGTTGTTGATGACCTGGGCGGCGAGGACGATCTCGTCG
AAGCCGTTGATGTTGTGCCCGACGATGTAGAGTTCCACGAATCGCGGGCGGCCCTTAACGTGGGGCAGCTTCTTGAGCTCGTC
GTAGGTGAGCTCGGCGGGGTCGCTGAGCCCGTGCTGCTCGAGGGCCCAGTCGGCGACGTGGGGGTTGGCGCTGAGGAAGG
AAGTCCAGAGATCCACGGCCAGGGCGGTCTGCAAGCGGTCCCGGTACTGACGGAACTGCTGGCCCACGGCCATTTTTTCGGG
GGTGACGCAGTAGAAGGTGCGGGGGTCGCCGTGCCAGCGGTCCCACTTGAGCTGGAGGGCGAGGTCGTGGGCGAGCTCGAC
GAGCGGCGGGTCCCCGGAGAGTTTCATGACCAGCATGAAGGGGACGAGCTGCTTGCCGAAGGACCCCATCCAGGTGTAGGTT
TCCACATCGTAGGTGAGGAAGAGCCTTTCGGTGCGAGGATGCGAGCCGATGGGGAAGAACTGGATCTCCTGCCACCAGTTGG
AGGAATGGCTGTTGATGTGATGGAAGTAGAAATGCCGACGGCGCGCCGAGCACTCGTGCTTGTGTTTATACAAGCGTCCGCA
GTGCTCGCAACGCTGCACGGGATGCACGTGCTGCACGAGCTGTACCTGGGTTCCTTTGACGAGGAATTTCAGTGGGCAGTGG
AGCGCTGGCGGCTGCATCTGGTGCTGTACTACGTCCTGGCCATCGGCGTGGCCATCGTCTGCCTCGATGGTGGTCATGCTGAC
GAGCCCGCGCGGGAGGCAGGTCCAGACTTCGGCTCGGACGGGTCGGAGAGCGAGGACGAGGGCGCGCAGGCCGGAGCTGT
CCAGGGTCCTGAGACGCTGCGGAGTCAGGTCAGTGGGCAGCGGCGGCGCGCGGTTGACTTGCAGGAGCTTTTCCAGGGCGC
GCGGGAGGTCCAGATGGTACTTGATCTCCACGGCGCCGTTGGTGGCGACGTCCACGGCTTGCAGGGTCCCGTGCCCCTGGGG
CGCCACCACCGTGCCCCGTTTCTTCTTGGGCGCTGCTTCCATGCCGGTCAGAAGCGGCGGCGAGGACGCGCGCCGGGCGGCA
GGGGCGGCTCGGGACCCGGAGGCAGGGGCGGCAGGGGCACGTCGGCGCCGCGCGCGGGCAGGTTCTGGTACTGCGCCCGG
AGAAGACTGGCGTGAGCGACGACGCGACGGTTGACGTCCTGGATCTGACGCCTCTGGGTGAAGGCCACGGGACCCGTGAGT
TTGAACCTGAAAGAGAGTTCGACAGAATCAATCTCGGTATCGTTGACGGCGGCCTGCCGCAGGATCTCTTGCACGTCGCCCGA
GTTGTCCTGGTAGGCGATCTCGGTCATGAACTGCTCGATCTCCTCCTCCTGAAGGTCTCCGCGGCCGGCGCGCTCGACGGTGG
CCGCGAGGTCGTTGGAGATGCGGCCCATGAGCTGCGAGAAGGCGTTCATGCCGGCCTCGTTCCAGACGCGGCTGTAGACCAC
GGCTCCGTCGGGGTCGCGCGCGCGCATGACCACCTGGGCGAGGTTGAGCTCGACGTGGCGCGTGAAGACCGCGTAGTTGCA
GAGGCGCTGGTAGAGGTAGTTGAGCGTGGTGGCGATGTGCTCGGTGACGAAGAAGTACATGATCCAGCGGCGGAGCGGCAT
CTCGCTGACGTCGCCCAGGGCTTCCAAGCGCTCCATGGCCTCGTAGAAGTCCACGGCGAAGTTGAAAAACTGGGAGTTGCGC
GCCGAGACGGTCAACTCCTCCTCCAGAAGACGGATGAGCTCAGCGATGGTGGCGCGCACCTCGCGCTCGAAGGCCCCGGGGG
GCTCCTCTTCTTCCATCTCTTCCTCCTCCACTAACATCTCTTCTACTTCCTCCTCAGGAGGCGGCGGCGGGGGAGGGGCCCTGCG
TCGCCGGCGGCGCACGGGCAGACGGTCGATGAAGCGCTCGATGGTCTCCCCGCGCCGGCGACGCATGGTCTCGGTGACGGC
GCGCCCGTCCTCGCGGGGCCGCAGCGTGAAGACGCCGCCGCGCATCTCCAGGTGGCCGCCGGGGGGGTCTCCGTTGGGCAG
GGAGAGGGCGCTGACGATGCATCTTATCAATTGGCCCGTAGGGACTCCGCGCAAGGACCTGAGCGTCTCGAGATCCACGGGA
TCCGAAAACCGCTGAACGAAGGCTTCGAGCCAGTCGCAGTCGCAAGGTAGGCTGAGCCCGGTTTCTTGTTCTTCGGGGATTTC
GGGAGGCGGGCGGGCGATGCTGCTGGTGATGAAGTTGAAGTAGGCGGTCCTGAGACGGCGGATGGTGGCGAGGAGCACCA
GGTCCTTGGGCCCGGCTTGCTGGATGCGCAGACGGTCGGCCATGCCCCAGGCGTGGTCCTGACACCTGGCGAGGTCCTTGTA
GTAGTCCTGCATGAGCCGCTCCACGGGCACCTCCTCCTCGCCCGCGCGGCCGTGCATGCGCGTGAGCCCGAACCCGCGCTGGG
GCTGGACGAGCGCCAGGTCGGCGACGACGCGCTCGGCGAGGATGGCCTGCTGTATCTGGGTGAGGGTGGTCTGGAAGTCGT
CGAAGTCGACGAAGCGGTGGTAGGCTCCGGTGTTGATGGTATAGGAGCAGTTGGCCATGACGGACCAGTTGACGGTCTGGT
GGCCGGGTCGCACGAGCTCGTGGTACTTGAGGCGCGAGTAGGCGCGCGTGTCGAAGATGTAGTCGTTGCAGGTGCGCACGA
GGTACTGGTATCCGACGAGGAAGTGCGGCGGCGGCTGGCGGTAGAGCGGCCATCGCTCGGTGGCGGGGGCGCCGGGCGCG
AGGTCCTCGAGCATGAGGCGGTGGTAGCCGTAGATGTACCTGGACATCCAGGTGATGCCGGCGGCGGTGGTGGAGGCGCGC
GGGAACTCGCGGACGCGGTTCCAGATGTTGCGCAGCGGCAGGAAGTAGTTCATGGTGGCCGCGGTCTGGCCCGTGAGGCGC
GCGCAGTCGTGGATGCTCTAGACATACGGGCAAAAACGAAAGCGGTCAGCGGCTCGACTCCGTGGCCTGGAGGCTAAGCGA
ACGGGTTGGGCTGCGCGTGTACCCCGGTTCGAATCTCGAATCAGGCTGGAGCCGCAGCTAACGTGGTACTGGCACTCCCGTCT
CGACCCAAGCCTGCTAACGAAACCTCCAGGATACGGAGGCGGGTCGTTTTTTGGCCTTGGTCGCTGGTCATGAAAAACTAGTA
AGCGCGGAAAGCGACCGCCCGCGATGGCTCGCTGCCGTAGTCTGGAGAAAGAATCGCCAGGGTTGCGTTGCGGTGTGCCCCG
GTTCGAGCCTCAGCGCTCGGCGCCGGCCGGATTCCGCGGCTAACGTGGGCGTGGCTGCCCCGTCGTTTCCAAGACCCCTTAGC
CAGCCGACTTCTCCAGTTACGGAGCGAGCCCCTCTTTTTCTTGTGTTTTTGCCAGATGCATCCCGTACTGCGGCAGATGCGCCCC
CACCCTCCACCTCAACCGCCCCTACCGCCGCAGCAGCAGCAACAGCCGGCGCTTCTGCCCCCGCCCCAGCAGCAGCCAGCCACT
ACCGCGGCGGCCGCCGTGAGCGGAGCCGGCGTTCAGTATGACCTGGCCTTGGAAGAGGGCGAGGGGCTGGCGCGGCTGGG
GGCGTCGTCGCCGGAGCGGCACCCGCGCGTGCAGATGAAAAGGGACGCTCGCGAGGCCTACGTGCCCAAGCAGAACCTGTT
CAGAGACAGGAGCGGCGAGGAGCCCGAGGAGATGCGCGCCTCCCGCTTCCACGCGGGGCGGGAGCTGCGGCGCGGCCTGG

Fig. 26D

ACCGAAAGCGGGTGCTGAGGGACGAGGATTTCGAGGCGGACGAGCTGACGGGGATCAGCCCCGCGCGCGCGCACGTGGCC
GCGGCCAACCTGGTCACGGCGTACGAGCAGACCGTGAAGGAGGAGAGCAACTTCCAAAAATCCTTCAACAACCACGTGCGCA
CGCTGATCGCGCGCGAGGAGGTGACCCTGGGCCTGATGCACCTGTGGGACCTGCTGGAGGCCATCGTGCAGAACCCCACGAG
CAAGCCGCTGACGGCGCAGCTGTTTCTGGTGGTGCAGCACAGTCGGGACAACGAGACGTTCAGGGAGGCGCTGCTGAATATC
ACCGAGCCCGAGGGCCGCTGGCTCCTGGACCTGGTGAACATTCTGCAGAGCATCGTGGTGCAGGAGCGCGGGCTGCCGCTGT
CCGAGAAGCTGGCGGCTATCAACTTCTCGGTGCTGAGCCTGGGCAAGTACTACGCTAGGAAGATCTACAAGACCCCGTACGTG
CCCATAGACAAGGAGGTGAAGATCGACGGGTTTTACATGCGCATGACCCTGAAAGTGCTGACCCTGAGCGACGATCTGGGGG
TGTACCGCAACGACAGGATGCACCGCGCGGTGAGCGCCAGCCGCCGGCGCGAGCTGAGCGACCAGGAGCTGATGCACAGCC
TGCAGCGGGCCCTGACCGGGGCCGGGACCGAGGGGGAGAGCTACTTTGACATGGGCGCGGACCTGCGCTGGCAGCCCAGCC
GCCGGGCCTTGGAAGCTGCCGGCGGTTCCCCCTACGTGGAGGAGGTGGACGATGAGGAGGAGGAGGGCGAGTACCTGGAA
GACTGATGGCGCGACCGTATTTTTGCTAGATGCAGCAACAGCCACCGCCTCCTGATCCCGCGATGCGGGCGGCGCTGCAGAGC
CAGCCGTCCGGCATTAACTCCTCGGACGATTGGACCCAGGCCATGCAACGCATCATGGCGCTGACGACCCGCAATCCCGAAGC
CTTTAGACAGCAGCCTCAGGCCAACCGGCTCTCGGCCATCCTGGAGGCCGTGGTGCCCTCGCGCTCGAACCCCACGCACGAGA
AGGTGCTGGCCATCGTGAACGCGCTGGTGGAGAACAAGGCCATCCGCGGCGACGAGGCCGGGCTGGTGTACAACGCGCTGC
TGGAGCGCGTGGCCCGCTACAACAGCACCAACGTGCAGACGAACCTGGACCGCATGGTGACCGACGTGCGCGAGGCGGTGT
CGCAGCGCGAGCGGTTCCACCGCGAGTCGAACCTGGGCTCCATGGTGGCGCTGAACGCCTTCCTGAGCACGCAGCCCGCCAA
CGTGCCCCGGGGCCAGGAGGACTACACCAACTTCATCAGCGCGCTGCGGCTGATGGTGGCCGAGGTGCCCCAGAGCGAGGT
GTACCAGTCGGGGCCGGACTACTTCTTCCAGACCAGTCGCCAGGGCTTGCAGACCGTGAACCTGAGCCAGGCTTTCAAGAACT
TGCAGGGACTGTGGGGCGTGCAGGCCCCGGTCGGGGACCGCGCGACGGTGTCGAGCCTGCTGACGCCGAACTCGCGCCTGC
TGCTGCTGCTGGTGGCGCCCTTCACGGACAGCGGCAGCGTGAGCCGCGACTCGTACCTGGGCTACCTGCTTAACCTGTACCGC
GAGGCCATCGGGCAGGCGCACGTGGACGAGCAGACCTACCAGGAGATCACCCACGTGAGCCGCGCGCTGGGCCAGGAGGAC
CCGGGCAACCTGGAGGCCACCCTGAACTTCCTGCTGACCAACCGGTCGCAGAAGATCCCGCCCCAGTACGCGCTGAGCACCGA
GGAGGAGCGCATCCTGCGCTACGTGCAGCAGAGCGTGGGGCTGTTCCTGATGCAGGAGGGGGCCACGCCCAGCGCCGCGCT
CGACATGACCGCGCGCGCAACATGGAGCCCAGCATGTACGCTCGCAACCGCCCGTTCATCAATAAGCTGATGGACTACTTGCATC
GGGCGGCCGCCATGAACTCGGACTACTTTACCAACGCCATCTTGAACCCGCACTGGCTCCCGCCGCCCGGGTTCTACACGGGC
GAGTACGACATGCCCGACCCCAACGACGGGTTCCTGTGGGACGACGTGGACAGCAGCGTGTTCTCGCCGCGCCCCGCCACCA
CCGTGTGGAAGAAAGAGGGCGGGGACCGGCGGCCGTCCTCGGCGCTGTCCGGTCGCGCGGGTGCTGCCGCGGCGGTGCCTG
AGGCCGCCAGCCCCTTCCCGAGCCTGCCCTTTTCGCTGAACAGCGTGCGCAGCAGCGAGCTGGGTCGGCTGACGCGGCCGCG
CCTGCTGGGCGAGGAGGAGTACCTGAACGACTCCTTGTTGAGGCCCGAGCGCGAGAAGAACTTCCCCAATAACGGGATAGAG
AGCCTGGTGGACAAGATGAGCCGCTGGAAGACGTACGCGCACGAGCACAGGGACGAGCCCCGAGCTAGCAGCAGCGCAGGC
ACCCGTAGACGCCAGCGACACGACAGGCAGCGGGGTCTGGTGTGGGACGATGAGGATTCCGCCGACGACAGCAGCGTGTTG
GACTTGGGTGGGAGTGGTGGTGGTAACCCGTTCGCTCACTTGCGCCCCCGTATCGGGCGCCTGATGTAAGAATCTGAAAAAAT
AAAAAACGGTACTCACCAAGGCCATGGCGACCAGCGTGCGTTCTTCTCTGTTGTTTGTAGTAGTATGATGAGGCGCGTGTACC
CGGAGGGTCCTCCTCCCTCGTACGAGAGCGTGATGCAGCAGGCGGTGGCGGCGGCGATGCAGCCCCCGCTGGAGGCGCCTTA
CGTGCCCCCGCGGTACCTGGCGCCTACGGAGGGGCGGAACAGCATTCGTTACTCGGAGCTGGCACCCTTGTACGATACCACCC
GGTTGTACCTGGTGGACAACAAGTCGGCGGACATCGCCTCGCTGAACTACCAGAACGACCACAGCAACTTCCTGACCACCGTG
GTGCAGAACAACGATTTCACCCCCACGGAGGCCAGCACCCAGACCATCAACTTTGACGAGCGCTCGCGGTGGGGCGGCCAGC
TGAAAACCATCATGCACACCAACATGCCCAACGTGAACGAGTTCATGTACAGCAACAAGTTCAAGGCGCGGGTGATGGTCTCG
CGCAAGACCCCCAATGGGGTCGCGGTGGATGAGAATTATGATGGTAGTCAGGACGAGCTGACTTACGAGTGGGTGGAGTTTG
AGCTGCCCGAGGGCAACTTCTCGGTGACCATGACCATCGATCTGATGAACAACGCCATCATCGACAACTACTTGGCGGTGGGG
CGTCAGAACGGGGTGCTGGAGAGCGACATCGGCGTGAAGTTCGACACGCGCAACTTCCGGCTGGGCTGGGACCCCGTGACC
GAGCTGGTGATGCCGGGCGTGTACACCAACGAGGCCTTCCACCCCGACATCGTCCTGCTGCCCGGCTGCGGCGTGGACTTCAC
CGAGAGCCGCCTCAGCAACCTGCTGGGCATCCGCAAGCGGCAGCCCTTCCAGGAGGGCTTCCAGATCCTGTACGAGGACCTG
GAGGGGGGCAACATCCCCGCGCTCTTGGATGTCGAAGCCTATGAGAAAAGCAAGGAGGAGGCCGCCGCAGCGGCGACCGCA
GCCGTGGCCACCGCCTCTACCGAGGTGCGGGGCGATAATTTTGCTAGCGCCGCGGCAGTGGCCGAGGCGGCTGAAACCGAAA
GTAAGATAGTCATCCAGCCGGTGGAGAAGGACAGCAAGGACAGGAGCTACAACGTGCTCGCGGACAAGAAAAACACCGCCT
ACCGCAGCTGGTACCTGGCCTACAACTACGGCGACCCCGAGAAGGGCGTGCGCTCCTGGACGCTGCTCACCACCTCGGACGTC
ACCTGCGGCGTGGAGCAAGTCTACTGGTCGCTGCCCGACATGATGCAAGACCCGGTCACCTTCCGCTCCACGCGTCAAGTTAG
CAACTACCCGGTGGTGGGCGCCGAGCTCCTGCCCGTCTACTCCAAGAGCTTCTTCAACGAGCAGGCCGTCTACTCGCAGCAGC
TGCGCGCCTTCACCTCGCTCACGCACGTCTTCAACCGCTTCCCCGAGAACCAGATCCTCGTCCGCCCGCCCGCGCCCACCATTAC
CACCGTCAGTGAAAACGTTCCTGCTCTCACAGATCACGGGACCCTGCCGCTGCGCAGCAGTATCCGGGGAGTCCAGCGCGTGA

Fig. 26E

CCGTCACTGACGCCAGACGCCGCACCTGCCCCTACGTCTACAAGGCCCTGGGCGTAGTCGCGCCGCGCGTCCTCTCGAGCCGC
ACCTTCTAAAAAATGTCCATTCTCATCTCGCCCAGTAATAACACCGGTTGGGGCCTGCGCGCGCCCAGCAAGATGTACGGAGG
CGCTCGCCAACGCTCCACGCAACACCCCGTGCGCGTGCGCGGGCACTTCCGCGCTCCCTGGGGCGCCCTCAAGGGCCGCGTGC
GCTCGCGCACCACCGTCGACGACGTGATCGACCAGGTGGTGGCCGACGCGCGCAACTACACGCCCGCCGCCGCGCCCGCCTC
CACCGTGGACGCCGTCATCGACAGCGTGGTGGCCGATGCGCGCCGGTACGCCCGCGCCAAGAGCCGGCGGCGGCGCATCGC
CCGGCGGCACCGGAGCACCCCCGCCATGCGCGCGGCGCGAGCCTTGCTGCGCAGGGCCAGGCGCACGGGACGCAGGGCCAT
GCTCAGGGCGGCCAGACGCGCGGCCTCCGGCAGCAGCAGCGCCGGCAGGACCCGCAGACGCGCGGCCACGGCGGCGGCGG
CGGCCATCGCCAGCATGTCCCGCCCGCGGCGCGGCAACGTGTACTGGGTGCGCGACGCCGCCACCGGTGTGCGCGTGCCCGT
GCGCACCCGCCCCCCTCGCACTTGAAGATGCTGACTTCGCGATGTTGATGTGTCCCAGCGGCGAGGAGGATGTCCAAGCGCAA
ATACAAGGAAGAGATGCTCCAGGTCATCGCGCCTGAGATCTACGGCCCCGCGGTGAAGGAGGAAAGAAAGCCCCGCAAACT
GAAGCGGGTCAAAAAGGACAAAAAGGAGGAGGAAGATGTGGACGGACTGGTGGAGTTTGTGCGCGAGTTCGCCCCCCGGC
GGCGCGTGCAGTGGCGCGGGCGGAAAGTGAAACCGGTGCTGCGGCCCGGCACCACGGTGGTCTTCACGCCCGGCGAGCGTT
CCGGCTCCGCCTCCAAGCGCTCCTACGACGAGGTGTACGGGGACGAGGACATCCTCGAGCAGGCGGTCGAGCGTCTGGGCGA
GTTTGCTTACGGCAAGCGCAGCCGCCCCGCGCCCTTGAAAGAGGAGGCGGTGTCCATCCCGCTGGACCACGGCAACCCCACG
CCGAGCCTGAAGCCGGTGACCCTGCAGCAGGTGCTGCCGAGCGCGGCGCCGCGCCGGGGCTTCAAGCGCGAGGGCGGCGAG
GATCTGTACCCGACCATGCAGCTGATGGTGCCCAAGCGCCAGAAGCTGGAGGACGTGCTGGAGCACATGAAGGTGGACCCCG
AGGTGCAGCCCGAGGTCAAGGTGCGGCCCATCAAGCAGGTGGCCCCGGGCCTGGGCGTGCAGACCGTGGACATCAAGATCC
CCACGGAGCCCATGGAAACGCAGACCGAGCCCGTGAAGCCCAGCACCAGCACCATGGAGGTGCAGACGGATCCCTGGATGCC
GGCGCCGGCTTCCACCACTCGCCGAAGACGCAAGTACGGCGCGGCCAGCCTGCTGATGCCCAACTACGCGCTGCATCCTTCCA
TCATCCCCACGCCGGGCTACCGCGGCACGCGCTTCTACCGCGGCTACACCAGCAGCCGCCGCAAGACCACCACCCGCCGCCGC
CGTCGTCGCACCCGCCGCAGCAGCACCGCGACTTCCGCCGCCGCCCTGGTGCGGAGAGTGTACCGCAGCGGGCGCGAGCCTC
TGACCCTGCCGCGCGCGCGCTACCACCCGAGCATCGCCATTTAACTCTGCCGTCGCCTCCTACTTGCAGATATGGCCCTCACAT
GCCGCCTCCGCGTCCCCATTACGGGCTACCGAGGAAGAAAGCCGCGCCGTAGAAGGCTGACGGGGAACGGGCTGCGTCGCC
ATCACCACCGGCGGCGGCGCGCCATCAGCAAGCGGTTGGGGGGAGGCTTCCTGCCCGCGCTGATCCCCATCATCGCCGCGGC
GATCGGGGCGATCCCCGGCATAGCTTCCGTGGCGGTGCAGGCCTCTCAGCGCCACTGAGACACAGCTTGGAAAATTTGTAATA
AAAAAATGGACTGACGCTCCTGGTCCTGTGATGTGTGTTTTTAGATGGAAGACATCAATTTTTCGTCCCTGGCACCGCGACACG
GCACGCGGCCGTTTATGGGCACCTGGAGCGACATCGGCAACAGCCAACTGAACGGGGGCGCCTTCAATTGGAGCAGTCTCTG
GAGCGGGCTTAAGAATTTCGGGTCCACGCTCAAAACCTATGGCAACAAGGCGTGGAACAGCAGCACAGGGCAGGCGCTGAG
GGAAAAGCTGAAAGAGCAGAACTTCCAGCAGAAGGTGGTCGATGGCCTGGCCTCGGGCATCAACGGGGTGGTGGACCTGGC
CAACCAGGCCGTGCAGAAACAGATCAACAGCCGCCTGGACGCGGTCCCGCCCGCGGGGTCCGTGGAGATGCCCCAGGTGGA
GGAGGAGCTGCCTCCCCTGGACAAGCGCGGCGACAAGCGACCGCGTCCCGACGCGGAGGAGACGCTGCTGACGCACACGGA
CGAGCCGCCCCCGTACGAGGAGGCGGTGAAACTGGGTCTGCCCACCACGCGGCCCGTGGCGCCTCTGGCCACCGGGGTGCTG
AAACCCAGCAGCAGCAGCCAGCCCGCGACCCTGGACTTGCCTCCGCCTGCTTCCCGCCCCTCCACAGTGGCTAAGCCCCTGCCG
CCGGTGGCCGTCGCGTCGCGCGCCCCCCGAGGCCGCCCCCAGGCGAACTGGCAGAGCACTCTGAACAGCATCGTGGGTCTGG
GAGTGCAGAGTGTGAAGCGCCGCCGCTGCTATTAAAAGACACTGTAGCGCTTAACTTGCTTGTCTGTGTGTATATGTATGTCC
GCCGACCAGAAGGAGGAAGAGGCGCGTCGCCGAGTTGCAAGATGGCCACCCCATCGATGCTGCCCCAGTGGGCGTACATGC
ACATCGCCGGACAGGACGCTTCGGAGTACCTGAGTCCGGGTCTGGTGCAGTTCGCCCGCGCCACAGACACCTACTTCAGTCTG
GGGAACAAGTTTAGGAACCCCACGGTGGCGCCCACGCACGATGTGACCACCGACCGCAGCCAGCGGCTGACGCTGCGCTTCG
TGCCCGTGGACCGCGAGGACAACACCTACTCGTACAAAGTGCGCTACACGCTGGCCGTGGGCGACAACCGCGTGCTGGACAT
GGCCAGCACCTACTTTGACATCCGCGGCGTGCTGGATCGGGGGCCCAGCTTCAAACCCTACTCCGGCACCGCCTACAACAGCC
TGGCTCCCAAGGGAGCGCCCAACACTTGCCAGTGGACATATAAAGCTGGTGATACTGATACAGAAAAAACCTATACATATGGA
AATGCACCTGTGCAAGGCATTAGCATTACAAAGGATGGTATTCAACTTGGAACTGACAGCGATGGTCAGGCAATCTATGCAGA
CGAAACTTATCAACCAGAGCCTCAAGTGGGTGATGCTGAATGGCATGACATCACTGGTACTGATGAAAAATATGGAGGCAGA
GCTCTTAAGCCTGACACCAAAATGAAGCCTTGCTATGGTTCTTTTGCCAAGCCTACCAATAAAGAAGGAGGCCAGGCAAATGT
GAAAACCGAAACAGGCGGTACCAAAGAATATGACATTGACATGGCATTCTTCGATAATCGAAGTGCAGCTGCCGCCGGCCTA
GCCCCAGAAATTGTTTTGTATACTGAGAATGTGGATCTGGAAACTCCAGATACCCATATTGTATACAAGGCAGGTACAGATGA
CAGTAGCTCTTCTATCAATTTGGGTCAGCAGTCCATGCCCAACAGACCCAACTACATTGGCTTCAGAGACAACTTTATCGGTCT
GATGTACTACAACAGCACTGGCAATATGGGTGTACTGGCTGGACAGGCCTCCCAGCTGAATGCTGTGGTGGACTTGCAGGAC
AGAAACACCGAACTGTCCTACCAGCTCTTGCTTGACTCTCTGGGTGACAGAACCAGGTATTTCAGTATGTGGAATCAGGCGGT
GGACAGTTATGACCCCGATGTGCGCATTATTGAAAATCACGGTGTGGAGGATGAACTTCCTAACTATTGCTTCCCCCTGGATGC
TGTGGGTAGAACTGATACTTACCAGGGAATTAAGGCCAATGGTGATAATCAAACCACCTGGACCAAAGATGATACTGTTAATG

Fig. 26F

ATGCTAATGAATTGGGCAAGGGCAATCCTTTCGCCATGGAGATCAACATCCAGGCCAACCTGTGGCGGAACTTCCTCTACGCG
AACGTGGCGCTGTACCTGCCCGACTCCTACAAGTACACGCCGGCCAACATCACGCTGCCCACCAACACCAACACCTACGATTAC
ATGAACGGCCGCGTGGTGGCGCCCTCGCTGGTGGACGCCTACATCAACATCGGGGCGCGCTGGTCGCTGGACCCCATGGACA
ACGTCAACCCCTTCAACCACCACCGCAACGCGGGCCTGCGATACCGCTCCATGCTCCTGGGCAACGGGCGCTACGTGCCCTTCC
ACATCCAGGTGCCCCAAAAGTTTTTCGCCATCAAGAGCCTCCTGCTCCTGCCCGGGTCCTACACCTACGAGTGGAACTTCCGCA
AGGACGTCAACATGATCCTGCAGAGCTCCCTCGGCAACGACCTGCGCACGGACGGGGCCTCCATCGCCTTCACCAGCATCAAC
CTCTACGCCACCTTCTTCCCCATGGCGCACAACACCGCCTCCACGCTCGAGGCCATGCTGCGCAACGACACCAACGACCAGTCC
TTCAACGACTACCTCTCGGCGGCCAACATGCTCTACCCCATCCCGGCCAACGCCACCAACGTGCCCATCTCCATCCCCTCGCGCA
ACTGGGCCGCCTTCCGCGGCTGGTCCTTCACGCGCCTCAAGACCCGCGAGACGCCCTCGCTCGGCTCCGGGTTCGACCCCTACT
TCGTCTACTCGGGCTCCATCCCCTACCTCGACGGCACCTTCTACCTCAACCACACCTTCAAGAAGGTCTCCATCACCTTCGACTCC
TCCGTCAGCTGGCCCGGCAACGACCGCCTCCTGACGCCCAACGAGTTCGAAATCAAGCGCACCGTCGACGGAGAGGGGTACA
ACGTGGCCCAGTGCAACATGACCAAGGACTGGTTCCTGGTCCAGATGCTGGCCCACTACAACATCGGCTACCAGGGCTTCTAC
GTGCCCGAGGGCTACAAGGACCGCATGTACTCCTTCTTCCGCAACTTCCAGCCCATGAGCCGCCAGGTCGTGGACGAGGTCAA
CTACAAGGACTACCAGGCCGTCACCCTGGCCTACCAGCACAACAACTCGGGCTTCGTCGGCTACCTCGCGCCCACCATGCGCC
AGGGCCAGCCCTACCCCGCCAACTACCCCTACCCGCTCATCGGCAAGAGCGCCGTCGCCAGCGTCACCCAGAAAAAGTTCCTC
TGCGACCGGGTCATGTGGCGCATCCCCTTCTCCAGCAACTTCATGTCCATGGGCGCGCTCACCGACCTCGGCCAGAACATGCTC
TACGCCAACTCCGCCCACGCGCTAGACATGAATTTCGAAGTCGACCCCATGGATGAGTCCACCCTTCTCTATGTTGTCTTCGAA
GTCTTCGACGTCGTCCGAGTGCACCAGCCCCACCGCGGCGTCATCGAGGCCGTCTACCTGCGCACGCCCTTCTCGGCCGGCAA
CGCCACCACCTAAGCCTCTTGCTTCTTGCAAGATGACGGCCTGCGCGGGCTCCGGCGAGCAGGAGCTCAGGGCCATCCTCCGC
GACCTGGGCTGCGGGCCCTGCTTCCTGGGCACCTTCGACAAGCGCTTCCCGGGATTCATGGCCCCGCACAAGCTGGCCTGCGC
CATCGTCAACACGGCCGGCCGCGAGACCGGGGGCGAGCACTGGCTGGCCTTCGCCTGGAACCCGCGCTCCCACACCTGCTAC
CTCTTCGACCCCTTCGGGTTCTCGGACGAGCGCCTCAAGCAGATCTACCAGTTCGAGTACGAGGGCCTGCTGCGTCGCAGCGC
CCTGGCCACCGAGGACCGCTGCGTCACCCTGGAAAAGTCCACCCAGACCGTGCAGGGTCCGCGCTCGGCCGCCTGCGGGCTC
TTCTGCTGCATGTTCCTGCACGCCTTCGTGCACTGGCCCGACCGCCCCATGGACAAGAACCCCACCATGAACTTGCTGACGGGG
GTGCCCAACGGCATGCTCCAGTCGCCCCAGGTGGAACCCACCCTGCGCCGCAACCAGGAGGCGCTCTACCGCTTCCTCAACGC
CCACTCCGCCTACTTTCGCTCCCACCGCGCGCGCATCGAGAAGGCCACCGCCTTCGACCGCATGAATCAAGACATGTAATCCGG
TGTGTGTATGTGAATGCTTTATTCATCATAATAAACAGCACATGTTTATGCCACCTTCTCTGAGGCTCTGACTTTATTTAGAAATC
GAAGGGGTTCTGCCGGCTCTCGGCATGGCCCGCGGGCAGGGATACGTTGCGGAACTGGTACTTGGGCAGCCACTTGAACTCG
GGGATCAGCAGCTTCGGCACGGGGAGGTCGGGGAACGAGTCGCTCCACAGCTTGCGCGTGAGTTGCAGGGCGCCCAGCAGG
TCGGGCGCGGAGATCTTGAAATCGCAGTTGGGACCCGCGTTCTGCGCGCGAGAGTTACGGTACACGGGGTTGCAGCACTGGA
ACACCATCAGGGCCGGGTGCTTCACGCTCGCCAGCACCGTCGCGTCGGTGATGCCCTCCACGTCCAGATCCTCGGCGTTGGCC
ATCCCGAAGGGGGTCATCTTGCAGGTCTGCCGCCCCATGCTGGGCACGCAGCCGGGCTTGTGGTTGCAATCGCAGTGCAGGG
GGATCAGCATCATCTGGGCCTGCTCGGAGCTCATGCCCGGGTACATGGCCTTCATGAAAGCCTCCAGCTGGCGGAAGGCCTGC
TGCGCCTTGCCGCCCTCGGTGAAGAAGACCCCGCAGGACTTGCTAGAGAACTGGTTGGTGGCGCAGCCAGCGTCGTGCACGC
AGCAGCGCGCGTCGTTGTTGGCCAGCTGCACCACGCTGCGCCCCCAGCGGTTCTGGGTGATCTTGGCCCGGTCGGGGTTCTCC
TTCAGCGCGCGCTGCCCGTTCTCGCTCGCCACATCCATCTCGATCGTGTGCTCCTTCTGGATCATCACGGTCCCGTGCAGGCACC
GCAGCTTGCCCTCGGCCTCGGTGCACCCGTGCAGCCACAGCGCGCAGCCGGTGCTCTCCCAGTTCTTGTGGGCGATCTGGGAG
TGCGAGTGCACGAAGCCCTGCAGGAAGCGGCCCATCATCGTGGTCAGGGTCTTGTTGCTGGTGAAGGTCAGCGGAATGCCGC
GGTGCTCCTCGTTCACATACAGGTGGCAGATACGGCGGTACACCTCGCCCTGCTCGGGCATCAGCTGGAAGGCGGACTTCAG
GTCGCTCTCCACGCGGTACCGGTCCATCAGCAGCGTCATCACTTCCATGCCCTTCTCCCAGGCCGAAACGATCGGCAGGCTCAG
GGGGTTCTTCACCGTTGTCATCTTAGTCGCCGCCGCCGAAGTCAGGGGGTCGTTCTCGTCCAGGGTCTCAAACACTCGCTTGCC
GTCCTTCTCGGTGATGCGCACGGGGGGAAAGCTGAAGCCCACGGCCGCCAGCTCCTCCTCGGCCTGCCTTTCGTCCTCGCTGT
CCTGGCTGATGTCTTGCAAAGGCACATGCTTGGTCTTGCGGGGTTTCTTTTTGGGCGGCAGAGGCGGCGGCGGAGACGTGCT
GGGCGAGCGCGAGTTCTCGCTCACCACGACTATTTCTTCTCCTTGGCCGTCGTCCGAGACCACGCGGCGGTAGGCATGCCTCTT
CTGGGGCAGAGGCGGAGGCGACGGGCTCTCGCGGTTCGGCGGGCGGCTGGCAGAGCCCCTTCCGCGTTCGGGGGTGCGCTC
CTGGCGGCGCTGCTCTGACTGACTTCCTCCGCGGCCGGCCATTGTGTTCTCCTAGGGAGCAAGCATGGAGACTCAGCCATCGT
CGCCAACATCGCCATCTGCCCCCGCCGCCGCCGACGAGAACCAGCAGCAGCAGAATGAAAGCTTAACCGCCCCGCCGCCCAGC
CCCACCTCCGACGCCGCAGCCCCAGACATGCAAGAGATGGAGGAATCCATCGAGATTGACCTGGGCTACGTGACGCCCGCGG
AGCACGAGGAGGAGCTGGCAGCGCGCTTTTCAGCCCCGGAAGAGAACCACCAAGAGCAGCCAGAGCAGGAAGCAGAGAGC
GAGCAGAACCAGGCTGGGCTCGAGCATGGCGACTACCTGAGCGGGGCAGAGGACGTGCTCATCAAGCATCTGGCCCGCCAA
TGCATCATCGTCAAGGACGCGCTGCTCGACCGCGCCGAGGTGCCCCTCAGCGTGGCGGAGCTCAGCCGCGCCTACGAGCGCA

Fig. 26G

ACCTCTTCTCGCCGCGCGTGCCCCCCAAGCGCCAGCCCAACGGCACCTGCGAGCCCAACCCGCGCCTCAACTTCTACCCGGTCT
TCGCGGTGCCCGAGGCCCTGGCCACCTACCACCTCTTTTTCAAGAACCAAAGGATCCCCGTCTCCTGCCGCGCCAACCGCACCC
GCGCCGACGCCCTGCTCAACCTGGGCCCCGGCGCCCGCCTACCTGATATCGCCTCCTTGGAAGAGGTTCCCAAGATCTTCGAG
GGTCTGGGCAGCGACGAGACTCGGGCCGCGAACGCTCTGCAAGGAAGCGGAGAGGAGCATGAGCACCACAGCGCCCTGGTG
GAGTTGGAAGGCGACAACGCGCGCCTGGCGGTCCTCAAGCGCACGGTCGAGCTGACCCACTTCGCCTACCCGGCGCTCAACC
TGCCCCCCAAGGTCATGAGCGCCGTCATGGACCAGGTGCTCATCAAGCGCGCCTCGCCCCTCTCGGAGGAGGAGATGCAGGA
CCCCGAGAGCTCGGACGAGGGCAAGCCCGTGGTCAGCGACGAGCAGCTGGCGCGCTGGCTGGGAGCGAGTAGCACCCCCCA
GAGCCTGGAAGAGCGGCGCAAGCTCATGATGGCCGTGGTCCTGGTGACCGTGGAGCTGGAGTGTCTGCGCCGCTTCTTCGCC
GACGCGGAGACCCTGCGCAAGGTCGAGGAGAACCTGCACTACCTCTTCAGACACGGGTTCGTGCGCCAGGCCTGCAAGATCT
CCAACGTGGAGCTGACCAACCTGGTCTCCTACATGGGCATCCTGCACGAGAACCGCCTGGGGCAGAACGTGCTGCACACCACC
CTGCGCGGGGAGGCCCGCCGCGACTACATCCGCGACTGCGTCTACCTGTACCTCTGCCACACCTGGCAGACGGGCATGGGCG
TGTGGCAGCAGTGCCTGGAGGAGCAGAACCTGAAAGAGCTCTGCAAGCTCCTGCAGAAGAACCTCAAGGCCCTGTGGACCGG
GTTCGACGAGCGCACCACCGCCGCGGACCTGGCCGACCTCATCTTCCCCGAGCGCCTGCGGCTGACGCTGCGCAACGGGCTGC
CCGACTTTATGAGCCAAAGCATGTTGCAAAACTTTCGCTCTTTCATCCTCGAACGCTCCGGGATCCTGCCCGCCACCTGCTCCGC
GCTGCCCTCGGACTTCGTGCCGCTGACCTTCCGCGAGTGCCCCCCGCCGCTCTGGAGCCACTGCTACCTGCTGCGCCTGGCCAA
CTACCTGGCCTACCACTCGGACGTGATCGAGGACGTCAGCGGCGAGGGCCTGCTCGAGTGCCACTGCCGCTGCAACCTCTGCA
CGCCGCACCGCTCCCTGGCCTGCAACCCCCAGCTGCTGAGCGAGACCCAGATCATCGGCACCTTCGAGTTGCAAGGCCCCGGC
GAGGGCAAGGGGGGTCTGAAACTCACCCCGGGGCTGTGGACCTCGGCCTACTTGCGCAAGTTCGTGCCCGAGGACTACCATC
CCTTCGAGATCAGGTTCTACGAGGACCAATCCCAGCCGCCCAAGGCCGAGCTGTCGGCCTGCGTCATCACCCAGGGGGCCATC
CTGGCCCAATTGCAAGCCATCCAGAAATCCCGCCAAGAATTTCTGCTGAAAAAGGGCCACGGGGTCTACTTGGACCCCCAGAC
CGGAGAGGAGCTCAACCCCAGCTTCCCCCAGGATGCCCCGAGGAAGCAGCAAGAAGCTGAAAGTGGAGCTGCCGCCGCCGC
CGGAGGATTTGGAGGAAGACTGGGAGAGCAGTCAGGCAGAGGAGGAGGAGATGGAAGACTGGGACAGCACTCAGGCAGA
GGAGGACAGCCTGCAAGACAGTCTGGAGGAGGAAGACGAGGTGGAGGAGGCAGAGGAAGAAGCAGCCGCCGCCAGACCG
TCGTCCTCGGCGGAGGAGGAGAAAGCAAGCAGCACGGATACCATCTCCGCTCCGGGTCGGGGTCGCGGCGGCCGGGCCCAC
AGTAGATGGGACGAGACCGGGCGCTTCCCGAACCCCACCACCCAGACCGGTAAGAAGGAGCGGCAGGGATACAAGTCCTGG
CGGGGGCACAAAAACGCCATCGTCTCCTGCTTGCAAGCCTGCGGGGGCAACATCTCCTTCACCCGGCGCTACCTGCTCTTCCAC
CGCGGGGTGAACTTCCCCCGCAACATCTTGCATTACTACCGTCACCTCCACAGCCCCTACTACTGTTTCCAAGAAGAGGCAGAA
ACCCAGCAGCAGCAGCAGCAGCAGAAAACCAGCGGCAGCAGCTAGAAAATCCACAGCGGCGGCAGGTGGACTGAGGATCGC
GGCGAACGAGCCGGCGCAGACCCGGGAGCTGAGGAACCGGATCTTTCCCACCCTCTATGCCATCTTCCAGCAGAGTCGGGGG
CAAGAGCAGGAACTGAAAGTCAAGAACCGTTCTCTGCGCTCGCTCACCCGCAGTTGTCTGTATCACAAGAGCGAAGACCAACT
TCAGCGCACTCTCGAGGACGCCGAGGCTCTCTTCAACAAGTACTGCGCGCTCACTCTTAAAGAGTAGCCCGCGCCCGCCCACA
CACGGAAAAAGGCGGGAATTACGTCACCACCTGCGCCCTTCGCCCGACCATCATCATGAGCAAAGAGATTCCCACGCCTTACA
TGTGGAGCTACCAGCCCCAGATGGGCCTGGCCGCCGGCGCCGCCCAGGACTACTCCACCCGCATGAACTGGCTCAGTGCCGG
GCCCGCGATGATCTCACGGGTGAATGACATCCGCGCCCACCGAAACCAGATACTCCTAGAACAGTCAGCGATCACCGCCACGC
CCCGCCATCACCTTAATCCGCGTAATTGGCCCGCCGCCCTGGTGTACCAGGAAATTCCCCAGCCCACGACCGTACTACTTCCGC
GAGACGCCCAGGCCGAAGTCCAGCTGACTAACTCAGGTGTCCAGCTGGCCGGCGGCGCCGCCCTGTGTCGTCACCGCCCCGCT
CAGGGTATAAAGCGGCTGGTGATCCGAGGCAGAGGCACACAGCTCAACGACGAGGTGGTGAGCTCTTCGCTGGGTCTGCGA
CCTGACGGAGTCTTCCAACTCGCCGGATCGGGGAGATCTTCCTTCACGCCTCGTCAGGCCGTCCTGACTTTGGAGAGTTCGTCC
TCGCAGCCCCGCTCGGGTGGCATCGGCACTCTCCAGTTCGTGGAGGAGTTCACTCCCTCGGTCTACTTCAACCCCTTCTCCGGC
TCCCCCGGCCACTACCCGGACGAGTTCATCCCGAACTTCGACGCCATCAGCGAGTCGGTGGACGGCTACGATTGAATGTCCCA
TGGTGGCGCGGCTGACCTAGCTCGGCTTCGACACCTGGACCACTGCCGCCGCTTCCGCTGCTTCGCTCGGGATCTCGCCGAGT
TTGCCTACTTTGAGCTGCCCGAGGAGCACCCTCAGGGCCCGGCCCACGGAGTGCGGATCGTCGTCGAAGGGGGTCTCGACTC
CCACCTGCTTCGGATCTTCAGCCAGCGTCCGATCCTGGCCGAGCGCGAGCAAGGACAGACCCTTCTGACCCTGTACTGCATCTG
CAACCACCCCGGCCTGCATGAAAGTCTTTGTTGTCTGCTGTGTACTGAGTATAATAAAAGCTGAGATCAGCGACTACTCCGGAC
TTCCGTGTGTTCCTGCTATCAACCAGTCCCTGTTCTTCACCGGGAACGAGACCGAGCTCCAGCTCCAGTGTAAGCCCCACAAGA
AGTACCTCACCTGGCTGTTCCAGGGCTCTCCGATCGCCGTTGTCAACCACTGCGACAACGACGGAGTCCTGCTGAGCGGCCCT
GCCAACCTTACTTTTTCCACCCGCAGAAGCAAGCTCCAGCTCTTCCAACCCTTCCTCCCCGGGACCTATCAGTGCGTCTCGGGAC
CCTGCCATCACACCTTCCACCTGATCCCGAATACCACAGCGTCGCTCCCCGCTACTAACAACCAAACTACCCACCAACGCCACCG
TCGCGACCGCGGACATGTACAGAGCTCGAGAAGTACTAGGCCACAATACATGCCCATATTAGACTATGAGGCCGAGCCACAG
CGACCCATGCTCCCCGCTATTAGTTACTTCAATCTAACCGGCGGAGATGACTGACCCACTGGCCAACAACAACGTCAACGACCT
TCTCCTGGACATGGACGGCCGCGCCTCGGAGCAGCGACTCGCCCAACTTCGCATTCGCCAGCAGCAGGAGAGAGCCGTCAAG

Fig. 26H

GAGCTGCAGGACGGCATAGCCATCCACCAGTGCAAGAAAGGCATCTTCTGCCTGGTGAAACAGGCCAAGATCTCCTACGAGG
TCACCCCGACCGACCATCGCCTCTCCTACGAGCTCCTGCAGCAGCGCCAGAAGTTCACCTGCCTGGTCGGAGTCAACCCCATCG
TCATCACCCAGCAGTCGGGCGATACCAAGGGGTGCATCCACTGCTCCTGCGACTCCCCCGACTGCGTCCACACTCTGATCAAGA
CCCTCTGCGGCCTCCGCGACCTCCTCCCCATGAACTAATCACCCCCTTATCCAGTGAAATAAATATCATATTGATGATGATTTAA
ATAAAAAATAATCATTTGATTTGAAATAAAGATACAATCATATTGATGATTTGAGTTTTAAAAAATAAAGAATCACTTACTTGAA
ATCTGATACCAGGTCTCTGTCCATGTTTTCTGCCAACACCACCTCACTCCCCTCTTCCCAGCTCTGGTACTGCAGACCCCGGCGG
GCTGCAAACTTCCTCCACACGCTGAAGGGGATGTCAAATTCCTCCTGTCCCTCAATCTTCATTTTATCTTCTATCAGATGTCCAAA
AAGCGCGTCCGGGTGGATGATGACTTCGACCCCGTCTACCCCTACGATGCAGACAACGCACCGACCGTGCCCTTCATCAACCC
CCCCTTCGTCTCTTCAGATGGATTCCAAGAGAAGCCCCTGGGGGTGCTGTCCCTGCGACTGGCTGACCCCGTCACCACCAAGAA
CGGGGAAATCACCCTCAAGCTGGGAGAGGGGGTGGACCTCGACTCCTCGGGAAAACTCATCTCCAACACGGCCACCAAGGCC
GCCGCCCCTCTCAGTTTTTCCAACAACACCATTTCCCTTAACATGGATACCCCTCTTTATACCAAAGATGGAAAATTATCCTTACA
AGTTTCTCCACCGTTAAACATATTAAAATCAACCATTCTGAACACATTAGCTGTAGCTTATGGATCAGGTTTAGGACTGAGTGG
TGGCACTGCTCTTGCAGTACAGTTGGCCTCTCCACTCACTTTTGATGAAAAAGGAAATATTAAAATTAACCTAGCCAGTGGTCC
ATTAACAGTTGATGCAAGTCGACTTAGTATCAACTGCAAAAGAGGGGTCACTGTCACTACCTCAGGAGATGCAATTGAAAGCA
ACATAAGCTGGCCTAAAGGTATAAGATTTGAAGGTAATGGCATAGCTGCAAACATTGGCAGAGGATTGGAATTTGGAACCAC
TAGTACAGAGACTGATGTCACAGATGCATACCCAATTCAAGTTAAATTGGGTACTGGCCTTACCTTTGACAGTACAGGCGCCAT
TGTTGCTTGGAACAAAGAGGATGATAAACTTACATTATGGACCACAGCCGACCCCTCGCCAAATTGCAAAATATACTCTGAAAA
AGATGCCAAACTCACACTTTGCTTGACAAAGTGTGGAAGTCAAATTCTGGGTACTGTGACTGTATTGGCAGTGAATAATGGAA
GTCTCAACCCAATCACAAACACAGTAAGCACTGCACTCGTCTCCCTCAAGTTTGATGCAAGTGGAGTTTTGCTAAGCAGCTCCA
CATTAGACAAAGAATATTGGAACTTCAGAAAGGGAGATGTTACACCTGCTGAGCCCTATACTAATGCTATAGGTTTTATGCCTA
ACATAAAGGCCTATCCTAAAAACACATCTGCAGCTTCAAAAAGCCATATTGTCAGTCAAGTTTATCTCAATGGGGATGAGGCCA
AACCACTGATGCTGATTATTACTTTTAATGAAACTGAGGATGCAACTTGCACCTACAGTATCACTTTTCAATGGAAATGGGATA
GTACTAAGTACACAGGTGAAACACTTGCTACCAGCTCCTTCACCTTCTCCTACATCGCCCAAGAATGAACACTGTATCCCACCCT
GCATGCCAACCCTTCCCACCCCACTCTGTCTATGGAAAAAACTCTGAAGCACAAAATAAAATAAAGTTCAAGTGTTTTATTGATT
CAACAGTTTTACAGGATTCGAGCAGTTATTTTTCCTCCACCCTCCCAGGACATGGAATACACCACCCTCTCCCCCCGCACAGCCT
TGAACATCTGAATGCCATTGGTGATGGACATGCTTTTGGTCTCCACGTTCCACACAGTTTCAGAGCGAGCCAGTCTCGGGTCGG
TCAGGGAGATGAAACCCTCCGGGCACTCCCGCATCTGCACCTCACAGCTCAACAGCTGAGGATTGTCCTCGGTGGTCGGGATC
ACGGTTATCTGGAAGAAGCAGAAGAGCGGCGGTGGGAATCATAGTCCGCGAACGGGATCGGCCGGTGGTGTCGCATCAGGC
CCCGCAGCAGTCGCTGCCGCCGCCGCTCCGTCAAGCTGCTGCTCAGGGGGTCCGGGTCCAGGGACTCCCTCAGCATGATGCCC
ACGGCCCTCAGCATCAGTCGTCTGGTGCGGCGGGCGCAGCAGCGCATGCGGATCTCGCTCAGGTCGCTGCAGTACGTGCAAC
ACAGGACCACCAGGTTGTTCAACAGTCCATAGTTCAACACGCTCCAGCCGAAACTCATCGCGGGAAGGATGCTACCCACGTGG
CCGTCGTACCAGATCCTCAGGTAAATCAAGTGGCGCTCCCTCCAGAACACGCTGCCCACGTACATGATCTCCTTGGGCATGTGG
CGGTTCACCACCTCCCGGTACCACATCACCCTCTGGTTGAACATGCAGCCCCGGATGATCCTGCGGAACCACAGGGCCAGCAC
CGCCCCGCCCGCCATGCAGCGAAGAGACCCCGGGTCCCGGCAATGGCAATGGAGGACCCACCGCTCGTACCCGTGGATCATC
TGGGAGCTGAACAAGTCTATGTTGGCACAGCACAGGCATATGCTCATGCATCTCTTCAGCACTCTCAGCTCCTCGGGGGTCAA
AACCATATCCCAGGGCACGGGGAACTCTTGCAGGACAGCGAACCCCGCAGAACAGGGCAATCCTCGCACATAACTTACATTGT
GCATGGACAGGGTATCGCAATCAGGCAGCACCGGGTGATCCTCCACCAGAGAAGCGCGGGTCTCGGTCTCCTCACAGCGTGG
TAAGGGGGCCGGCCGATACGGGTGATGGCGGGACGCGGCTGATCGTGTTCGCGACCGTGTCATGATGCAGTTGCTTTCGGAC
ATTTTCGTACTTGCTGTAGCAGAACCTGGTCCGGGCGCTGCACACCGATCGCCGGCGGCGGTCCCGGCGCTTGGAACGCTCGG
TGTTGAAATTGTAAAACAGCCACTCTCTCAGACCGTGCAGCAGATCTAGGGCCTCAGGAGTGATGAAGATCCCATCATGCCTG
ATAGCTCTGATCACATCGACCACCGTGGAATGGGCCAGACCCAGCCAGATGATGCAATTTTGTTGGGTTTCGGTGACGGCGGG
GGAGGGAAGAACAGGAAGAACCATGATTAACTTTTAATCCAAACGGTCTCGGAGCACTTCAAAATGAAGGTCGCGGAGATGG
CACCTCTCGCCCCCGCTGTGTTGGTGGAAAATAACAGCCAGGTCAAAGGTGATACGGTTCTCGAGATGTTCCACGGTGGCTTC
CAGCAAAGCCTCCACGCGCACATCCAGAAACAAGACAATAGCGAAAGCGGGAGGGTTCTCTAATTCCTCAATCATCATGTTAC
ACTCCTGCACCATCCCCAGATAATTTTCATTTTTCCAGCCTTGAATGATTCGAACTAGTTCCTGAGGTAAATCCAAGCCAGCCAT
GATAAAGAGCTCGCGCAGAGCGCCCTCCACCGGCATTCTTAAGCACACCCTCATAATTCCAAGATATTCTGCTCCTGGTTCACC
TGCAGCAGATTGACAAGCGGAATATCAAAATCTCTGCCGCGATCCCTAAGCTCCTCCCTCAGCAATAACTGTAAGTACTCTTTC
ATATCCTCTCCGAAATTTTTAGCCATAGGACCACCAGGAATAAGATTAGGGCAAGCCACAGTACAGATAAACCGAAGTCCTCCC
CAGTGAGCATTGCCAAATGCAAGACTGCTATAAGCATGCTGGCTAGACCCGGTGATATCTTCCAGATAACTGGACAGAAAATC
ACCCAGGCAATTTTTAAGAAAATCAACAAAAGAAAAATCCTCCAGGTGCACGTTTAGAGCCTCGGGAACAACGATGAAGTAAA
TGCAAGCGGTGCGTTCCAGCATGGTTAGTTAGCTGATCTGTAAAAAACAAAAAATAAAACATTAAACCATGCTAGCCTGGCGA
ACAGGTGGGTAAATCGTTCTCTCCAGCACCAGGCAGGCCACGGGGTCTCCGGCGCGACCCTCGTAAAAATTGTCGCTATGATT
GAAAACCATCACAGAGAGACGTTCCCGGTGGCCGGCGTGAATGATTCGACAAGATGAATACACCCCCGGAACATTGGCGTCC
GCGAGTGAAAAAAAGCGCCCGAGGAAGCAATAAGGCACTACAATGCTCAGTCTCAAGTCCAGCAAAGCGATGCCATGCGGAT
GAAGCACAAAATCCTCAGGTGCGTACAAAATGTAATTACTCCCCTCCTGCACAGGCAGCGAAGCCCCCGATCCCTCCAGATACA
CATACAAAGCCTCAGCGTCCATAGCTTACCGAGCAGCAGCACACAACAGGCGCAAGAGTCAGAGAAAGGCTGAGCTCTAACC
TGTCCACCCGCTCTCTGCTCAATATATAGCCCAGATCTACACTGACGTAAAGGCCAAAGTCTAAAAATACCCGCCAAATAATCA
CACACGCCCAGCACACGCCCAGAAACCGGTGACACACTCAAAAAAATACGCGCACTTCCTCAAACGCCCAAACTGCCGTCATTT
CCGGGTTCCCACGCTACGTCATCGGAATTCGACTTTCAAATTCCGTCGACCGTTAAAAACGTCACCCGCCCCGCCCCTAACGGT
CGCCCGTCTCTCGGCCAATCACCTTCCTCCCTCCCCAAATTCAAACAGCTCATTTGCATATTAACGCGCACCAAAAGTTTGAGGT
ATATTATTGATGATG

Fig. 26I

AdC7 010-DU172gp160(E1622) Amino acids – SEQ ID NO: 15
The symbol " * " refers herein to stop codons in the non coding regions

HHQ*YTSNFWCALICK*AV*IWGGRKVIGRETGDR*GRGG*RFDDVAVRRSRFASSRGKSDVKRGVV*TRKYSIFPRSLTGNEVFLG
GCK*KRAIFARKLNEEVKI*VISRLWQGGVFAEGRVDFDRLRGGFDYRIFHLNFRVRCQSPVFLRTISFPRKCHLTVTITVLR*RKLRSP
DPLWCTLSTICSDAA*LSQYLLPACVLEVAE*CASKI*ATTRQGLTDNCMKNLLRVRRFALLRDVRARYTR*H*LLTSMPSTPPIDVND
GKWPAWHYAQYMTLWDFPTWQYIYVLVIAITMVMRFWQYINGRG*RFDSRGFPSLHPIDVNGSLFWHQNQRDFPKCRNNSAP
LTQMGGRRVRWEVYISRARLVNRQITRSFIAVVYHS*IANAVSASDTTVSNLRLEYLIRLTIG*LRLEFDATMRVMGILRSYQQWWI
WGILGFWMLMICNVWGNLWVTVYYGVPVWKEAKTTLFCASDAKAHKEEVHNIWATHACVPTDPNPQEIVLKNVTENFNMWK
NDMVDQMHEDIISLWDQSLKPCVKLTPLCVTLNCSDVKIKGTNATYNNATYNNNNTISDMKNCSFNTTTEITDKKKKEYALFYKLDV
VALDGKETNSTNSSEYRLINCNTSAVTQACPKVSFDPIPIHYCAPAGYAILKCNNKTFNGTGPCNNVSTVQCTHGIKPVVSTQLLLNG
SLAEEEVVIRFENLTNNAKIIIVHLNESVEINCTRPSNNTRKSVRIGPGQTFFATGDIIGDIRQAHCNISRKKWNTTLQRVKEKLKEKFPN
KTIQFAPSSGGDLEITTHSFNCRGEFFYCYTSDLFNSTYMSNNTGGANITLQCRIKQIIRMWQGVGQAMYAPPIAGNITCKSNITGLL
LTRDGGKEKNDTETFRPGGGDMRDNWRSELYKYKVVEIKPLGIAPDKAKRRVVEREKRAVGIGAVFLGFLGAAGSTMGAASMTLT
VQARQLLSGIVQQQSNLLRAIEAQQHMLQLTVWGIKQLQTRVLAIERYLKDQQLLGIWGCSGKLICTTAVPWNASWSNKSYEEIW
GNMTWMQWDREINNYTNTIYSLLEESQNQQEKNEKDLLALDSWESLWSWFNITNWLWYIRIFIIIVGGLIGLRIIFAVLSIVNRVRQ
GYSPLSFQTLTPSPREPDRLGRIEEEGGEQDRARSVRLVNGFLALAWEDLRSLCLFSYHRLRDLILIAARAAALLGRSSLWGLQKGWE
ALKYLGSLVQYWGLELKKSAISLFDAIAITVAEGTDRIINIVQRISRAFYNIPRRIRQGFEATLQ*GTSRVDPGGQTADQPRLCLLVASHL
LFAPPPCLP*PWKVPLPLSFPNKMRKLHRIV*VGVILFWGVGWGRTARGRIGKTIAGMLGMRWALWLLRRKEPADLQI*IHLCRVR
RKR**NGIMGIMGLH**IGQISICWPPCM*PRTPARHGPSSSTTS*PDAMCTWGPAEACSCPTSATCNL*RCCWSPMPCPE*A*R
GCLT*MWSCGKF*DMMNPRPGAGPANAEASTPGFSPCVWR*RRTCDPIIWCCPATGRSSAPAGKNLTRVSSVWGRWRACMRG
RMTKICVFLCVAAA*AEAPPLREGYSALI*RGVSPPGRECVRM*WDPRWTAGPCSPRTLQP*PTRP*APRPWTQLPPQLLLPPPAP
CAEWPWAPATTALWWPTRLPPIIPPA*TRRSCCC*WPSSRP*PSAWAS*PSRWLSCRRRRGPRLPR*KPNKK*INK*TETVVDFNT
ES*IFI*FFARGRPWTTGLDH*APGGFFPGPGRGGLGC*GTWA*ARPGGGGSSIAGPRARGWCCKSPSHSRGAGRGAARCP*GG
D*WPRAAPWCRC*RTC*AGRDACGGR*DASWPGS*DWRCSRPDPAGGSCCAGPPARCIRRTWGICHATWKGRRERIWRRPCD
RPGFPCTHP**WRWARGRRPGQRRFGGRTHRSCGPG*ARHRPF**IWGGGCPTGGRRCPRSRGRSCPRRSASPRP*ARRGGSCP
PAGR*KKRFPGRGR*AGPKAGSGAAGTCRSRWGRR*PR*PAAGGS*GRDSCRPRGGGGPPRSSSRAHACSRARVPPGGARPPAR
GALAARRSFSAA*XRRPWAFWRGSVARVPDGPRAR*CALGHLDPADLLVSRVGATAGVGHQAMGVQRGQGPVLPGSQGPRQR
GLRHGEGVRAGLGACEGALQAHPAGREPLPVGALRVGQVAIEHEFVVERLGRVALGAELTFGSVSADGTEEGLEGVELGGEEDGLG
GVGVRAAAGADGLALHEPGEVGPVGVKNEVSSVLFDAFLTSGLHELVSPLGDKEAVRVPVDRLYGPVLERGAAVLVVEEPRPLRDE
GPGPGQHEGGHVGGVAVVVHQRVHLLQGMQAHVPLVHIQEGDWLVSVGHVTGGPGRGGIKGGGPLLVLTVFRIAVQERQLLG*
VFPLEGWHNLGTQVVSF*KRGGFDIDGAVGDAFHEPLVHLVRKDDLFVVELGGEGAVEGVGEELGDGAHGLVLFLVGALLGGDVE
LHVLARHALPFGEDGGELVGHDSDPPAAVVQGDEVHAGGHLAAQGLVGPAEAPALARAEGGQRVQHELVGGVGVHGEDAGQK
LGVEVADAGVQIVQRRLPVAHGQRALVGAEGRAPGHGVRERGGVHAADVVDVEGLLEDADVGGVAAPPADAGAHVVVQLVRG
REEPRAEVGALRLFGAVDDLAEDGVGVGGDGGPLEDVEVGVGQADRVPDEVGVGVLQLGDELGGDEDVQGAVVEGLLDDVVLE
LALLLPQLAVEKELFAVLPVLFEGEPVLIGTVRAHHVELVDGLVGAAALLHGEGVSLCGLAQGGVGEGEGVAHHDLEELVLEVEVVA
AALLPELEVRALLVGGVGQSESNIVEEDLARAGHEVASDAERLGHLGPVVDDLGGEDDLVEAVDVVPDDVEFHESRAALNVGQLLE
LVVGELGGVAEPVLLEGPVGDVGVGAEEGSPEIHGQGGLQAVPVLTELLAHGHFFGGDAVEGAGVAVPAVPLELEGEVVGELDER
RVPGEFHDQHEGDELLAEGPHPGVGFHIVGEEEPFGARMRADGEELDLLPPVGGMAVDVMEVEMPTARRALVLVFIQASAVLATL
HGMHVLHELYLGSFDEEFQWAVERWRLHLVLYYVLAIGVAIVCLDGGHADEPAREAGPDFGSDGSESEDEGAQAGAVQGPETLRS
QVSGQRRRAVDLQELFQGAREVQMVLDLHGAVGGDVHGLQGPVPLGRHHRAPFLLGRCFHAGQKRRRGRAPGGRGGSGPGGR
GGRGTSAPRAGRFWYCARRRLA*ATTRRLTSWI*RLWVKATGPVSLNLKESSTESISVSLTAACRRISCTSPELSW*AISVMNCSISSS
*RSPRPARSTVAARSLEMRPMSCEKAFMPASFQTRL*TTAPSGSRARMTTWARLSSTWRVKTA*LQRRW*R*LSVVAMCSVTKKY
MIQRRSGISLTSPRASKRSMAS*KSTAKLKNWELRAETVNSSSRRRMSSAMVARTSRSKAPGGSSSSISSSSTNISSTSSSGGGGGGG
ALRRRRRTGRRSMKRSMVSPRRRRMVSVTARPSSRGRSVKTPPRISRWPPGGSPLGRERALTMHLINWPVGTPRKDLSVSRSTGSE
NR*TKASSQSQSQGRLSPVSCSSGISGGGRAMLLVMKLK*AVLRRRMVARSTRSLGPACWMRRRSAMPQAWS*HLARSL**SCM
SRSTGTSSSPARPCMRVSPNPRWGWTSARSATTRSARMACCIWVRVVWKSSKSTKRW*APVLMV*EQLAMTDQLTVWWPGRT
SSWYLRRE*ARVSKM*SLQVRTRYWYPTRKCGGGWR*SGHRSVAGAPGARSSSMRRW*P*MYLDIQVMPAAVVEARGNSRTRF
QMLRSGRK*FMVAAVWPVRRAQSWML*TYGQKRKRSAARLRGLEAKRTGWAARVPRFESRIRLEPQLTWYWHSRLDPSLLTKPP
GYGGGSFFGLGRWS*KTSKRGKRPPAMARCRSLEKESPGLRCGVPRFEPQRSAPAGFRG*RGRGCPVVSKTP*PADFSSYGASPSF
SCVFARCIPYCGRCAPTLHLNRPYRRSSSNSRRFCPRPSSSQPLPRRPP*AEPAFSMTWPWKRARGWRGWGRRRRSGTRACR*KG

Fig. 26J

TLARPTCPSRTCSETGAARSPRRCAPPASTRGGSCGAAWTESGC*GTRISRRTS*RGSAPRARTWPRPTWSRRTSRP*RRRATSKNP
STTTCAR*SRARR*PWA*CTCGTCWRPSCRTPRASR*RRSCFWWCSTVGTTRRSGRRC*ISPSPRAAGSWTW*TFCRASWCRSAG
CRCPRSWRLSTSRC*AWASTTLGRSTRPRTCP*TRR*RSTGFTCA*P*KC*P*ATIWGCTATTGCTAR*APAAGAS*ATRS*CTACS
GP*PGPGPRGRATLTWARTCAGSPAAGPWKLPAVPPTWRRWTMRRRRASTWKTDGATVFLLDAATATAS*SRDAGGAAEPAV
RH*LLGRLDPGHATHHGADDPQSRSL*TAASGQPALGHPGGRGALALEPHAREGAGHRERAGGEQGHPRRRGRAGVQRAAGAR
GPLQQHQRADEPGPHGDRRARGGVAARAVPPRVEPGLHGGAERLPEHAARQRAPGPGGLHQLHQRAAADGGRGAPERGVPV
GAGLLLPDQSPGLADREPEPGFQELAGTVGRAGPGRGPRDGVEPADAELAPAAAAGGALHGQRQREPRLVPGLPA*PVPRGHRA
GARGRADLPGDHPREPRAGPGGPGQPGGHPELPADQPVAEDPAPVRAEHRGGAHPALRAAERGAVPDAGGGHAQRRARHDR
AQHGAQHVRSQPPVHQ*ADGLLASGGRHELGLLYQRHLEPALAPAARVLHGRVRHARPQRRVPVGRRGQQRVLAAPRHHRVEE
RGRGPAAVLGAVRSRGCCRGGA*GRQPLPEPALFAEQRAQQRAGSADAAAPAGRGGVPERLLVEARAREELPQ*RDREPGGQDE
PLEDVRARAQGRAPS*QQRRHP*TPATRQAAGSGVGR*GFRRRQQRVGLGWEWWW*PVRSLAPPYRAPDVRI*KNKKRYSPRP
WRPACVLLCCL**YDEARVPGGSSSLVRERDAAGGGGGDAAPAGGALRAPAVPGAYGGAEQHSLLGAGTLVRYHPVVPGGQQV
GGHRLAELPERPQQLPDHRGAEQRFHPHGGQHPDHQL*RALAVGRPAENHHAHQHAQRERVHVQQQVQGAGDGLAQDPQW
GRGG*EL*W*SGRADLRVGGV*AARGQLLGDHDHRSDEQRHHRQLLGGGASERGAGERHRREVRHAQLPAGLGPRDRAGDAG
RVHQRGLPPRHRPAARLRRGLHREPPQQPAGHPQAAALPGGLPDPVRGPGGGQHPRALGCRSL*EKQGGGRRSGDRSRGHRLY
RGAGR*FC*RRGSGRGG*NRK*DSHPAGGEGQQGQELQRARGQEKHRLPQLVPGLQLRRPREGRALLDAAHHLGRHLRRGASLL
VAARHDARPGHLPLHASS*QLPGGGRRAPARLLQELLQRAGRLLAAAARLHLAHARLQPLPREPDPRPPARAHHYHRQ*KRSCSHR
SRDPAAAQQYPGSPARDRH*RQTPHLPLRLQGPGRSRAARPLEPHLLKNVHSHLAQ**HRLGPARAQQDVRRRSPTLHATPRARA
RALPRSLGRPQGPRALAHHRRRRDRPGGGRRAQLHARRRARLHRGRRHRQRGGRCAPVRPRQEPAAAHRPAAPEHPRHARGAS
LAAQGQAHGTQGHAQGGQTRGLRQQQRRQDPQTRGHGGGGGHRQHVPPAARQRVLGARRRHRCARARAHPPPSHLKMLTS
RC*CVPAARRMSKRKYKEEMLQVIAPEIYGPAVKEERKPRKLKRVKKDKKEEEDVDGLVEFVREFAPRRRVQWRGRKVKPVLRPGT
TVVFTPGERSGSASKRSYDEVYGDEDILEQAVERLGEFAYGKRSRPAPLKEEAVSIPLDHGNPTPSLKPVTLQQVLPSAAPRRGFKREG
GEDLYPTMQLMVPKRQKLEDVLEHMKVDPEVQPEVKVRPIKQVAPGLGVQTVDIKIPTEPMETQTEPVKPSTSTMEVQTDPWMP
APASTTRRRRKYGAASLLMPNYALHPSIIPTPGYRGTRFYRGYTSSRRKTTTRRRRRTRRSSTATSAAALVRRVYRSGREPLTLPRARY
HPSIAI*LCRRLLLADMALTCRLRVPITGYRGRKPRRRRLTGNGLRRHHHRRRRAISKRLGGGFLPALIPIIAAAIGAIPGIASVAVQASQ
RH*DTAWKICNKKMD*RSWSCDVCF*MEDINFSSLAPRHGTRPFMGTWSDIGNSQLNGGAFNWSSLWSGLKNFGSTLKTYGNK
AWNSSTGQALREKLKEQNFQQKVVDGLASGINGVVDLANQAVQKQINSRLDAVPPAGSVEMPQVEEELPPLDKRGDKRPRPDAE
ETLLTHTDEPPPYEEAVKLGLPTTRPVAPLATGVLKPSSSSQPATLDLPPPASRPSTVAKPLPPVAVASRAPRGRPQANWQSTLNSIV
GLGVQSVKRRRCY*KTL*RLTCLSVCICMSADQKEEEARRRVARWPPHRCCPSGRTCTSPDRTLRST*VRVWCSSPAPQTPTSVWG
TSLGTPRWRPRTM*PPTAASG*RCASCPWTARTTPTRTKCATRWPWATTACWTWPAPTLTSAACWIGGPASNPTPAPPTTAWL
PRERPTLASGHIKLVILIQKKPIHMEMHLCKALALQRMVFNLELTAMVRQSMQTKLINQSLKWVMLNGMTSLVLMKNMEAELLSL
TPK*SLAMVLLPSLPIKKEARQM*KPKQAVPKNMTLTWHSSIIEVQLPPA*PQKLFCILRMWIWKLQIPILYTRQVQMTVALLSIWVS
SPCPTDPTTLASETTLSV*CTTTALAIWVYWLDRPPS*MLWWTCRTETPNCPTSSCLTLWVTEPGISVCGIRRWTVMTPMCALLKIT
VWRMNFLTIASPWMLWVELILTRELRPMVIIKPPGPKMILLMMLMNWARAILSPWRSTSRPTCGGTSSTRTWRCTCPTPTSTRRP
TSRCPPTPTPTIT*TAAWWRPRWWTPTSTSGRAGRWTPWTTSTPSTTTATRACDTAPCSWATGATCPSTSRCPKSFSPSRASCSCP
GPTPTSGTSARTST*SCRAPSATTCARTGPPSPSPASTSTPPSSPWRTTPPPRSRPCCATTPTTSPSTTTSRRPTCSTPSRPTPPTCPSPS
PRATGPPSAAGPSRASRPARRPRSAPGSTPTSSTRAPSPTSTAPSTSTTPSRRSPSPSTPPSAGPATTAS*RPTSSKSSAPSTERGTTWP
SAT*PRTGSWSRCWPTTTSATRASTCPRATRTACTPSSATSSP*AARSWTRSTTRTTRPSPWPTSTTTRASSATSRPPCARASPTPPT
TPTRSSARAPSPASPRKSSSATGSCGASPSPATSCPWARSPTSARTCSTPTPPTR*T*ISKSTPWMSPPFSMLSSKSSTSSECTSPTAAS
SRPSTCARPSRPATPPPKPLASCKMTACAGSGEQELRAILRDLGCGPCFLGTFDKRFPGFMAPHKLACAIVNTAGRETGGEHWLAFA
WNPRSHTCYLFDPFGFSDERLKQIYQFEYEGLLRRSALATEDRCVTLEKSTQTVQGPRSAACGLFCCMFLHAFVHWPDRPMDKNPT
MNLLTGVPNGMLQSPQVEPTLRRNQEALYRFLNAHSAYFRSHRARIEKATAFDRMNQDM*SGVCM*MLYSS**TAHVYATFSEA
LTLFRNRRGSAGSRHGPRAGIRCGTGTWAAT*TRGSAASARGGRGTSRSTACA*VAGRPAGRARRS*NRSWDPRSARESYGTRGC
STGTPSGPGASRSPAPSRR*CPPRPDPRRWPSRRGSSCRSAAPCWARSRACGCNRSAGGSASSGPARSSCPGTWPS*KPPAGGRP
AAPCRPR*RRPRRTC*RTGWWRSQRRARSSARRCWPAAPRCAPSGSG*SWPGRGSPSARAARSRSPHPSRSCAPSGSSRSRAGT
AACPRPRCTRAATARSRCSPSSCGRSGSASARSPAGSGPSSWSGSCCW*RSAECRGAPRSHTGGRYGGTPRPARASAGRRTSGRSP
RGTGPSAASSLPCPSPRPKRSAGSGGSSPLSS*SPPPKSGGRSRPGSQTLACRPSR*CARGES*SPRPPAPPRPAFRPRCPG*CLAKAH
AWSCGVSFWAAEAAAETCWASASSRSPRLFLLLGRRPRPRGGRHASSGAEAEATGSRGSAGGWQSPFRVRGCAPGGAALTDFLR
GRPLCSPREQAWRLSHRRQHRHLPPPPPTRTSSSRMKA*PPRRPAPPPTPQPQTCKRWRNPSRLTWAT*RPRSTRRSWQRAFQP
RKRTTKSSQSRKQRASRTRLGSSMATT*AGQRTCSSSIWPANASSSRTRCSTAPRCPSAWRSSAAPTSATSSRRACPPSASPTAPASP
TRASTSTRSSRCPRPWPPTTSFSRTKGSPSPAAPTAPAPTPCSTWAPAPAYLISPPWKRFPRSSRVWAATRLGPRTLCKEAERSMSTT

Fig. 26K

APWWSWKATTRAWRSSSARSS*PTSPTRRSTCPPRS*APSWTRCSSSAPRPSRRRRCRTPRARTRASPWSATSSWRAGWERVAP
PRAWKSGASS*WPWSW*PWSWSVCAASSPTRRPCARSRRTCTTSSDTGSCARPARSPTWS*PTWSPTWASCTRTAWGRTCCTP
PCAGRPAATTSATASTCTSATPGRRAWACGSSAWRSRT*KSSASSCRRTSRPCGPGSTSAPPPRTWPTSSSPSACG*RCATGCPTL*
AKACCKTFALSSSNAPGSCPPPAPRCPRTSCR*PSASAPRRSGATATCCAWPTTWPTTRT*SRTSAARACSSATAAATSARRTAPWP
ATPSC*ARPRSSAPSSCKAPARARGV*NSPRGCGPRPTCASSCPRTTIPSRSGSTRTNPSRPRPSCRPASSPRGPSWPNCKPSRNPAK
NFC*KRATGSTWTPRPERSSTPASPRMPRGSSKKLKVELPPPPEDLEEDWESSQAEEEEMEDWDSTQAEEDSLQDSLEEEDEVEEA
EEEAAAARPSSSAEEEKASSTDTISAPGRGRGGRAHSRWDETGRFPNPTTQTGKKERQGYKSWRGHKNAIVSCLQACGGNISFTRR
YLLFHRGVNFPRNILHYYRHLHSPYYCFQEEAETQQQQQQQKTSGSS*KIHSGGRWTEDRGERAGADPGAEEPDLSHPLCHLPAES
GARAGTESQEPFSALAHPQLSVSQERRPTSAHSRGRRGSLQQVLRAHS*RVARARPHTEKGGNYVTTCALRPTIIMSKEIPTPYMWS
YQPQMGLAAGAAQDYSTRMNWLSAGPAMISRVNDIRAHRNQILLEQSAITATPRHHLNPRNWPAALVYQEIPQPTTVLLPRDAQ
AEVQLTNSGVQLAGGAALCRHRPAQGIKRLVIRGRGTQLNDEVVSSSLGLRPDGVFQLAGSGRSSFTPRQAVLTLESSSSQPRSGGI
GTLQFVEEFTPSVYFNPFSGSPGHYPDEFIPNFDAISESVDGYD*MSHGGAADLARLRHLDHCRRFRCFARDLAEFAYFELPEEHPQG
PAHGVRIVVEGGLDSHLLRIFSQRPILAEREQGQTLLTLYCICNHPGLHESLCCLLCTEYNKS*DQRLLRTSVCSCYQPVPVLHRERDRA
PAPV*APQEVPHLAVPGLSDRRCQPLRQRRSPAERPCQPYFFHPQKQAPALPTLPPRDLSVRLGTLPSHLPPDPEYHSVAPRY*QPN
YPPTPPSRPRTCTELEKY*ATIHAHIRL*GRATATHAPRY*LLQSNRRR*LTHWPTTTSTTFSWTWTAAPRSSDSPNFAFASSRREPSR
SCRTA*PSTSARKASSAW*NRPRSPTRSPRPTIASPTSSCSSARSSPAWSESTPSSSPSSRAIPRGASTAPATPPTASTL*SRPSAASATS
SP*TNHPLIQ*NKYHIDDDLNKK*SFDLK*RYNHIDDLSFKK*RITYLKSDTRSLSMFSANTTSLPSSQLWYCRPRRAANFLHTLKGMS
NSSCPSIFILSSIRCPKSASGWMMTSTPSTPTMQTTHRPCPSSTPPSSLQMDSKRSPWGCCPCDWLTPSPPRTGKSPSSWERGWTS
TPRENSSPTRPPRPPPLSVFPTTPFPLTWIPLFIPKMENYPYKFLHR*TY*NQPF*TH*L*LMDQV*D*VVALLLQYSWPLHSLLMKKE
ILKLT*PVVH*QLMQVDLVSTAKEGSLSLPQEMQLKAT*AGLKV*DLKVMA*LQTLAEDWNLEPLVQRLMSQMHTQFKLNWVLA
LPLTVQAPLLLGTKRMINLHYGPQPTPRQIAKYTLKKMPNSHFA*QSVEVKFWVL*LYWQ*IMEVSTQSQTQ*ALHSSPSSLMQVE
FC*AAPH*TKNIGTSEREMLHLLSPILML*VLCLT*RPILKTHLQLQKAILSVKFISMGMRPNH*C*LLLLMKLRMQLAPTVSLFNGNG
IVLSTQVKHLLPAPSPSPTSPKNEHCIPPCMPTLPTPLCLWKKL*STK*NKVQVFY*FNSFTGFEQLFFLHPPRTWNTPPSPPAQP*TS
ECHW*WTCFWSPRSTQFQSEPVSGRSGR*NPPGTPASAPHSSTAEDCPRWSGSRLSGRSRRAAVGIIVRERDRPVVSHQAPQQSL
PPPLRQAAAQGVRVQGLPQHDAHGPQHQSSGAAGAAAHADLAQVAAVRATQDHQVVQQSIVQHAPAETHRGKDATHVAVVP
DPQVNQVALPPEHAAHVHDLLGHVAVHHLPVPHHPLVEHAAPDDPAEPQGQHRPARHAAKRPRVPAMAMEDPPLVPVDHLGA
EQVYVGTAQAYAHASLQHSQLLGGQNHIPGHGELLQDSEPRRTGQSSHITYIVHGQGIAIRQHRVILHQRSAGLGLLTAW*GGRPIR
VMAGRG*SCSRPCHDAVAFGHFRTCCSRTWSGRCTPIAGGGPGAWNARC*NCKTATLSDRAADLGPQE**RSHHA**L*SHRPP
WNGPDPAR*CNFVGFR*RRGREEQEEP*LTFNPNGLGALQNEGRGDGTSRPRCVGGK*QPGQR*YGSRDVPRWLPAKPPRAHP
ETRQ*RKREGSLIPQSSCYTPAPSPDNFHFSSLE*FELVPEVNPSQP**RARAERPPPAFLSTPS*FQDILLLVHLQQIDKRNIKISAAIPK
LLPQQ*L*VLFHILSEIFSHRTTRNKIRASHSTDKPKSSPVSIAKCKTAISMLARPGDIFQITGQKITQAIFKKINKRKILQVHV*SLGNND
EVNASGAFQHG*LADL*KTKNKTLNHASLANRWVNRSLQHQAGHGVSGATLVKIVAMIENHHRETFPVAGVNDSTR*IHPRNIGV
RE*KKAPEEAIRHYNAQSQVQQSDAMRMKHKILRCVQNVITPLLHRQRSPRSLQIHIQSLSVHSLPSSSTQQAQESEKG*ALTCPPAL
CSIYSPDLH*RKGQSLKIPAK*SHTPSTRPETGDTLKKIRALPQTPKLPSFPGSHATSSEFDFQIPSTVKNVTRPAPNGRPSLGQSPSSLP
KFKQLICILTRTKSLRYIIDD

Fig. 27A

AdC7 010-DU422gp160(E1623) Nucleic Acids – SEQ ID NO: 8

CATCATCAATAATATACCTCAAACTTTTGGTGCGCGTTAATATGCAAATGAGCTGTTTGAATTTGGGGAGGGAGGAAGGTGAT
TGGCCGAGAGACGGGCGACCGTTAGGGGCGGGGCGGGTGACGTTTTGATGACGTGGCCGTGAGGCGGAGCCGGTTTGCAA
GTTCTCGTGGGAAAAGTGACGTCAAACGAGGTGTGGTTTGAACACGGAAATACTCAATTTTCCCGCGCTCTCTGACAGGAAAT
GAGGTGTTTCTGGGCGGATGCAAGTGAAAACGGGCCATTTTCGCGCGAAAACTGAATGAGGAAGTGAAAATCTGAGTAATTT
CGCGTTTATGGCAGGGAGGAGTATTTGCCGAGGGCCGAGTAGACTTTGACCGATTACGTGGGGGTTTCGATTACCGTATTTTT
CACCTAAATTTCCGCGTACGGTGTCAAAGTCCGGTGTTTTTACGTACGATATCATTTCCCCGAAAGTGCCACCTGACCGTAACTA
TAACGGTCCTAAGGTAGCGAAAGCTCAGATCTCCCGATCCCCTATGGTGCACTCTCAGTACAATCTGCTCTGATGCCGCATAGT
TAAGCCAGTATCTGCTCCCTGCTTGTGTGTTGGAGGTCGCTGAGTAGTGCGCGAGCAAAATTTAAGCTACAACAAGGCAAGGC
TTGACCGACAATTGCATGAAGAATCTGCTTAGGGTTAGGCGTTTTGCGCTGCTTCGCGATGTACGGGCCAGATATACGCGTTG
ACATTGATTATTGACTAGTATGCCAAGTACGCCCCCTATTGACGTCAATGACGGTAAATGGCCCGCCTGGCATTATGCCCAGTA
CATGACCTTATGGGACTTTCCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCATGGTGATGCGGTTTTGGCAGTAC
ATCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATTTCCAAGTCTCCACCCCATTGACGTCAATGGGAGTTTGTTTTGGCA
CCAAAATCAACGGGACTTTCCAAAATGTCGTAACAACTCCGCCCCATTGACGCAAATGGGCGGTAGGCGTGTACGGTGGGAG
GTCTATATAAGCAGAGCTCGTTTAGTGAACCGTCAGATCACTAGAAGCTTTATTGCGGTAGTTTATCACAGTTAAATTGCTAAC
GCAGTCAGTGCTTCTGACACAACAGTCTCGAACTTAAGGCTAGAGTTCGACGCCACCATGCGCGTGCGCGGCATCCCCCGCAA
CTGGCCCCAGTGGTGGATCTGGGGCATCCTGGGCTTCTGGATGATCATCATCTGCCGCGTGGTGGGCAACCTGGACCTGTGG
GTGACCGTGTACTACGGCGTGCCCGTGTGGAAGGAGGCCAAGACCACCCTGTTCTGCGCCTCCGACGCCAAGGCCTACGACA
AGGAGGTGCACAACGTGTGGGCCACCCACGCCTGCGTGCCCACCGACCCCAACCCCCAGGAGATCGTGCTGGAGAACGTGAC
CGAGAACTTCAACATGTGGAAGAACGACATGGTGGACCAGATGCACGAGGACATCATCTCCCTGTGGGACCAGTCCCTGAAG
CCCTGCGTGAAGCTGACCCCCCTGTGCGTGACCCTGAACTGCAAGAACGTGAACATCTCCGCCAACGCCAACGCCACCGCCAC
CCTGAACTCCTCCATGAACGGCGAGATCAAGAACTGCTCCTTCAACACCACCACCGAGCTGCGCGACAAGAAGCAGAAGGTGT
ACGCCCTGTTCTACAAGCCCGACGTGGTGCCCCTGAACGGCGGCGAGCACAACGAGACCGGCGAGTACATCCTGATCAACTG
CAACTCCTCCACCATCACCCAGGCCTGCCCCAAGGTGTCCTTCGACCCCATCCCCATCCACTACTGCGCCCCCGCCGGCTACGCC
ATCCTGAAGTGCAACAACAAGACCTTCAACGGCACCGGCCCCTGCAACAACGTGTCCACCGTGCAGTGCACCCACGGCATCAA
GCCCGTGGTGTCCACCCAGCTGCTGCTGAACGGCTCCCTGGCCGAGGAGGAGATCATCGTGCGCTCCGAGAACCTGACCAAC
AACATCAAGACCATCATCGTGCACCTGAACAAGTCCGTGGAGATCAAGTGCACCCGCCCCAACAACAACACCCGCAAGTCCGT
GCGCATCGGCCCCGGCCAGACCTTCTACGCCACCGGCGAGATCATCGGCGACATCCGCGAGGCCCACTGCAACATCTCCCGCG
AGACCTGGAACTCCACCCTGATCCAGGTGAAGGAGAAGCTGCGCGAGCACTACAACAAGACCATCAAGTTCGAGCCCTCCTCC
GGCGGCGACCTGGAGGTGACCACCCACTCCTTCAACTGCCGCGGCGAGTTCTTCTACTGCGACACCACCAAGCTGTTCAACGA
GACCAAGCTGTTCAACGAGTCCGAGTACGTGGACAACAAGACCATCATCCTGCCCTGCCGCATCAAGCAGATCATCAACATGT
GGCAGGAGGTGGGCCGCGCCATGTACGCCCCCCCCATCGAGGGCAACATCACCTGCAAGTCCAACATCACCGGCCTGCTGCT
GACCTGGGACGGCGGCGAGAACTCCACCGAGGGCGTGTTCCGCCCCGGCGGCGGCAACATGAAGGACAACTGGCGCTCCGA
GCTGTACAAGTACAAGGTGGTGGAGATCAAGCCCCTGGGCGTGGCCCCCACCAAGAGCAAGCGCAAGGTGGTGGGCCGCGA
GAAGCGCGCCGTGGGCCTGGGCGCCGTGCTGCTGGGCTTCCTGGGCGCCGCCGGCAGCACCATGGGCGCCGCCAGCATCACC
CTGACCGTGCAGGCCCGCCAGCTGCTGAGCGGCATCGTGCAGCAGCAGAGCAACCTGCTGCGCGCCATCGAGGCCCAGCAGC
ACCTGCTGCAGCTGACCGTGTGGGGCATCAAGCAGCTGCAGACCCGCGTGCTGGCCATCGAGCGCTACCTGAAGGACCAGCA
GCTGCTGGGCCTGTGGGGCTGCAGCGGCAAGCTGATCTGCGCCACCGCCGTGCCCTGGAACAGCAGCTGGAGCAACAAGAG
CCTGGGCGACATCTGGGACAACATGACCTGGATGCAGTGGGACCGCGAGATCAGCAACTACACCAACACCATCTTCCGCCTGC
TGGAGGACAGCCAGAACCAGCAGGAGAAGAACGAGAAGGACCTGCTGGCCCTGGACAGCTGGAAGAACCTGTGGAACTGGT
TCGACATCACCAACTGGCTGTGGTACATCAAGATCTTCATCATGATCGTGGGCGGCCTGATCGGCCTGCGCATCATCTTCGGCG
TGCTGGCCATCGTGAAGCGCGTGCGCCAGGGCTACAGCCCCCTGAGCTTCCAGACCCTGATCCCCAACCCCCGCGGCCCCGAC
CGCCTGGGCCGCATCGAGGAGGAGGGCGGCGAGCAGGACAAGGACCGCAGCATCCGCCTGGTGAGCGGCTTCCTGGCCCTG
GCCTGGGACGACCTGCGCAGCCTGTGCCTGTTCAGCTACCACCAGCTGCGCGACTTCATCCTGACCGCCGCCCGCGCCGCCGA
GCTGCTGGGCCGCAGCAGCCTGCGCGGCCTGCAGCGCGGCTGGGAGGTGCTGAAGTACCTGGGCAACCTGGTGCAGTACTG
GGGCCTGGAGCTGAAGCGCAGCGCCATCAACCTGTTCGACACCATCGCCATCGCCGTGGCCGAGGGCACCGACCGCATCATC
GAGGTGATCCAGCGCATCTGCCGCGCCATCCGCTACATCCCCACCCGCATCCGCCAGGGCTTCGAGGCCGCCCTGCTGTAAGG
TACCTCTAGAGTCGACCCGGGCGGCCAAACCGCTGATCAGCCTCGACTGTGCCTTCTAGTTGCCAGCCATCTGTTGTTTGCCCC
TCCCCCGTGCCTTCCTTGACCCTGGAAGGTGCCACTCCCACTGTCCTTTCCTAATAAAATGAGGAAATTGCATCGCATTGTCTGA
GTAGGTGTCATTCTATTCTGGGGGGTGGGGTGGGGCAGGACAGCAAGGGGGAGGATTGGGAAGACAATAGCAGGCATGCT

Fig. 27B

GGGGATGCGGTGGGCTCTATGGCTTCTGAGGCGGAAAGAACCAGCAGATCTGCAGATCTGAATTCATCTATGTCGGGTGCGG
AGAAAGAGGTAATGAAATGGCATTATGGGTATTATGGGTCTGCATTAATGAATCGGCCAGATATCGATATGCTGGCCACCGTG
CATGTGACCTCGCACCCCCGCAAGACATGGCCCGAGTTCGAGCACAACGTCATGACCCGATGCAATGTGCACCTGGGGTCCCG
CCGAGGCATGTTCATGCCCTACCAGTGCAACATGCAATTTGTGAAGGTGCTGCTGGAGCCCGATGCCATGTCCAGAGTGAGCC
TGACGGGGGTGTTTGACATGAATGTGGAGCTGTGGAAAATTCTGAGATATGATGAATCCAAGACCAGGTGCCGGGCCTGCGA
ATGCGGAGGCAAGCACGCCAGGCTTCAGCCCGTGTGTGTGGAGGTGACGGAGGACCTGCGACCCGATCATTTGGTGTTGTCC
TGCAACGGGACGGAGTTCGGCTCCAGCGGGGAAGAATCTGACTAGAGTGAGTAGTGTTTGGGGGAGGTGGAGGGCTTGTAT
GAGGGGCAGAATGACTAAAATCTGTGTTTTTCTGTGTGTTGCAGCAGCATGAGCGGAAGCGCCTCCTTTGAGGGAGGGGTAT
TCAGCCCTTATCTGACGGGGCGTCTCCCCTCCTGGGCGGGAGTGCGTCAGAATGTGATGGGATCCACGGTGGACGGCCGGCC
CGTGCAGCCCGCGAACTCTTCAACCCTGACCTACGCGACCCTGAGCTCCTCGTCCGTGGACGCAGCTGCCGCCGCAGCTGCTG
CTTCCGCCGCCAGCGCCGTGCGCGGAATGGCCCTGGGCGCCGGCTACTACAGCTCTCTGGTGGCCAACTCGACTTCCACCAAT
AATCCCGCCAGCCTGAACGAGGAGAAGCTGCTGCTGCTGATGGCCCAGCTCGAGGCCCTGACCCAGCGCCTGGGCGAGCTGA
CCCAGCAGGTGGCTCAGCTGCAGGCGGAGACGCGGGCCGCGGTTGCCACGGTGAAAACCAAATAAAAAATGAATCAATAAAT
AAACGGAGACGGTTGTTGATTTTAACACAGAGTCTTGAATCTTTATTTGATTTTTCGCGCGCGGTAGGCCCTGGACCACCGGTC
TCGATCATTGAGCACCCGGTGGATTTTTTCCAGGACCCGGTAGAGGTGGGCTTGGATGTTGAGGTACATGGGCATGAGCCCGT
CCCGGGGGTGGAGGTAGCTCCATTGCAGGGCCTCGTGCTCGGGGGTGGTGTTGTAAATCACCCAGTCATAGCAGGGGCGCA
GGGCGTGGTGCTGCACGATGTCCTTGAGGAGGAGACTGATGGCCACGGGCAGCCCCTTGGTGTAGGTGTTGACGAACCTGTT
GAGCTGGGAGGGATGCATGCGGGGGGAGATGAGATGCATCTTGGCCTGGATCTTGAGATTGGCGATGTTCCCGCCCAGATCC
CGCCGGGGGTTCATGTTGTGCAGGACCACCAGCACGGTGTATCCGGCGCACTTGGGGAATTTGTCATGCAACTTGGAAGGGA
AGGCGTGAAAGAATTTGGAGACGCCCTTGTGACCGCCCAGGTTTTCCATGCACTCATCCATGATGATGGCGATGGGCCCGTGG
GCGGCGGCCTGGGCAAAGACGTTTCGGGGGTCGGACACATCGTAGTTGTGGTCCTGGGTGAGCTCGTCATAGGCCATTTTAA
TGAATTTGGGGCGGAGGGTGCCCGACTGGGGGACGAAGGTGCCCTCGATCCCGGGGGCGTAGTTGCCCTCGCAGATCTGCAT
CTCCCAGGCCTTGAGCTCGGAGGGGGGGATCATGTCCACCTGCGGGGCGATGAAAAAAACGGTTTCCGGGGCGGGGGAGAT
GAGCTGGGCCGAAAGCAGGTTCCGGAGCAGCTGGGACTTGCCGCAGCCGGTGGGGCCGTAGATGACCCCGATGACCGGCTG
CAGGTGGTAGTTGAGGGAGAGACAGCTGCCGTCCTCGCGGAGGAGGGGGGCCACCTCGTTCATCATCTCGCGCACATGCATG
TTCTCGCGCACGAGTTCCGCCAGGAGGCGCTCGCCCCCCAGCGAGAGGAGCTCTTGCAGCGAGGCGAAGTTTTTCAGCGGCTT
GAGYCCGTCGGCCATGGGCATTTTGGAGAGGGTCTGTTGCAAGAGTTCCAGACGGTCCCAGAGCTCGGTGATGTGCTCTAGG
GCATCTCGATCCAGCAGACCTCCTCGTTTCGCGGGTTGGGGCGACTGCGGGAGTAGGGCACCAGGCGATGGGCGTCCAGCGA
GGCCAGGGTCCGGTCCTTCCAGGGTCGCAGGGTCCGCGTCAGCGTGGTCTCCGTCACGGTGAAGGGGTGCGCGCCGGGCTG
GGCGCTTGCGAGGGTGCGCTTCAGGCTCATCCGGCTGGTCGAGAACCGCTCCCGGTCGGCGCCCTGCGCGTCGGCCAGGTAG
CAATTGAGCATGAGTTCGTAGTTGAGCGCCTCGGCCGCGTGGCCCTTGGCGCGGAGCTTACCTTTGGAAGTGTGTCCGCAGAC
GGGACAGAGGAGGGACTTGAGGGCGTAGAGCTTGGGGGCGAGGAAGACGGACTCGGGGGCGTAGGCGTCCGCGCCGCAG
CTGGCGCAGACGGTCTCGCACTCCACGAGCCAGGTGAGGTCGGGCCGGTTGGGGTCAAAAACGAGGTTTCCTCCGTGCTTTTT
GATGCGTTTCTTACCTCTGGTCTCCATGAGCTCGTGTCCCCGCTGGGTGACAAAGAGGCTGTCCGTGTCCCCGTAGACCGACTT
TATGGGCCGGTCCTCGAGCGGGGTGCCGCGGTCCTCGTCGTAGAGGAACCCCGCCCACTCCGAGACGAAGGCCCGGGTCCAG
GCCAGCACGAAGGAGGCCACGTGGGAGGGGTAGCGGTCGTTGTCCACCAGCGGGTCCACCTTCTCCAGGGTATGCAAGCACA
TGTCCCCCTCGTCCACATCCAGGAAGGTGATTGGCTTGTAAGTGTAGGCCACGTGACCGGGGGGTCCCGGCCGGGGGGGTATA
AAAGGGGGCGGGCCCCTGCTCGTCCTCACTGTCTTCCGGATCGCTGTCCAGGAGCGCCAGCTGTTGGGGTAGGTATTCCCTCT
CGAAGGCTGGCATAACCTCGGCACTCAGGTTGTCAGTTTCTAGAAACGAGGAGGATTTGATATTGACGGTGCCGTTGGAGAC
GCCTTTCATGAGCCCCTCGTCCATCTGGTCAGAAAAGACGATCTTTTTGTTGTCGAGCTTGGTGGCGAAGGAGCCGTAGAGGG
CGTTGGAGAGGAGCTTGGCGATGGAGCGCATGGTCTGGTTCTTTTCCTTGTCGGCGCGCTCCTTGGCGGCGATGTTGAGCTGC
ACGTACTCGCGCGCCACGCACTTCCATTCGGGGAAGACGGTGGTGAGCTCGTCGGGCACGATTCTGACCCGCCAGCCGCGGTT
GTGCAGGGTGATGAGGTCCACGCTGGTGGCCACCTCGCCGCGCAGGGGCTCGTTGGTCCAGCAGAGGCGCCCGCCCTTGCGC
GAGCAGAAGGGGGGCAGCGGGTCCAGCATGAGCTCGTCGGGGGGGTCGGCGTCCACGGTGAAGATGCCGGGCAGAAGCTC
GGGGTCGAAGTAGCTGATGCAGGTGTCCAGATCGTCCAGCGCCGCTTGCCAGTCGCGCACGGCCAGCGCGCGCTCGTAGGGG
CTGAGGGGCGTGCCCCAGGGCATGGGGTGCGTGAGCGCGGAGGCGTACATGCCGCAGATGTCGTAGACGTAGAGGGGCTCC
TCGAGGACGCCGATGTAGGTGGGGTAGCAGCGCCCCCCGCGGATGCTGGCGCGCACGTAGTCGTACAGCTCGTGCGAGGGC
GCGAGGAGCCCCGTGCCGAGGTTGGAGCGTTGCGGCTTTTCGGCGCGGTAGACGATCTGGCGGAAGATGGCGTGGGAGTTG
GAGGAGATGGTGGGCCTCTGGAAGATGTTGAAGTGGGCGTGGGGCAGGCCGACCGAGTCCCTGATGAAGTGGGCGTAGGA
GTCCTGCAGCTTGGCGACGAGCTCGGCGGTGACGAGGACGTCCAGGGCGCAGTAGTCGAGGGTCTCTTGGATGATGTCGTAC
TTGAGCTGGCCCTTCTGCTTCCACAGCTCGCGGTTGAGAAGGAACTCTTCGCGGTCCTTCCAGTACTCTTCGAGGGGGAACCCG

Fig. 27C

TCCTGATCGGCACGGTAAGAGCCCACCATGTAGAACTGGTTGACGGCCTTGTAGGCGCAGCAGCCCTTCTCCACGGGGAGGG
CGTAAGCTTGTGCGGCCTTGCGCAGGGAGGTGTGGGTGAGGGCGAAGGTGTCGCGCACCATGACCTTGAGGAACTGGTGCT
TGAAGTCGAGGTCGTCGCAGCCGCCCTGCTCCCAGAGCTGGAAGTCCGTGCGCTTCTTGTAGGCGGGGTTGGGCAAAGCGAA
AGTAACATCGTTGAAGAGGATCTTGCCCGCGCGGGGCATGAAGTTGCGAGTGATGCGGAAAGGCTGGGGCACCTCGGCCCG
GTTGTTGATGACCTGGGCGGCGAGGACGATCTCGTCGAAGCCGTTGATGTTGTGCCCGACGATGTAGAGTTCCACGAATCGC
GGGCGGCCCTTAACGTGGGGCAGCTTCTTGAGCTCGTCGTAGGTGAGCTCGGCGGGGTCGCTGAGCCCGTGCTGCTCGAGGG
CCCAGTCGGCGACGTGGGGGTTGGCGCTGAGGAAGGAAGTCCAGAGATCCACGGCCAGGGCGGTCTGCAAGCGGTCCCGGT
ACTGACGGAACTGCTGGCCCACGGCCATTTTTTCGGGGGTGACGCAGTAGAAGGTGCGGGGGTCGCCGTGCCAGCGGTCCCA
CTTGAGCTGGAGGGCGAGGTCGTGGGCGAGCTCGACGAGCGGCGGGTCCCCGGAGAGTTTCATGACCAGCATGAAGGGGAC
GAGCTGCTTGCCGAAGGACCCCATCCAGGTGTAGGTTTCCACATCGTAGGTGAGGAAGAGCCTTTCGGTGCGAGGATGCGAG
CCGATGGGGAAGAACTGGATCTCCTGCCACCAGTTGGAGGAATGGCTGTTGATGTGATGGAAGTAGAAATGCCGACGGCGC
GCCGAGCACTCGTGCTTGTGTTTATACAAGCGTCCGCAGTGCTCGCAACGCTGCACGGGATGCACGTGCTGCACGAGCTGTAC
CTGGGTTCCTTTGACGAGGAATTTCAGTGGGCAGTGGAGCGCTGGCGGCTGCATCTGGTGCTGTACTACGTCCTGGCCATCGG
CGTGGCCATCGTCTGCCTCGATGGTGGTCATGCTGACGAGCCCGCGCGGGAGGCAGGTCCAGACTTCGGCTCGGACGGGTCG
GAGAGCGAGGACGAGGGCGCGCAGGCCGGAGCTGTCCAGGGTCCTGAGACGCTGCGGAGTCAGGTCAGTGGGCAGCGGCG
GCGCGCGGTTGACTTGCAGGAGCTTTTCCAGGGCGCGCGGGAGGTCCAGATGGTACTTGATCTCCACGGCGCCGTTGGTGGC
GACGTCCACGGCTTGCAGGGTCCCGTGCCCCTGGGGCGCCACCACCGTGCCCCGTTTCTTCTTGGGCGCTGCTTCCATGCCGGT
CAGAAGCGGCGGCGAGGACGCGCGCCGGGCGGCAGGGGCGGCTCGGGACCCGGAGGCAGGGGCGGCAGGGGCACGTCGG
CGCCGCGCGCGGGCAGGTTCTGGTACTGCGCCCGGAGAAGACTGGCGTGAGCGACGACGCGACGGTTGACGTCCTGGATCT
GACGCCTCTGGGTGAAGGCCACGGGACCCGTGAGTTTGAACCTGAAAGAGAGTTCGACAGAATCAATCTCGGTATCGTTGAC
GGCGGCCTGCCGCAGGATCTCTTGCACGTCGCCCGAGTTGTCCTGGTAGGCGATCTCGGTCATGAACTGCTCGATCTCCTCCTC
CTGAAGGTCTCCGCGGCCGGCGCGCTCGACGGTGGCCGCGAGGTCGTTGGAGATGCGGCCCATGAGCTGCGAGAAGGCGTT
CATGCCGGCCTCGTTCCAGACGCGGCTGTAGACCACGGCTCCGTCGGGGTCGCGCGCGCGCATGACCACCTGGGCGAGGTTG
AGCTCGACGTGGCGCGTGAAGACCGCGTAGTTGCAGAGGCGCTGGTAGAGGTAGTTGAGCGTGGTGGCGATGTGCTCGGTG
ACGAAGAAGTACATGATCCAGCGGCGGAGCGGCATCTCGCTGACGTCGCCCAGGGCTTCCAAGCGCTCCATGGCCTCGTAGA
AGTCCACGGCGAAGTTGAAAAACTGGGAGTTGCGCGCCGAGACGGTCAACTCCTCCTCCAGAAGACGGATGAGCTCAGCGAT
GGTGGCGCGCACCTCGCGCTCGAAGGCCCCGGGGGGCTCCTCTTCTTCCATCTCTTCCTCCTCCACTAACATCTCTTCTACTTCC
TCCTCAGGAGGCGGCGGCGGGGGAGGGGCCCTGCGTCGCCGGCGGCGCACGGGCAGACGGTCGATGAAGCGCTCGATGGT
CTCCCCGCGCCGGCGACGCATGGTCTCGGTGACGGCGCGCCCGTCCTCGCGGGGCCGCAGCGTGAAGACGCCGCCGCGCATC
TCCAGGTGGCCGCCGGGGGGGTCTCCGTTGGGCAGGGAGAGGGCGCTGACGATGCATCTTATCAATTGGCCCGTAGGGACTC
CGCGCAAGGACCTGAGCGTCTCGAGATCCACGGGATCCGAAAACCGCTGAACGAAGGCTTCGAGCCAGTCGCAGTCGCAAGG
TAGGCTGAGCCCGGTTTCTTGTTCTTCGGGGATTTCGGGAGGCGGGCGGGCGATGCTGCTGGTGATGAAGTTGAAGTAGGCG
GTCCTGAGACGGCGGATGGTGGCGAGGAGCACCAGGTCCTTGGGCCCGGCTTGCTGGATGCGCAGACGGTCGGCCATGCCC
CAGGCGTGGTCCTGACACCTGGCGAGGTCCTTGTAGTAGTCCTGCATGAGCCGCTCCACGGGCACCTCCTCCTCGCCCGCGCG
GCCGTGCATGCGCGTGAGCCCGAACCCGCGCTGGGGCTGGACGAGCGCCAGGTCGGCGACGACGCGCTCGGCGAGGATGGC
CTGCTGTATCTGGGTGAGGGTGGTCTGGAAGTCGTCGAAGTCGACGAAGCGGTGGTAGGCTCCGGTGTTGATGGTATAGGA
GCAGTTGGCCATGACGGACCAGTTGACGGTCTGGTGGCCGGGTCGCACGAGCTCGTGGTACTTGAGGCGCGAGTAGGCGCG
CGTGTCGAAGATGTAGTCGTTGCAGGTGCGCACGAGGTACTGGTATCCGACGAGGAAGTGCGGCGGCGGCTGGCGGTAGAG
CGGCCATCGCTCGGTGGCGGGGGCGCCGGGCGCGAGGTCCTCGAGCATGAGGCGGTGGTAGCCGTAGATGTACCTGGACAT
CCAGGTGATGCCGGCGGCGGTGGTGGAGGCGCGCGGGAACTCGCGGACGCGGTTCCAGATGTTGCGCAGCGGCAGGAAGT
AGTTCATGGTGGCCGCGGTCTGGCCCGTGAGGCGCGCGCAGTCGTGGATGCTCTAGACATACGGGCAAAAACGAAAGCGGTC
AGCGGCTCGACTCCGTGGCCTGGAGGCTAAGCGAACGGGTTGGGCTGCGCGTGTACCCCGGTTCGAATCTCGAATCAGGCTG
GAGCCGCAGCTAACGTGGTACTGGCACTCCCGTCTCGACCCAAGCCTGCTAACGAAACCTCCAGGATACGGAGGCGGGTCGTT
TTTTGGCCTTGGTCGCTGGTCATGAAAAACTAGTAAGCGCGGAAAGCGACCGCCCGCGATGGCTCGCTGCCGTAGTCTGGAG
AAAGAATCGCCAGGGTTGCGTTGCGGTGTGCCCCGGTTCGAGCCTCAGCGCTCGGCGCCGGCCGGATTCCGCGGCTAACGTG
GGCGTGGCTGCCCCGTCGTTTCCAAGACCCCTTAGCCAGCCGACTTCTCCAGTTACGGAGCGAGCCCCTCTTTTTCTTGTGTTTT
TGCCAGATGCATCCCGTACTGCGGCAGATGCGCCCCCACCCTCCACCTCAACCGCCCCTACCGCCGCAGCAGCAGCAACAGCC
GGCGCTTCTGCCCCCGCCCCAGCAGCAGCCAGCCACTACCGCGGCGGCCGCCGTGAGCGGAGCCGGCGTTCAGTATGACCTG
GCCTTGGAAGAGGGCGAGGGGCTGGCGCGGCTGGGGGCGTCGTCGCCGGAGCGGCACCCGCGCGTGCAGATGAAAAGGGA
CGCTCGCGAGGCCTACGTGCCCAAGCAGAACCTGTTCAGAGACAGGAGCGGCGAGGAGCCCGAGGAGATGCGCGCCTCCCG
CTTCCACGCGGGGCGGGAGCTGCGGCGCGGCCTGGACCGAAAGCGGGTGCTGAGGGACGAGGATTTCGAGGCGGACGAGC

Fig. 27D

TGACGGGGATCAGCCCCGCGCGCGCGCACGTGGCCGCGGCCAACCTGGTCACGGCGTACGAGCAGACCGTGAAGGAGGAGA
GCAACTTCCAAAAATCCTTCAACAACCACGTGCGCACGCTGATCGCGCGCGAGGAGGTGACCCTGGGCCTGATGCACCTGTGG
GACCTGCTGGAGGCCATCGTGCAGAACCCCACGAGCAAGCCGCTGACGGCGCAGCTGTTTCTGGTGGTGCAGCACAGTCGGG
ACAACGAGACGTTCAGGGAGGCGCTGCTGAATATCACCGAGCCCGAGGGCCGCTGGCTCCTGGACCTGGTGAACATTCTGCA
GAGCATCGTGGTGCAGGAGCGCGGGCTGCCGCTGTCCGAGAAGCTGGCGGCTATCAACTTCTCGGTGCTGAGCCTGGGCAAG
TACTACGCTAGGAAGATCTACAAGACCCCGTACGTGCCCATAGACAAGGAGGTGAAGATCGACGGGTTTTACATGCGCATGA
CCCTGAAAGTGCTGACCCTGAGCGACGATCTGGGGGTGTACCGCAACGACAGGATGCACCGCGCGGTGAGCGCCAGCCGCC
GGCGCGAGCTGAGCGACCAGGAGCTGATGCACAGCCTGCAGCGGGCCCTGACCGGGGCCGGGACCGAGGGGGAGAGCTAC
TTTGACATGGGCGCGGACCTGCGCTGGCAGCCCAGCCGCCGGGCCTTGGAAGCTGCCGGCGGTTCCCCCTACGTGGAGGAGG
TGGACGATGAGGAGGAGGAGGGCGAGTACCTGGAAGACTGATGGCGCGACCGTATTTTTGCTAGATGCAGCAACAGCCACC
GCCTCCTGATCCCGCGATGCGGGCGGCGCTGCAGAGCCAGCCGTCCGGCATTAACTCCTCGGACGATTGGACCCAGGCCATGC
AACGCATCATGGCGCTGACGACCCGCAATCCCGAAGCCTTTAGACAGCAGCCTCAGGCCAACCGGCTCTCGGCCATCCTGGAG
GCCGTGGTGCCCTCGCGCTCGAACCCCACGCACGAGAAGGTGCTGGCCATCGTGAACGCGCTGGTGGAGAACAAGGCCATCC
GCGGCGACGAGGCCGGGCTGGTGTACAACGCGCTGCTGGAGCGCGTGGCCCGCTACAACAGCACCAACGTGCAGACGAACC
TGGACCGCATGGTGACCGACGTGCGCGAGGCGGTGTCGCAGCGCGAGCGGTTCCACCGCGAGTCGAACCTGGGCTCCATGGT
GGCGCTGAACGCCTTCCTGAGCACGCAGCCCGCCAACGTGCCCCGGGGCCAGGAGGACTACACCAACTTCATCAGCGCGCTG
CGGCTGATGGTGGCCGAGGTGCCCCAGAGCGAGGTGTACCAGTCGGGGCCGGACTACTTCTTCCAGACCAGTCGCCAGGGCT
TGCAGACCGTGAACCTGAGCCAGGCTTTCAAGAACTTGCAGGGACTGTGGGGCGTGCAGGCCCCGGTCGGGGACCGCGCGA
CGGTGTCGAGCCTGCTGACGCCGAACTCGCGCCTGCTGCTGCTGCTGGTGGCGCCCTTCACGGACAGCGGCAGCGTGAGCCG
CGACTCGTACCTGGGCTACCTGCTTAACCTGTACCGCGAGGCCATCGGGCAGGCGCACGTGGACGAGCAGACCTACCAGGAG
ATCACCCACGTGAGCCGCGCGCTGGGCCAGGAGGACCCGGGCAACCTGGAGGCCACCCTGAACTTCCTGCTGACCAACCGGT
CGCAGAAGATCCCGCCCCAGTACGCGCTGAGCACCGAGGAGGAGCGCATCCTGCGCTACGTGCAGCAGAGCGTGGGGCTGTT
CCTGATGCAGGAGGGGGCCACGCCCAGCGCCGCGCTCGACATGACCGCGCGCAACATGGAGCCCAGCATGTACGCTCGCAAC
CGCCCGTTCATCAATAAGCTGATGGACTACTTGCATCGGGCGGCCGCCATGAACTCGGACTACTTTACCAACGCCATCTTGAAC
CCGCACTGGCTCCCGCCGCCCGGGTTCTACACGGGCGAGTACGACATGCCCGACCCCAACGACGGGTTCCTGTGGGACGACG
TGGACAGCAGCGTGTTCTCGCCGCGCCCCGCCACCACCGTGTGGAAGAAAGAGGGCGGGGACCGGCGGCCGTCCTCGGCGC
TGTCCGGTCGCGCGGGTGCTGCCGCGGCGGTGCCTGAGGCCGCCAGCCCCTTCCCGAGCCTGCCCTTTTCGCTGAACAGCGTG
CGCAGCAGCGAGCTGGGTCGGCTGACGCGGCCGCGCCTGCTGGGCGAGGAGGAGTACCTGAACGACTCCTTGTTGAGGCCC
GAGCGCGAGAAGAACTTCCCCAATAACGGGATAGAGAGCCTGGTGGACAAGATGAGCCGCTGGAAGACGTACGCGCACGAG
CACAGGGACGAGCCCCGAGCTAGCAGCAGCGCAGGCACCCGTAGACGCCAGCGACACGACAGGCAGCGGGGTCTGGTGTGG
GACGATGAGGATTCCGCCGACGACAGCAGCGTGTTGGACTTGGGTGGGAGTGGTGGTGGTAACCCGTTCGCTCACTTGCGCC
CCCGTATCGGGCGCCTGATGTAAGAATCTGAAAAAATAAAAAACGGTACTCACCAAGGCCATGGCGACCAGCGTGCGTTCTTC
TCTGTTGTTTGTAGTAGTATGATGAGGCGCGTGTACCCGGAGGGTCCTCCTCCCTCGTACGAGAGCGTGATGCAGCAGGCGGT
GGCGGCGGCGATGCAGCCCCCGCTGGAGGCGCCTTACGTGCCCCCGCGGTACCTGGCGCCTACGGAGGGGCGGAACAGCAT
TCGTTACTCGGAGCTGGCACCCTTGTACGATACCACCCGGTTGTACCTGGTGGACAACAAGTCGGCGGACATCGCCTCGCTGA
ACTACCAGAACGACCACAGCAACTTCCTGACCACCGTGGTGCAGAACAACGATTTCACCCCCACGGAGGCCAGCACCCAGACC
ATCAACTTTGACGAGCGCTCGCGGTGGGGCGGCCAGCTGAAAACCATCATGCACACCAACATGCCCAACGTGAACGAGTTCAT
GTACAGCAACAAGTTCAAGGCGCGGGTGATGGTCTCGCGCAAGACCCCCAATGGGGTCGCGGTGGATGAGAATTATGATGGT
AGTCAGGACGAGCTGACTTACGAGTGGGTGGAGTTTGAGCTGCCCGAGGGCAACTTCTCGGTGACCATGACCATCGATCTGA
TGAACAACGCCATCATCGACAACTACTTGGCGGTGGGGCGTCAGAACGGGGTGCTGGAGAGCGACATCGGCGTGAAGTTCG
ACACGCGCAACTTCCGGCTGGGCTGGGACCCCGTGACCGAGCTGGTGATGCCGGGCGTGTACACCAACGAGGCCTTCCACCC
CGACATCGTCCTGCTGCCCGGCTGCGGCGTGGACTTCACCGAGAGCCGCCTCAGCAACCTGCTGGGCATCCGCAAGCGGCAG
CCCTTCCAGGAGGGCTTCCAGATCCTGTACGAGGACCTGGAGGGGGGCAACATCCCCGCGCTCTTGGATGTCGAAGCCTATGA
GAAAAGCAAGGAGGAGGCCGCCGCAGCGGCGACCGCAGCCGTGGCCACCGCCTCTACCGAGGTGCGGGGCGATAATTTTGC
TAGCGCCGCGGCAGTGGCCGAGGCGGCTGAAACCGAAAGTAAGATAGTCATCCAGCCGGTGGAGAAGGACAGCAAGGACA
GGAGCTACAACGTGCTCGCGGACAAGAAAAACACCGCCTACCGCAGCTGGTACCTGGCCTACAACTACGGCGACCCCGAGAA
GGGCGTGCGCTCCTGGACGCTGCTCACCACCTCGGACGTCACCTGCGGCGTGGAGCAAGTCTACTGGTCGCTGCCCGACATGA
TGCAAGACCCGGTCACCTTCCGCTCCACGCGTCAAGTTAGCAACTACCCGGTGGTGGGCGCCGAGCTCCTGCCCGTCTACTCCA
AGAGCTTCTTCAACGAGCAGGCCGTCTACTCGCAGCAGCTGCGCGCCTTCACCTCGCTCACGCACGTCTTCAACCGCTTCCCCG
AGAACCAGATCCTCGTCCGCCCGCCCGCGCCCACCATTACCACCGTCAGTGAAAACGTTCCTGCTCTCACAGATCACGGGACCC
TGCCGCTGCGCAGCAGTATCCGGGGAGTCCAGCGCGTGACCGTCACTGACGCCAGACGCCGCACCTGCCCCTACGTCTACAAG

Fig. 27E

GCCCTGGGCGTAGTCGCGCCGCGCGTCCTCTCGAGCCGCACCTTCTAAAAAATGTCCATTCTCATCTCGCCCAGTAATAACACC
GGTTGGGGCCTGCGCGCGCCCAGCAAGATGTACGGAGGCGCTCGCCAACGCTCCACGCAACACCCCGTGCGCGTGCGCGGGC
ACTTCCGCGCTCCCTGGGGCGCCCTCAAGGGCCGCGTGCGCTCGCGCACCACCGTCGACGACGTGATCGACCAGGTGGTGGC
CGACGCGCGCAACTACACGCCCGCCGCCGCGCCCGCCTCCACCGTGGACGCCGTCATCGACAGCGTGGTGGCCGATGCGCGC
CGGTACGCCCGCGCCAAGAGCCGGCGGCGGCGCATCGCCCGGCGGCACCGGAGCACCCCCGCCATGCGCGCGGCGCGAGCC
TTGCTGCGCAGGGCCAGGCGCACGGGACGCAGGGCCATGCTCAGGGCGGCCAGACGCGCGGCCTCCGGCAGCAGCAGCGCC
GGCAGGACCCGCAGACGCGCGGCCACGGCGGCGGCGGCGGCCATCGCCAGCATGTCCCGCCCGCGGCGCGGCAACGTGTAC
TGGGTGCGCGACGCCGCCACCGGTGTGCGCGTGCCCGTGCGCACCCGCCCCCCTCGCACTTGAAGATGCTGACTTCGCGATGT
TGATGTGTCCCAGCGGCGAGGAGGATGTCCAAGCGCAAATACAAGGAAGAGATGCTCCAGGTCATCGCGCCTGAGATCTACG
GCCCCGCGGTGAAGGAGGAAAGAAAGCCCCGCAAACTGAAGCGGGTCAAAAAGGACAAAAAGGAGGAGGAAGATGTGGAC
GGACTGGTGGAGTTTGTGCGCGAGTTCGCCCCCCGGCGGCGCGTGCAGTGGCGCGGGCGGAAAGTGAAACCGGTGCTGCGG
CCCGGCACCACGGTGGTCTTCACGCCCGGCGAGCGTTCCGGCTCCGCCTCCAAGCGCTCCTACGACGAGGTGTACGGGGACG
AGGACATCCTCGAGCAGGCGGTCGAGCGTCTGGGCGAGTTTGCTTACGGCAAGCGCAGCCGCCCCGCGCCCTTGAAAGAGGA
GGCGGTGTCCATCCCGCTGGACCACGGCAACCCCACGCCGAGCCTGAAGCCGGTGACCCTGCAGCAGGTGCTGCCGAGCGCG
GCGCCGCGCCGGGGCTTCAAGCGCGAGGGCGGCGAGGATCTGTACCCGACCATGCAGCTGATGGTGCCCAAGCGCCAGAAG
CTGGAGGACGTGCTGGAGCACATGAAGGTGGACCCCGAGGTGCAGCCCGAGGTCAAGGTGCGGCCCATCAAGCAGGTGGCC
CCGGGCCTGGGCGTGCAGACCGTGGACATCAAGATCCCCACGGAGCCCATGGAAACGCAGACCGAGCCCGTGAAGCCCAGC
ACCAGCACCATGGAGGTGCAGACGGATCCCTGGATGCCGGCGCCGGCTTCCACCACTCGCCGAAGACGCAAGTACGGCGCGG
CCAGCCTGCTGATGCCCAACTACGCGCTGCATCCTTCCATCATCCCCACGCCGGGCTACCGCGGCACGCGCTTCTACCGCGGCT
ACACCAGCAGCCGCCGCAAGACCACCACCCGCCGCCGCCGTCGTCGCACCCGCCGCAGCAGCACCGCGACTTCCGCCGCCGCC
CTGGTGCGGAGAGTGTACCGCAGCGGGCGCGAGCCTCTGACCCTGCCGCGCGCGCGCTACCACCCGAGCATCGCCATTTAACT
CTGCCGTCGCCTCCTACTTGCAGATATGGCCCTCACATGCCGCCTCCGCGTCCCCATTACGGGCTACCGAGGAAGAAAGCCGC
GCCGTAGAAGGCTGACGGGGAACGGGCTGCGTCGCCATCACCACCGGCGGCGGCGCGCCATCAGCAAGCGGTTGGGGGGA
GGCTTCCTGCCCGCGCTGATCCCCATCATCGCCGCGGCGATCGGGGCGATCCCCGGCATAGCTTCCGTGGCGGTGCAGGCCTC
TCAGCGCCACTGAGACACAGCTTGGAAAATTTGTAATAAAAAAATGGACTGACGCTCCTGGTCCTGTGATGTGTGTTTTTAGAT
GGAAGACATCAATTTTTCGTCCCTGGCACCGCGACACGGCACGCGGCCGTTTATGGGCACCTGGAGCGACATCGGCAACAGCC
AACTGAACGGGGGCGCCTTCAATTGGAGCAGTCTCTGGAGCGGGCTTAAGAATTTCGGGTCCACGCTCAAAACCTATGGCAAC
AAGGCGTGGAACAGCAGCACAGGGCAGGCGCTGAGGGAAAAGCTGAAAGAGCAGAACTTCCAGCAGAAGGTGGTCGATGG
CCTGGCCTCGGGCATCAACGGGGTGGTGGACCTGGCCAACCAGGCCGTGCAGAAACAGATCAACAGCCGCCTGGACGCGGTC
CCGCCCGCGGGGTCCGTGGAGATGCCCCAGGTGGAGGAGGAGCTGCCTCCCCTGGACAAGCGCGGCGACAAGCGACCGCGT
CCCGACGCGGAGGAGACGCTGCTGACGCACACGGACGAGCCGCCCCCGTACGAGGAGGCGGTGAAACTGGGTCTGCCCACC
ACGCGGCCCGTGGCGCCTCTGGCCACCGGGGTGCTGAAACCCAGCAGCAGCAGCCAGCCCGCGACCCTGGACTTGCCTCCGC
CTGCTTCCCGCCCCTCCACAGTGGCTAAGCCCCTGCCGCCGGTGGCCGTCGCGTCGCGCGCCCCCCGAGGCCGCCCCCAGGCG
AACTGGCAGAGCACTCTGAACAGCATCGTGGGTCTGGGAGTGCAGAGTGTGAAGCGCCGCCGCTGCTATTAAAAGACACTGT
AGCGCTTAACTTGCTTGTCTGTGTGTATATGTATGTCCGCCGACCAGAAGGAGGAAGAGGCGCGTCGCCGAGTTGCAAGATG
GCCACCCCATCGATGCTGCCCCAGTGGGCGTACATGCACATCGCCGGACAGGACGCTTCGGAGTACCTGAGTCCGGGTCTGGT
GCAGTTCGCCCGCGCCACAGACACCTACTTCAGTCTGGGGAACAAGTTTAGGAACCCCACGGTGGCGCCCACGCACGATGTGA
CCACCGACCGCAGCCAGCGGCTGACGCTGCGCTTCGTGCCCGTGGACCGCGAGGACAACACCTACTCGTACAAAGTGCGCTAC
ACGCTGGCCGTGGGCGACAACCGCGTGCTGGACATGGCCAGCACCTACTTTGACATCCGCGGCGTGCTGGATCGGGGGCCCA
GCTTCAAACCCTACTCCGGCACCGCCTACAACAGCCTGGCTCCCAAGGGAGCGCCCAACACTTGCCAGTGGACATATAAAGCT
GGTGATACTGATACAGAAAAAACCTATACATATGGAAATGCACCTGTGCAAGGCATTAGCATTACAAAGGATGGTATTCAACT
TGGAACTGACAGCGATGGTCAGGCAATCTATGCAGACGAAACTTATCAACCAGAGCCTCAAGTGGGTGATGCTGAATGGCAT
GACATCACTGGTACTGATGAAAAATATGGAGGCAGAGCTCTTAAGCCTGACACCAAAATGAAGCCTTGCTATGGTTCTTTTGCC
AAGCCTACCAATAAAGAAGGAGGCCAGGCAAATGTGAAAACCGAAACAGGCGGTACCAAAGAATATGACATTGACATGGCAT
TCTTCGATAATCGAAGTGCAGCTGCCGCCGGCCTAGCCCCAGAAATTGTTTTGTATACTGAGAATGTGGATCTGGAAACTCCAG
ATACCCATATTGTATACAAGGCAGGTACAGATGACAGTAGCTCTTCTATCAATTTGGGTCAGCAGTCCATGCCCAACAGACCCA
ACTACATTGGCTTCAGAGACAACTTTATCGGTCTGATGTACTACAACAGCACTGGCAATATGGGTGTACTGGCTGGACAGGCC
TCCCAGCTGAATGCTGTGGTGGACTTGCAGGACAGAAACACCGAACTGTCCTACCAGCTCTTGCTTGACTCTCTGGGTGACAG
AACCAGGTATTTCAGTATGTGGAATCAGGCGGTGGACAGTTATGACCCCGATGTGCGCATTATTGAAAATCACGGTGTGGAG
GATGAACTTCCTAACTATTGCTTCCCCCTGGATGCTGTGGGTAGAACTGATACTTACCAGGGAATTAAGGCCAATGGTGATAAT
CAAACCACCTGGACCAAAGATGATACTGTTAATGATGCTAATGAATTGGGCAAGGGCAATCCTTTCGCCATGGAGATCAACAT

Fig. 27F

CCAGGCCAACCTGTGGCGGAACTTCCTCTACGCGAACGTGGCGCTGTACCTGCCCGACTCCTACAAGTACACGCCGGCCAACA
TCACGCTGCCCACCAACACCAACACCTACGATTACATGAACGGCCGCGTGGTGGCGCCCTCGCTGGTGGACGCCTACATCAAC
ATCGGGGCGCGCTGGTCGCTGGACCCCATGGACAACGTCAACCCCTTCAACCACCACCGCAACGCGGGCCTGCGATACCGCTC
CATGCTCCTGGGCAACGGGCGCTACGTGCCCTTCCACATCCAGGTGCCCCAAAAGTTTTTCGCCATCAAGAGCCTCCTGCTCCT
GCCCGGGTCCTACACCTACGAGTGGAACTTCCGCAAGGACGTCAACATGATCCTGCAGAGCTCCCTCGGCAACGACCTGCGCA
CGGACGGGGCCTCCATCGCCTTCACCAGCATCAACCTCTACGCCACCTTCTTCCCCATGGCGCACAACACCGCCTCCACGCTCG
AGGCCATGCTGCGCAACGACACCAACGACCAGTCCTTCAACGACTACCTCTCGGCGGCCAACATGCTCTACCCCATCCCGGCCA
ACGCCACCAACGTGCCCATCTCCATCCCCTCGCGCAACTGGGCCGCCTTCCGCGGCTGGTCCTTCACGCGCCTCAAGACCCGCG
AGACGCCCTCGCTCGGCTCCGGGTTCGACCCCTACTTCGTCTACTCGGGCTCCATCCCCTACCTCGACGGCACCTTCTACCTCAA
CCACACCTTCAAGAAGGTCTCCATCACCTTCGACTCCTCCGTCAGCTGGCCCGGCAACGACCGCCTCCTGACGCCCAACGAGTT
CGAAATCAAGCGCACCGTCGACGGAGAGGGGTACAACGTGGCCCAGTGCAACATGACCAAGGACTGGTTCCTGGTCCAGATG
CTGGCCCACTACAACATCGGCTACCAGGGCTTCTACGTGCCCGAGGGCTACAAGGACCGCATGTACTCCTTCTTCCGCAACTTC
CAGCCCATGAGCCGCCAGGTCGTGGACGAGGTCAACTACAAGGACTACCAGGCCGTCACCCTGGCCTACCAGCACAACAACTC
GGGCTTCGTCGGCTACCTCGCGCCCACCATGCGCCAGGGCCAGCCCTACCCCGCCAACTACCCCTACCCGCTCATCGGCAAGA
GCGCCGTCGCCAGCGTCACCCAGAAAAAGTTCCTCTGCGACCGGGTCATGTGGCGCATCCCCTTCTCCAGCAACTTCATGTCCA
TGGGCGCGCTCACCGACCTCGGCCAGAACATGCTCTACGCCAACTCCGCCCACGCGCTAGACATGAATTTCGAAGTCGACCCC
ATGGATGAGTCCACCCTTCTCTATGTTGTCTTCGAAGTCTTCGACGTCGTCCGAGTGCACCAGCCCCACCGCGGCGTCATCGAG
GCCGTCTACCTGCGCACGCCCTTCTCGGCCGGCAACGCCACCACCTAAGCCTCTTGCTTCTTGCAAGATGACGGCCTGCGCGGG
CTCCGGCGAGCAGGAGCTCAGGGCCATCCTCCGCGACCTGGGCTGCGGGCCCTGCTTCCTGGGCACCTTCGACAAGCGCTTCC
CGGGATTCATGGCCCCGCACAAGCTGGCCTGCGCCATCGTCAACACGGCCGGCCGCGAGACCGGGGGCGAGCACTGGCTGG
CCTTCGCCTGGAACCCGCGCTCCCACACCTGCTACCTCTTCGACCCCTTCGGGTTCTCGGACGAGCGCCTCAAGCAGATCTACC
AGTTCGAGTACGAGGGCCTGCTGCGTCGCAGCGCCCTGGCCACCGAGGACCGCTGCGTCACCCTGGAAAAGTCCACCCAGAC
CGTGCAGGGTCCGCGCTCGGCCGCCTGCGGGCTCTTCTGCTGCATGTTCCTGCACGCCTTCGTGCACTGGCCCGACCGCCCCAT
GGACAAGAACCCCACCATGAACTTGCTGACGGGGGTGCCCAACGGCATGCTCCAGTCGCCCCAGGTGGAACCCACCCTGCGC
CGCAACCAGGAGGCGCTCTACCGCTTCCTCAACGCCCACTCCGCCTACTTTCGCTCCCACCGCGCGCGCATCGAGAAGGCCACC
GCCTTCGACCGCATGAATCAAGACATGTAATCCGGTGTGTGTATGTGAATGCTTTATTCATCATAATAAACAGCACATGTTTAT
GCCACCTTCTCTGAGGCTCTGACTTTATTTAGAAATCGAAGGGGTTCTGCCGGCTCTCGGCATGGCCCGCGGGCAGGGATACG
TTGCGGAACTGGTACTTGGGCAGCCACTTGAACTCGGGGATCAGCAGCTTCGGCACGGGGAGGTCGGGGAACGAGTCGCTCC
ACAGCTTGCGCGTGAGTTGCAGGGCGCCCAGCAGGTCGGGCGCGGAGATCTTGAAATCGCAGTTGGGACCCGCGTTCTGCGC
GCGAGAGTTACGGTACACGGGGTTGCAGCACTGGAACACCATCAGGGCCGGGTGCTTCACGCTCGCCAGCACCGTCGCGTCG
GTGATGCCCTCCACGTCCAGATCCTCGGCGTTGGCCATCCCGAAGGGGGTCATCTTGCAGGTCTGCCGCCCCATGCTGGGCAC
GCAGCCGGGCTTGTGGTTGCAATCGCAGTGCAGGGGGATCAGCATCATCTGGGCCTGCTCGGAGCTCATGCCCGGGTACATG
GCCTTCATGAAAGCCTCCAGCTGGCGGAAGGCCTGCTGCGCCTTGCCGCCCTCGGTGAAGAAGACCCCGCAGGACTTGCTAGA
GAACTGGTTGGTGGCGCAGCCAGCGTCGTGCACGCAGCAGCGCGCGTCGTTGTTGGCCAGCTGCACCACGCTGCGCCCCCAG
CGGTTCTGGGTGATCTTGGCCCGGTCGGGGTTCTCCTTCAGCGCGCGCTGCCCGTTCTCGCTCGCCACATCCATCTCGATCGTG
TGCTCCTTCTGGATCATCACGGTCCCGTGCAGGCACCGCAGCTTGCCCTCGGCCTCGGTGCACCCGTGCAGCCACAGCGCGCA
GCCGGTGCTCTCCCAGTTCTTGTGGGCGATCTGGGAGTGCGAGTGCACGAAGCCCTGCAGGAAGCGGCCCATCATCGTGGTC
AGGGTCTTGTTGCTGGTGAAGGTCAGCGGAATGCCGCGGTGCTCCTCGTTCACATACAGGTGGCAGATACGGCGGTACACCTC
GCCCTGCTCGGGCATCAGCTGGAAGGCGGACTTCAGGTCGCTCTCCACGCGGTACCGGTCCATCAGCAGCGTCATCACTTCCA
TGCCCTTCTCCCAGGCCGAAACGATCGGCAGGCTCAGGGGGTTCTTCACCGTTGTCATCTTAGTCGCCGCCGCCGAAGTCAGG
GGGTCGTTCTCGTCCAGGGTCTCAAACACTCGCTTGCCGTCCTTCTCGGTGATGCGCACGGGGGGGAAAGCTGAAGCCCACGGC
CGCCAGCTCCTCCTCGGCCTGCCTTTCGTCCTCGCTGTCCTGGCTGATGTCTTGCAAAGGCACATGCTTGGTCTTGCGGGGTTTC
TTTTTGGGCGGCAGAGGCGGCGGCGGAGACGTGCTGGGCGAGCGCGAGTTCTCGCTCACCACGACTATTTCTTCTCCTTGGCC
GTCGTCCGAGACCACGCGGCGGTAGGCATGCCTCTTCTGGGGCAGAGGCGGAGGCGACGGGCTCTCGCGGTTCGGCGGGCG
GCTGGCAGAGCCCCTTCCGCGTTCGGGGGTGCGCTCCTGGCGGCGCTGCTCTGACTGACTTCCTCCGCGGCCGGCCATTGTGT
TCTCCTAGGGAGCAAGCATGGAGACTCAGCCATCGTCGCCAACATCGCCATCTGCCCCCGCCGCCGCCGACGAGAACCAGCAG
CAGCAGAATGAAAGCTTAACCGCCCCGCCGCCCAGCCCCACCTCCGACGCCGCAGCCCCAGACATGCAAGAGATGGAGGAAT
CCATCGAGATTGACCTGGGCTACGTGACGCCCGCGGAGCACGAGGAGGAGCTGGCAGCGCGCTTTTCAGCCCCGGAAGAGA
ACCACCAAGAGCAGCCAGAGCAGGAAGCAGAGAGCGAGCAGAACCAGGCTGGGCTCGAGCATGGCGACTACCTGAGCGGG
GCAGAGGACGTGCTCATCAAGCATCTGGCCCGCCAATGCATCATCGTCAAGGACGCGCTGCTCGACCGCGCCGAGGTGCCCCT
CAGCGTGGCGGAGCTCAGCCGCGCCTACGAGCGCAACCTCTTCTCGCCGCGCGTGCCCCCCAAGCGCCAGCCCAACGGCACCT

Fig. 27G

GCGAGCCCAACCCGCGCCTCAACTTCTACCCGGTCTTCGCGGTGCCCGAGGCCCTGGCCACCTACCACCTCTTTTTCAAGAACC
AAAGGATCCCCGTCTCCTGCCGCGCCAACCGCACCCGCGCCGACGCCCTGCTCAACCTGGGCCCCGGCGCCCGCCTACCTGAT
ATCGCCTCCTTGGAAGAGGTTCCCAAGATCTTCGAGGGTCTGGGCAGCGACGAGACTCGGGCCGCGAACGCTCTGCAAGGAA
GCGGAGAGGAGCATGAGCACCACAGCGCCCTGGTGGAGTTGGAAGGCGACAACGCGCGCCTGGCGGTCCTCAAGCGCACGG
TCGAGCTGACCCACTTCGCCTACCCGGCGCTCAACCTGCCCCCCAAGGTCATGAGCGCCGTCATGGACCAGGTGCTCATCAAG
CGCGCCTCGCCCCTCTCGGAGGAGGAGATGCAGGACCCCGAGAGCTCGGACGAGGGCAAGCCCGTGGTCAGCGACGAGCAG
CTGGCGCGCTGGCTGGGAGCGAGTAGCACCCCCCAGAGCCTGGAAGAGCGGCGCAAGCTCATGATGGCCGTGGTCCTGGTG
ACCGTGGAGCTGGAGTGTCTGCGCCGCTTCTTCGCCGACGCGGAGACCCTGCGCAAGGTCGAGGAGAACCTGCACTACCTCTT
CAGACACGGGTTCGTGCGCCAGGCCTGCAAGATCTCCAACGTGGAGCTGACCAACCTGGTCTCCTACATGGGCATCCTGCACG
AGAACCGCCTGGGGCAGAACGTGCTGCACACCACCCTGCGCGGGGAGGCCCGCCGCGACTACATCCGCGACTGCGTCTACCT
GTACCTCTGCCACACCTGGCAGACGGGCATGGGCGTGTGGCAGCAGTGCCTGGAGGAGCAGAACCTGAAAGAGCTCTGCAA
GCTCCTGCAGAAGAACCTCAAGGCCCTGTGGACCGGGTTCGACGAGCGCACCACCGCCGCGGACCTGGCCGACCTCATCTTCC
CCGAGCGCCTGCGGCTGACGCTGCGCAACGGGCTGCCCGACTTTATGAGCCAAAGCATGTTGCAAAACTTTCGCTCTTTCATCC
TCGAACGCTCCGGGATCCTGCCCGCCACCTGCTCCGCGCTGCCCTCGGACTTCGTGCCGCTGACCTTCCGCGAGTGCCCCCCGC
CGCTCTGGAGCCACTGCTACCTGCTGCGCCTGGCCAACTACCTGGCCTACCACTCGGACGTGATCGAGGACGTCAGCGGCGAG
GGCCTGCTCGAGTGCCACTGCCGCTGCAACCTCTGCACGCCGCACCGCTCCCTGGCCTGCAACCCCCAGCTGCTGAGCGAGAC
CCAGATCATCGGCACCTTCGAGTTGCAAGGCCCCGGCGAGGGCAAGGGGGGTCTGAAACTCACCCCGGGGCTGTGGACCTCG
GCCTACTTGCGCAAGTTCGTGCCCGAGGACTACCATCCCTTCGAGATCAGGTTCTACGAGGACCAATCCCAGCCGCCCAAGGC
CGAGCTGTCGGCCTGCGTCATCACCCAGGGGGCCATCCTGGCCCAATTGCAAGCCATCCAGAAATCCCGCCAAGAATTTCTGC
TGAAAAAGGGCCACGGGGTCTACTTGGACCCCCAGACCGGAGAGGAGCTCAACCCCAGCTTCCCCCAGGATGCCCCGAGGAA
GCAGCAAGAAGCTGAAAGTGGAGCTGCCGCCGCCGCCGGAGGATTTGGAGGAAGACTGGGAGAGCAGTCAGGCAGAGGAG
GAGGAGATGGAAGACTGGGACAGCACTCAGGCAGAGGAGGACAGCCTGCAAGACAGTCTGGAGGAGGAAGACGAGGTGG
AGGAGGCAGAGGAAGAAGCAGCCGCCGCCAGACCGTCGTCCTCGGCGGAGGAGGAGAAAGCAAGCAGCACGGATACCATC
TCCGCTCCGGGTCGGGGTCGCGGCGGCCGGGCCCACAGTAGATGGGACGAGACCGGGCGCTTCCCGAACCCCACCACCCAGA
CCGGTAAGAAGGAGCGGCAGGGATACAAGTCCTGGCGGGGGCACAAAAACGCCATCGTCTCCTGCTTGCAAGCCTGCGGGG
GCAACATCTCCTTCACCCGGCGCTACCTGCTCTTCCACCGCGGGGTGAACTTCCCCCGCAACATCTTGCATTACTACCGTCACCT
CCACAGCCCCTACTACTGTTTCCAAGAAGAGGCAGAAACCCAGCAGCAGCAGCAGCAGCAGAAAACCAGCGGCAGCAGCTAG
AAAATCCACAGCGGCGGCAGGTGGACTGAGGATCGCGGCGAACGAGCCGGCGCAGACCCGGGAGCTGAGGAACCGGATCTT
TCCCACCCTCTATGCCATCTTCCAGCAGAGTCGGGGGCAAGAGCAGGAACTGAAAGTCAAGAACCGTTCTCTGCGCTCGCTCA
CCCGCAGTTGTCTGTATCACAAGAGCGAAGACCAACTTCAGCGCACTCTCGAGGACGCCGAGGCTCTCTTCAACAAGTACTGC
GCGCTCACTCTTAAAGAGTAGCCCGCGCCCGCCCACACACGGAAAAAGGCGGGAATTACGTCACCACCTGCGCCCTTCGCCCG
ACCATCATCATGAGCAAAGAGATTCCCACGCCTTACATGTGGAGCTACCAGCCCCAGATGGGCCTGGCCGCCGGCGCCGCCCA
GGACTACTCCACCCGCATGAACTGGCTCAGTGCCGGGCCCGCGATGATCTCACGGGTGAATGACATCCGCGCCCACCGAAACC
AGATACTCCTAGAACAGTCAGCGATCACCGCCACGCCCCGCCATCACCTTAATCCGCGTAATTGGCCCGCCGCCCTGGTGTACC
AGGAAATTCCCCAGCCCACGACCGTACTACTTCCGCGAGACGCCCAGGCCGAAGTCCAGCTGACTAACTCAGGTGTCCAGCTG
GCCGGCGGCGCCGCCCTGTGTCGTCACCGCCCCGCTCAGGGTATAAAGCGGCTGGTGATCCGAGGCAGAGGCACACAGCTCA
ACGACGAGGTGGTGAGCTCTTCGCTGGGTCTGCGACCTGACGGAGTCTTCCAACTCGCCGGATCGGGGAGATCTTCCTTCACG
CCTCGTCAGGCCGTCCTGACTTTGGAGAGTTCGTCCTCGCAGCCCCGCTCGGGTGGCATCGGCACTCTCCAGTTCGTGGAGGA
GTTCACTCCCTCGGTCTACTTCAACCCCTTCTCCGGCTCCCCCGGCCACTACCCGGACGAGTTCATCCCGAACTTCGACGCCATC
AGCGAGTCGGTGGACGGCTACGATTGAATGTCCCATGGTGGCGCGGCTGACCTAGCTCGGCTTCGACACCTGGACCACTGCC
GCCGCTTCCGCTGCTTCGCTCGGGATCTCGCCGAGTTTGCCTACTTTGAGCTGCCCGAGGAGCACCCTCAGGGCCCGGCCCAC
GGAGTGCGGATCGTCGTCGAAGGGGGTCTCGACTCCCACCTGCTTCGGATCTTCAGCCAGCGTCCGATCCTGGCCGAGCGCG
AGCAAGGACAGACCCTTCTGACCCTGTACTGCATCTGCAACCACCCCGGCCTGCATGAAAGTCTTTGTTGTCTGCTGTGTACTG
AGTATAATAAAAGCTGAGATCAGCGACTACTCCGGACTTCCGTGTGTTCCTGCTATCAACCAGTCCCTGTTCTTCACCGGGAAC
GAGACCGAGCTCCAGCTCCAGTGTAAGCCCCACAAGAAGTACCTCACCTGGCTGTTCCAGGGCTCTCCGATCGCCGTTGTCAA
CCACTGCGACAACGACGGAGTCCTGCTGAGCGGCCCTGCCAACCTTACTTTTTCCACCCGCAGAAGCAAGCTCCAGCTCTTCCA
ACCCTTCCTCCCCGGGACCTATCAGTGCGTCTCGGGACCCTGCCATCACACCTTCCACCTGATCCCGAATACCACAGCGTCGCTC
CCCGCTACTAACAACCAAACTACCCACCAACGCCACCGTCGCGACCGCGGACATGTACAGAGCTCGAGAAGTACTAGGCCACA
ATACATGCCCATATTAGACTATGAGGCCGAGCCACAGCGACCCATGCTCCCCGCTATTAGTTACTTCAATCTAACCGGCGGAGA
TGACTGACCCACTGGCCAACAACAACGTCAACGACCTTCTCCTGGACATGGACGGCCGCGCCTCGGAGCAGCGACTCGCCCAA
CTTCGCATTCGCCAGCAGCAGGAGAGAGCCGTCAAGGAGCTGCAGGACGGCATAGCCATCCACCAGTGCAAGAAAGGCATCT

Fig. 27H

TCTGCCTGGTGAAACAGGCCAAGATCTCCTACGAGGTCACCCCGACCGACCATCGCCTCTCCTACGAGCTCCTGCAGCAGCGCC
AGAAGTTCACCTGCCTGGTCGGAGTCAACCCCATCGTCATCACCCAGCAGTCGGGCGATACCAAGGGGTGCATCCACTGCTCC
TGCGACTCCCCCGACTGCGTCCACACTCTGATCAAGACCCTCTGCGGCCTCCGCGACCTCCTCCCCATGAACTAATCACCCCCTT
ATCCAGTGAAATAAATATCATATTGATGATGATTTAAATAAAAAATAATCATTTGATTTGAAATAAAGATACAATCATATTGATG
ATTTGAGTTTTAAAAAATAAAGAATCACTTACTTGAAATCTGATACCAGGTCTCTGTCCATGTTTTCTGCCAACACCACCTCACTC
CCCTCTTCCCAGCTCTGGTACTGCAGACCCCGGCGGGCTGCAAACTTCCTCCACACGCTGAAGGGGATGTCAAATTCCTCCTGT
CCCTCAATCTTCATTTTATCTTCTATCAGATGTCCAAAAAGCGCGTCCGGGTGGATGATGACTTCGACCCCGTCTACCCCTACGA
TGCAGACAACGCACCGACCGTGCCCTTCATCAACCCCCCCTTCGTCTCTTCAGATGGATTCCAAGAGAAGCCCCTGGGGGTGCT
GTCCCTGCGACTGGCTGACCCCGTCACCACCAAGAACGGGGAAATCACCCTCAAGCTGGGAGAGGGGGTGGACCTCGACTCC
TCGGGAAAACTCATCTCCAACACGGCCACCAAGGCCGCCGCCCCTCTCAGTTTTTCCAACAACACCATTTCCCTTAACATGGATA
CCCCTCTTTATACCAAAGATGGAAAATTATCCTTACAAGTTTCTCCACCGTTAAACATATTAAAATCAACCATTCTGAACACATTA
GCTGTAGCTTATGGATCAGGTTTAGGACTGAGTGGTGGCACTGCTCTTGCAGTACAGTTGGCCTCTCCACTCACTTTTGATGAA
AAAGGAAATATTAAAATTAACCTAGCCAGTGGTCCATTAACAGTTGATGCAAGTCGACTTAGTATCAACTGCAAAAGAGGGGT
CACTGTCACTACCTCAGGAGATGCAATTGAAAGCAACATAAGCTGGCCTAAAGGTATAAGATTTGAAGGTAATGGCATAGCTG
CAAACATTGGCAGAGGATTGGAATTTGGAACCACTAGTACAGAGACTGATGTCACAGATGCATACCCAATTCAAGTTAAATTG
GGTACTGGCCTTACCTTTGACAGTACAGGCGCCATTGTTGCTTGGAACAAAGAGGATGATAAACTTACATTATGGACCACAGC
CGACCCCTCGCCAAATTGCAAAATATACTCTGAAAAAGATGCCAAACTCACACTTTGCTTGACAAAGTGTGGAAGTCAAATTCT
GGGTACTGTGACTGTATTGGCAGTGAATAATGGAAGTCTCAACCCAATCACAAACACAGTAAGCACTGCACTCGTCTCCCTCAA
GTTTGATGCAAGTGGAGTTTTGCTAAGCAGCTCCACATTAGACAAAGAATATTGGAACTTCAGAAAGGGAGATGTTACACCTG
CTGAGCCCTATACTAATGCTATAGGTTTTATGCCTAACATAAAGGCCTATCCTAAAAACACATCTGCAGCTTCAAAAAGCCATAT
TGTCAGTCAAGTTTATCTCAATGGGGATGAGGCCAAACCACTGATGCTGATTATTACTTTTAATGAAACTGAGGATGCAACTTG
CACCTACAGTATCACTTTTCAATGGAAATGGGATAGTACTAAGTACACAGGTGAAACACTTGCTACCAGCTCCTTCACCTTCTCC
TACATCGCCCAAGAATGAACACTGTATCCCACCCTGCATGCCAACCCTTCCCACCCCACTCTGTCTATGGAAAAAACTCTGAAGC
ACAAAATAAAATAAAGTTCAAGTGTTTTATTGATTCAACAGTTTTACAGGATTCGAGCAGTTATTTTTCCTCCACCCTCCCAGGA
CATGGAATACACCACCCTCTCCCCCCGCACAGCCTTGAACATCTGAATGCCATTGGTGATGGACATGCTTTTGGTCTCCACGTTC
CACACAGTTTCAGAGCGAGCCAGTCTCGGGTCGGTCAGGGAGATGAAACCCTCCGGGCACTCCCGCATCTGCACCTCACAGCT
CAACAGCTGAGGATTGTCCTCGGTGGTCGGGATCACGGTTATCTGGAAGAAGCAGAAGAGCGGCGGTGGGAATCATAGTCC
GCGAACGGGATCGGCCGGTGGTGTCGCATCAGGCCCCGCAGCAGTCGCTGCCGCCGCCGCTCCGTCAAGCTGCTGCTCAGGG
GGTCCGGGTCCAGGGACTCCCTCAGCATGATGCCCACGGCCCTCAGCATCAGTCGTCTGGTGCGGCGGGCGCAGCAGCGCAT
GCGGATCTCGCTCAGGTCGCTGCAGTACGTGCAACACAGGACCACCAGGTTGTTCAACAGTCCATAGTTCAACACGCTCCAGC
CGAAACTCATCGCGGGAAGGATGCTACCCACGTGGCCGTCGTACCAGATCCTCAGGTAAATCAAGTGGCGCTCCCTCCAGAAC
ACGCTGCCCACGTACATGATCTCCTTGGGCATGTGGCGGTTCACCACCTCCCGGTACCACATCACCCTCTGGTTGAACATGCAG
CCCCGGATGATCCTGCGGAACCACAGGGCCAGCACCGCCCCGCCCGCCATGCAGCGAAGAGACCCCGGGTCCCGGCAATGGC
AATGGAGGACCCACCGCTCGTACCCGTGGATCATCTGGGAGCTGAACAAGTCTATGTTGGCACAGCACAGGCATATGCTCATG
CATCTCTTCAGCACTCTCAGCTCCTCGGGGGTCAAAACCATATCCCAGGGCACGGGGAACTCTTGCAGGACAGCGAACCCCGC
AGAACAGGGCAATCCTCGCACATAACTTACATTGTGCATGGACAGGGTATCGCAATCAGGCAGCACCGGGTGATCCTCCACCA
GAGAAGCGCGGGTCTCGGTCTCCTCACAGCGTGGTAAGGGGGCCGGCCGATACGGGTGATGGCGGGACGCGGCTGATCGTG
TTCGCGACCGTGTCATGATGCAGTTGCTTTCGGACATTTTCGTACTTGCTGTAGCAGAACCTGGTCCGGGCGCTGCACACCGAT
CGCCGGCGGCGGTCCCGGCGCTTGGAACGCTCGGTGTTGAAATTGTAAAACAGCCACTCTCTCAGACCGTGCAGCAGATCTAG
GGCCTCAGGAGTGATGAAGATCCCATCATGCCTGATAGCTCTGATCACATCGACCACCGTGGAATGGGCCAGACCCAGCCAGA
TGATGCAATTTTGTTGGGTTTCGGTGACGGCGGGGGAGGGAAGAACAGGAAGAACCATGATTAACTTTTAATCCAAACGGTC
TCGGAGCACTTCAAAATGAAGGTCGCGGAGATGGCACCTCTCGCCCCCGCTGTGTTGGTGGAAAATAACAGCCAGGTCAAAG
GTGATACGGTTCTCGAGATGTTCCACGGTGGCTTCCAGCAAAGCCTCCACGCGCACATCCAGAAACAAGACAATAGCGAAAGC
GGGAGGGTTCTCTAATTCCTCAATCATCATGTTACACTCCTGCACCATCCCCAGATAATTTTCATTTTTCCAGCCTTGAATGATTC
GAACTAGTTCCTGAGGTAAATCCAAGCCAGCCATGATAAAGAGCTCGCGCAGAGCGCCCTCCACCGGCATTCTTAAGCACACC
CTCATAATTCCAAGATATTCTGCTCCTGGTTCACCTGCAGCAGATTGACAAGCGGAATATCAAAATCTCTGCCGCGATCCCTAA
GCTCCTCCCTCAGCAATAACTGTAAGTACTCTTTCATATCCTCTCCGAAATTTTTAGCCATAGGACCACCAGGAATAAGATTAGG
GCAAGCCACAGTACAGATAAACCGAAGTCCTCCCCAGTGAGCATTGCCAAATGCAAGACTGCTATAAGCATGCTGGCTAGACC
CGGTGATATCTTCCAGATAACTGGACAGAAAATCACCCAGGCAATTTTTAAGAAAATCAACAAAAGAAAAATCCTCCAGGTGC
ACGTTTAGAGCCTCGGGAACAACGATGAAGTAAATGCAAGCGGTGCGTTCCAGCATGGTTAGTTAGCTGATCTGTAAAAAACA
AAAAATAAAACATTAAACCATGCTAGCCTGGCGAACAGGTGGGTAAATCGTTCTCTCCAGCACCAGGCAGGCCACGGGGTCTC
CGGCGCGACCCTCGTAAAAATTGTCGCTATGATTGAAAACCATCACAGAGAGACGTTCCCGGTGGCCGGCGTGAATGATTCGA
CAAGATGAATACACCCCCGGAACATTGGCGTCCGCGAGTGAAAAAAAGCGCCCGAGGAAGCAATAAGGCACTACAATGCTCA
GTCTCAAGTCCAGCAAAGCGATGCCATGCGGATGAAGCACAAAATCCTCAGGTGCGTACAAAATGTAATTACTCCCCTCCTGC
ACAGGCAGCGAAGCCCCCGATCCCTCCAGATACACATACAAAGCCTCAGCGTCCATAGCTTACCGAGCAGCAGCACACAACAG
GCGCAAGAGTCAGAGAAAGGCTGAGCTCTAACCTGTCCACCCGCTCTCTGCTCAATATATAGCCCAGATCTACACTGACGTAA
AGGCCAAAGTCTAAAAATACCCGCCAAATAATCACACACGCCCAGCACACGCCCAGAAACCGGTGACACACTCAAAAAAATAC
GCGCACTTCCTCAAACGCCCAAACTGCCGTCATTTCCGGGTTCCCACGCTACGTCATCGGAATTCGACTTTCAAATTCCGTCGAC
CGTTAAAAACGTCACCCGCCCCGCCCCTAACGGTCGCCCGTCTCTCGGCCAATCACCTTCCTCCCTCCCCAAATTCAAACAGCTC
ATTTGCATATTAACGCGCACCAAAAGTTTGAGGTATATTATTGATGATG

Fig. 27I

AdC7 010-DU422gp160(E1623) Amino acids – SEQ ID NO: 16
The symbol " * " refers herein to stop codons in the non coding regions

HHQ*YTSNFWCALICK*AV*IWGGRKVIGRETGDR*GRGG*RFDDVAVRRSRFASSRGKSDVKRGVV*TRKYSIFPRSLTGNEVFLG
GCK*KRAIFARKLNEEVKI*VISRLWQGGVFAEGRVDFDRLRGGFDYRIFHLNFRVRCQSPVFLRTISFPRKCHLTVTITVLR*RKLRSP
DPLWCTLSTICSDAA*LSQYLLPACVLEVAE*CASKI*ATTRQGLTDNCMKNLLRVRRFALLRDVRARYTR*H*LLTSMPSTPPIDVND
GKWPAWHYAQYMTLWDFPTWQYIYVLVIAITMVMRFWQYINGRG*RFDSRGFPSLHPIDVNGSLFWHQNQRDFPKCRNNSAP
LTQMGGRRVRWEVYISRARLVNRQITRSFIAVVYHS*IANAVSASDTTVSNLRLEFDATMRVRGIPRNWPQWWIWGILGFWMIIIC
RVVGNLDLWVTVYYGVPVWKEAKTTLFCASDAKAYDKEVHNVWATHACVPTDPNPQEIVLENVTENFNMWKNDMVDQMHED
IISLWDQSLKPCVKLTPLCVTLNCKNVNISANANATATLNSSMNGEIKNCSFNTTTELRDKKQKVYALFYKPDVVPLNGGEHNETGEY
ILINCNSSTITQACPKVSFDPIPIHYCAPAGYAILKCNNKTFNGTGPCNNVSTVQCTHGIKPVVSTQLLLNGSLAEEEIIVRSENLTNNIKT
IIVHLNKSVEIKCTRPNNNTRKSVRIGPGQTFYATGEIIGDIREAHCNISRETWNSTLIQVKEKLREHYNKTIKFEPSSGGDLEVTTHSFN
CRGEFFYCDTTKLFNETKLFNESEYVDNKTIILPCRIKQIINMWQEVGRAMYAPPIEGNITCKSNITGLLLTWDGGENSTEGVFRPGG
GNMKDNWRSELYKYKVVEIKPLGVAPTKSKRKVVGREKRAVGLGAVLLGFLGAAGSTMGAASITLTVQARQLLSGIVQQQSNLLRA
IEAQQHLLQLTVWGIKQLQTRVLAIERYLKDQQLLGLWGCSGKLICATAVPWNSSWSNKSLGDIWDNMTWMQWDREISNYTNTI
FRLLEDSQNQQEKNEKDLLALDSWKNLWNWFDITNWLWYIKIFIMIVGGLIGLRIIFGVLAIVKRVRQGYSPLSFQTLIPNPRGPDRL
GRIEEEGGEQDKDRSIRLVSGFLALAWDDLRSLCLFSYHQLRDFILTAARAAELLGRSSLRGLQRGWEVLKYLGNLVQYWGLELKRSAI
NLFDTIAIAVAEGTDRIIEVIQRICRAIRYIPTRIRQGFEAALL*GTSRVDPGGQTADQPRLCLLVASHLLFAPPPCLP*PWKVPLPLSFPN
KMRKLHRIV*VGVILFWGVGWGRTARGRIGKTIAGMLGMRWALWLLRRKEPADLQI*IHLCRVRRKR**NGIMGIMGLH**IGQI
SICWPPCM*PRTPARHGPSSSTTS*PDAMCTWGPAEACSCPTSATCNL*RCCWSPMPCPE*A*RGCLT*MWSCGKF*DMMNPR
PGAGPANAEASTPGFSPCVWR*RRTCDPIIWCCPATGRSSAPAGKNLTRVSSVWGRWRACMRGRMTKICVFLCVAAA*AEAPPL
REGYSALI*RGVSPPGRECVRM*WDPRWTAGPCSPRTLQP*PTRP*APRPWTQLPPQLLLPPPAPCAEWPWAPATTALWWPTRL
PPIIPPA*TRRSCCC*WPSSRP*PSAWAS*PSRWLSCRRRRGPRLPR*KPNKK*INK*TETVVDFNTES*IFI*FFARGRPWTTGLDH*
APGGFFPGPGRGGLGC*GTWA*ARPGGGGSSIAGPRARGWCCKSPSHSRGAGRGAARCP*GGD*WPRAAPWCRC*RTC*AGR
DACGGR*DASWPGS*DWRCSRPDPAGGSCCAGPPARCIRRTWGICHATWKGRRERIWRRPCDRPGFPCTHP**WRWARGRRP
GQRRFGGRTHRSCGPG*ARHRPF**IWGGGCPTGGRRCPRSRGRSCPRRSASPRP*ARRGGSCPPAGR*KKRFPGRGR*AGPKAG
SGAAGTCRSRWGRR*PR*PAAGGS*GRDSCRPRGGGGPPRSSSRAHACSRARVPPGGARPPARGALAARRSFSAA*XRRPWAF
WRGSVARVPDGPRAR*CALGHLDPADLLVSRVGATAGVGHQAMGVQRGQGPVLPGSQGPRQRGLRHGEGVRAGLGACEGAL
QAHPAGREPLPVGALRVGQVAIEHEFVVERLGRVALGAELTFGSVSADGTEEGLEGVELGGEEDGLGGVGVRAAAGADGLALHEP
GEVGPVGVKNEVSSVLFDAFLTSGLHELVSPLGDKEAVRVPVDRLYGPVLERGAAVLVVEEPRPLRDEGPGPGQHEGGHVGGVAV
VVHQRVHLLQGMQAHVPLVHIQEGDWLVSVGHVTGGPGRGGIKGGGPLLVLTVFRIAVQERQLLG*VFPLEGWHNLGTQVVSF*
KRGGFDIDGAVGDAFHEPLVHLVRKDDLFVVELGGEGAVEGVGEELGDGAHGLVLFLVGALLGGDVELHVLARHALPFGEDGGELV
GHDSDPPAAVVQGDEVHAGGHLAAQGLVGPAEAPALARAEGGQRVQHELVGGVGVHGEDAGQKLGVEVADAGVQIVQRRLPV
AHGQRALVGAEGRAPGHGVRERGGVHAADVVDVEGLLEDADVGGVAAPPADAGAHVVVQLVRGREEPRAEVGALRLFGAVDD
LAEDGVGVGGDGGPLEDVEVGVGQADRVPDEVGVGVLQLGDELGGDEDVQGAVVEGLLDDVVLELALLLPQLAVEKELFAVLPVL
FEGEPVLIGTVRAHHVELVDGLVGAAALLHGEGVSLCGLAQGGVGEGEGVAHHDLEELVLEVEVVAAALLPELEVRALLVGGVGQS
ESNIVEEDLARAGHEVASDAERLGHLGPVVDDLGGEDDLVEAVDVVPDDVEFHESRAALNVGQLLELVVGELGGVAEPVLLEGPVG
DVGVGAEEGSPEIHGQGGLQAVPVLTELLAHGHFFGGDAVEGAGVAVPAVPLELEGEVVGELDERRVPGEFHDQHEGDELLAEGP
HPGVGFHIVGEEEPFGARMRADGEELDLLPPVGGMAVDVMEVEMPTARRALVLVFIQASAVLATLHGMHVLHELYLGSFDEEFQ
WAVERWRLHLVLYYVLAIGVAIVCLDGGHADEPAREAGPDFGSDGSESEDEGAQAGAVQGPETLRSQVSGQRRRAVDLQELFQG
AREVQMVLDLHGAVGGDVHGLQGPVPLGRHHRAPFLLGRCFHAGQKRRRGRAPGGRGGSGPGGRGGRGTSAPRAGRFWYCAR
RRLA*ATTRRLTSWI*RLWVKATGPVSLNLKESSTESISVSLTAACRRISCTSPELSW*AISVMNCSISSS*RSPRPARSTVAARSLEMR
PMSCEKAFMPASFQTRL*TTAPSGSRARMTTWARLSSTWRVKTA*LQRRW*R*LSVVAMCSVTKKYMIQRRSGISLTSPRASKRS
MAS*KSTAKLKNWELRAETVNSSSRRRMSSAMVARTSRSKAPGGSSSSISSSSTNISSTSSSGGGGGGGALRRRRRTGRRSMKRSM
VSPRRRRMVSVTARPSSRGRSVKTPPRISRWPPGGSPLGRERALTMHLINWPVGTPRKDLSVSRSTGSENR*TKASSQSQSQGRLS
PVSCSSGISGGGRAMLLVMKLK*AVLRRRMVARSTRSLGPACWMRRRSAMPQAWS*HLARSL**SCMSRSTGTSSSPARPCMRV
SPNPRWGWTSARSATTRSARMACCIWVRVVWKSSKSTKRW*APVLMV*EQLAMTDQLTVWWPGRTSSWYLRRE*ARVSKM*
SLQVRTRYWYPTRKCGGGWR*SGHRSVAGAPGARSSSMRRW*P*MYLDIQVMPAAVVEARGNSRTRFQMLRSGRK*FMVAAV
WPVRRAQSWML*TYGQKRKRSAARLRGLEAKRTGWAARVPRFESRIRLEPQLTWYWHSRLDPSLLTKPPGYGGGSFFGLGRWS*
KTSKRGKRPPAMARCRSLEKESPGLRCGVPRFEPQRSAPAGFRG*RGRGCPVVSKTP*PADFSSYGASPSFSCVFARCIPYCGRCAPT
LHLNRPYRRSSSNSRRFCPRPSSSQPLPRRPP*AEPAFSMTWPWKRARGWRGWGRRRRSGTRACR*KGTLARPTCPSRTCSETGA

Fig. 27J

ARSPRRCAPPASTRGGSCGAAWTESGC*GTRISRRTS*RGSAPRARTWPRPTWSRRTSRP*RRRATSKNPSTTTCAR*SRARR*PW
A*CTCGTCWRPSCRTPRASR*RRSCFWWCSTVGTTRRSGRRC*ISPSPRAAGSWTW*TFCRASWCRSAGCRCPRSWRLSTSRC*A
WASTTLGRSTRPRTCP*TRR*RSTGFTCA*P*KC*P*ATIWGCTATTGCTAR*APAAGAS*ATRS*CTACSGP*PGPGPRGRATLTW
ARTCAGSPAAGPWKLPAVPPTWRRWTMRRRRASTWKTDGATVFLLDAATATAS*SRDAGGAAEPAVRH*LLGRLDPGHATHHG
ADDPQSRSL*TAASGQPALGHPGGRGALALEPHAREGAGHRERAGGEQGHPRRRGRAGVQRAAGARGPLQQHQRADEPGPHG
DRRARGGVAARAVPPRVEPGLHGGAERLPEHAARQRAPGPGGLHQLHQRAAADGGRGAPERGVPVGAGLLLPDQSPGLADREP
EPGFQELAGTVGRAGPGRGPRDGVEPADAELAPAAAAGGALHGQRQREPRLVPGLPA*PVPRGHRAGARGRADLPGDHPREPR
AGPGGPGQPGGHPELPADQPVAEDPAPVRAEHRGGAHPALRAAERGAVPDAGGGHAQRRARHDRAQHGAQHVRSQPPVHQ*
ADGLLASGGRHELGLLYQRHLEPALAPAARVLHGRVRHARPQRRVPVGRRGQQRVLAAPRHHRVEERGRGPAAVLGAVRSRGCC
RGGA*GRQPLPEPALFAEQRAQQRAGSADAAAPAGRGGVPERLLVEARAREELPQ*RDREPGGQDEPLEDVRARAQGRAPS*QQ
RRHP*TPATRQAAGSGVGR*GFRRRQQRVGLGWEWWW*PVRSLAPPYRAPDVRI*KNKKRYSPRPWRPACVLLCCL**YDEARV
PGGSSSLVRERDAAGGGGGDAAPAGGALRAPAVPGAYGGAEQHSLLGAGTLVRYHPVVPGGQQVGGHRLAELPERPQQLPDHR
GAEQRFHPHGGQHPDHQL*RALAVGRPAENHHAHQHAQRERVHVQQQVQGAGDGLAQDPQWGRGG*EL*W*SGRADLRV
GGV*AARGQLLGDHDHRSDEQRHHRQLLGGGASERGAGERHRREVRHAQLPAGLGPRDRAGDAGRVHQRGLPPRHRPAARLR
RGLHREPPQQPAGHPQAAALPGGLPDPVRGPGGGQHPRALGCRSL*EKQGGGRRSGDRSRGHRLYRGAGR*FC*RRGSGRGG*
NRK*DSHPAGGEGQQGQELQRARGQEKHRLPQLVPGLQLRRPREGRALLDAAHHLGRHLRRGASLLVAARHDARPGHLPLHASS
*QLPGGGRRAPARLLQELLQRAGRLLAAAARLHLAHARLQPLPREPDPRPPARAHHYHRQ*KRSCSHRSRDPAAAQQYPGSPARD
RH*RQTPHLPLRLQGPGRSRAARPLEPHLLKNVHSHLAQ**HRLGPARAQQDVRRRSPTLHATPRARARALPRSLGRPQGPRALAH
HRRRRDRPGGGRRAQLHARRRARLHRGRRHRQRGGRCAPVRPRQEPAAAHRPAAPEHPRHARGASLAAQGGQAHGTQGHAQG
GQTRGLRQQQRRQDPQTRGHGGGGGHRQHVPPAARQRVLGARRRHRCARARAHPPPSHLKMLTSRC*CVPAARRMSKRKYKE
EMLQVIAPEIYGPAVKEERKPRKLKRVKKDKKEEEDVDGLVEFVREFAPRRRVQWRGRKVKPVLRPGTTVVFTPGERSGSASKRSYD
EVYGDEDILEQAVERLGEFAYGKRSRPAPLKEEAVSIPLDHGNPTPSLKPVTLQQVLPSAAPRRGFKREGGEDLYPTMQLMVPKRQK
LEDVLEHMKVDPEVQPEVKVRPIKQVAPGLGVQTVDIKIPTEPMETQTEPVKPSTSTMEVQTDPWMPAPASTTRRRRKYGAASLL
MPNYALHPSIIPTPGYRGTRFYRGYTSSRRKTTTRRRRRTRRSSTATSAAALVRRVYRSGREPLTLPRARYHPSIAI*LCRRLLLADMA
LTCRLRVPITGYRGRKPRRRRLTGNGLRRHHHRRRRAISKRLGGGFLPALIPIIAAAIGAIPGIASVAVQASQRH*DTAWKICNKKMD*
RSWSCDVCF*MEDINFSSLAPRHGTRPFMGTWSDIGNSQLNGGAFNWSSLWSGLKNFGSTLKTYGNKAWNSSTGQALREKLKEQ
NFQQKVVDGLASGINGVVDLANQAVQKQINSRLDAVPPAGSVEMPQVEEELPPLDKRGDKRPRPDAEETLLTHTDEPPPYEEAVKL
GLPTTRPVAPLATGVLKPSSSSQPATLDLPPPASRPSTVAKPLPPVAVASRAPRGRPQANWQSTLNSIVGLGVQSVKRRRCY*KTL*R
LTCLSVCICMSADQKEEEARRRVARWPPHRCCPSGRTCTSPDRTLRST*VRVWCSSPAPQTPTSVWGTSLGTPRWRPRTM*PPTA
ASG*RCASCPWTARTTPTRTKCATRWPWATTACWTWPAPTLTSAACWIGGPASNPTPAPPTTAWLPRERPTLASGHIKLVILIQKK
PIHMEMHLCKALALQRMVFNLELTAMVRQSMQTKLINQSLKWVMLNGMTSLVLMKNMEAELLSLTPK*SLAMVLLPSLPIKKEAR
QM*KPKQAVPKNMTLTWHSSIIEVQLPPA*PQKLFCILRMWIWKLQIPILYTRQVQMTVALLSIWVSSPCPTDPTTLASETTLSV*CT
TTALAIWVYWLDRPPS*MLWWTCRTETPNCPTSSCLTLWVTEPGISVCGIRRWTVMTPMCALLKITVWRMNFLTIASPWMLWVE
LILTRELRPMVIIKPPGPKMILLMMLMNWARAILSPWRSTSRPTCGGTSSTRTWRCTCPTPTSTRRPTSRCPPTPTPTIT*TAAWWR
PRWWTPTSTSGRAGRWTPWTTSTPSTTTATRACDTAPCSWATGATCPSTSRCPKSFSPSRASCSCPGPTPTSGTSARTST*SCRAPS
ATTCARTGPPSPSPASTSTPPSSPWRTTPPPRSRPCCATTPTTSPSTTTSRRPTCSTPSRPTPPTCPSPSPRATGPPSAAGPSRASRPAR
RPRSAPGSTPTSSTRAPSPTSTAPSTSTTPSRRSPSPSTPPSAGPATTAS*RPTSSKSSAPSTERGTTWPSAT*PRTGSWSRCWPTTTS
ATRASTCPRATRTACTPSSATSSP*AARSWTRSTTRTTRPSPWPTSTTTRASSATSRPPCARASPTPPTTPTRSSARAPSPASPRKSSS
ATGSCGASPSPATSCPWARSPTSARTCSTPTPPTR*T*ISKSTPWMSPPFSMLSSKSSTSSECTSPTAASSRPSTCARPSRPATPPPKPL
ASCKMTACAGSGEQELRAILRDLGCGPCFLGTFDKRFPGFMAPHKLACAIVNTAGRETGGEHWLAFAWNPRSHTCYLFDPFGFSD
ERLKQIYQFEYEGLLRRSALATEDRCVTLEKSTQTVQGPRSAACGLFCCMFLHAFVHWPDRPMDKNPTMNLLTGVPNGMLQSPQV
EPTLRRNQEALYRFLNAHSAYFRSHRARIEKATAFDRMNQDM*SGVCM*MLYSS**TAHVYATFSEALTLFRNRRGSAGSRHGPRA
GIRCGTGTWAAT*TRGSAASARGGRGTSRSTACA*VAGRPAGRARRS*NRSWDPRSARESYGTRGCSTGTPSGPGASRSPAPSRR
*CPPRPDPRRWPSRRGSSCRSAAPCWARSRACGCNRSAGGSASSGPARSSCPGTWPS*KPPAGGRPAAPCRPR*RRPRRTC*RTG
WWRSQRRARSSARRCWPAAPRCAPSGSG*SWPGRGSPSARAARSRSPHPSRSCAPSGSSRSRAGTAACPRPRCTRAATARSRCSP
SSCGRSGSASARSPAGSGPSSWSGSCCW*RSAECRGAPRSHTGGRYGGTPRPARASAGRRTSGRSPRGTGPSAASSLPCPSPRPKR
SAGSGGSSPLSS*SPPPKSGGRSRPGSQTLACRPSR*CARGES*SPRPPAPPRPAFRPRCPG*CLAKAHAWSCGVSFWAAEAAAETC
WASASSRSPRLFLLLGRRPRPRGGRHASSGAEAEATGSRGSAGGWQSPFRVRGCAPGGAALTDFLRGRPLCSPREQAWRLSHRRQ
HRHLPPPPPTRTSSSRMKA*PPRRPAPPPTPQPQTCKRWRNPSRLTWAT*RPRSTRRSWQRAFQPRKRTTKSSQSRKQRASRTRL
GSSMATT*AGQRTCSSSIWPANASSSRTRCSTAPRCPSAWRSSAAPTSATSSRRACPPSASPTAPASPTRASTSTRSSRCPRPWPPTT
SFSRTKGSPSPAAPTAPAPTPCSTWAPAPAYLISPPWKRFPRSSRVWAATRLGPRTLCKEAERSMSTTAPWWSWKATTRAWRSSS

Fig. 27K

ARSS*PTSPTRRSTCPPRS*APSWTRCSSSAPRPSRRRRCRTPRARTRASPWSATSSWRAGWERVAPPRAWKSGASS*WPWSW*
PWSWSVCAASSPTRRPCARSRRTCTTSSDTGSCARPARSPTWS*PTWSPTWASCTRTAWGRTCCTPPCAGRPAATTSATASTCTS
ATPGRRAWACGSSAWRSRT*KSSASSCRRTSRPCGPGSTSAPPPRTWPTSSSPSACG*RCATGCPTL*AKACCKTFALSSSNAPGSC
PPPAPRCPRTSCR*PSASAPRRSGATATCCAWPTTWPTTRT*SRTSAARACSSATAAATSARRTAPWPATPSC*ARPRSSAPSSCKA
PARARGV*NSPRGCGPRPTCASSCPRTTIPSRSGSTRTNPSRPRPSCRPASSPRGPSWPNCKPSRNPAKNFC*KRATGSTWTPRPER
SSTPASPRMPRGSSKKLKVELPPPPEDLEEDWESSQAEEEEMEDWDSTQAEEDSLQDSLEEEDEVEEAEEEAAAARPSSSAEEEKAS
STDTISAPGRGRGGRAHSRWDETGRFPNPTTQTGKKERQGYKSWRGHKNAIVSCLQACGGNISFTRRYLLFHRGVNFPRNILHYYR
HLHSPYYCFQEEAETQQQQQQQKTSGSS*KIHSGGRWTEDRGERAGADPGAEEPDLSHPLCHLPAESGARAGTESQEPFSALAHP
QLSVSQERRPTSAHSRGRRGSLQQVLRAHS*RVARARPHTEKGGNYVTTCALRPTIIMSKEIPTPYMWSYQPQMGLAAGAAQDYS
TRMNWLSAGPAMISRVNDIRAHRNQILLEQSAITATPRHHLNPRNWPAALVYQEIPQPTTVLLPRDAQAEVQLTNSGVQLAGGAA
LCRHRPAQGIKRLVIRGRGTQLNDEVVSSSLGLRPDGVFQLAGSGRSSFTPRQAVLTLESSSSQPRSGGIGTLQFVEEFTPSVYFNPFS
GSPGHYPDEFIPNFDAISESVDGYD*MSHGGAADLARLRHLDHCRRFRCFARDLAEFAYFELPEEHPQGPAHGVRIVVEGGLDSHLL
RIFSQRPILAEREQGQTLLTLYCICNHPGLHESLCCLLCTEYNKS*DQRLLRTSVCSCYQPVPVLHRERDRAPAPV*APQEVPHLAVPG
LSDRRCQPLRQRRSPAERPCQPYFFHPQKQAPALPTLPPRDLSVRLGTLPSHLPPDPEYHSVAPRY*QPNYPPTPPSRPRTCTELEKY*
ATIHAHIRL*GRATATHAPRY*LLQSNRRR*LTHWPTTTSTTFSWTWTAAPRSSDSPNFAFASSRREPSRSCRTA*PSTSARKASSAW
*NRPRSPTRSPRPTIASPTSSCSSARSSPAWSESTPSSSPSSRAIPRGASTAPATPPTASTL*SRPSAASATSSP*TNHPLIQ*NKYHIDD
DLNKK*SFDLK*RYNHIDDLSFKK*RITYLKSDTRSLSMFSANTTSLPSSQLWYCRPRRAANFLHTLKGMSNSSCPSIFILSSIRCPKSAS
GWMMTSTPSTPTMQTTHRPCPSSTPPSSLQMDSKRSPWGCCPCDWLTPSPPRTGKSPSSWERGWTSTPRENSSPTRPPRPPPLS
VFPTTPFPLTWIPLFIPKMENYPYKFLHR*TY*NQPF*TH*L*LMDQV*D*VVALLLQYSWPLHSLLMKKEILKLT*PVVH*QLMQVD
LVSTAKEGSLSLPQEMQLKAT*AGLKV*DLKVMA*LQTLAEDWNLEPLVQRLMSQMHTQFKLNWVLALPLTVQAPLLLGTKRMIN
LHYGPQPTPRQIAKYTLKKMPNSHFA*QSVEVKFWVL*LYWQ*IMEVSTQSQTQ*ALHSSPSSLMQVEFC*AAPH*TKNIGTSERE
MLHLLSPILML*VLCLT*RPILKTHLQLQKAILSVKFISMGMRPNH*C*LLLLMKLRMQLAPTVSLFNGNGIVLSTQVKHLLPAPSPSPT
SPKNEHCIPPCMPTLPTPLCLWKKL*STK*NKVQVFY*FNSFTGFEQLFFLHPPRTWNTPPSPPAQP*TSECHW*WTCFWSPRSTQ
FQSEPVSGRSGR*NPPGTPASAPHSSTAEDCPRWSGSRLSGRSRRAAVGIIVRERDRPVVSHQAPQQSLPPPLRQAAAQGVRVQGL
PQHDAHGPQHQSSGAAGAAAHADLAQVAAVRATQDHQVVQQSIVQHAPAETHRGKDATHVAVVPDPQVNQVALPPEHAAHV
HDLLGHVAVHHLPVPHHPLVEHAAPDDPAEPQGQHRPARHAAKRPRVPAMAMEDPPLVPVDHLGAEQVYVGTAQAYAHASLQ
HSQLLGGQNHIPGHGELLQDSEPRRTGQSSHITYIVHGQGIAIRQHRVILHQRSAGLGLLTAW*GGRPIRVMAGRG*SCSRPCHDA
VAFGHFRTCCSRTWSGRCTPIAGGGPGAWNARC*NCKTATLSDRAADLGPQE**RSHHA**L*SHRPPWNGPDPAR*CNFVGFR
*RRGREEQEEP*LTFNPNGLGALQNEGRGDGTSRPRCVGGK*QPGQR*YGSRDVPRWLPAKPPRAHPETRQ*RKREGSLIPQSSC
YTPAPSPDNFHFSSLE*FELVPEVNPSQP**RARAERPPPAFLSTPS*FQDILLLVHLQQIDKRNIKISAAIPKLLPQQ*L*VLFHILSEIFS
HRTTRNKIRASHSTDKPKSSPVSIAKCKTAISMLARPGDIFQITGQKITQAIFKKINKRKILQVHV*SLGNNDEVNASGAFQHG*LADL*
KTKNKTLNHASLANRWVNRSLQHQAGHGVSGATLVKIVAMIENHHRETFPVAGVNDSTR*IHPRNIGVRE*KKAPEEAIRHYNAQS
QVQQSDAMRMKHKILRCVQNVITPLLHRQRSPRSLQIHIQSLSVHSLPSSSTQQAQESEKG*ALTCPPALCSIYSPDLH*RKGQSLKIP
AK*SHTPSTRPETGDTLKKIRALPQTPKLPSFPGSHATSSEFDFQIPSTVKNVTRPAPNGRPSLGQSPSSLPKFKQLICILTRTKSLRYIID
D