FIG. 1A

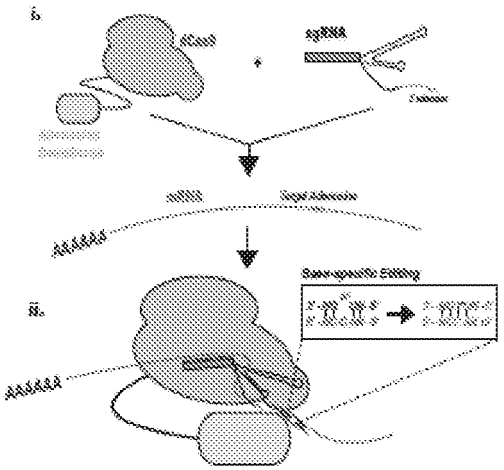


FIG. 1B

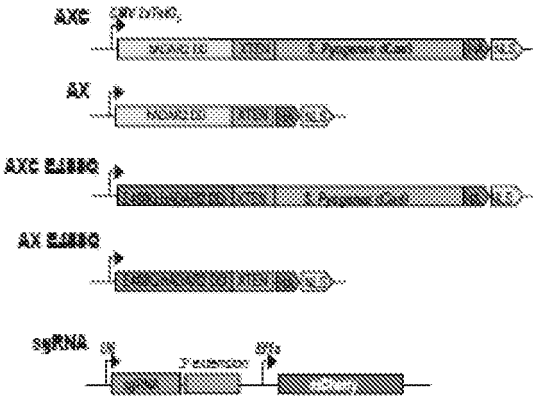


FIG. 1C

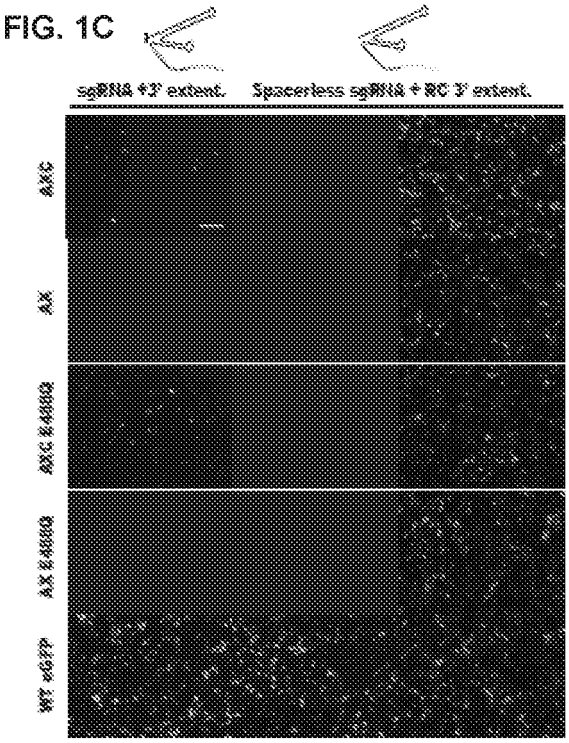
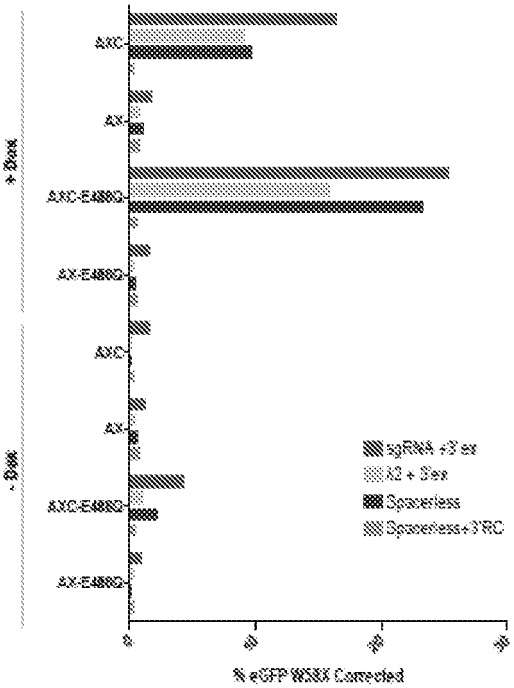


FIG. 1D



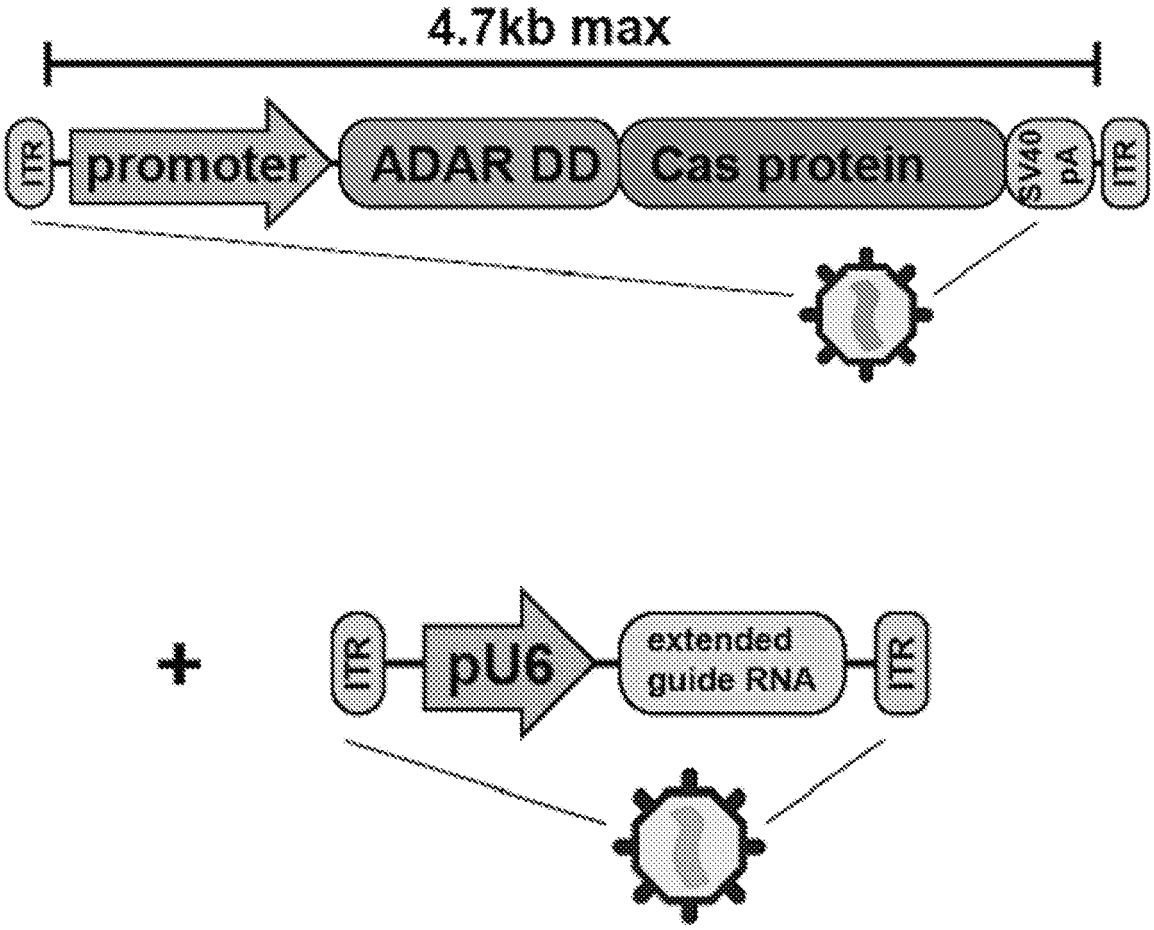

4.7kb max
ITR
promoter
ADAR DD
Cas protein
SV40 pA
ITR
+
ITR
pU6
extended guide RNA
ITR

FIG. 2

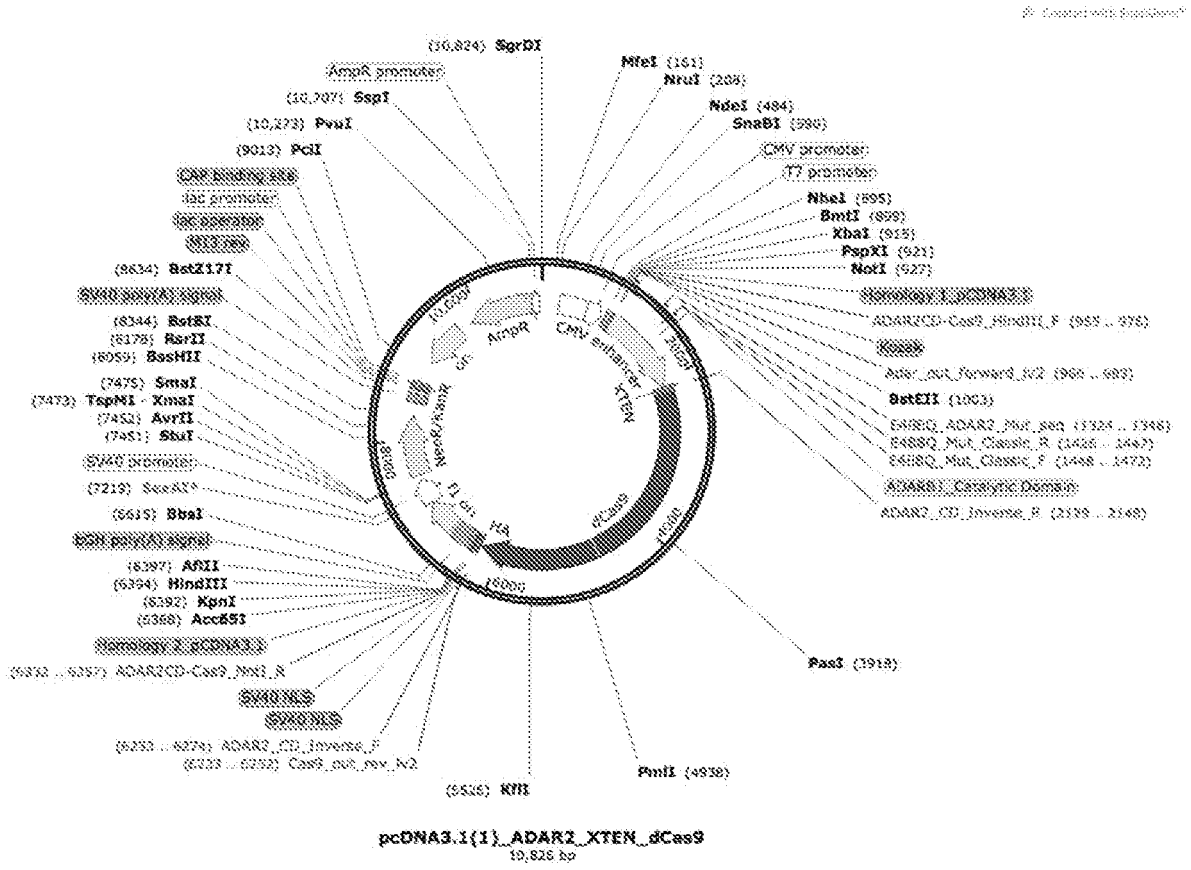

(10,824) SgrDI
AmpR promoter
(10,707) SspI
(10,273) PvuI
(9013) PciI
CAP binding site
lac promoter
lac operator
R13 rev
(9634) BstZ17I
SV40 poly(A) signal
(8344) BstBI
(8178) NsiI
(8059) BssHII
(7475) SmaI
(7472) TspMI - XmaI
(7452) AvrII
(7451) SfuI
SV40 promoter
(7219) SacII*
(6615) SbaI
CMV poly(A) signal
(6397) AflII
(6394) HindIII
(6392) KpnI
(6388) Acc65I
Synthego 2_pcDNA3.1
(6032 .. 6057) ADAR2CD-Cas9_HindI_R
SV40 ori
SV40 ENH
(6233 .. 6278) ADAR2_CD_Inverse_F
(6233 .. 6252) Cas9_out_rev_N2
(5536) KflI
PmlI (4838)
PasI (3918)
Synthego 1_pcDNA3.1
ADAR2CD-Cas9_HindIII_F (955 .. 976)
KozAk
Adar_out_forward_N2 (966 .. 989)
BstEII (1003)
E488Q_ADAR2_Mut_seq (1324 .. 1348)
E488Q_Mut_Classic_R (1426 .. 1447)
E488Q_Mut_Classic_F (1448 .. 1472)
ADAR2_Catalytic Domain
ADAR2_CD_Inverse_R (2139 .. 2168)
f1 ori
AmpR
CMV enhancer
XTEN
dCas9
pcDNA3.1(+)_ADAR2_XTEN_dCas9
10,826 bp

FIG. 3

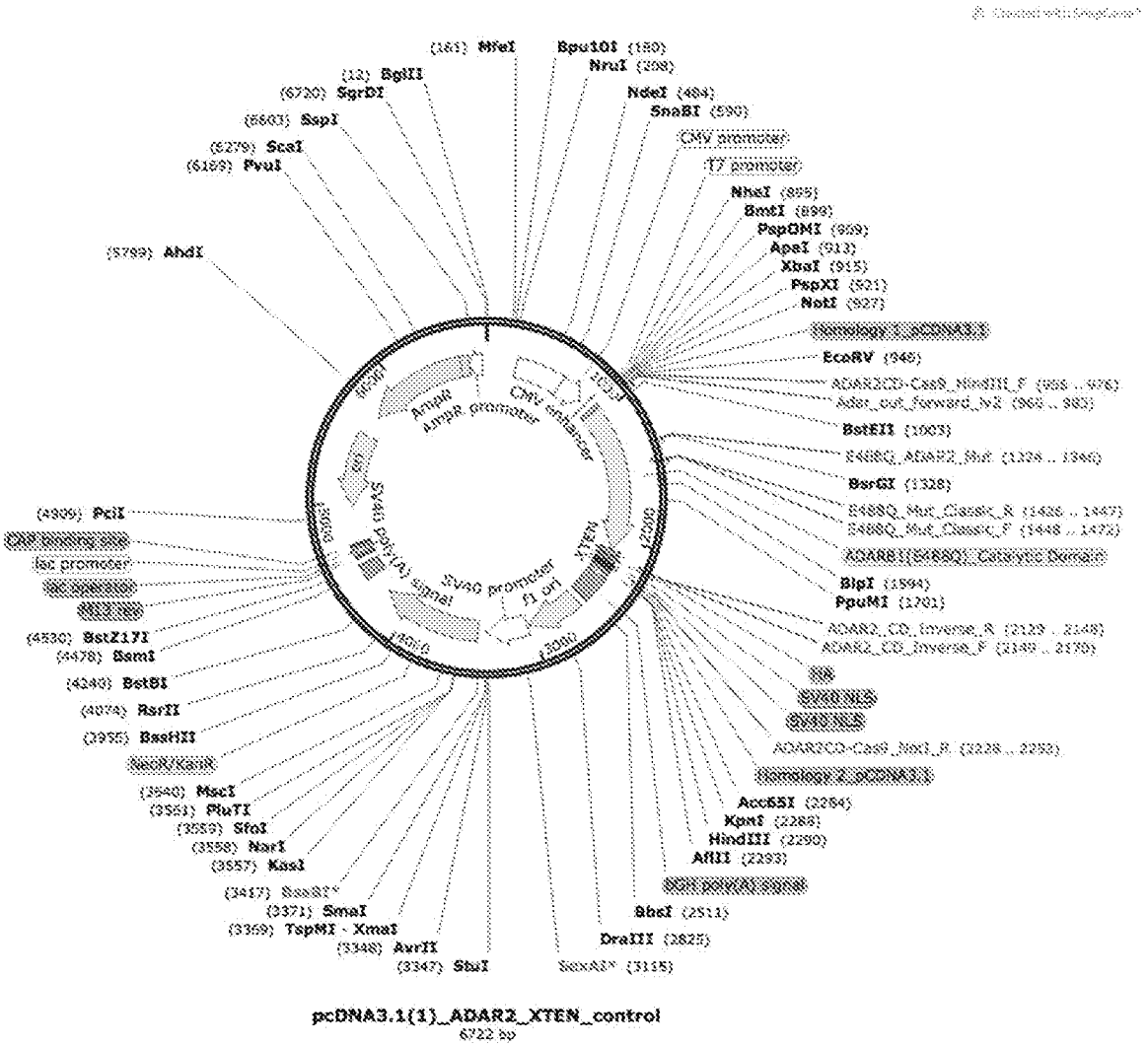

(181) MfeI
Bpu10I (180)
NruI (208)
NdeI (484)
SnaBI (590)
CMV promoter
T7 promoter
NheI (895)
BmtI (899)
PspOMI (909)
ApaI (913)
XbaI (915)
PspXI (921)
NotI (927)
EcoRV (940)
BstEII (1003)
BsrGI (1328)
BglI (12)
SgrDI (6720)
SspI (6603)
ScaI (6279)
PvuI (6189)
AhdI (5799)
(4309) PciI
BstZ17I (4530)
SmiI (4478)
BstBI (4240)
RsrII (4074)
BssHII (3955)
MscI (3540)
PluTI (3551)
SfoI (3559)
NarI (3558)
KasI (3557)
SmaI (3371)
TspMI - XmaI (3369)
AvrII (3348)
SbaI (3347)
SbfI (2511)
DraIII (2825)
Acc65I (2284)
KpnI (2288)
HindIII (2290)
AflII (2293)
AmpR promoter
CMV enhancer
SV40 poly(A) signal
SV40 promoter
f1 ori
XTEN
pcDNA3.1(1)_ADAR2_XTEN_control
6722 bp

FIG. 4

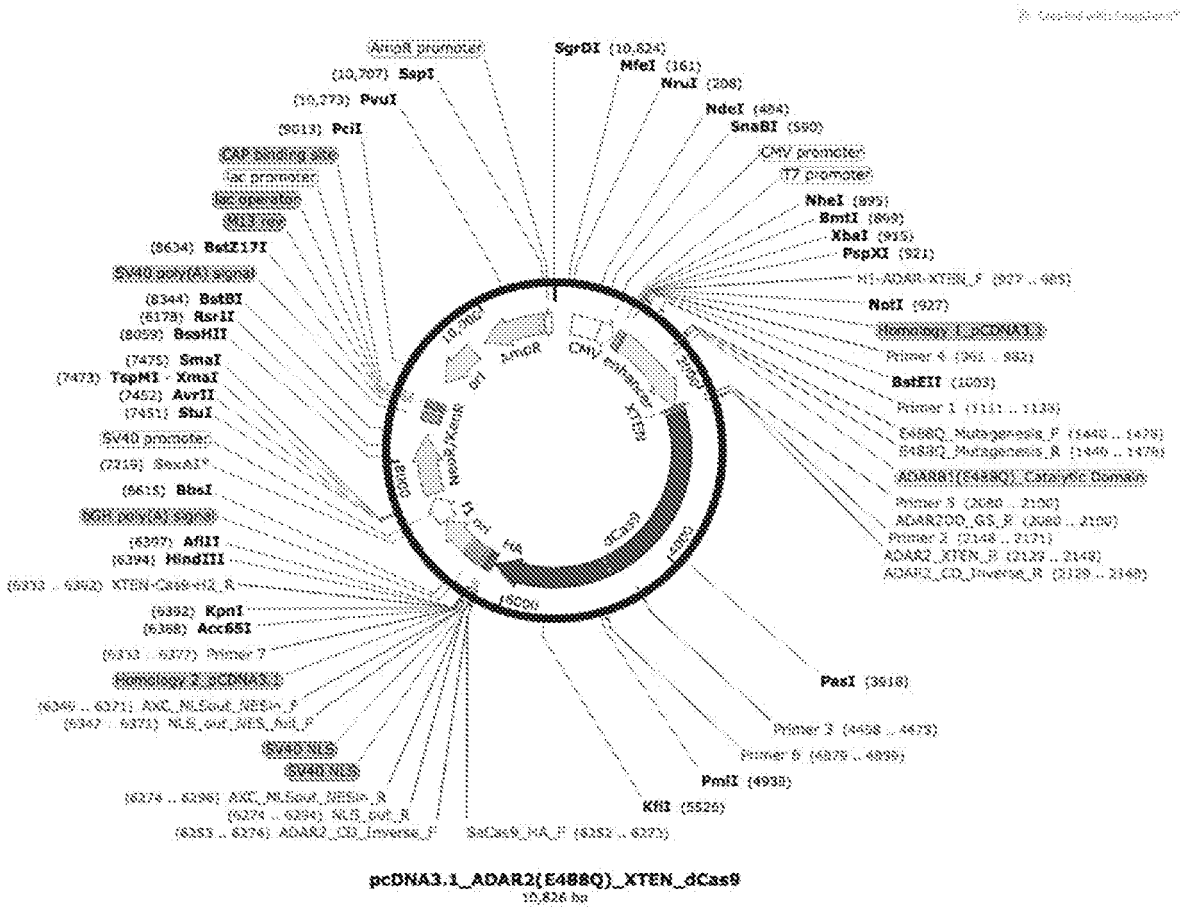

AmpR promoter
SgrDI (10,824)
MfeI (161)
NruI (208)
NdeI (484)
SnaBI (580)
CMV promoter
T7 promoter
NheI (895)
BmtI (898)
XbaI (915)
PspXI (921)
NotI (927)
BstEII (1003)
E488Q_Mutagenesis_F (1440 .. 1478)
E488Q_Mutagenesis_R (1440 .. 1478)
Primer 3 (4458 .. 4479)
PmlI (4938)
KflI (5526)
(10,707) SapI
(10,273) PvuI
(9613) PciI
(8634) BstZ17I
(8344) BstBI
(8178) AsrII
(8059) BssHII
(7475) SmaI
(7473) TspMI - XmaI
(7452) AvrII
(7451) SbuI
(7319) SnaBI
(6615) BbsI
(6297) AflII
(6294) HindIII
(6382) KpnI
(6368) Acc65I
PasI (3818)
pcDNA3.1_ADAR2(E488Q)_XTEN_dCas9
10,826 bp

FIG. 5

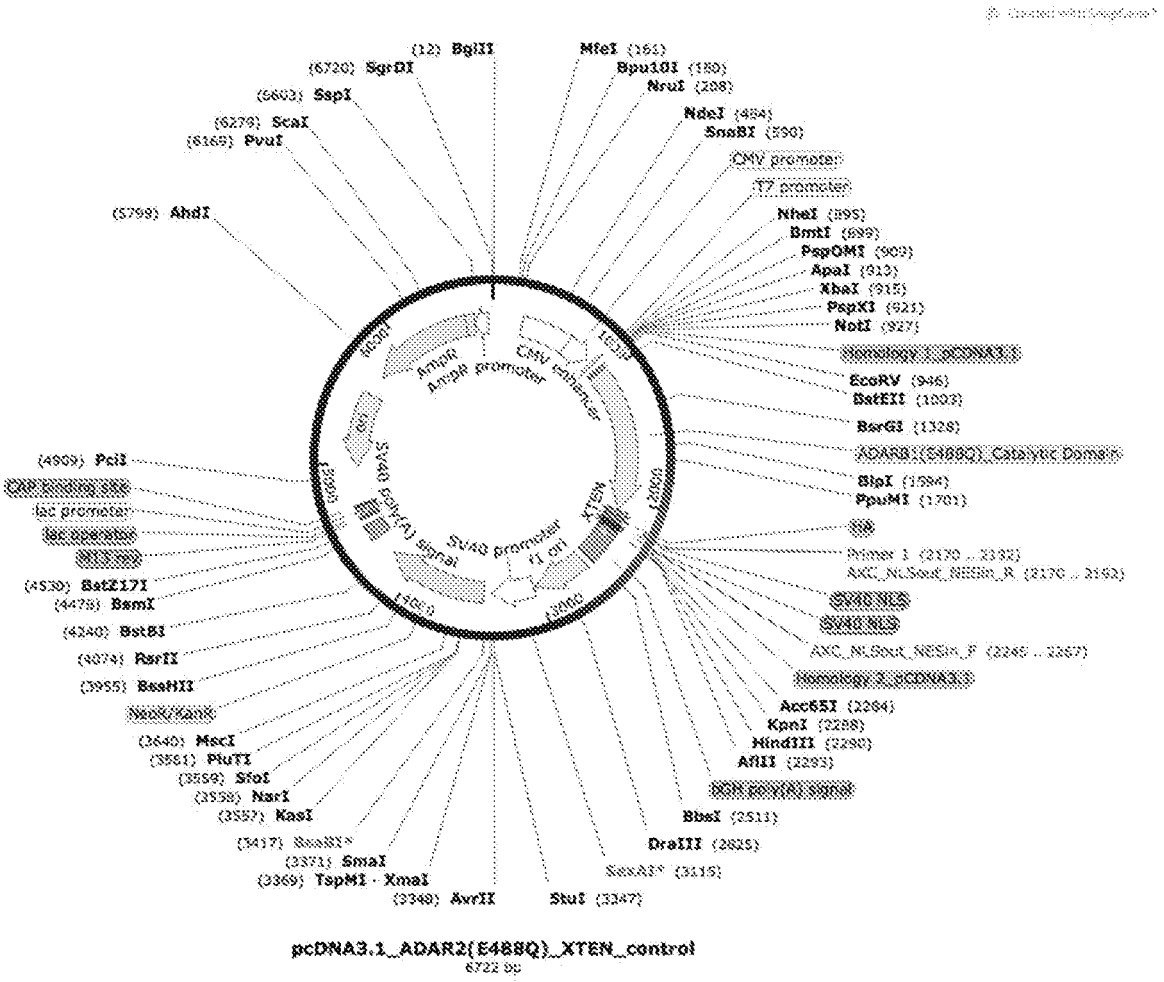

(12) BglII
MfeI (161)
Bpu10I (180)
NruI (208)
NdeI (484)
SnaBI (590)
CMV promoter
T7 promoter
NheI (895)
BmtI (899)
PspOMI (903)
ApaI (913)
XhoI (915)
PspXI (921)
NotI (927)
EcoRV (946)
SstEII (1003)
BsrGI (1328)
ADARB1(E488Q) Catalytic Domain
BlpI (1584)
PpuMI (1701)
Primer 1 (2170 .. 2192)
AAC_NLSout_NESin_R (2170 .. 2192)
SV40 NLS
SV40 NLS
AAC_NLSout_NESin_F (2246 .. 2267)
Acc65I (2284)
KpnI (2288)
HindIII (2290)
AflII (2295)
BbsI (2511)
DraIII (2835)
(3348) AvrII
StuI (3347)
(3369) TspMI · XmaI
(3371) SmaI
(6720) SgrDI
(6603) SspI
(6279) ScaI
(6169) PvuI
(5799) AhdI
(4909) PciI
(4530) BstZ17I
(4478) BsmI
(4240) BstBI
(4074) RsrII
(3955) BssHII
(3640) MscI
(3561) PluTI
(3559) SfoI
(3558) NarI
(3557) KasI
pcDNA3.1_ADAR2(E488Q)_XTEN_control
6722 bp

FIG. 6

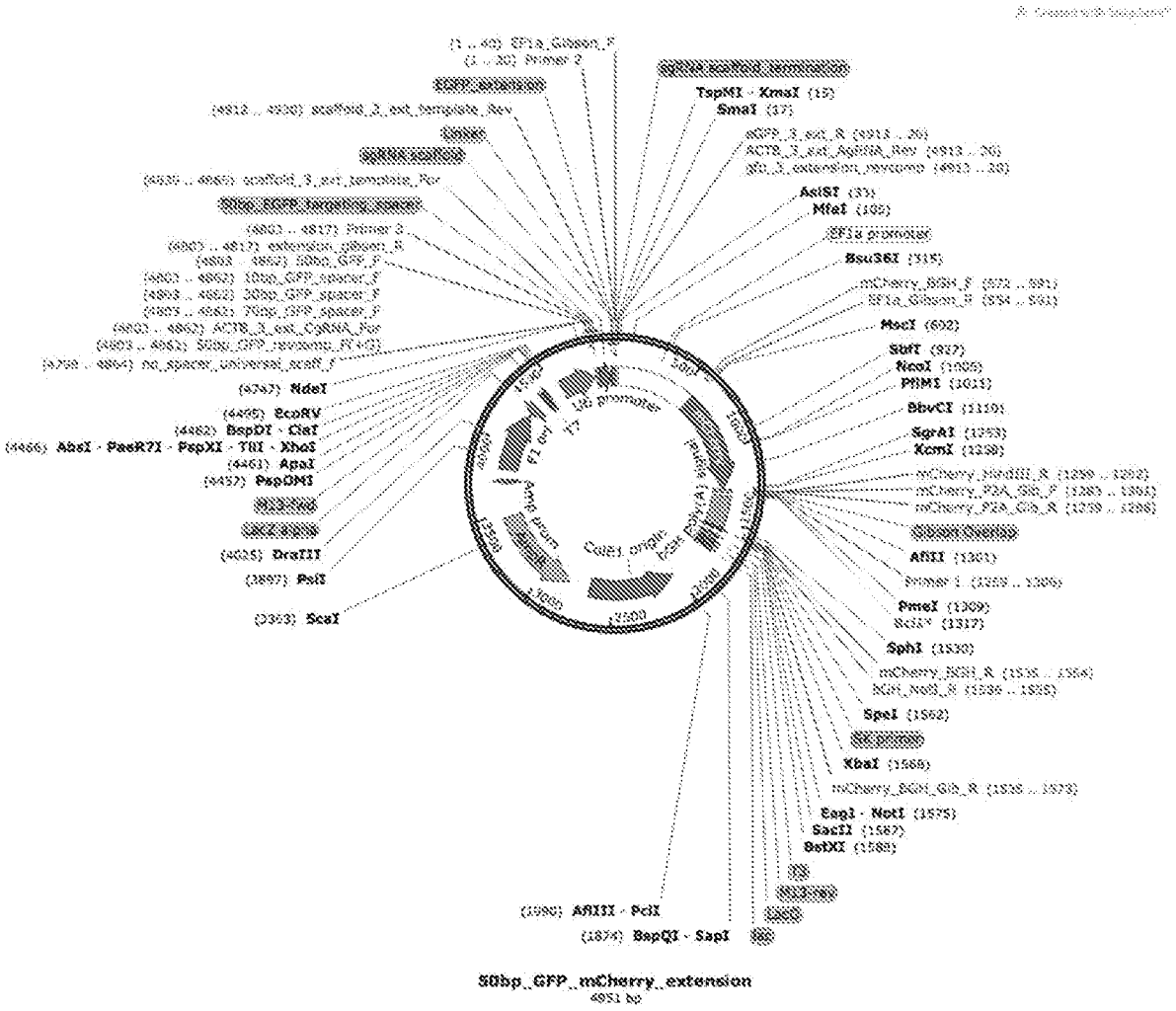

TspMI - XmaI (15)
SmaI (17)
AscI (31)
MfeI (102)
BsaI (515)
MscI (692)
SbfI (827)
NcoI (1005)
PflMI (1011)
BbvCI (1119)
SgrAI (1193)
XcmI (1230)
AflII (1301)
PmeI (1309)
SphI (1530)
SpeI (1562)
XbaI (1568)
SacII (1587)
BstXI (1588)
AflIII - PciI (1990)
BspQI - SapI (1874)
5Obp_GFP_mCherry_extension
4951 bp

FIG. 7

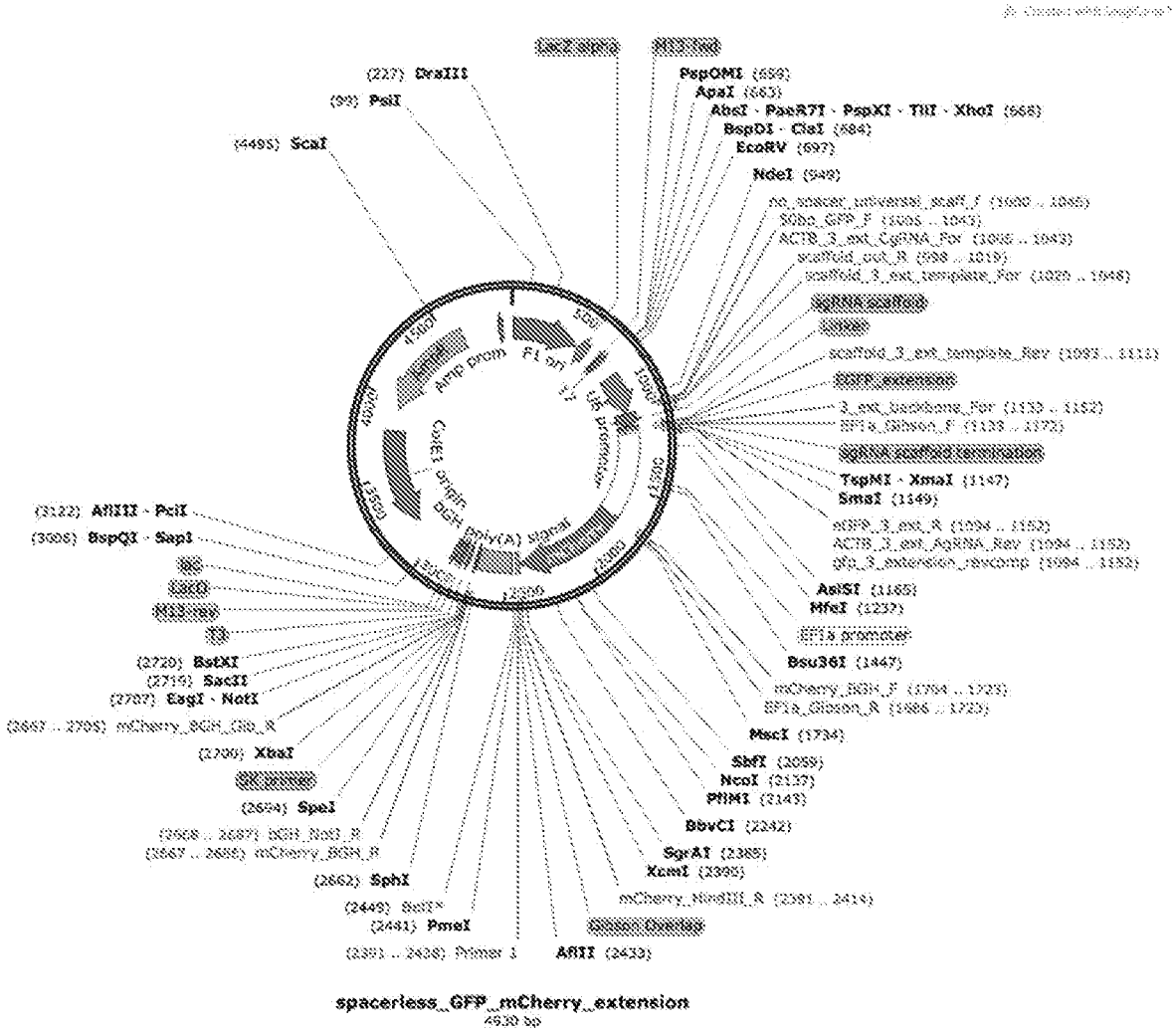

lacZ alpha
M13 rev
(227) DraIII
(99) PsiI
(4495) ScaI
PspOMI (659)
ApaI (663)
AbsI - PasR7I - PspXI - TliI - XhoI (668)
BspDI - ClaI (684)
EcoRV (697)
NdeI (949)
no_spacer_universal_scaff_f (1000 .. 1065)
SOBo_GFP_F (1005 .. 1043)
ACTB_3_ext_CgRNA_For (1005 .. 1043)
scaffold_out_R (998 .. 1019)
scaffold_3_ext_template_For (1020 .. 1048)
sgRNA scaffold
Linker
scaffold_3_ext_template_Rev (1093 .. 1111)
GFP extension
3_ext_backbone_For (1133 .. 1152)
EF1a_Gibson_F (1133 .. 1172)
sgRNA scaffold termination
TspMI - XmaI (1147)
SmaI (1149)
mGFP_3_ext_R (1094 .. 1152)
ACTB_3_ext_AgRNA_Rev (1094 .. 1152)
gfp_3_extension_revcomp (1094 .. 1152)
AsiSI (1165)
MfeI (1237)
EF1a promoter
Bsu36I (1447)
mCherry_BGH_F (1704 .. 1723)
EF1a_Gibson_R (1686 .. 1723)
MscI (1734)
SbfI (2059)
NcoI (2137)
PflMI (2143)
BbvCI (2242)
SgrAI (2385)
XcmI (2390)
mCherry_HindIII_R (2381 .. 2414)
Gibson Overlap
AflII (2433)
(3122) AflIII - PciI
(3008) BspQI - SapI
M6
LacO
M13 rev
T3
(2720) BstXI
(2719) SacII
(2707) EagI - NotI
(2667 .. 2705) mCherry_BGH_Gib_R
(2700) XbaI
SV40 poly(A)
(2694) SpeI
(2668 .. 2687) BGH_NotI_R
(2667 .. 2686) mCherry_BGH_R
(2662) SphI
(2449) BstEII
(2441) PmeI
(2391 .. 2408) Primer 3
Amp prom
F1 ori
Cole1 origin
BGH poly(A) signal
spacerless_GFP_mCherry_extension
4930 bp

FIG. 8

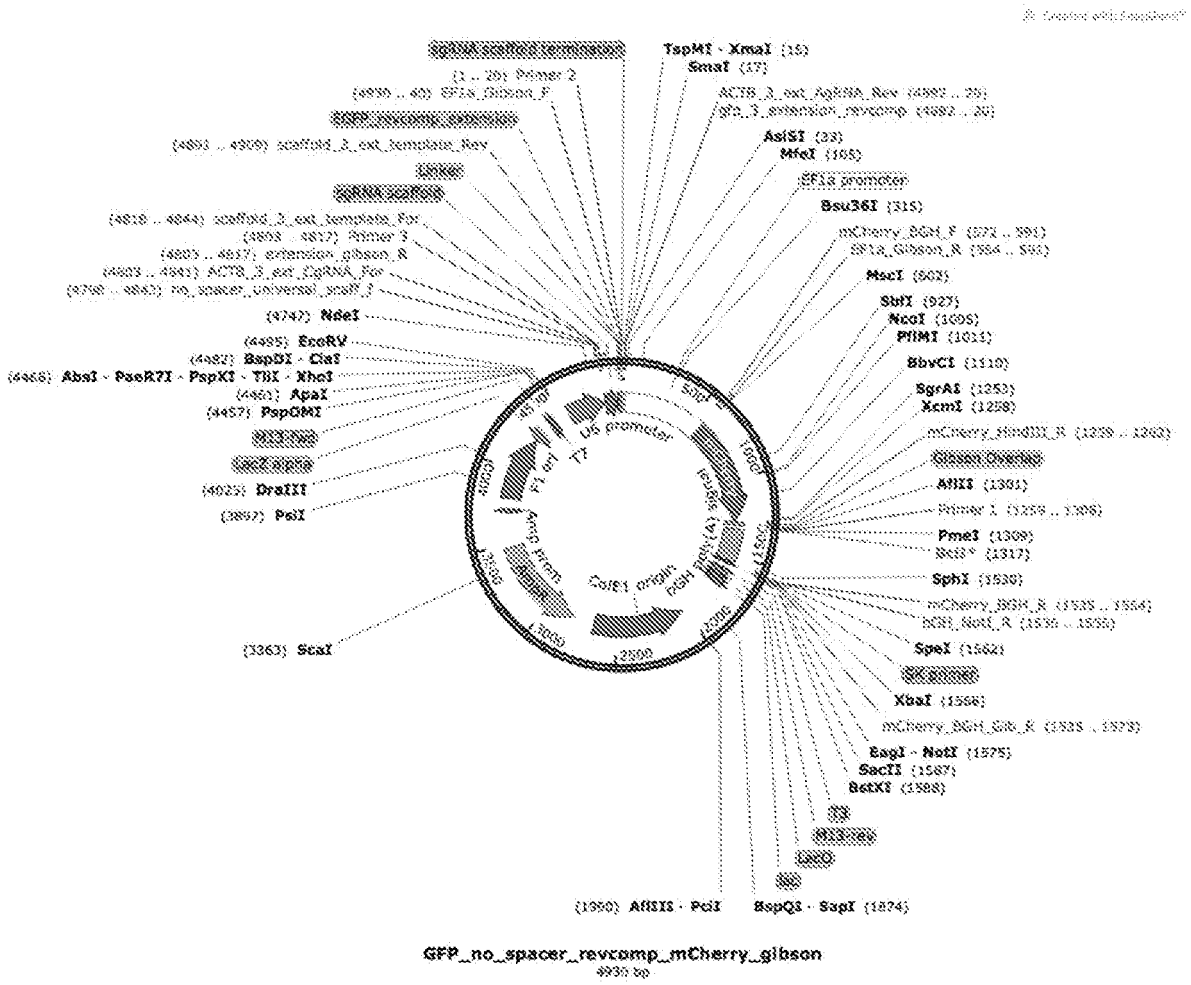

TspMI - XmaI (15)
SmaI (17)
AsiSI (33)
MfeI (165)
Bsu36I (315)
MscI (603)
SbfI (927)
NcoI (1005)
PflMI (1021)
BbvCI (1110)
SgrAI (1253)
XcmI (1258)
AflII (1301)
PmeI (1309)
SphI (1530)
SpeI (1562)
XbaI (1566)
BsgI - NotI (1575)
SacII (1587)
BstXI (1588)
(1950) AffSII - PciI
BspQI - SapI (1874)
(3363) ScaI
(4025) DraIII
(3897) PsiI
(4468) AbsI - PaeR7I - PspXI - XhoI
(4457) PspOMI
(4747) NdeI
(4495) EcoRV
(4482) BspDI - ClaI
Col1 origin
pSH
Amp prom
f1 ori
T7
U6 promoter
1000
2000
3000
4000
GFP_no_spacer_revcomp_mCherry_gibson
4930 bp

FIG. 9

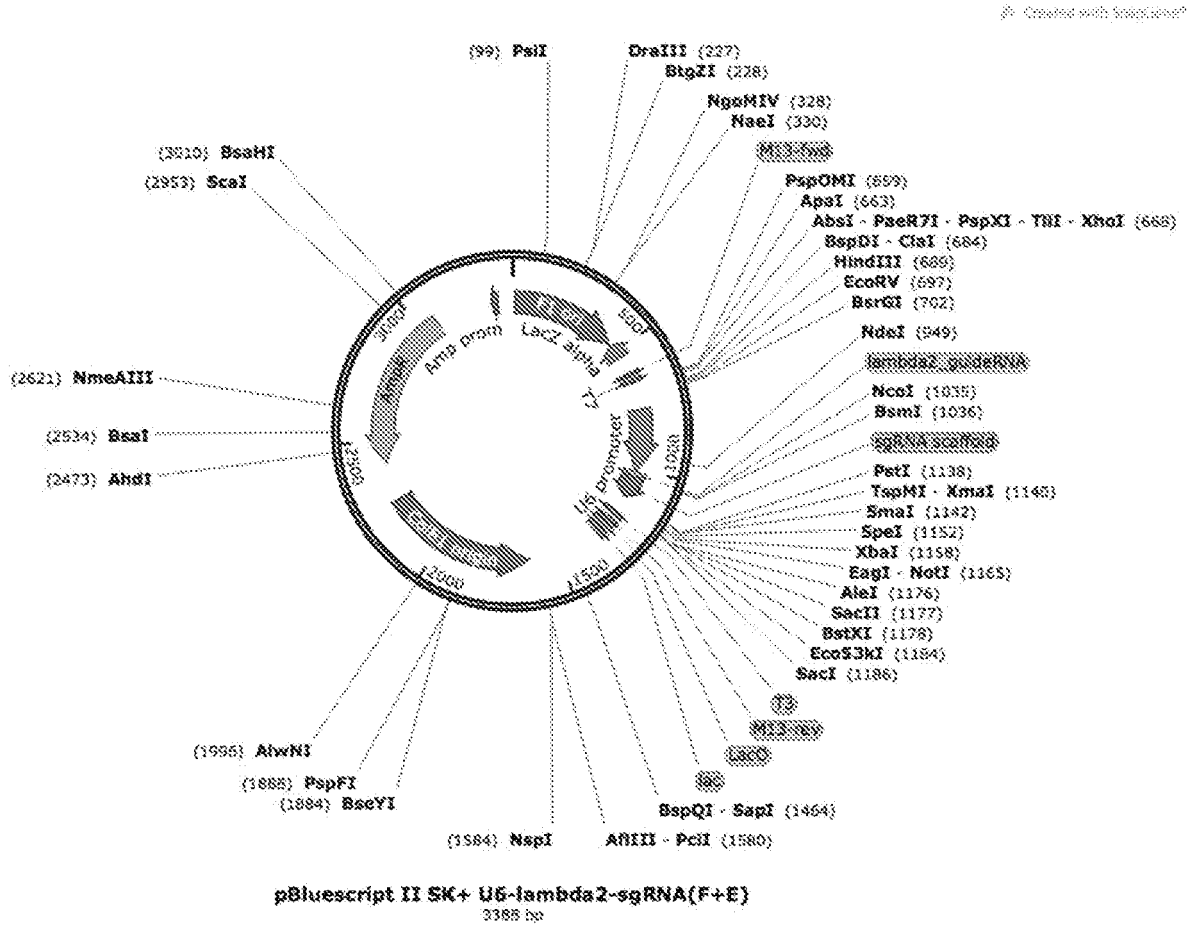

(99) PsiI
DraIII (227)
BtgZI (228)
NgoMIV (328)
NaeI (330)
(3810) BsaHI
(2953) ScaI
PspOMI (659)
ApaI (663)
AbsI - PaeR7I - PspXI - TbI - XhoI (668)
BspDI - ClaI (684)
HindIII (689)
EcoRV (697)
BsrGI (702)
NdeI (949)
lambda2 guideRNA
NcoI (1035)
BsmI (1036)
sgRNA scaffold
PstI (1138)
TspMI - XmaI (1140)
SmaI (1142)
SpeI (1152)
XbaI (1158)
EagI - NotI (1165)
AleI (1176)
SacII (1177)
BstXI (1178)
Eco53kI (1184)
SacI (1186)
(2621) NmeAIII
(2534) BsaI
(2473) AhdI
(1995) AlwNI
(1888) PspFI
(1884) BseYI
(1584) NspI
AflIII - PciI (1580)
BspQI - SapI (1464)
Amp prom
LacZ alpha
T7
U6 promoter
pBluescript II SK+ U6-lambda2-sgRNA(F+E)
3388 bp

FIG. 10

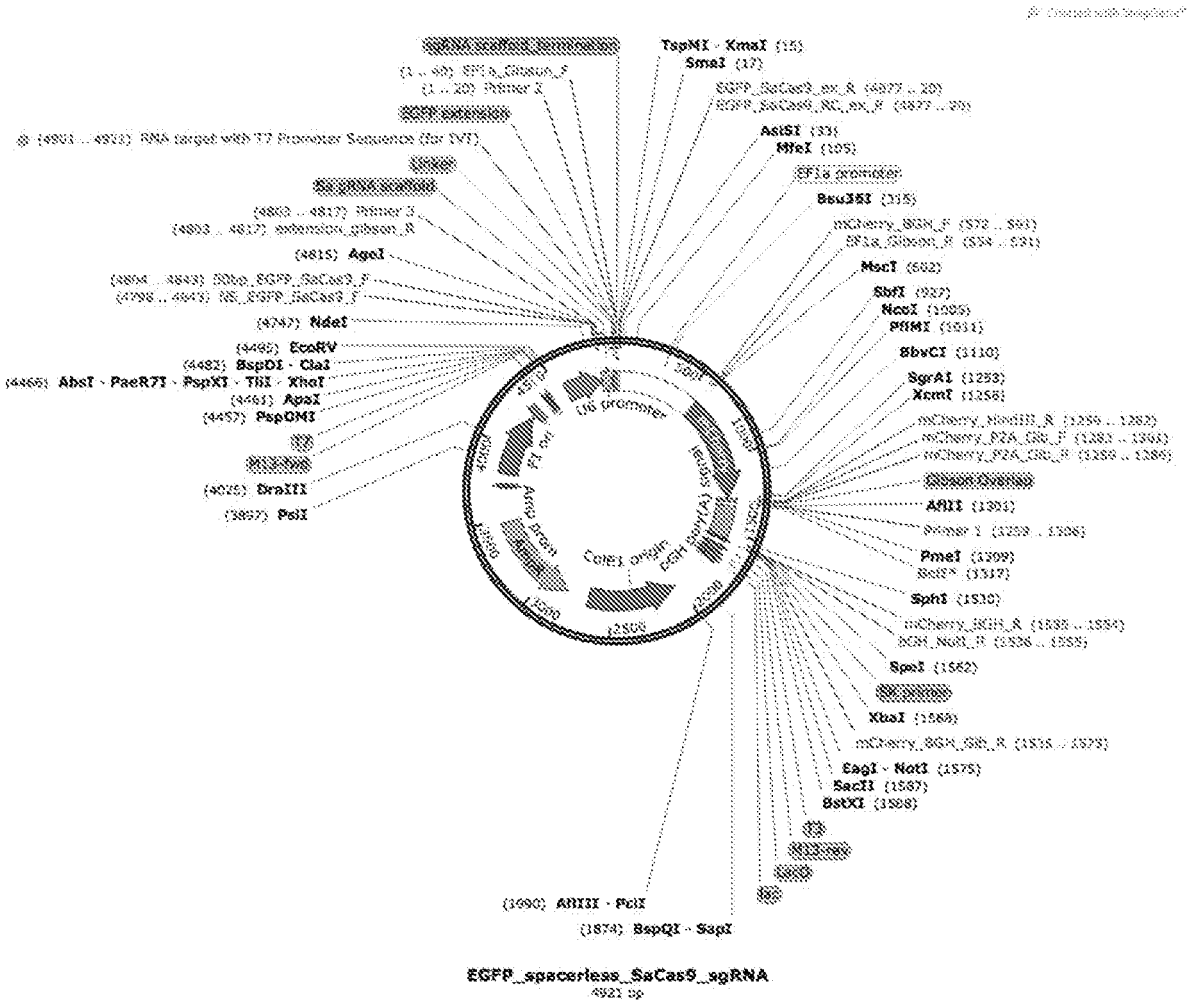

TspNI - XmaI (15)
SmaI (17)
AstSI (33)
MfeI (105)
Bsu36I (315)
MscI (602)
SbfI (927)
NcoI (1005)
PflMI (1031)
BbvCI (1110)
SgrAI (1253)
XcmI (1258)
AflII (1301)
PmeI (1309)
SphI (1530)
SpeI (1562)
XbaI (1588)
EagI - NotI (1575)
SacII (1567)
BstXI (1568)
(3690) AflIII - PciI
(1874) BspQI - SapI
EGFP_spacerless_SaCas9_sgRNA
4921 bp

FIG. 11

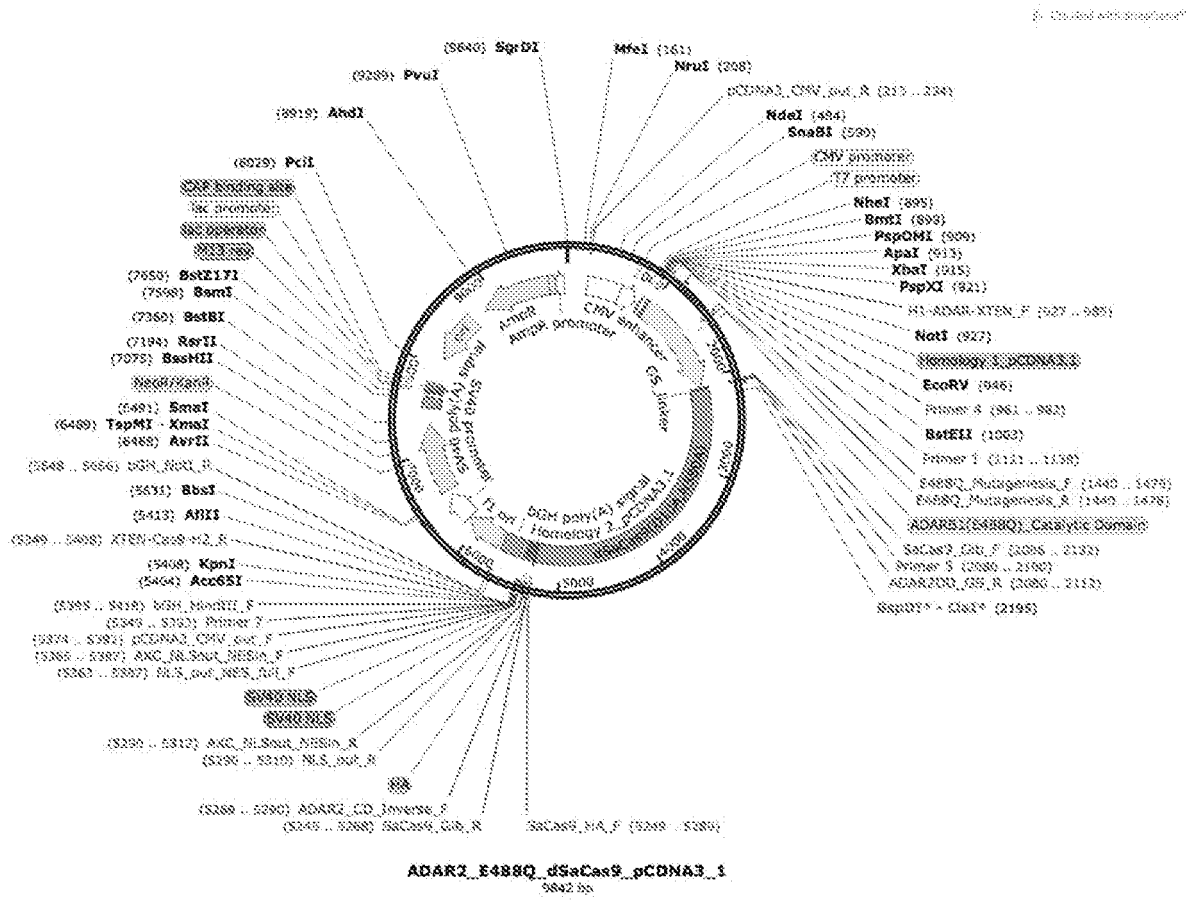

(9640) SgrDI
MfeI (361)
(9289) PvuI
NruI (398)
(8919) AhdI
NdeI (484)
SnaBI (590)
(8029) PciI
CMV promoter
T7 promoter
NheI (895)
BmtI (899)
PspOMI (909)
ApaI (913)
XhoI (915)
PspXI (921)
NotI (927)
EcoRV (946)
BstEII (1062)
(7650) BstE1711
(7598) BsmI
(7360) BstBI
(7194) RsrII
(7078) BssHII
(5491) SmaI
(5488) TspMI - XmaI
(5488) AvrII
(5435) BbsI
(5413) AflII
(5408) KpnI
(5404) Acc65I
(5395) BGH_NheIII_F
(5345) Primer 7
(5279) pCDNA3_CMV_ext_F
(5265) AAC_SV.Sout_NESin_F
(5262) NLS_ext_NES_Xbl_F
(5239) AAC_SV.Sout_NESin_R
(5236) NLS_ext_R
(5230) ADAR2_CD_Inverse_F
(5249) SaCas9_Gib_R
SaCas9_HA_F (5249 .. 5285)
ADAR2_E488Q_dSaCas9_pCDNA3_1
9842 bp

FIG. 12

Sp-CREDITv1



Sa-CREDITv1

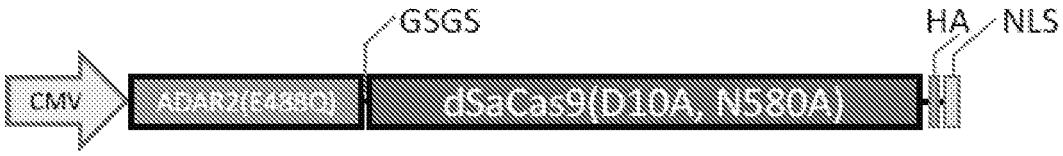
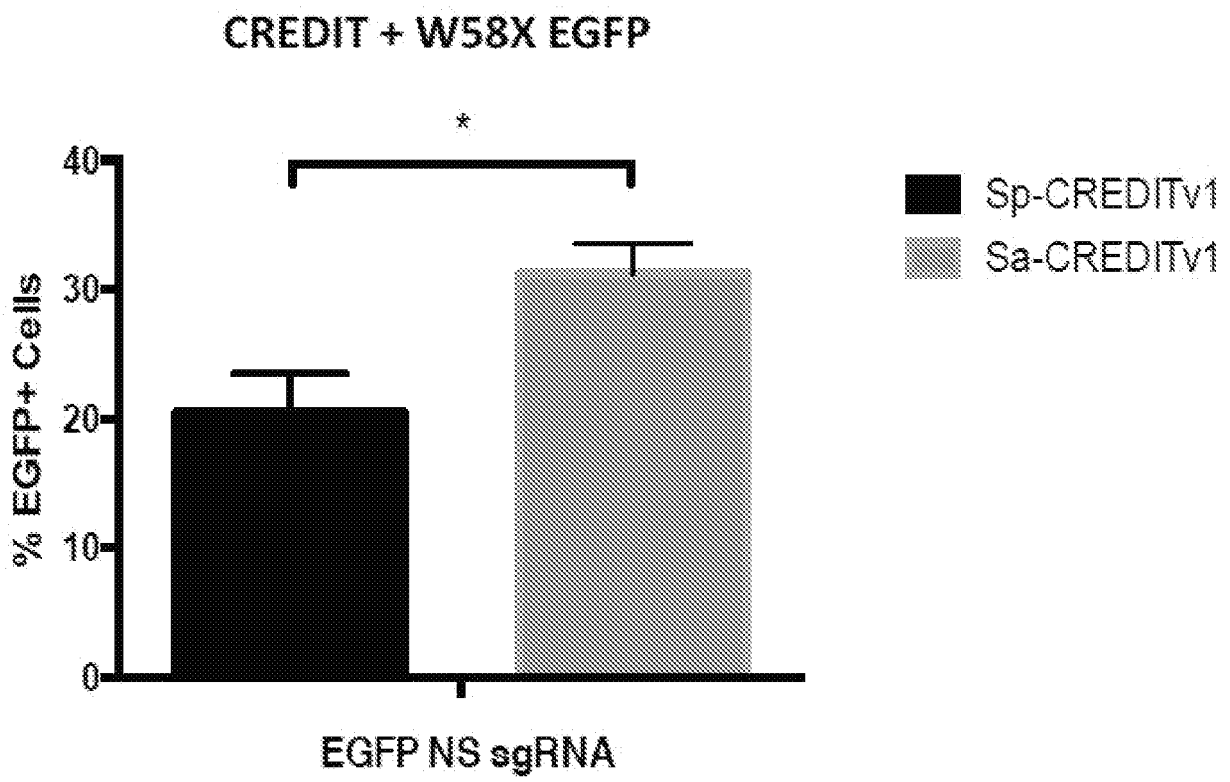


FIG. 13A



* < 0.05 p-value one-way ANOVA

FIG. 13B