

Figure 1

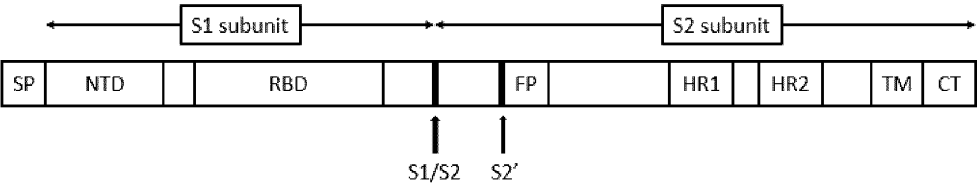


FIGURE 2

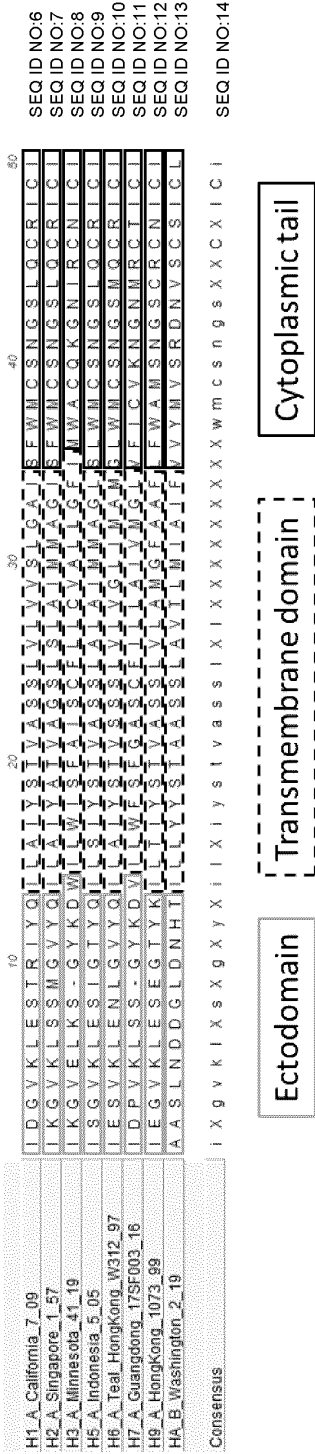


Figure 3A

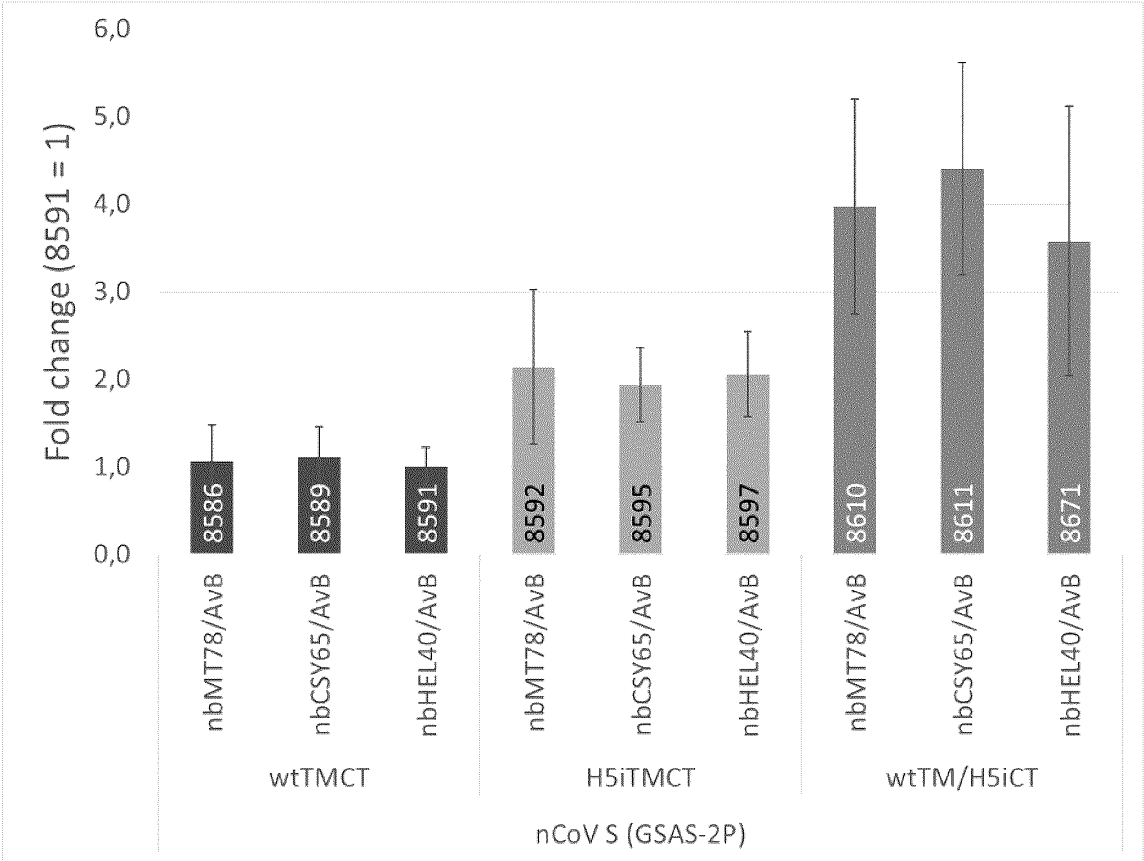


Figure 3B

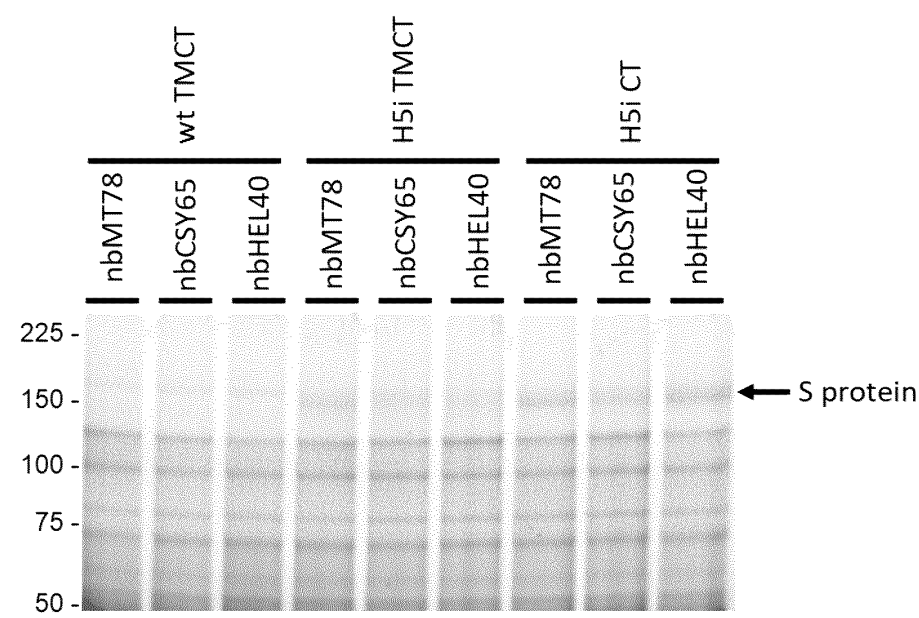


Figure 3C

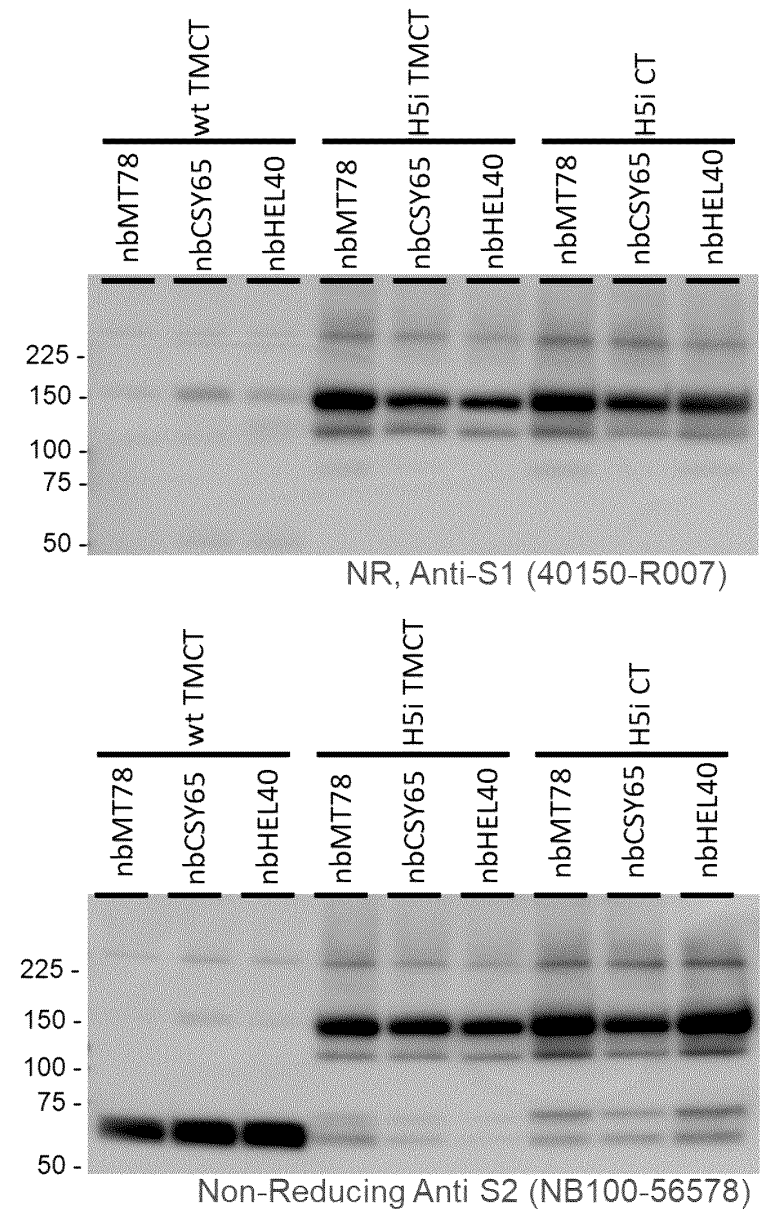


Figure 4A

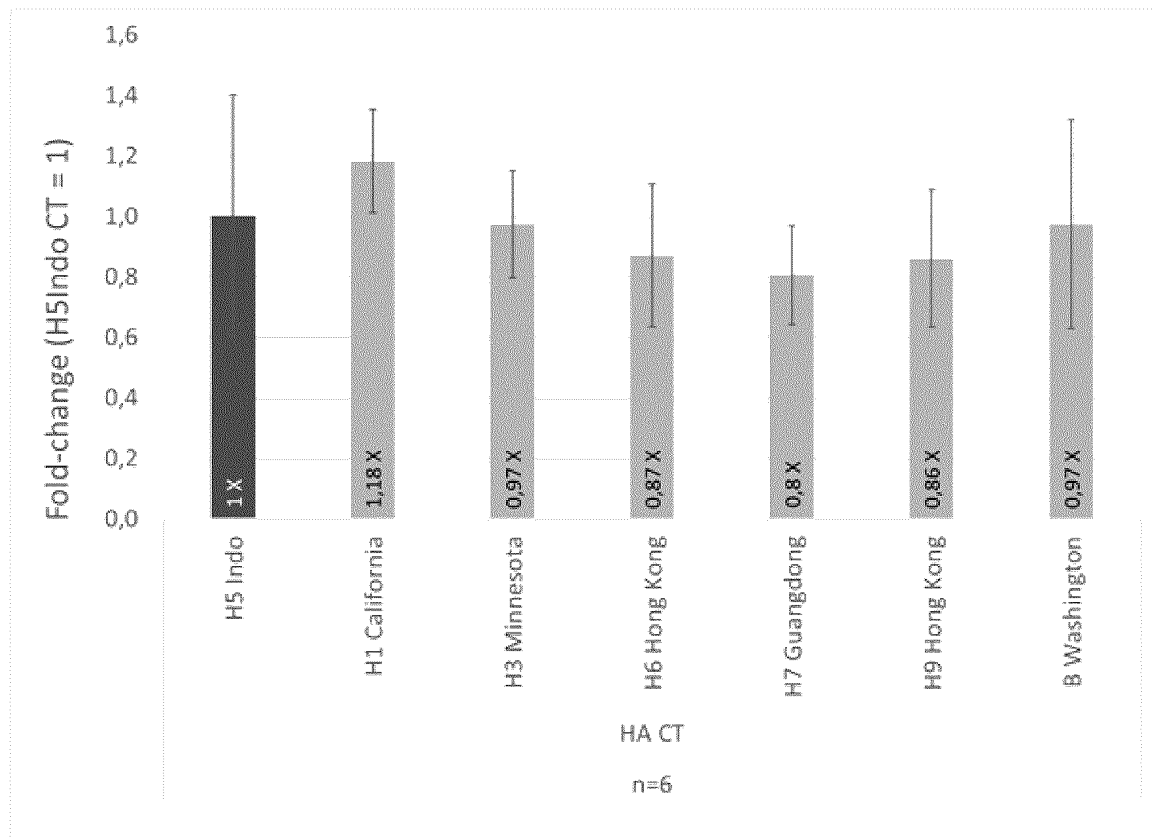


Figure 4B

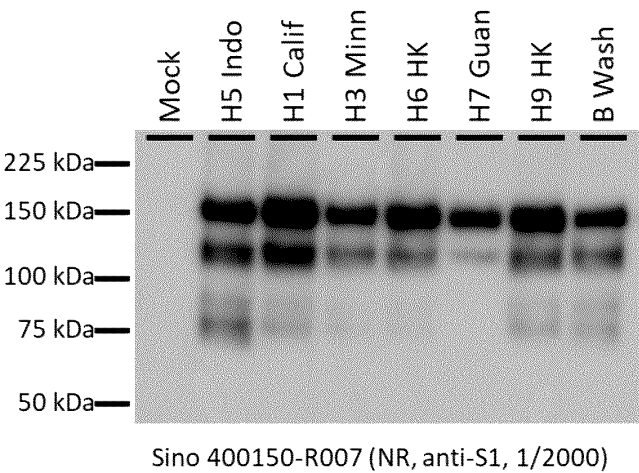


Figure 4C

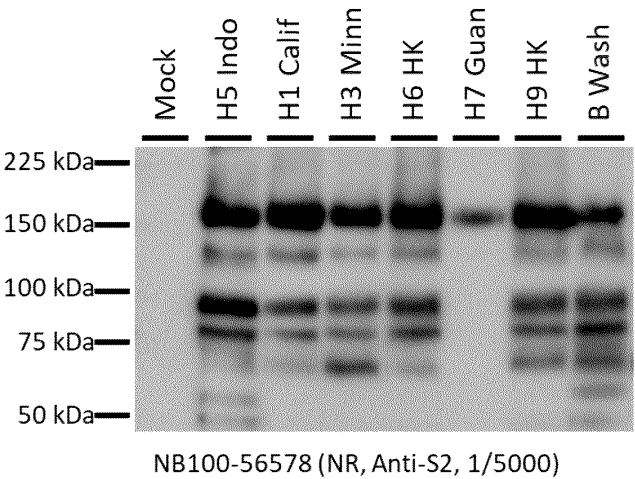


Figure 5A

SARS-CoV-2 S protein with wtTM/**wtCT**

...YEQYIKWPWYIWLGFIAGLIAIVMTIML**CCMTSCC**SLKGCCSCGSCCKFDEDDSEPVLKGVKLHYT

H5 A/Indonesia/5/05 Hemagglutinin with H5iTM/**H5iCT**

...EISGVKLESIGTYQILSIYSTVASSLALAIMMAGL**SLWMCSNGSLQCRICI**

Modified SARS-CoV-2 S protein with wtTM/**H5iCT**

...YEQYIKWPWYIWLGFIAGLIAIVMTIML**SLWMCSNGSLQCRICI**

Modified SARS-CoV-2 S protein with wtTM/**H5iCT** (V1)

...YEQYIKWPWYIWLGFIAGLIAIVMTIM**MAGLSLWMCSNGSLQCRICI**

Modified SARS-CoV-2 S protein with wtTM/**H5iCT** (V2)

...YEQYIKWPWYIWLGFIAGLIAIVMTIM**AGLSLWMCSNGSLQCRICI**

Modified SARS-CoV-2 S protein with wtTM/**H5iCT** (V3)

...YEQYIKWPWYIWLGFIAGLIAIVMTIML**CCMCSNGSLQCRICI**

Modified SARS-CoV-2 S protein with wtTM/**H5iCT** (V4)

...YEQYIKWPWYIWLGFIAGLIAIVMTIML**LCCSNGSLQCRIC**

Figure 5B

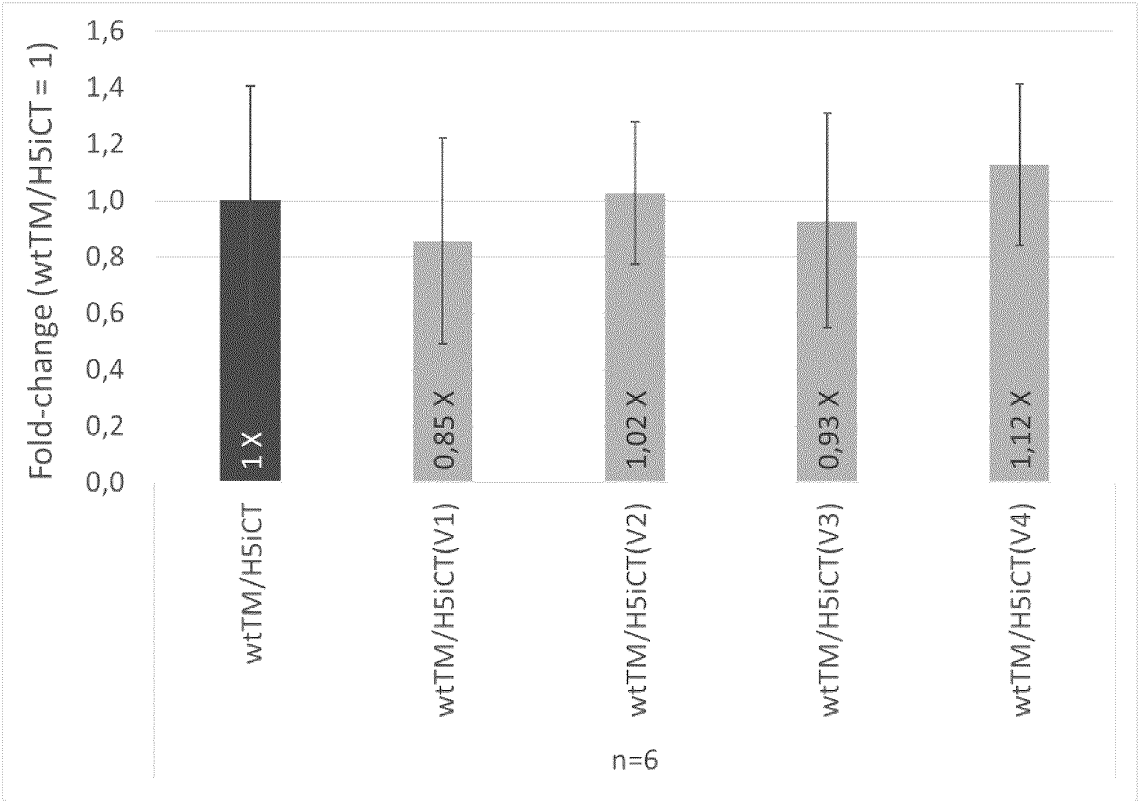


Figure 6A

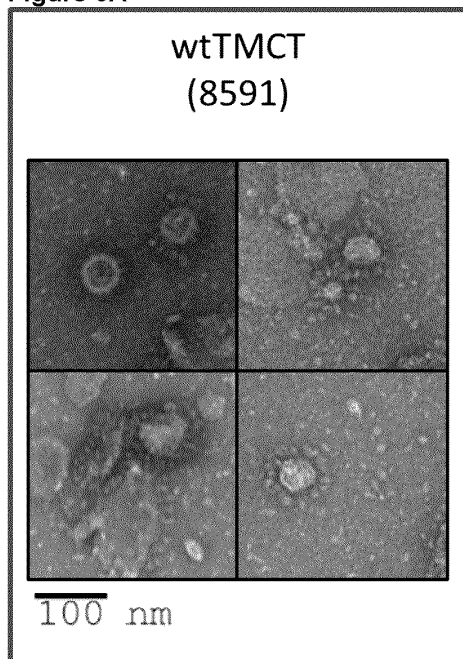


Figure 6B

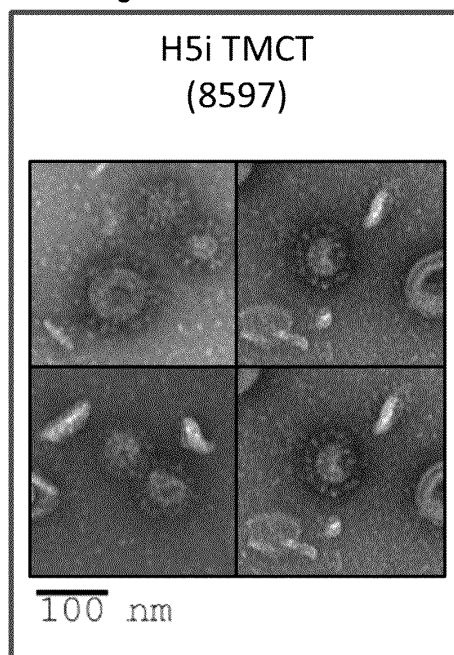


Figure 6C

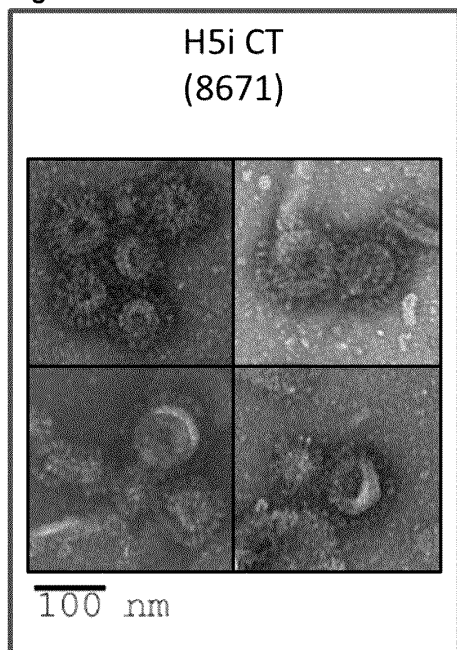


Figure 6D

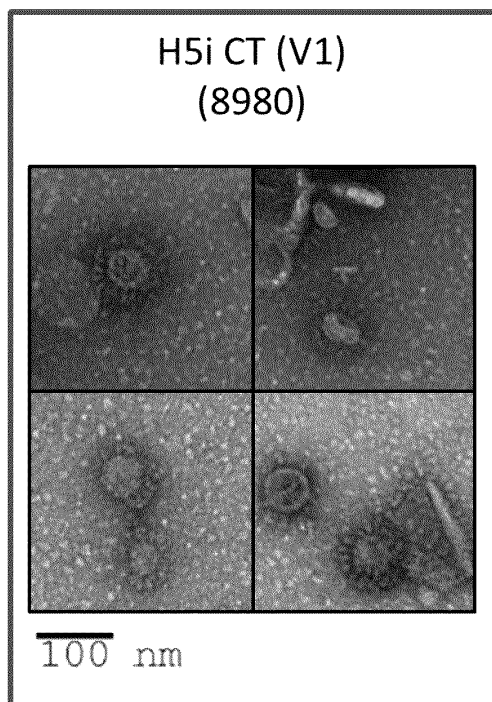


Figure 6E

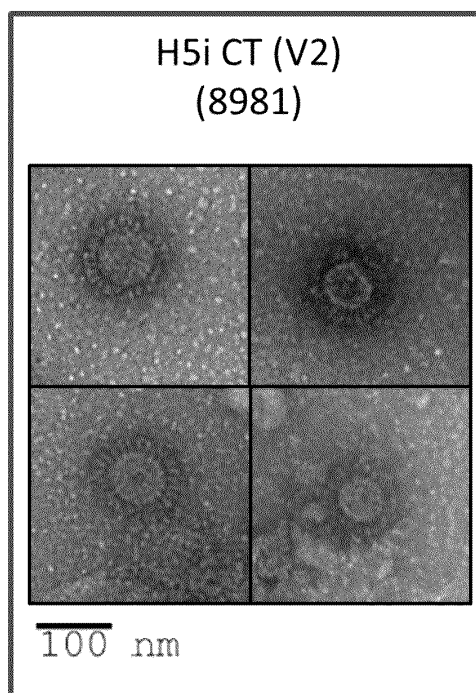


Figure 6F

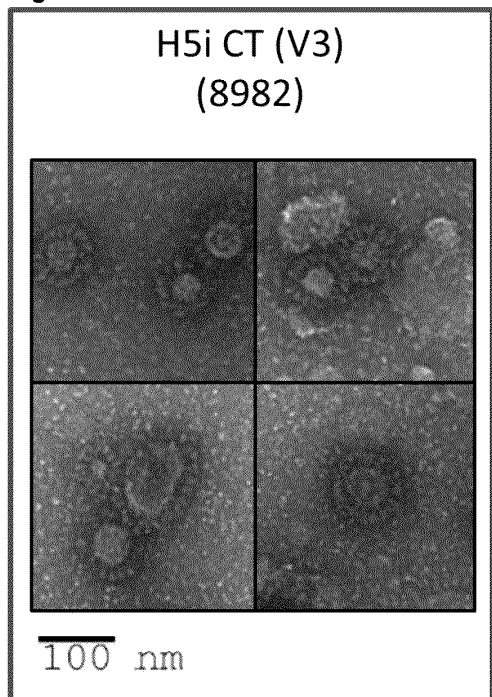


Figure 6G

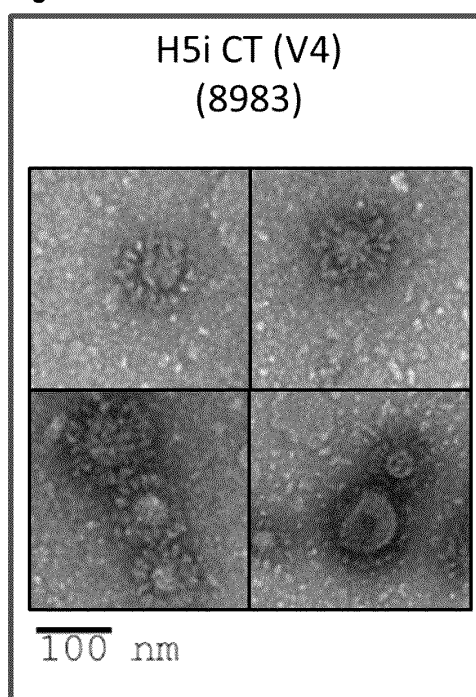


Figure 6H

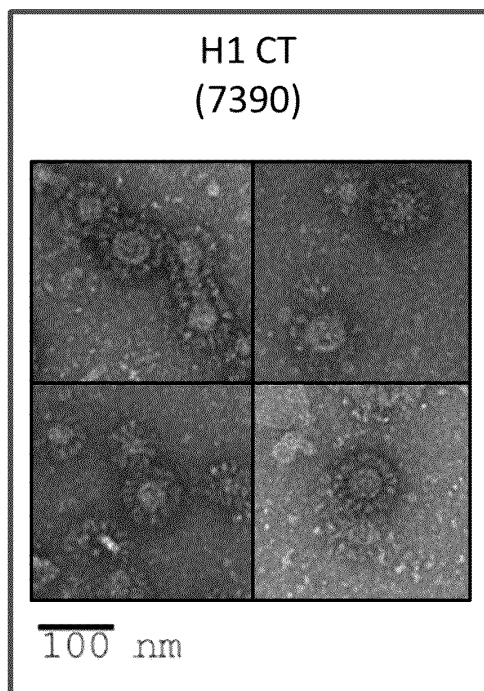


Figure 6I

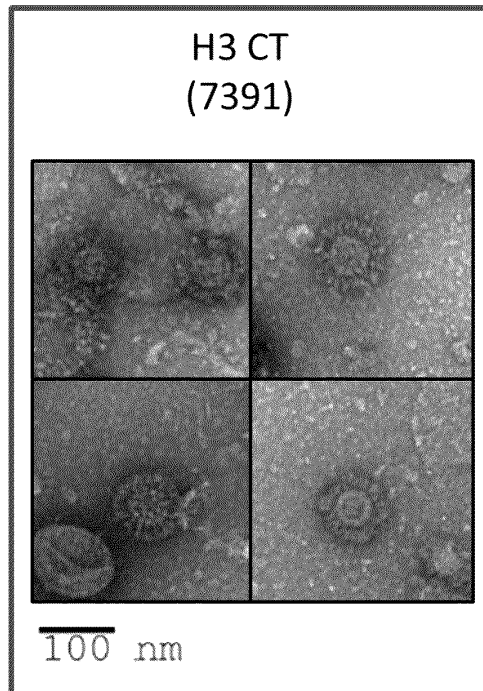


Figure 6J

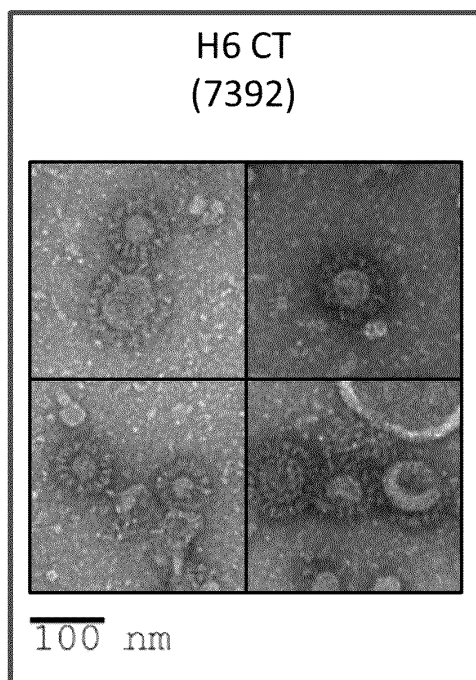


Figure 6K

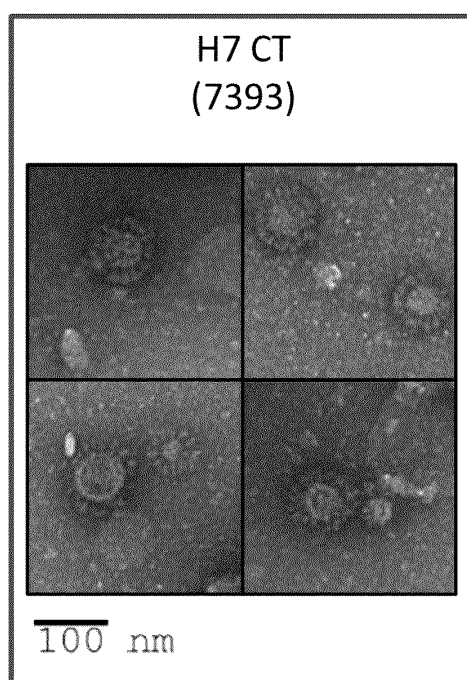


Figure 6L

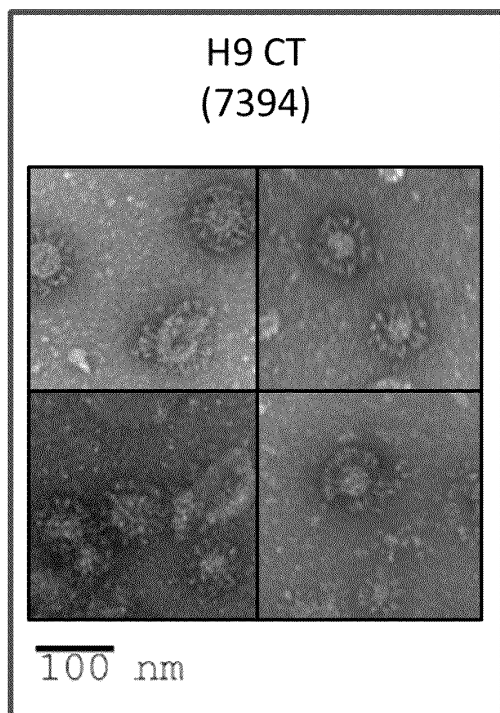


Figure 6M

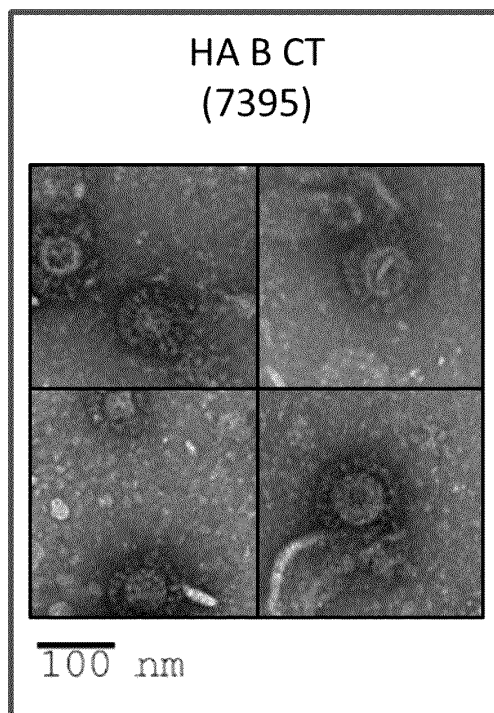


Figure 7B

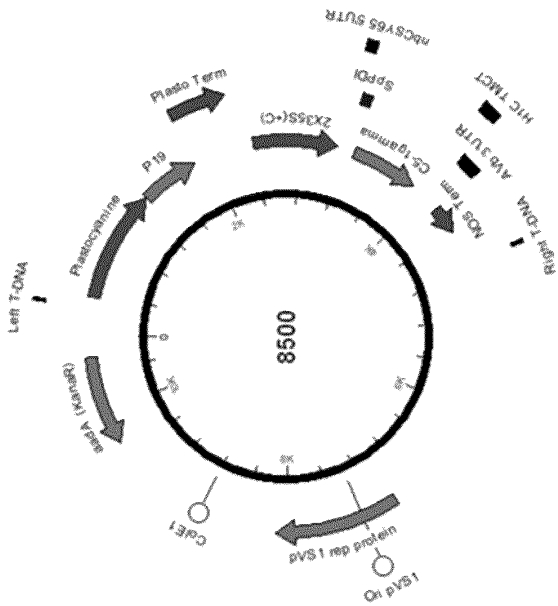


Figure 7C

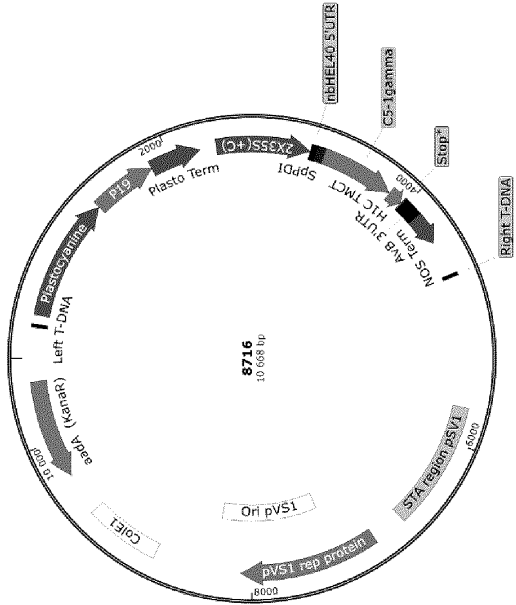
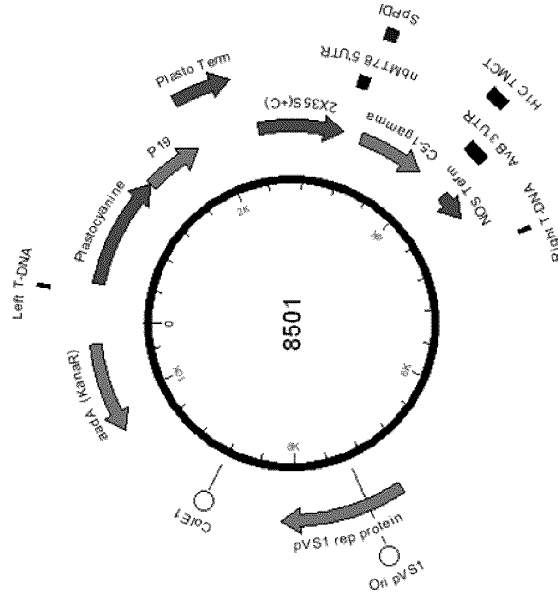


Figure 7A



8589

SoPDI

nbCSY5 5'UTR

(SWSO) IS AocII

GSAS

V872P

nCSY5 (L226A/L413A/L521A)

V871P

NOS Term

Right T-DNA

Avr 3'UTR

wt TMCT

On pVST

pVST rep protein

ColEI

gusA (KanR)

Plasmacyanine

P19

plasmid Term

2X35S

0 20 40 60 80 100

[illegible]

Figure 9B

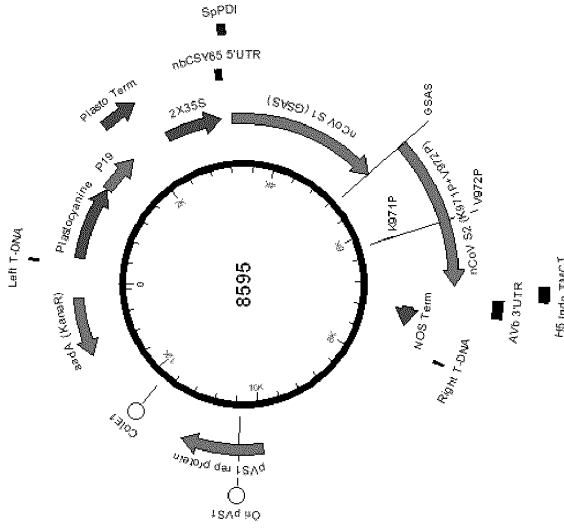


Figure 9C

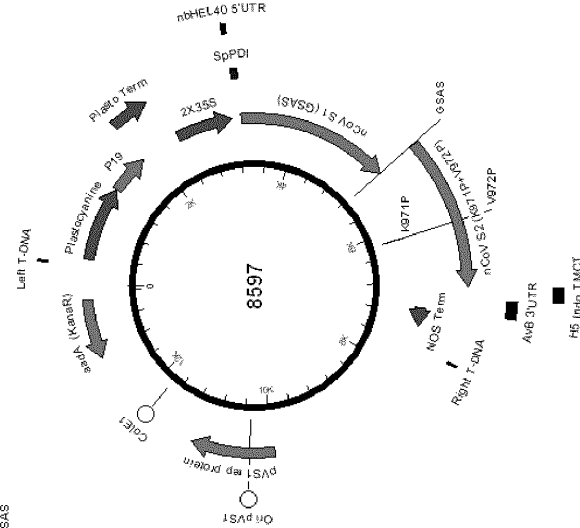


Figure 9A

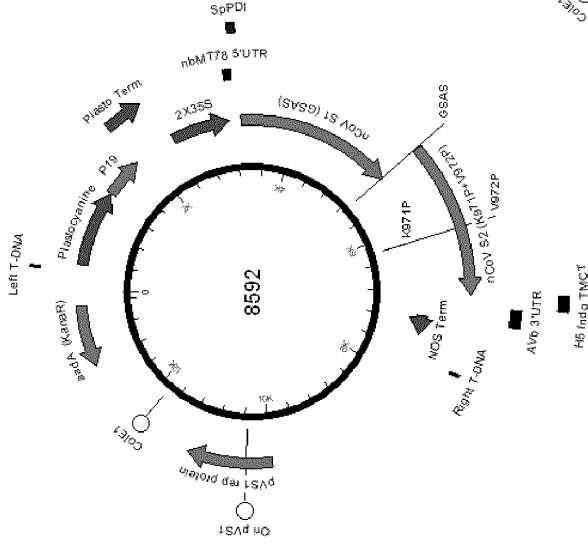


Figure 11A

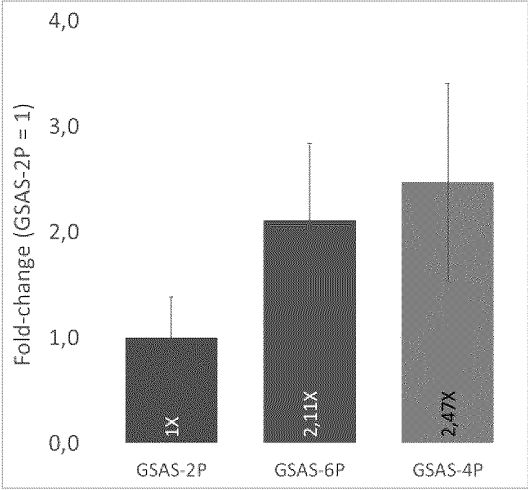


Figure 11B

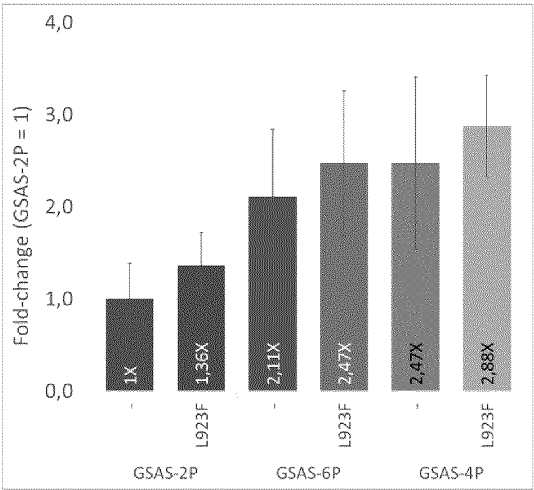


Figure 12A

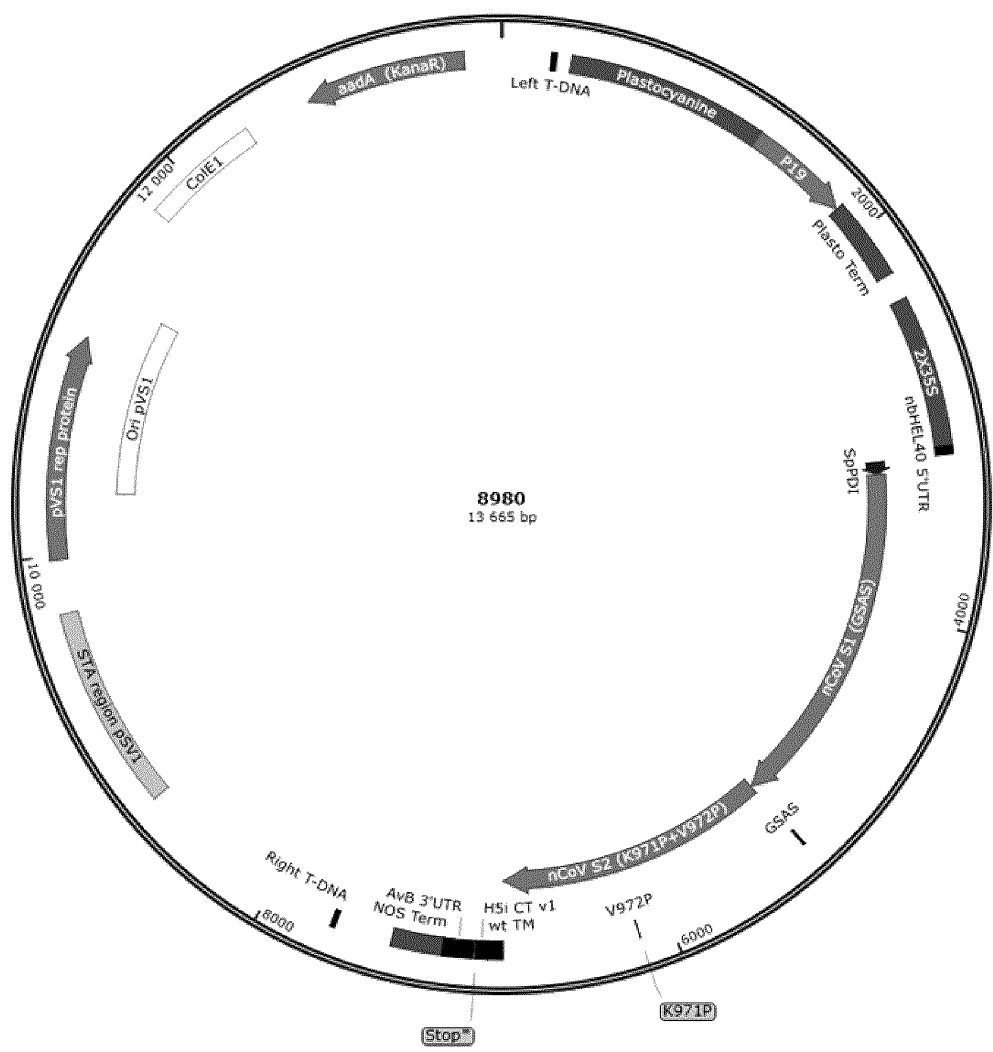


Figure 12B

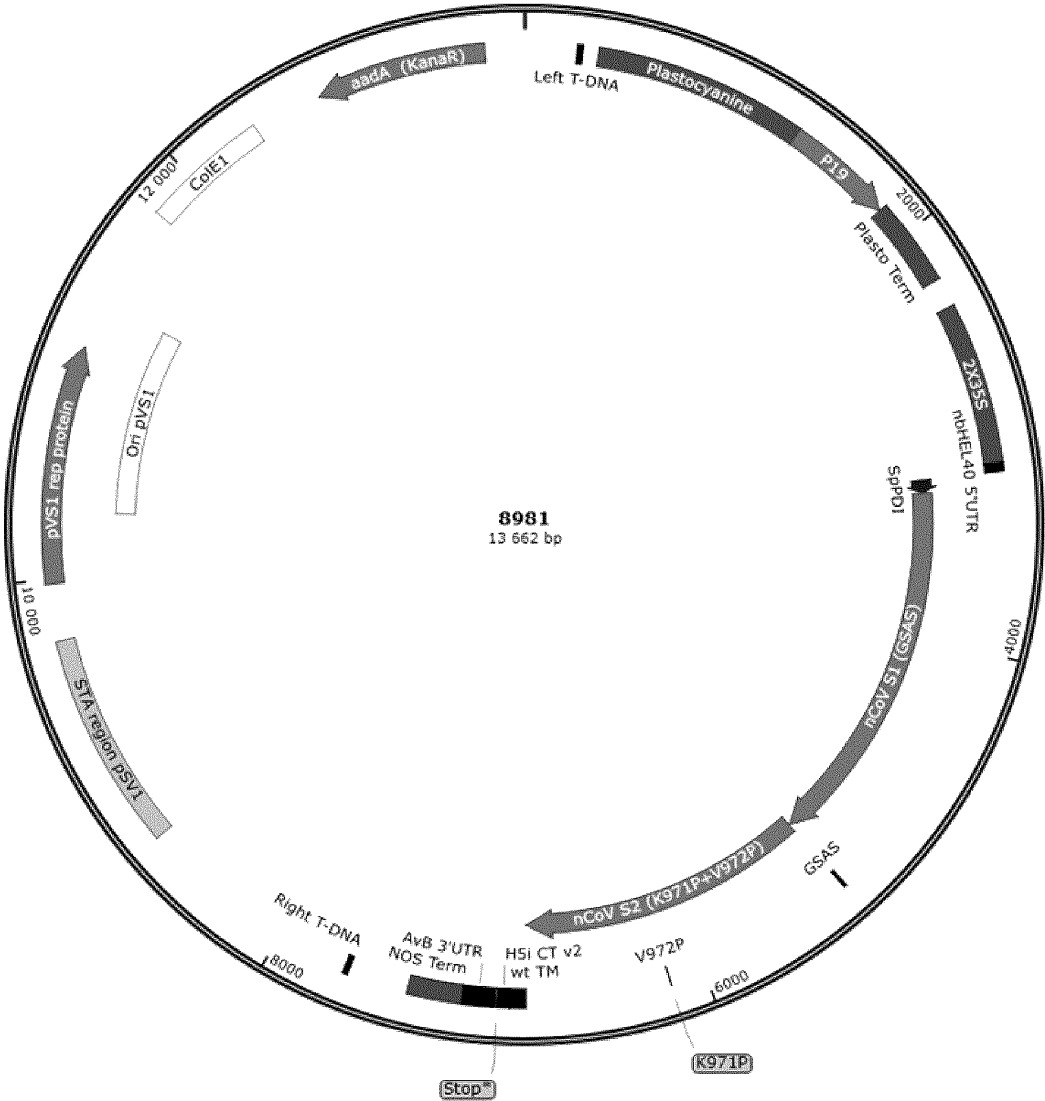


Figure 12C

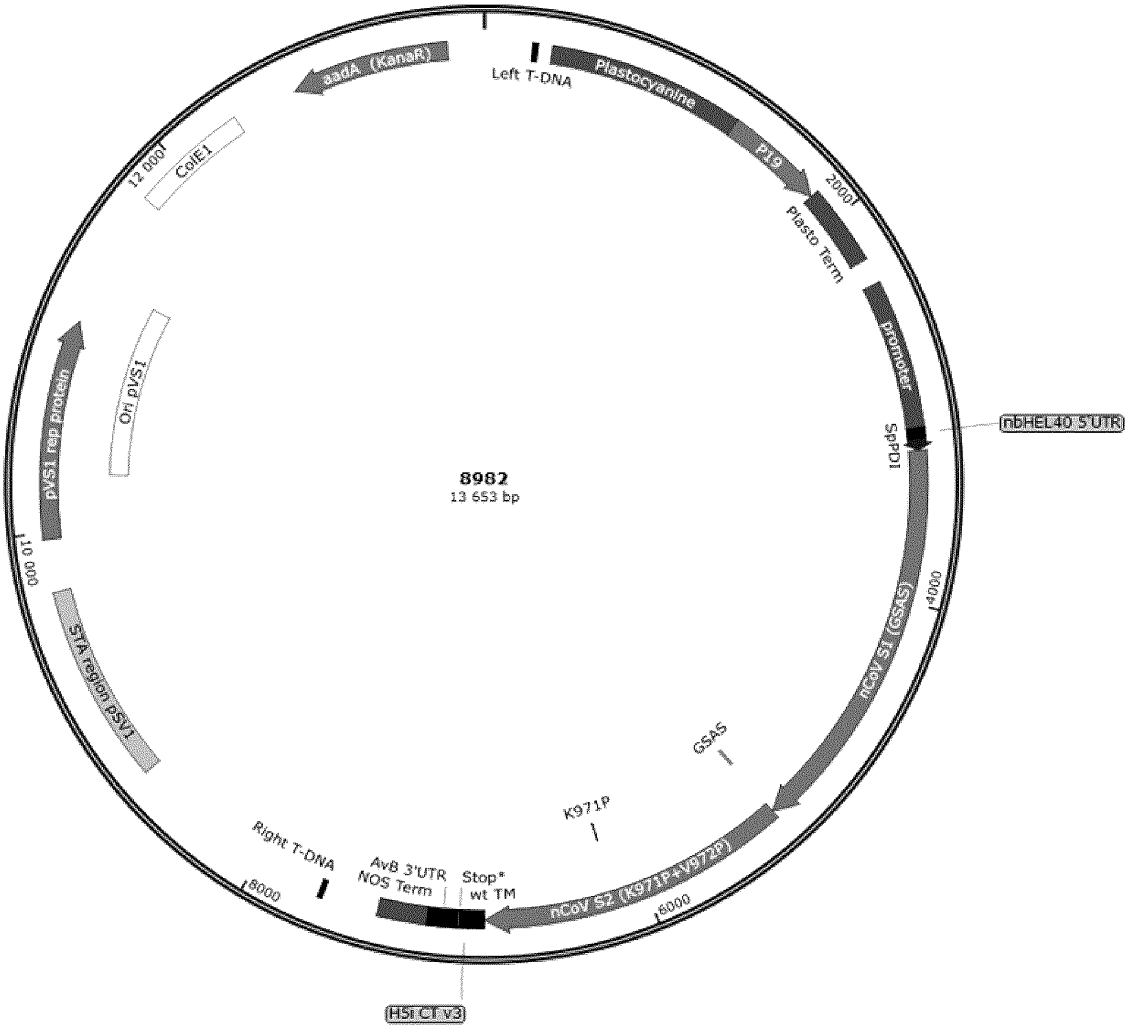


Figure 12D

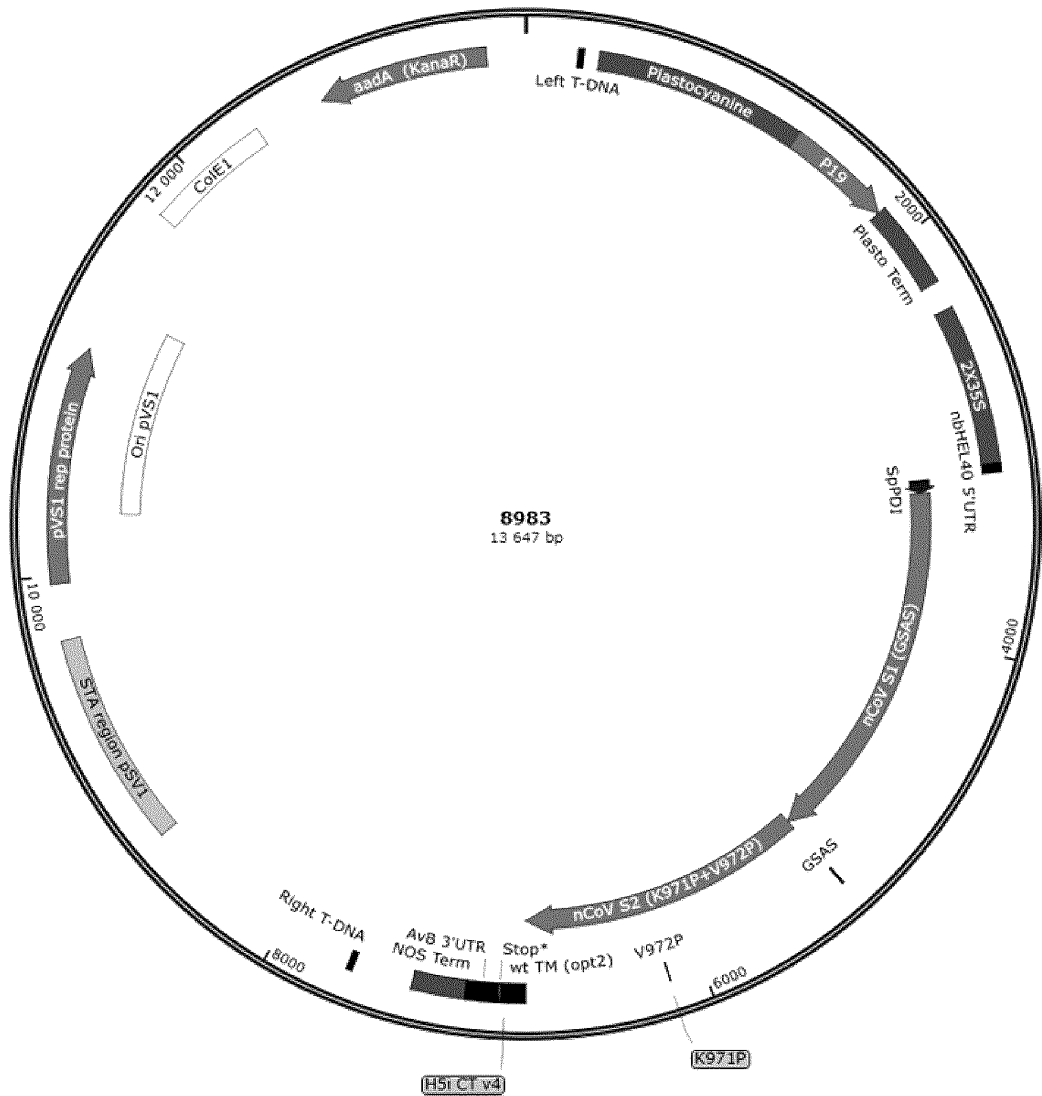


Figure 13A

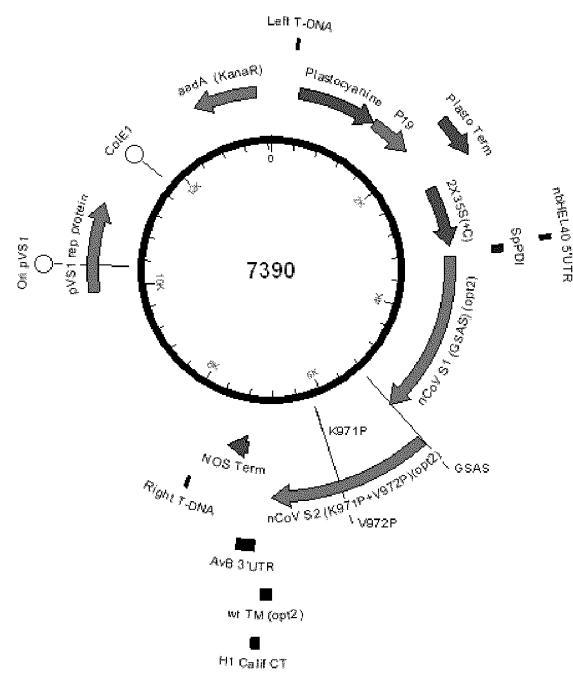


Figure 13B

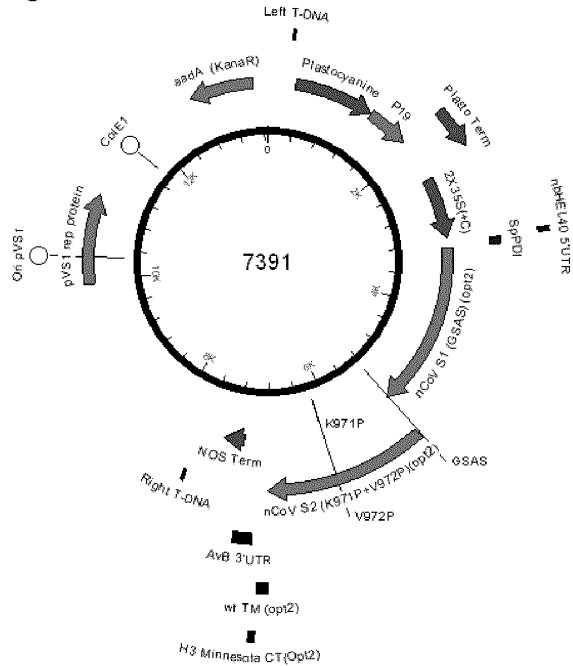


Figure 13C

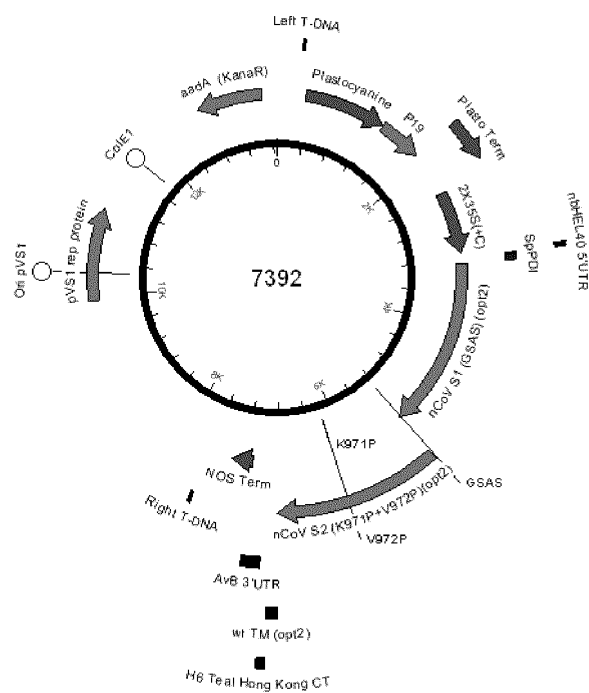


Figure 13D

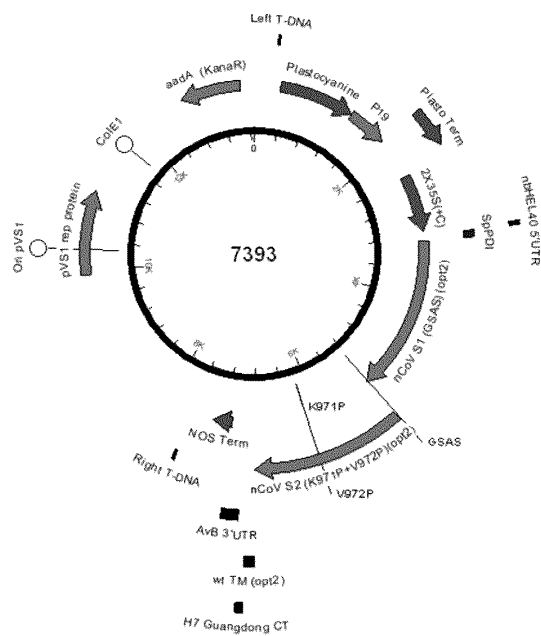


Figure 13E

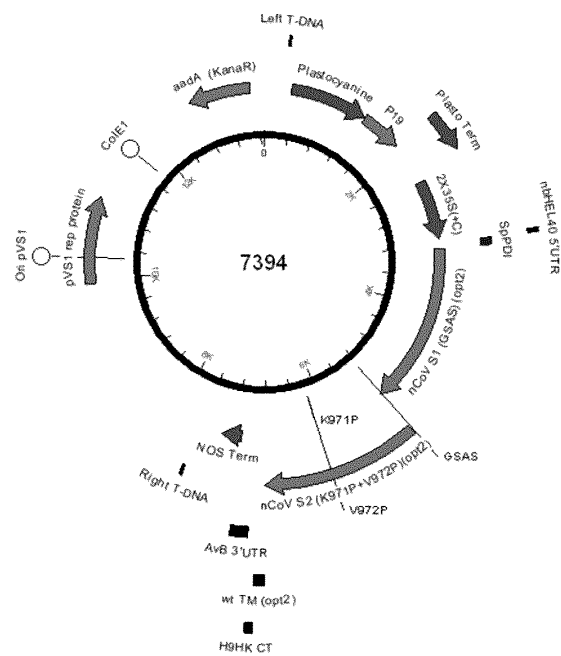


Figure 13F

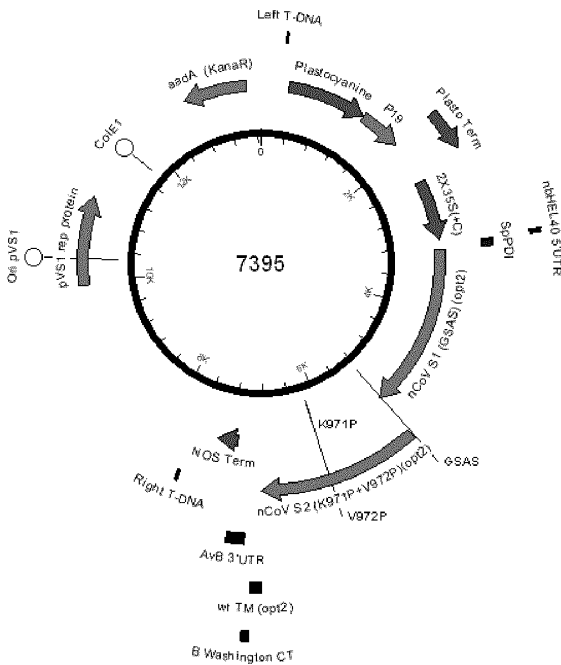


Figure 14A

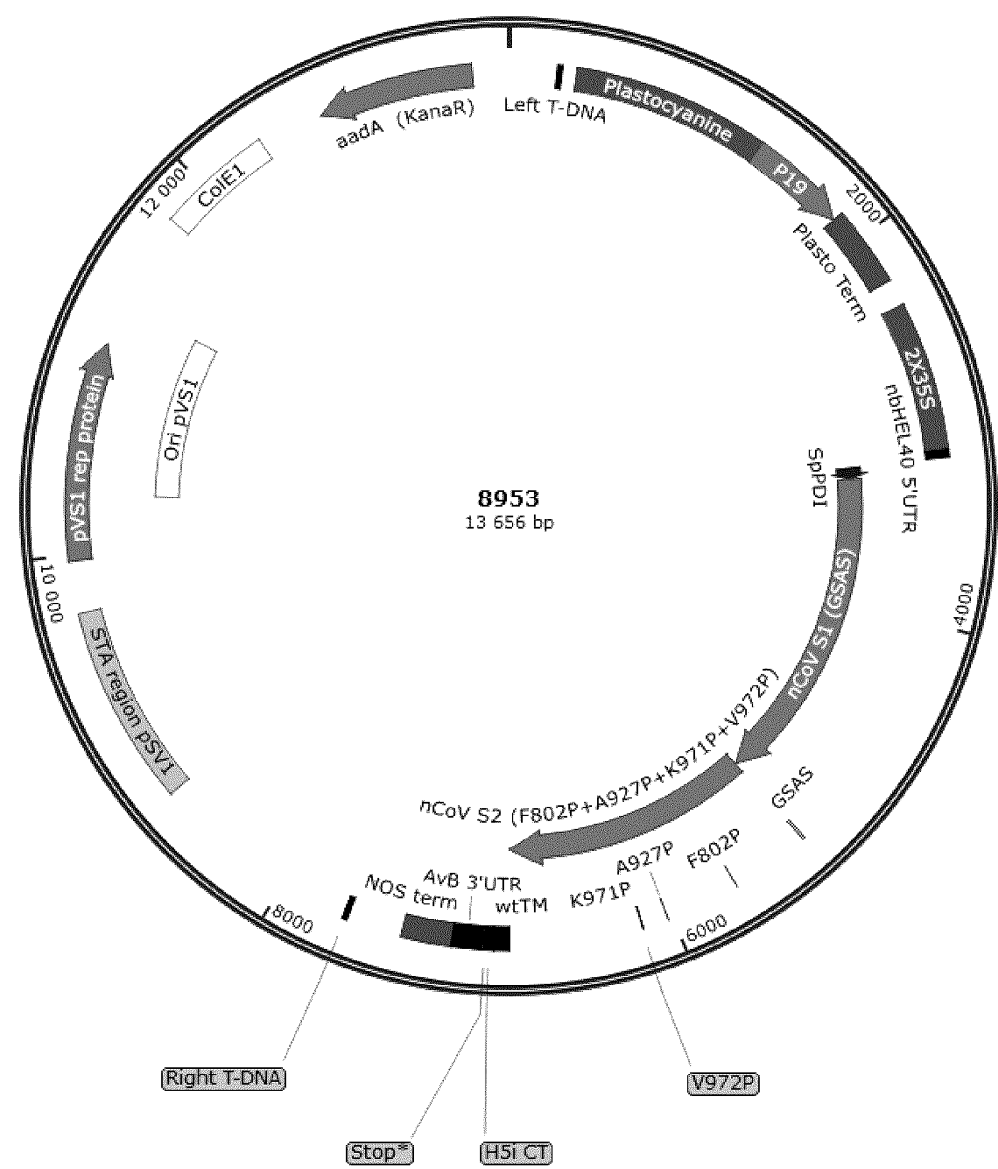


Figure 14B

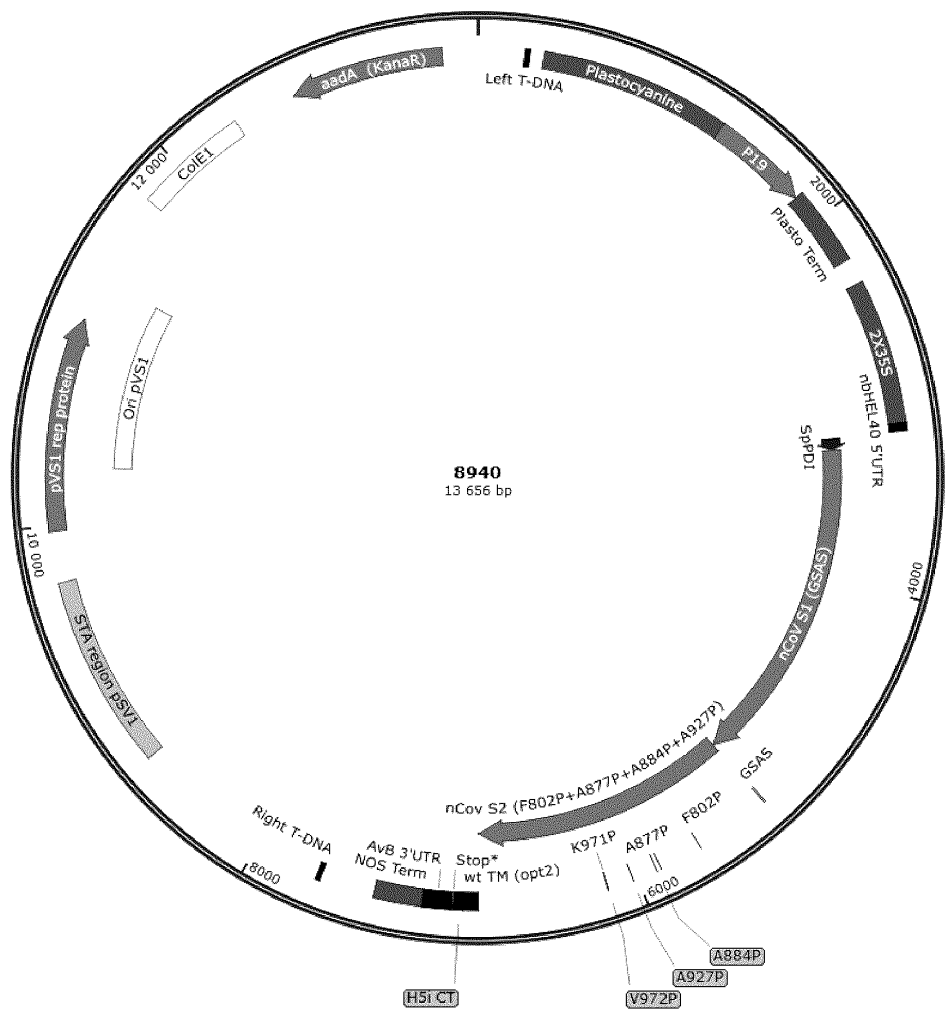
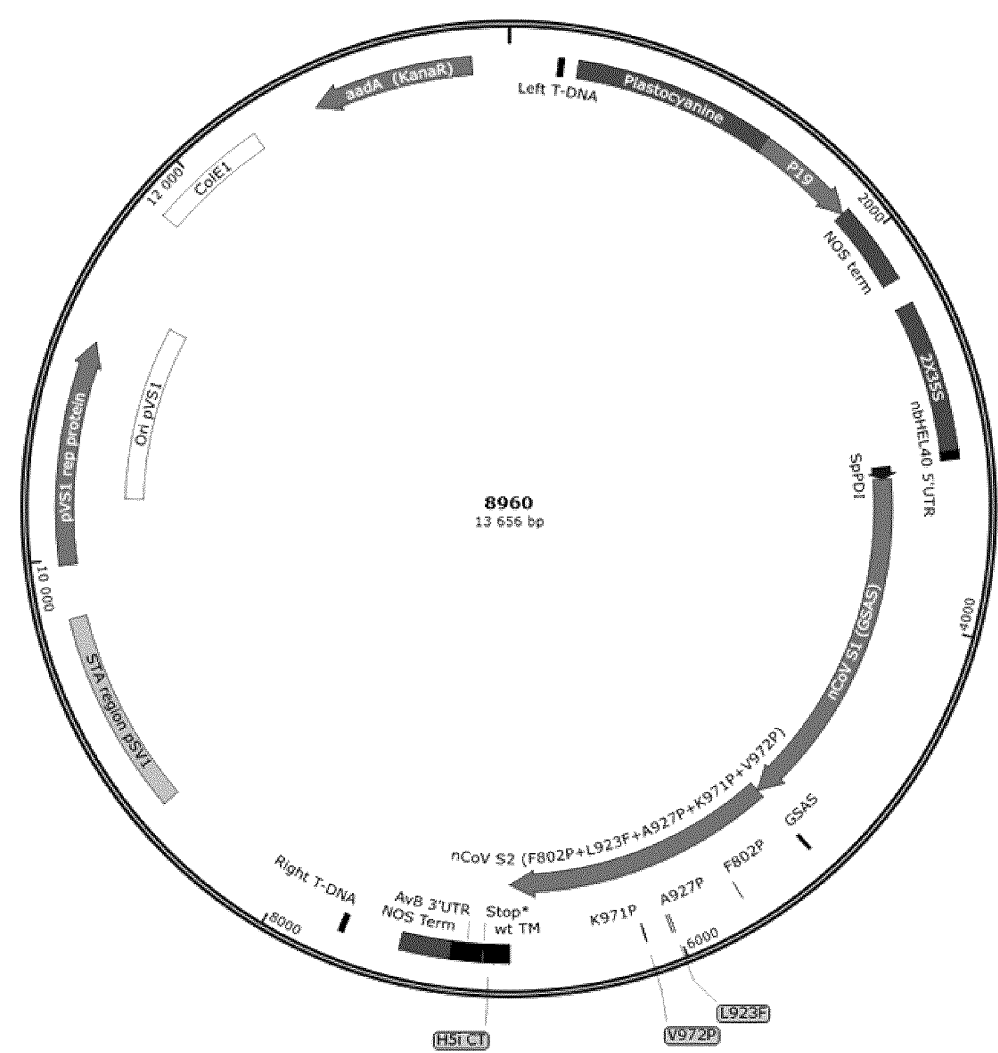


Figure 15A



Figure 15B



8947
13 656 bp

Map features include:
 - **aadA (KanaR)**: Antibiotic resistance gene.
 - **Left T-DNA**: T-DNA region.
 - **Plastocyanine**: Plastocyanine gene.
 - **p19**: p19 gene.
 - **Plasto Term**: Plastocyanine terminator.
 - **2355**: 2355 bp segment.
 - **nHEL40 5'UTR**: nHEL40 5'UTR.
 - **SspD1**: SspD1 gene.
 - **nCov S1 (GSAS)**: nCov S1 (GSAS) gene.
 - **GSAS**: GSAS gene.
 - **nCov S2 (F802P+A877P+A884P+L923F+A927P+K971P+V972P)**: nCov S2 (F802P+A877P+A884P+L923F+A927P+K971P+V972P) gene.
 - **K971P**: K971P mutation site.
 - **A877P**: A877P mutation site.
 - **F802P**: F802P mutation site.
 - **V972P**: V972P mutation site.
 - **A927P**: A927P mutation site.
 - **A884P**: A884P mutation site.
 - **L923F**: L923F mutation site.
 - **Stop* wt TM**: Stop* wt TM mutation site.
 - **AvB 3'UTR**: AvB 3'UTR.
 - **NOS term**: NOS term.
 - **Right T-DNA**: Right T-DNA region.
 - **5'A region pSV1**: 5'A region pSV1.
 - **Ori pSV1**: Ori pSV1.
 - **pSV1 rep protein**: pSV1 rep protein.
 - **ColE1**: ColE1 origin of replication.
 - **12 000**: 12 000 bp segment.

Figure 16A

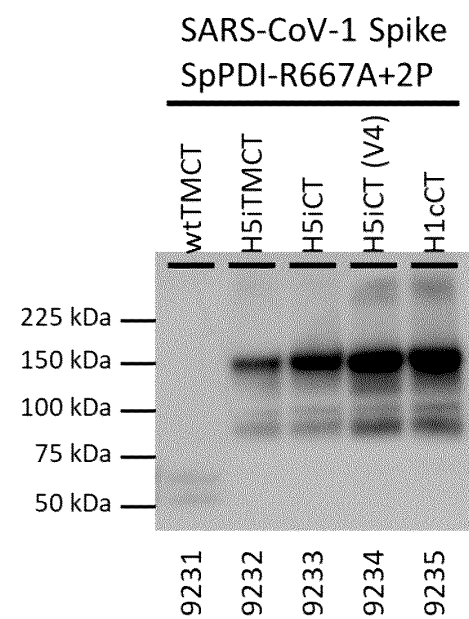


Figure 16B

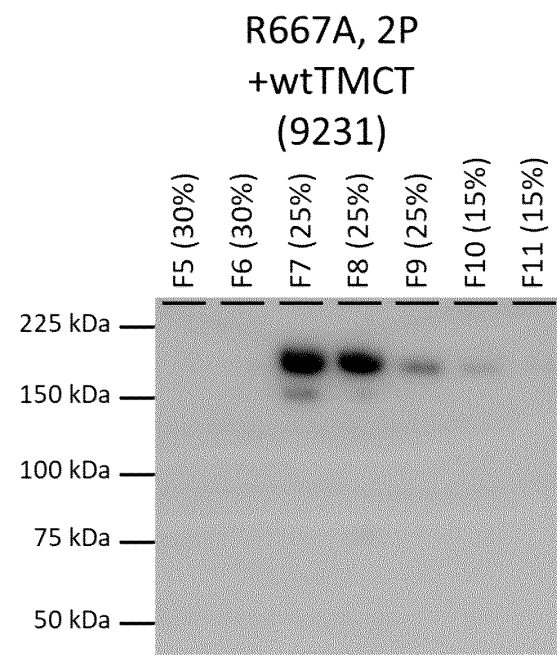


Figure 16C

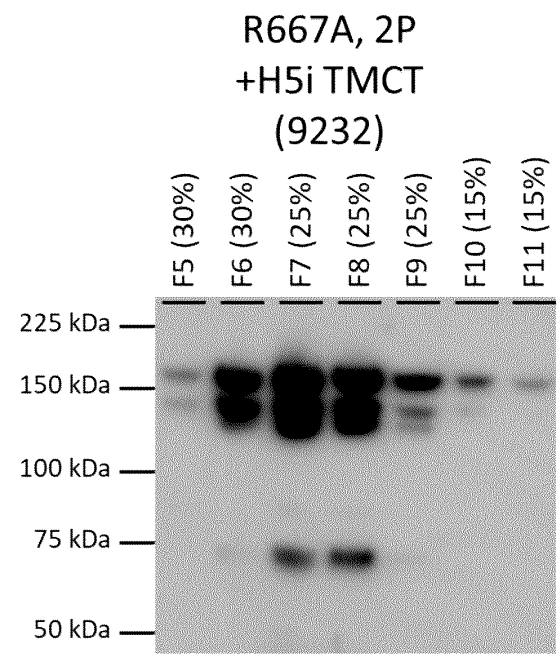


Figure 16D

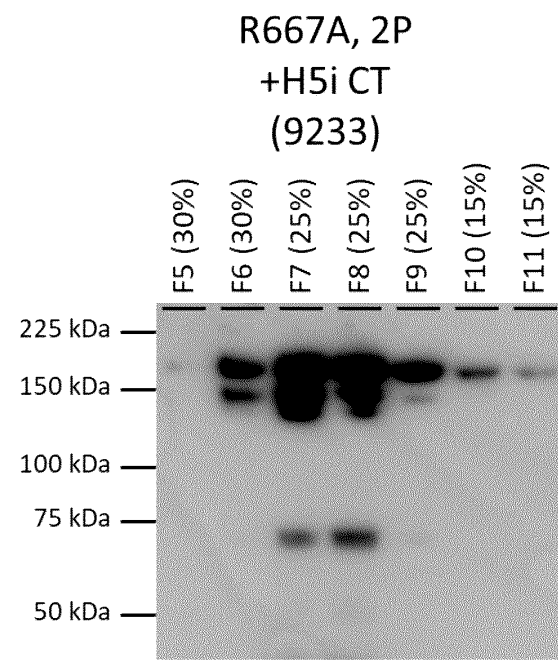
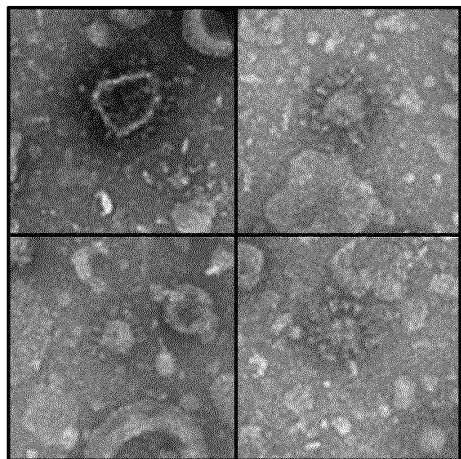


Figure 17A

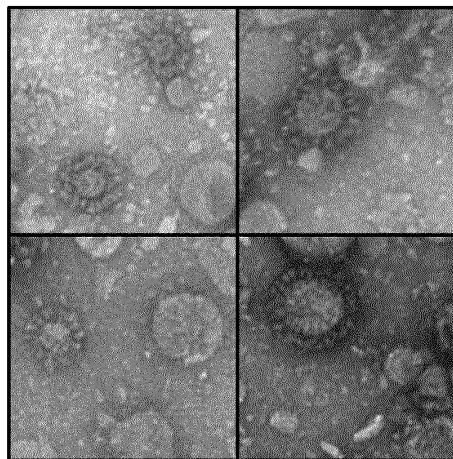
R667A, 2P
+wtTMCT
(9231)



100 nm

Figure 17B

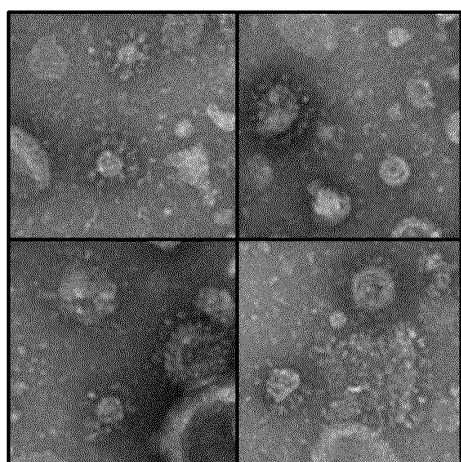
R667A, 2P
+H5i TMCT
(9232)



100 nm

Figure 17C

R667A, 2P
+H5i CT
(9233)



100 nm

Figure 18A

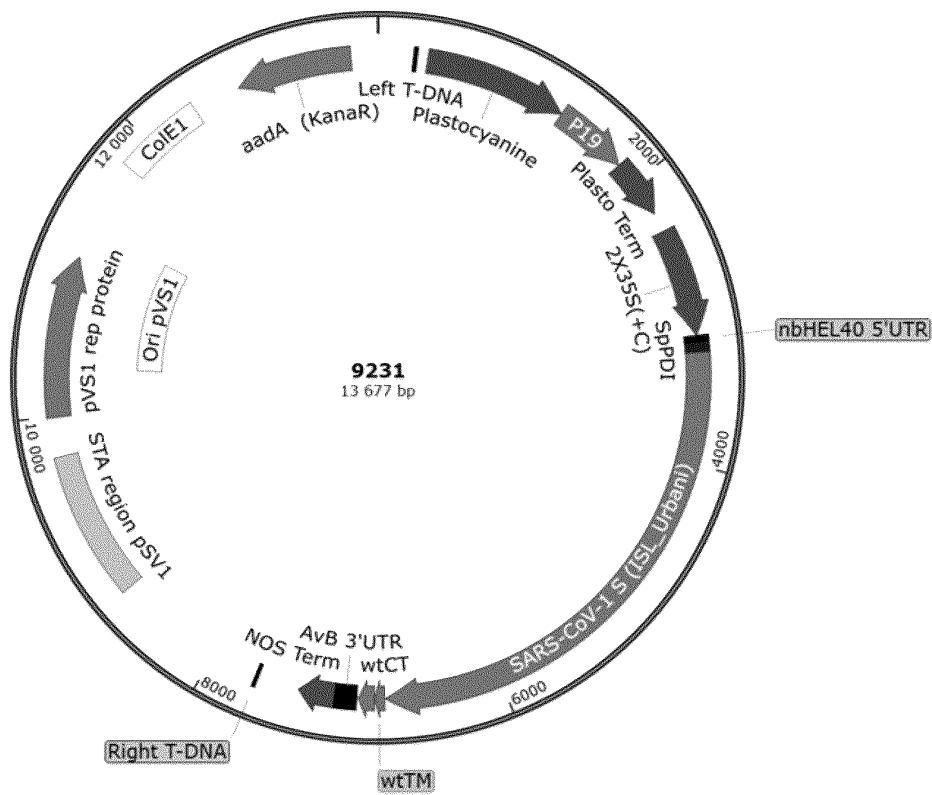


Figure 18B

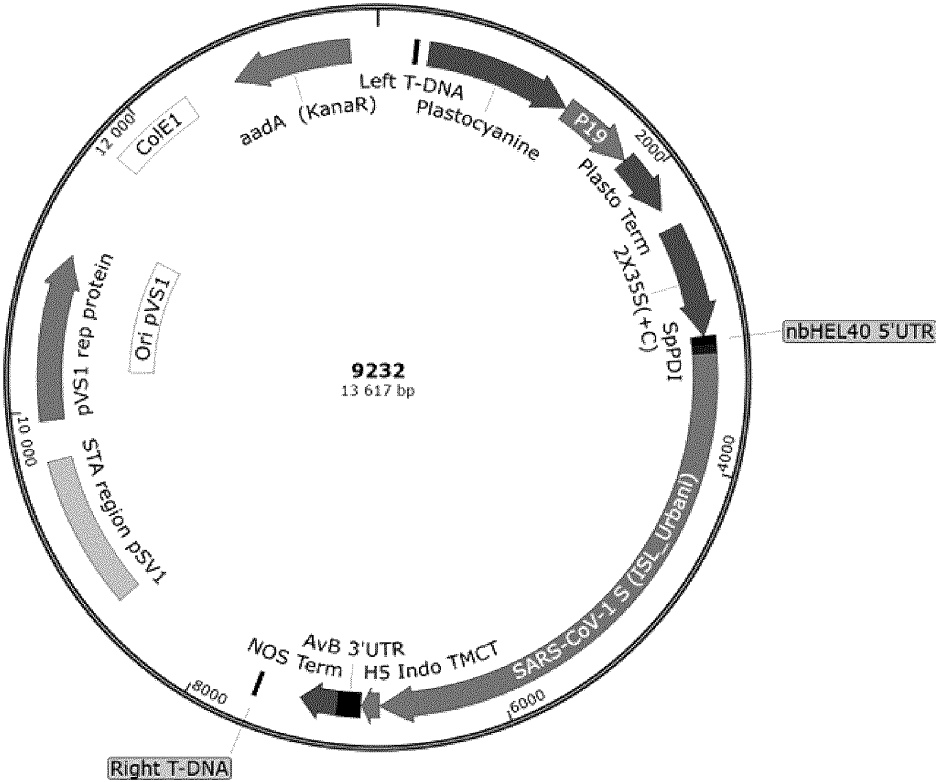


Figure 18C

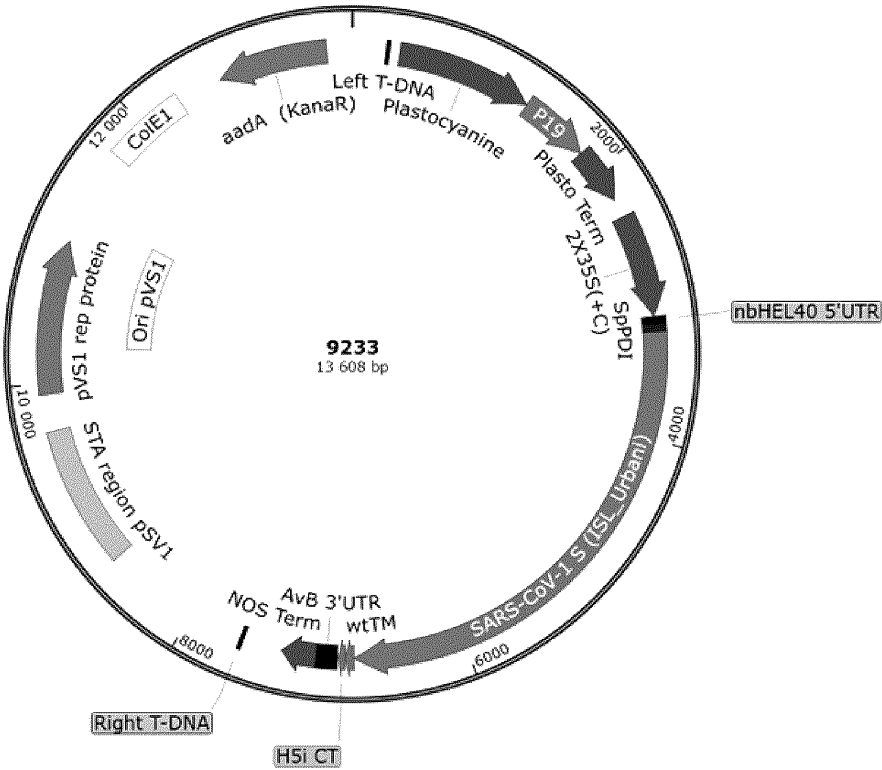


Figure 18D

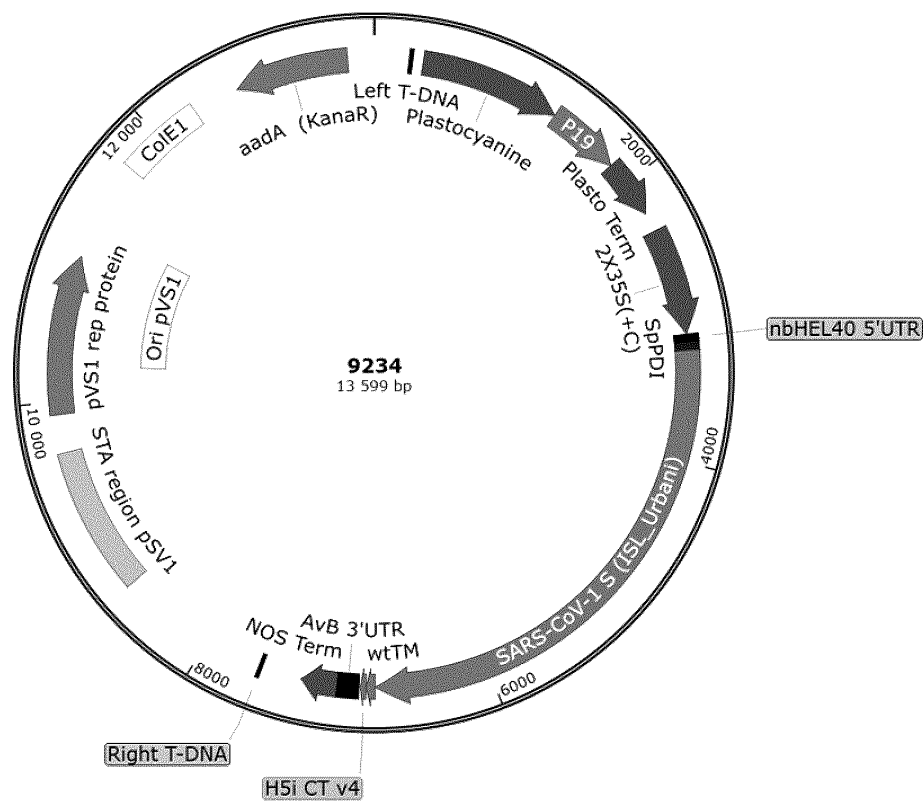


Figure 18E

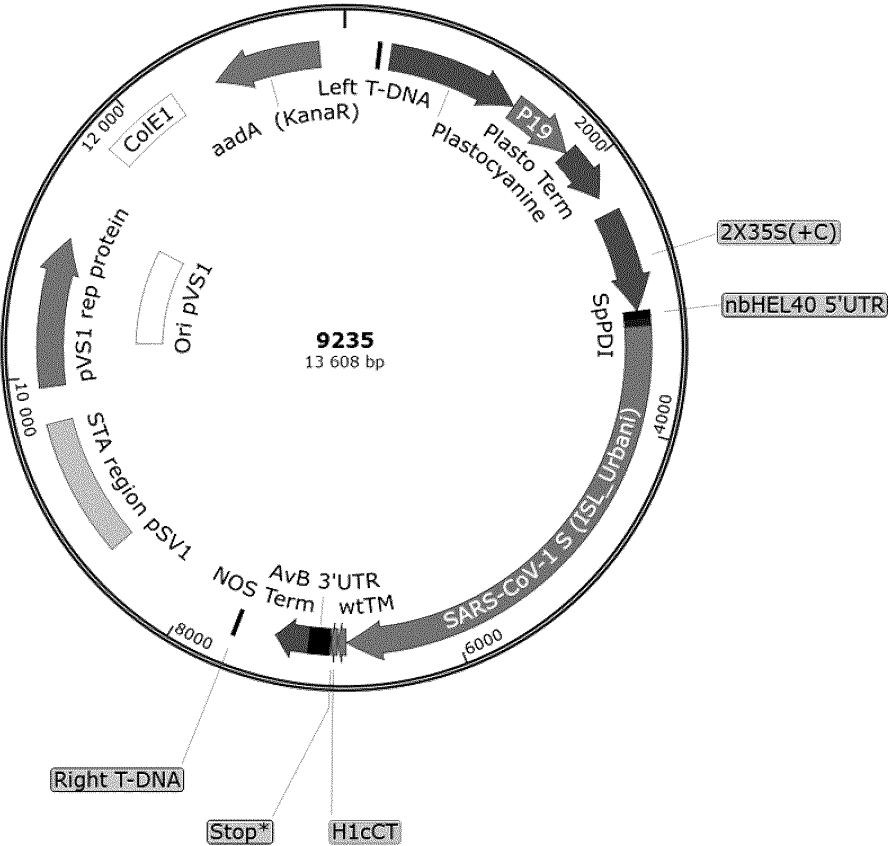


Figure 19A

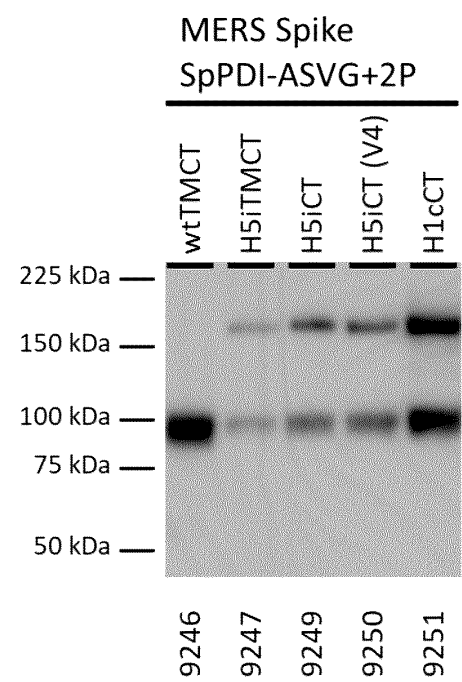


Figure 19B

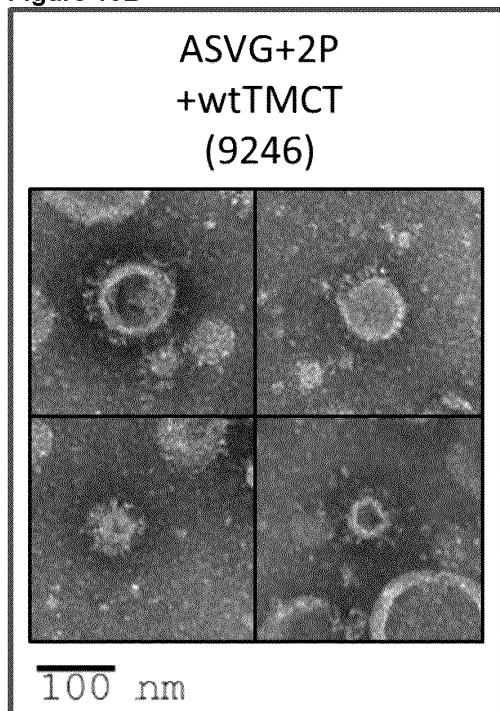


Figure 19C

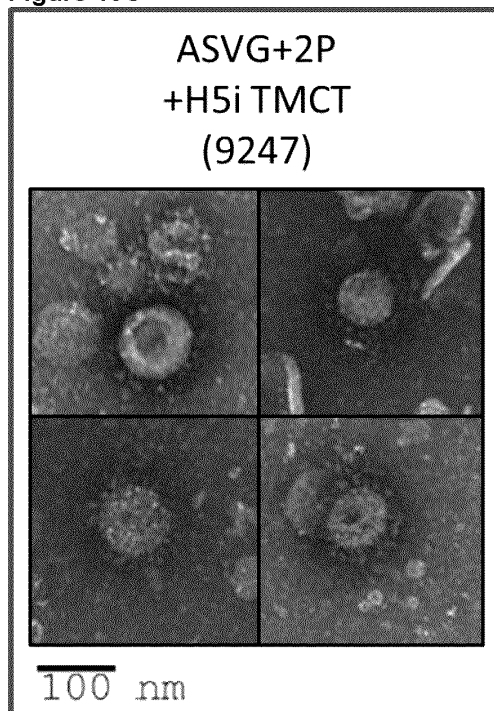


Figure 19D

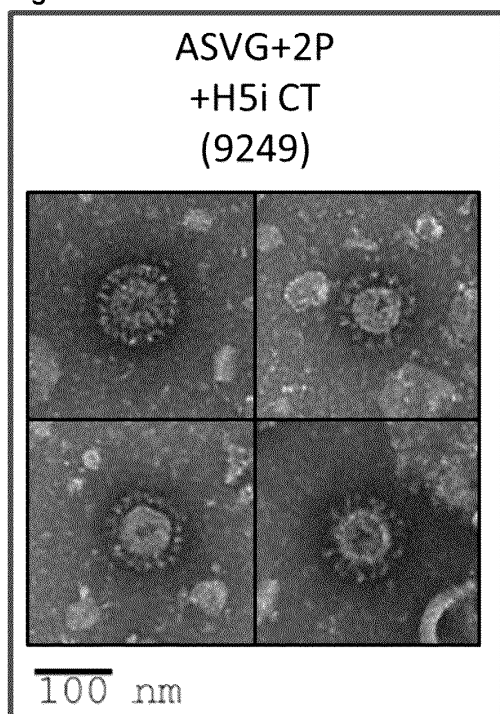


Figure 19E

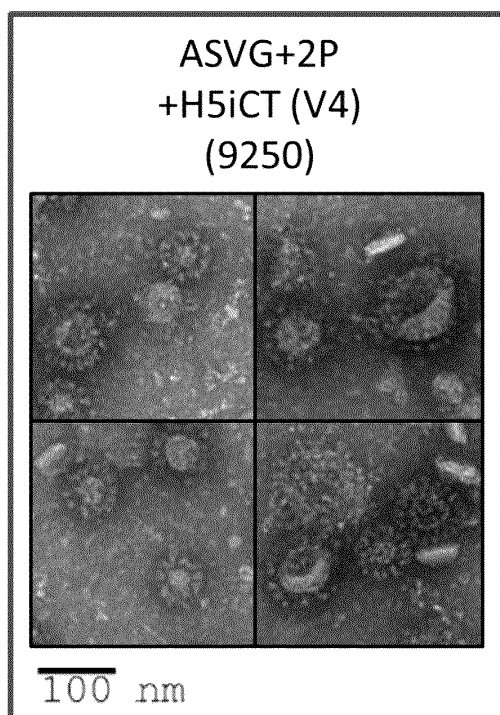


Figure 19F

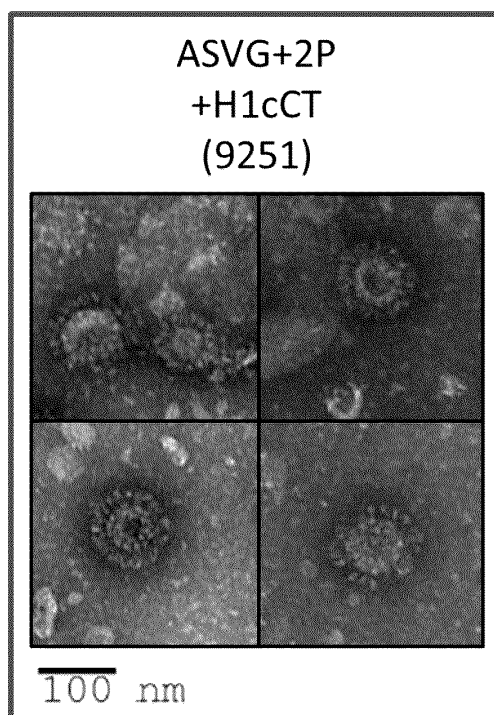


Figure 20A

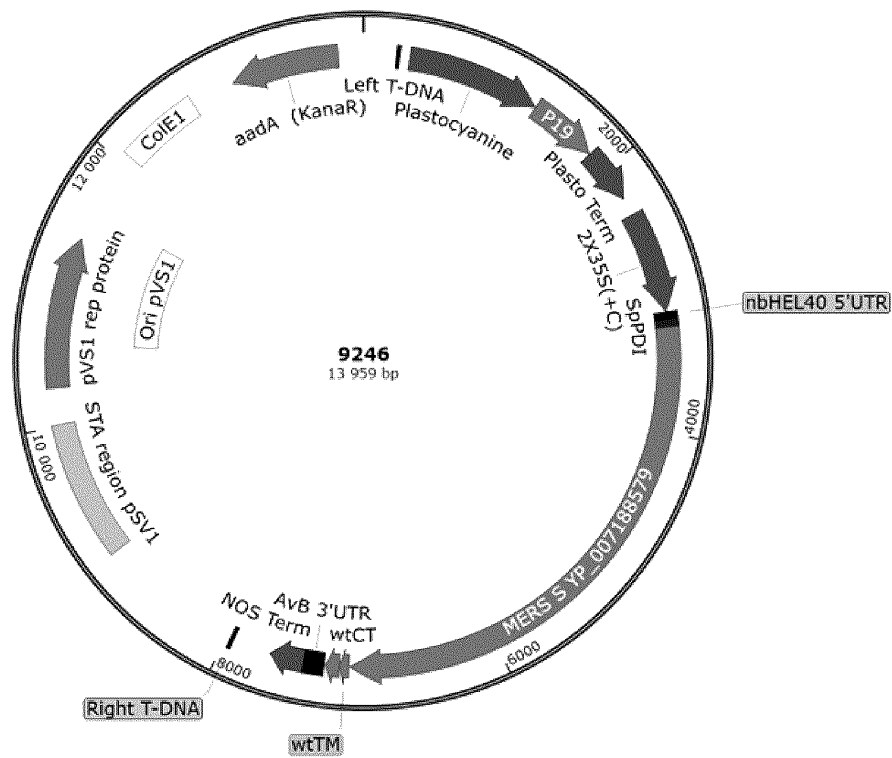


Figure 20B

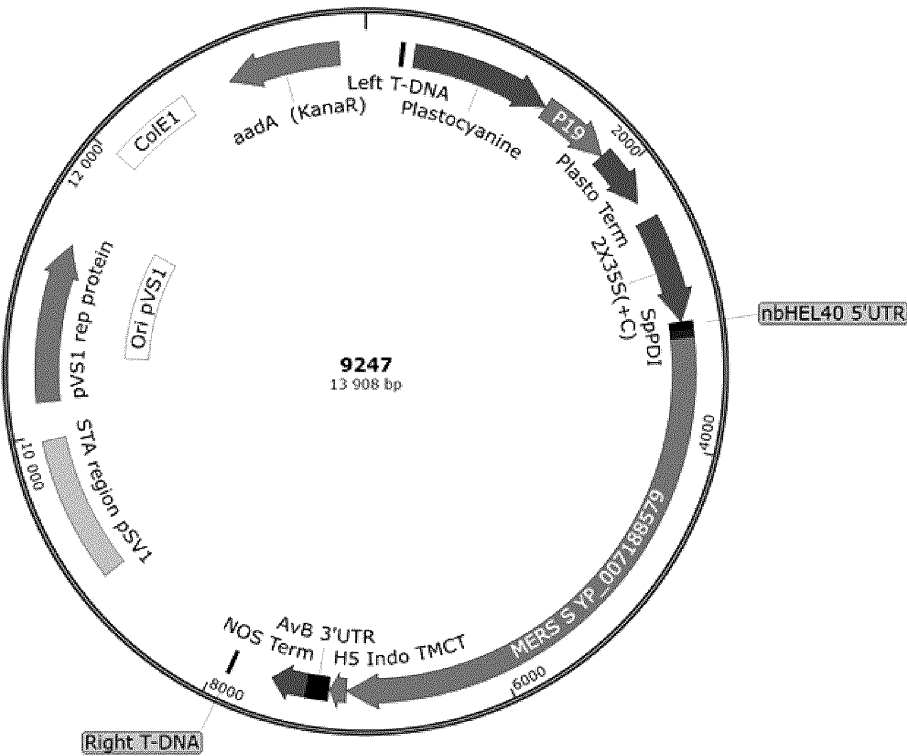


Figure 20C

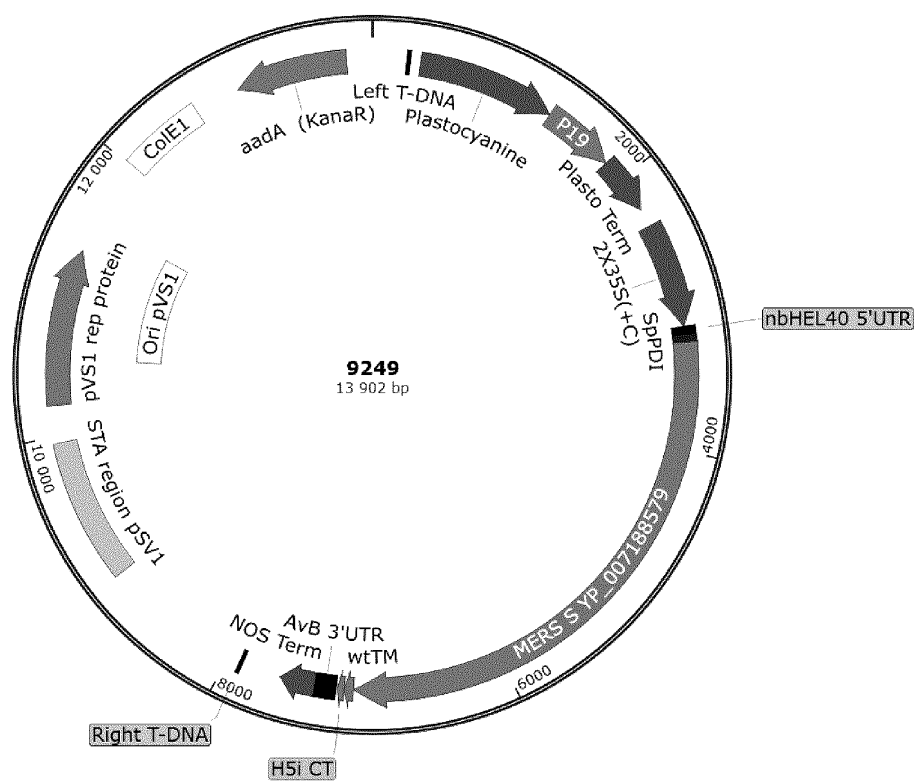


Figure 20D

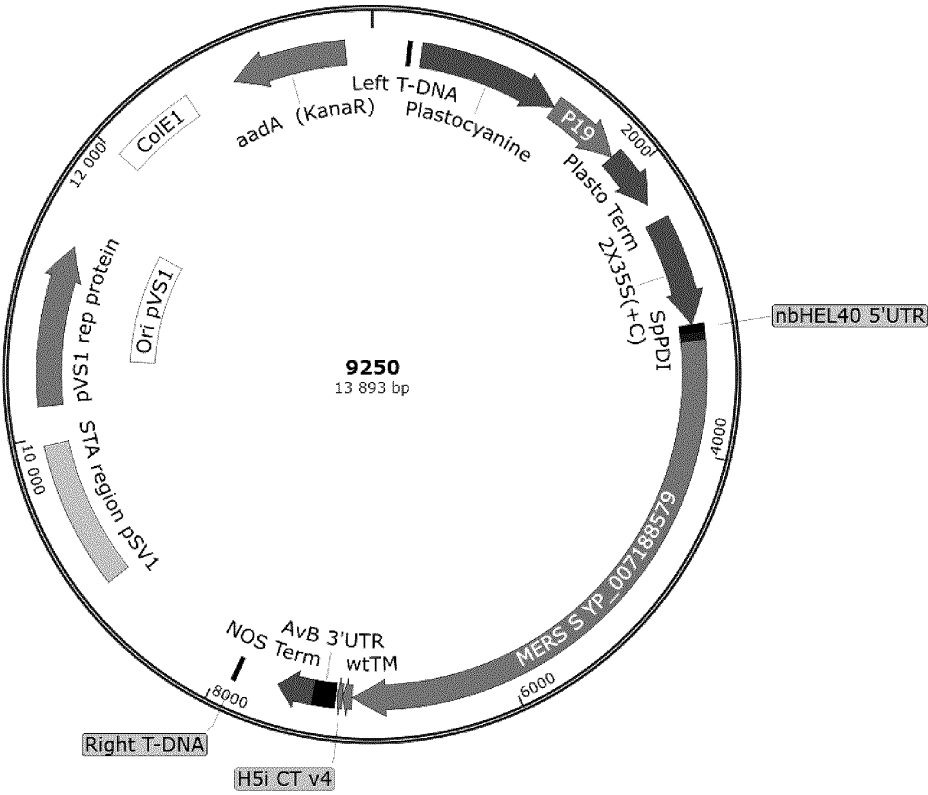


Figure 20E

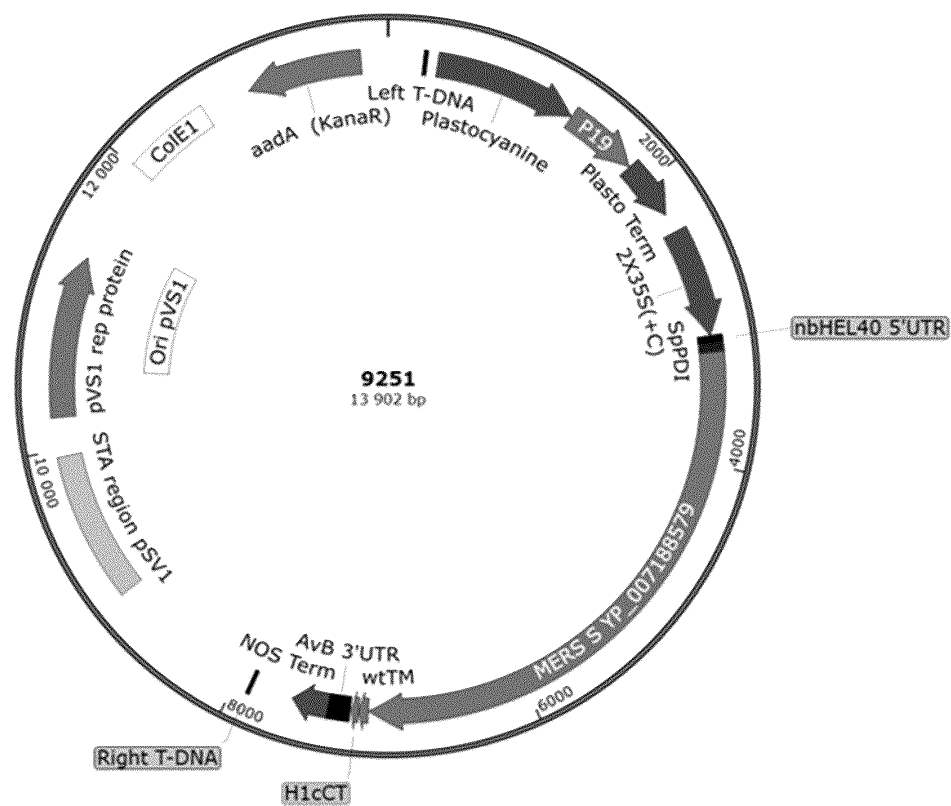
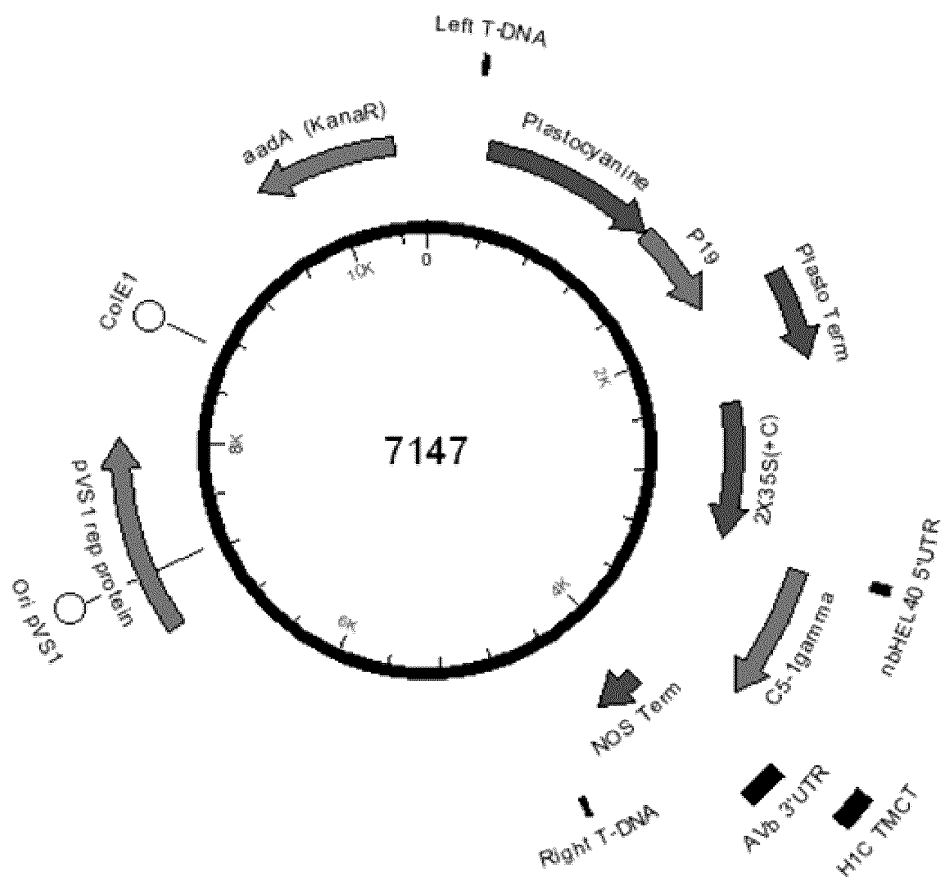


Figure 21



Native MERS S no signal peptide_SEQ_ID_115
Native SARS-CoV-1 S no signal peptide_SEQ_ID_114
Native SARS-CoV-2 S no signal peptide_SEQ_ID_2

Native MERS S no signal peptide_SEQ_ID_115
Native SARS-CoV-1 S no signal peptide_SEQ_ID_114
Native SARS-CoV-2 S no signal peptide_SEQ_ID_2

Native MERS S no signal peptide_SEQ_ID_115
Native SARS-CoV-1 S no signal peptide_SEQ_ID_114
Native SARS-CoV-2 S no signal peptide_SEQ_ID_2

Native MERS S no signal peptide_SEQ_ID_115
Native SARS-CoV-1 S no signal peptide_SEQ_ID_114
Native SARS-CoV-2 S no signal peptide_SEQ_ID_2

Native MERS S no signal peptide_SEQ_ID_115
Native SARS-CoV-1 S no signal peptide_SEQ_ID_114
Native SARS-CoV-2 S no signal peptide_SEQ_ID_2

Native_MERS_S no signal peptide_SEQ_ID_115
Native_SARS-CoV-1_S no signal peptide_SEQ_ID_114
Native_SARS-CoV-2_S no signal peptide_SEQ_ID_2

Native_MERS_S no_signal_peptide_SEQ_ID_115
Native_SARS-CoV-1_S no_signal_peptide_SEQ_ID_114
Native_SARS-CoV-2_S no_signal_peptide_SEQ_ID_2

Native MERS S no signal peptide_SEQ_ID_115
Native SARS-CoV-1 S no signal peptide_SEQ_ID_114
Native SARS-CoV-2 S no signal peptide_SEQ_ID_2

Native_MERS_S no_signal_peptide_SEQ_ID_115
Native_SARS-CoV-1_S no_signal_peptide_SEQ_ID_114
Native_SARS-CoV-2_S no_signal_peptide_SEQ_ID_2

[illegible]

Native_MERS_S no_signal_peptide_SEQ_ID_115
Native_SARS-CoV-1_S no_signal_peptide_SEQ_ID_114
Native_SARS-CoV-2_S no_signal_peptide_SEQ_ID_2

50/65

[illegible]

51/65

Figure 23A

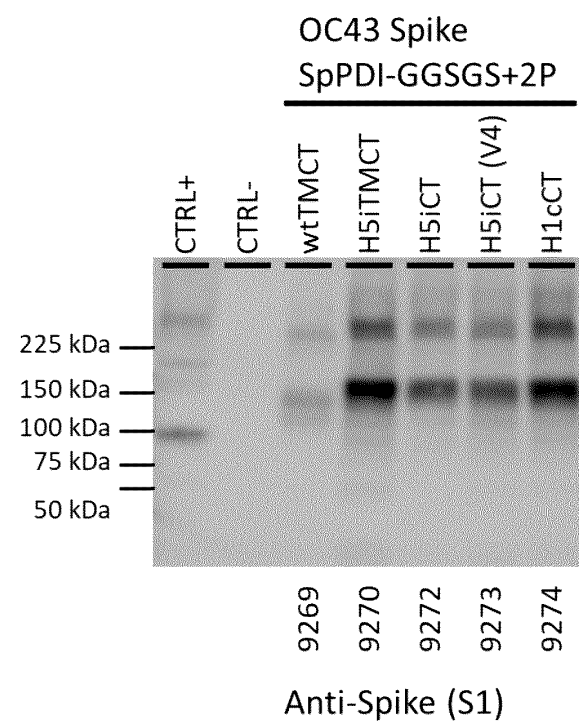


Figure 23B

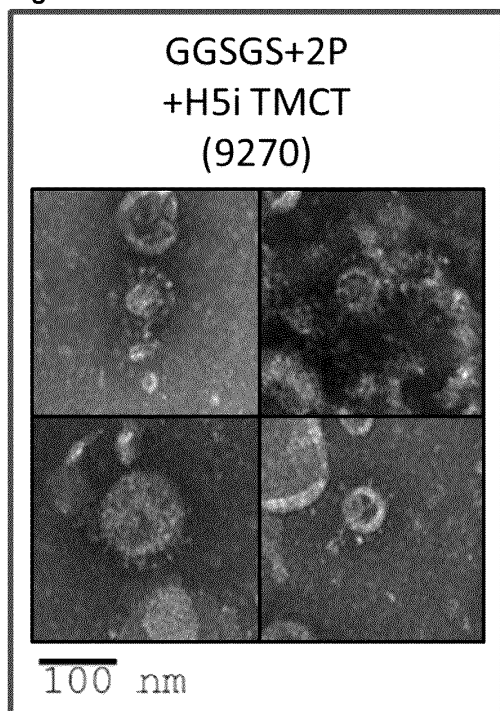


Figure 23C

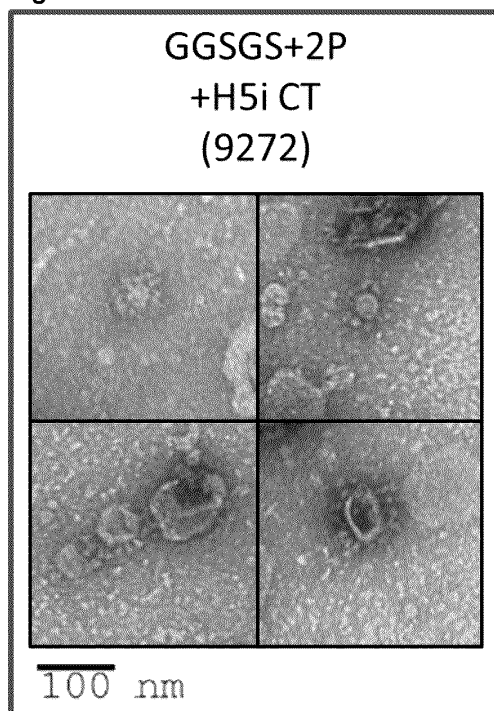


Figure 23D

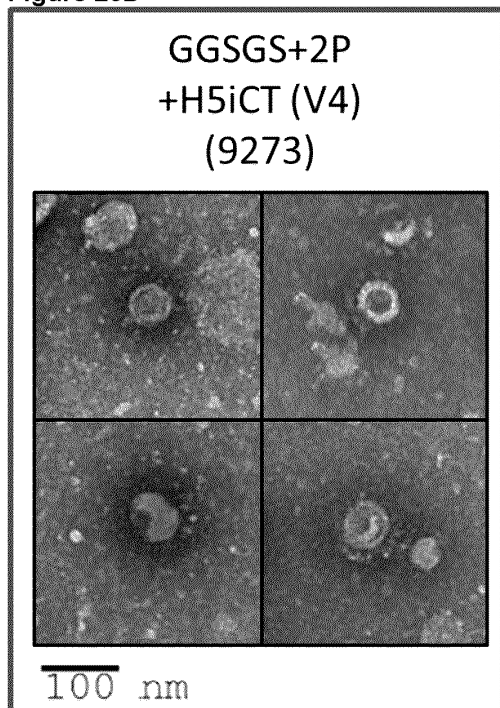


Figure 23E

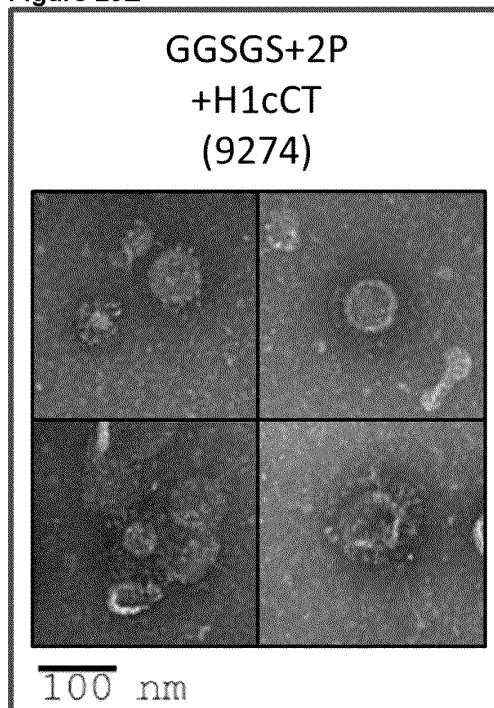


Figure 24A

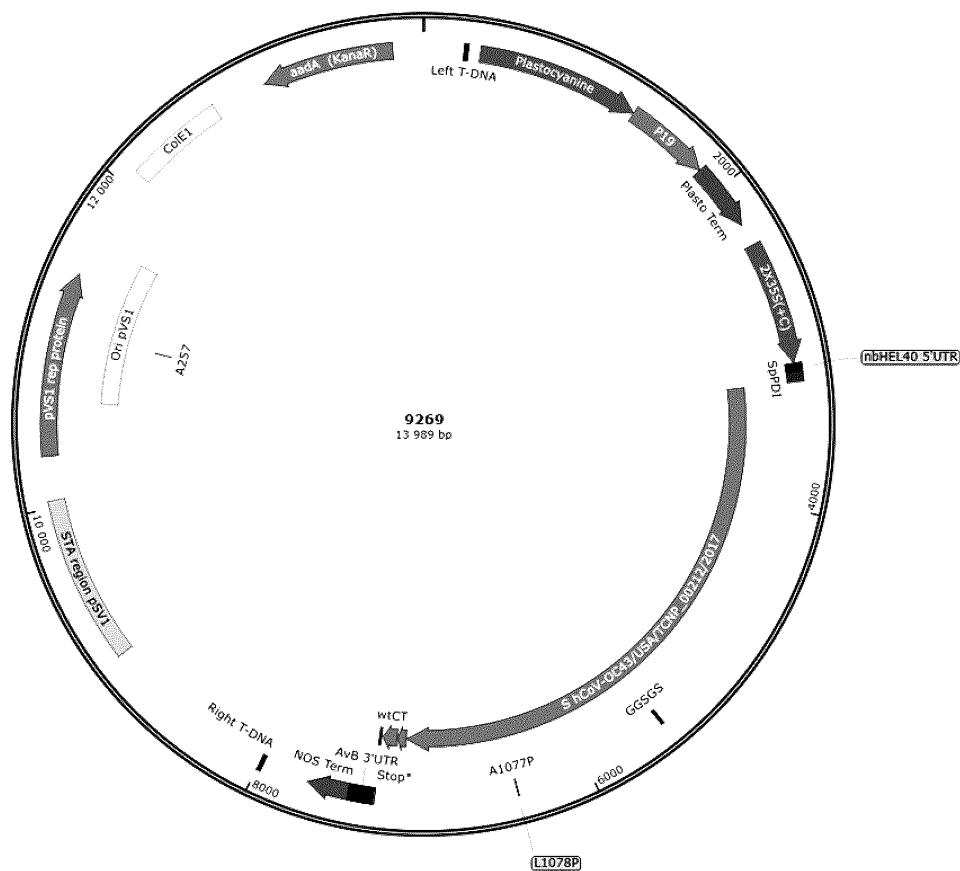


Figure 24B

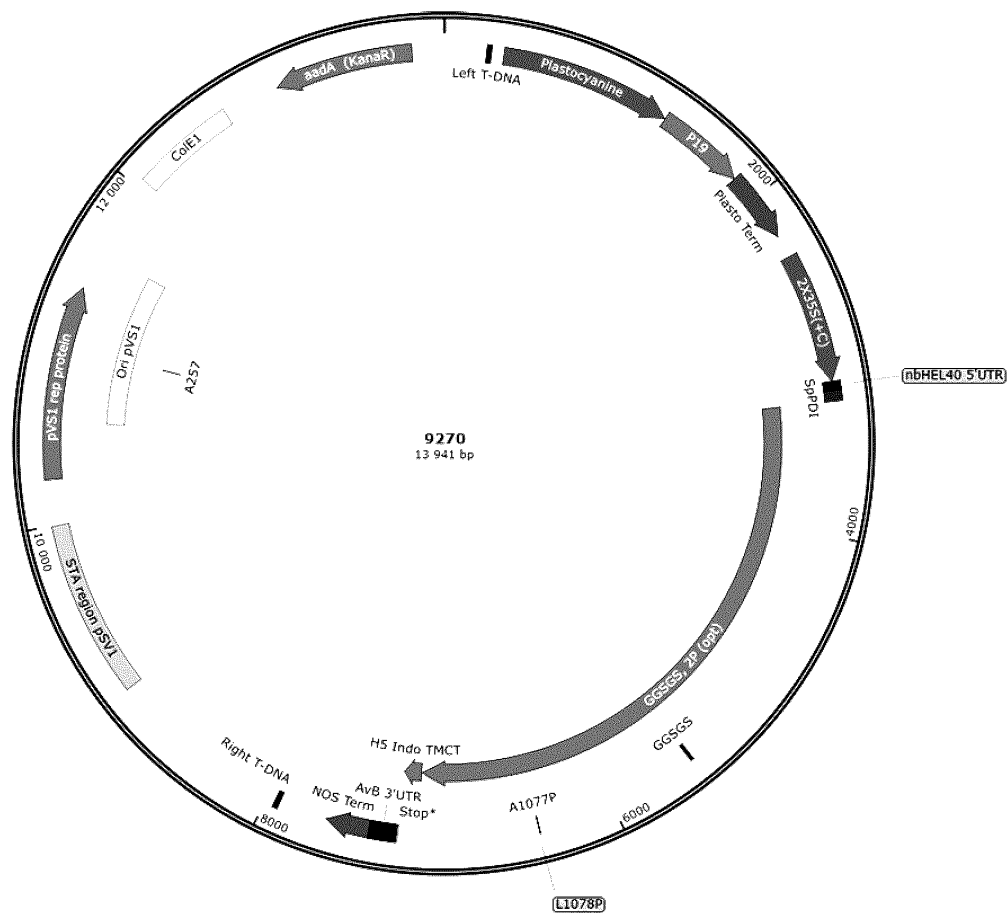


Figure 24C

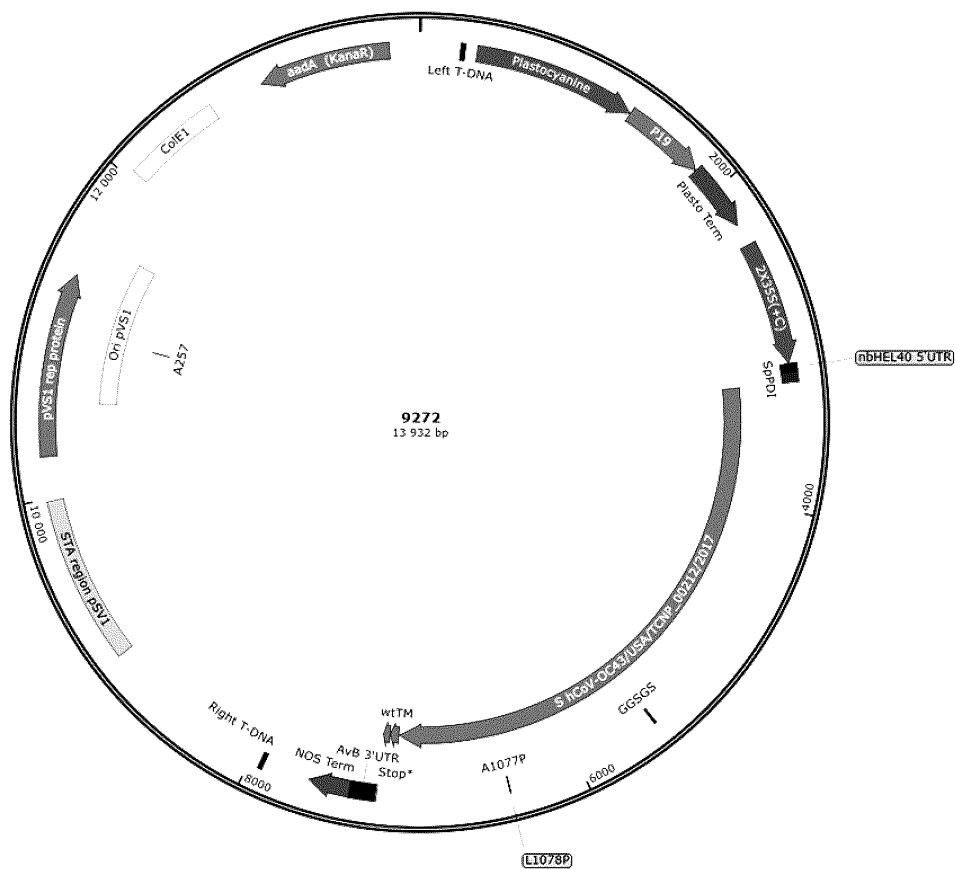


Figure 24D

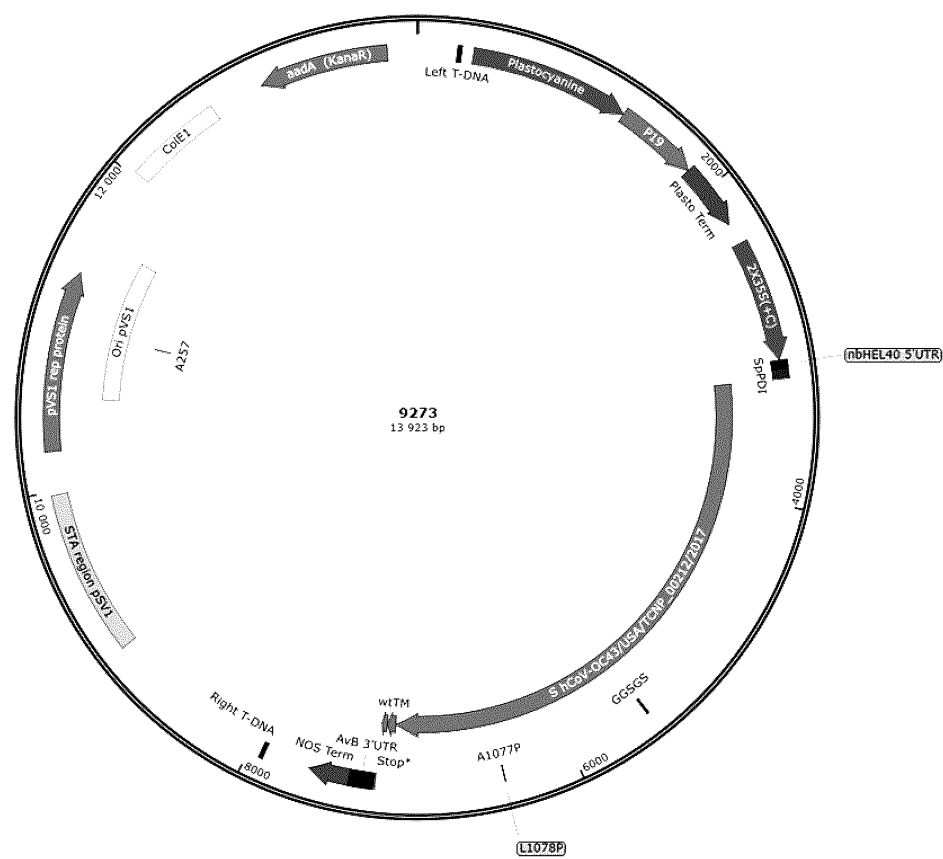


Figure 24E

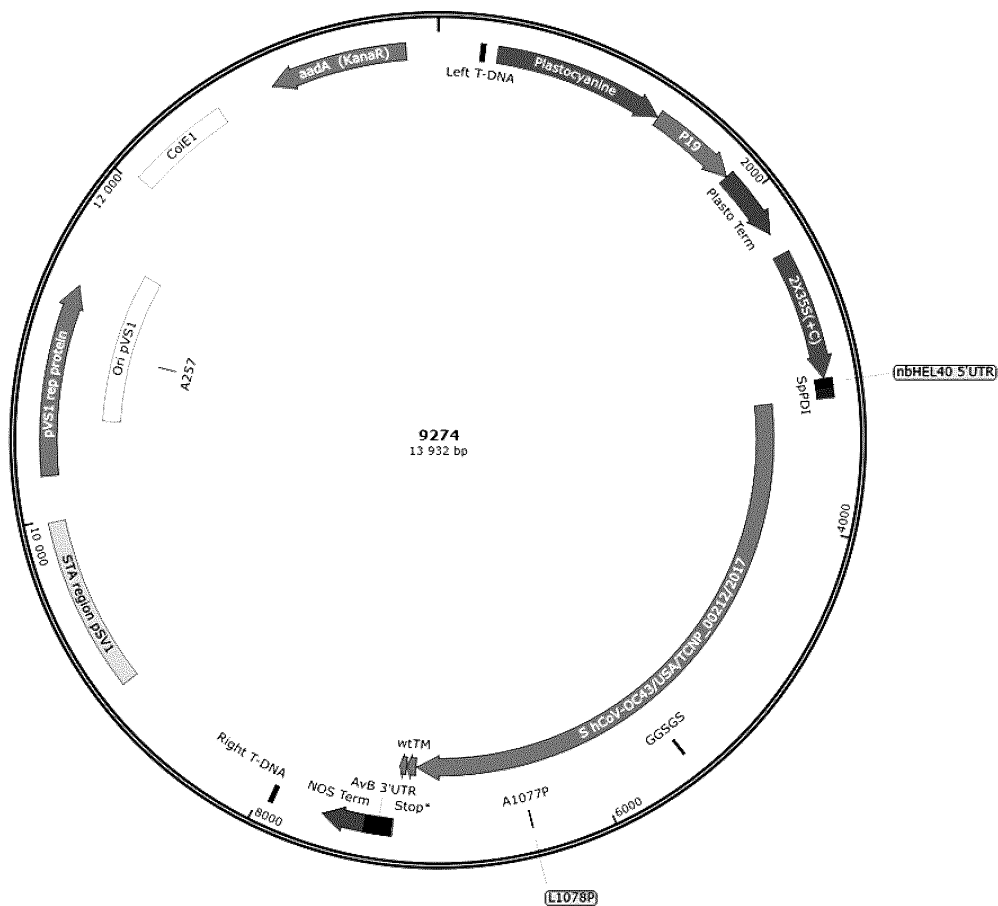


Figure 25A

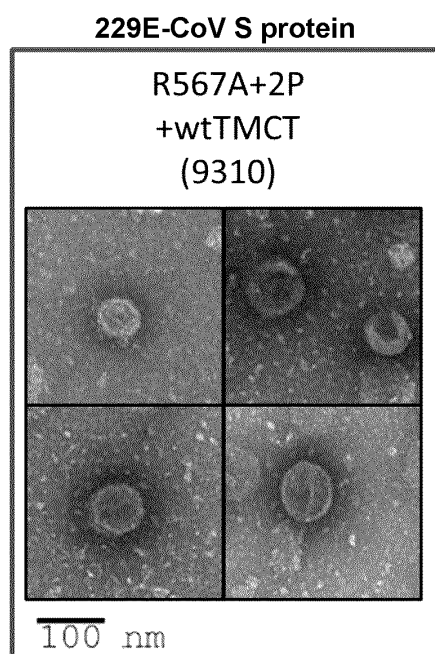


Figure 25B

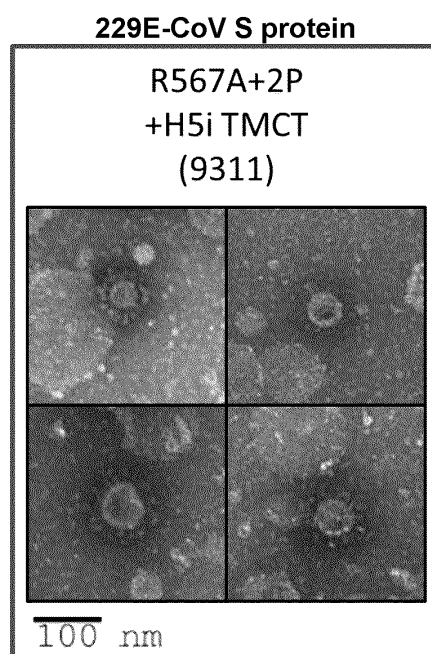


Figure 25C

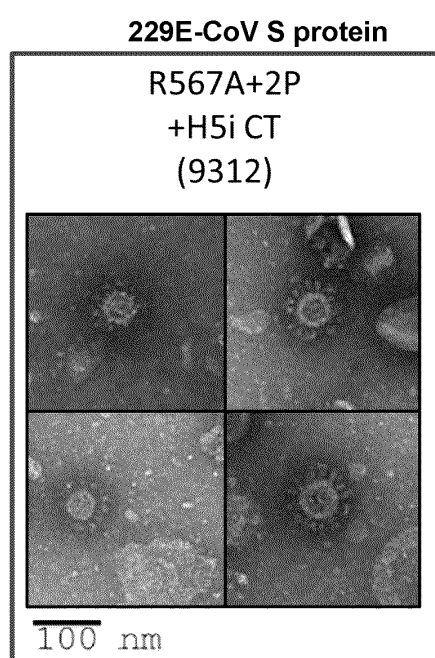


Figure 25D

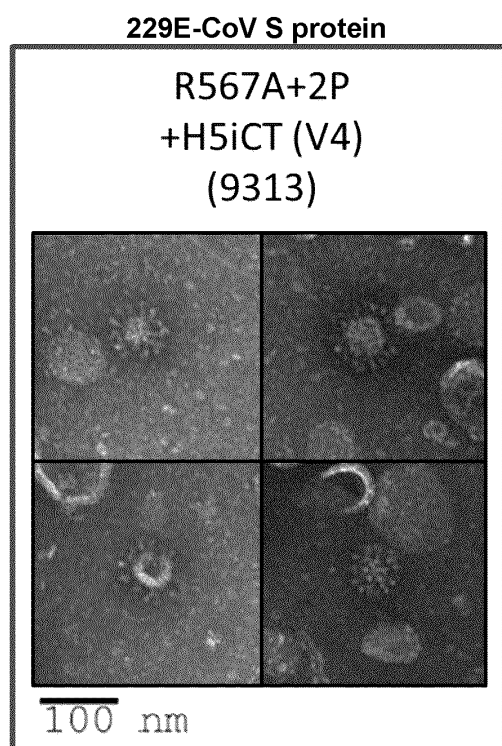


Figure 25E

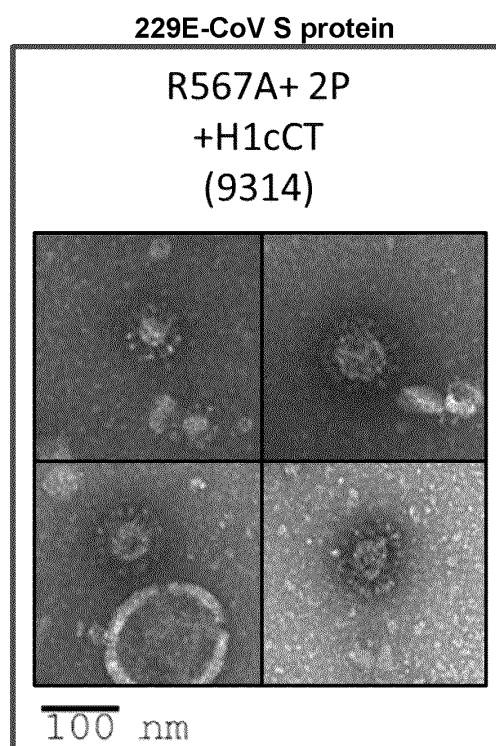


Figure 26A

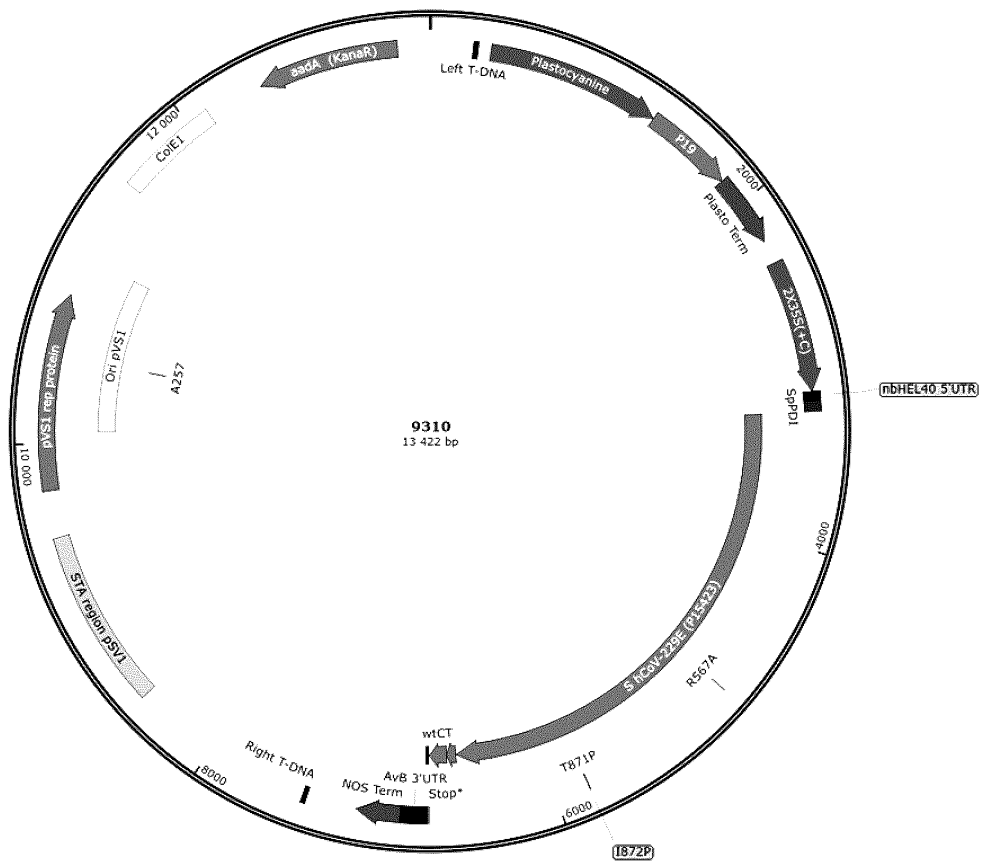


Figure 26B

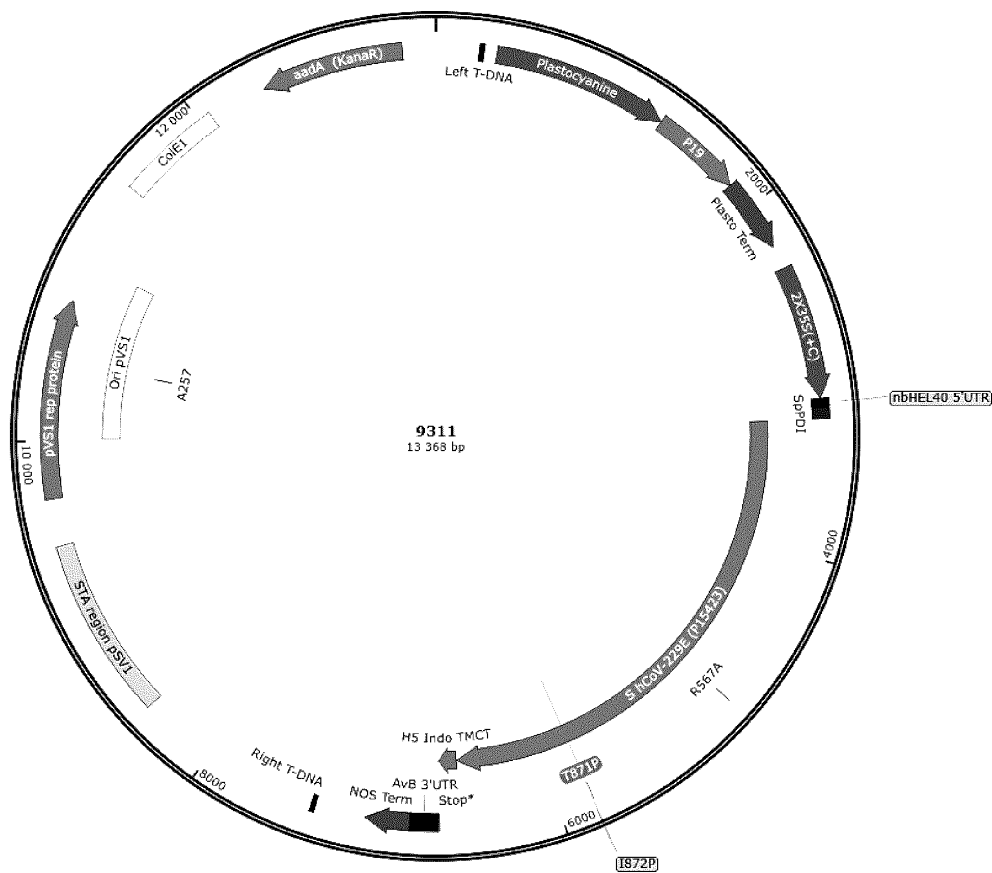


Figure 26C

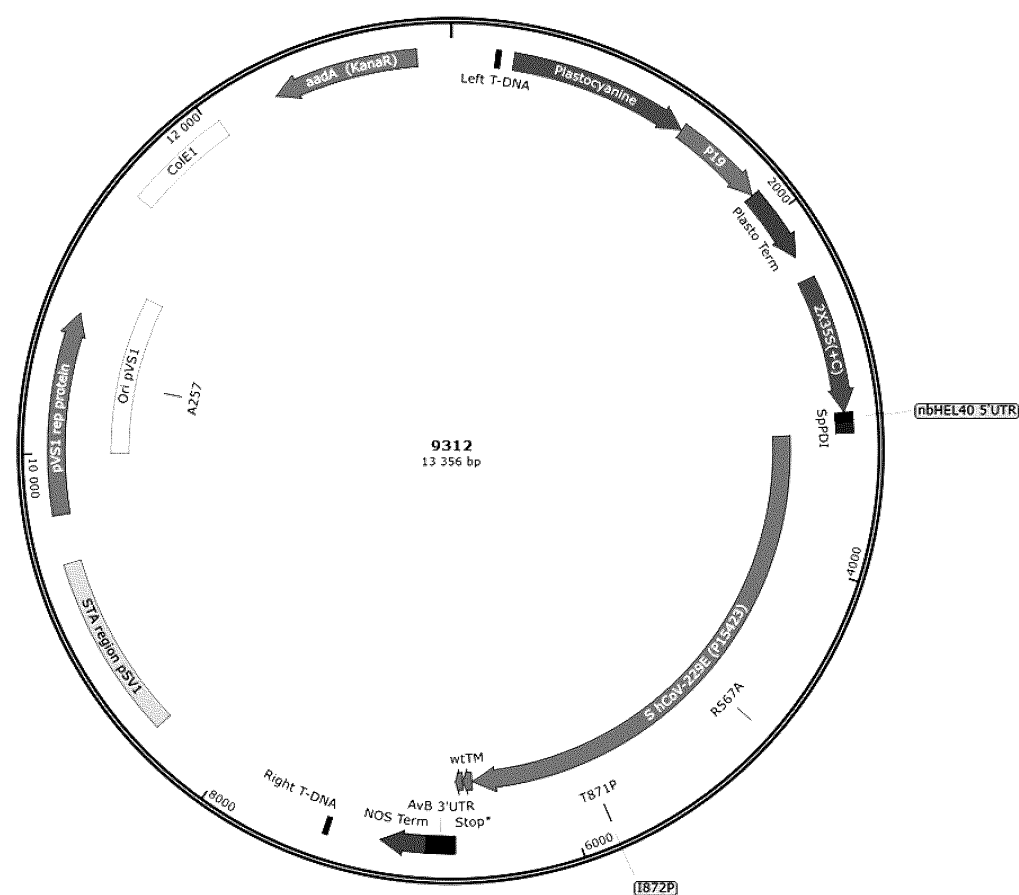


Figure 26D

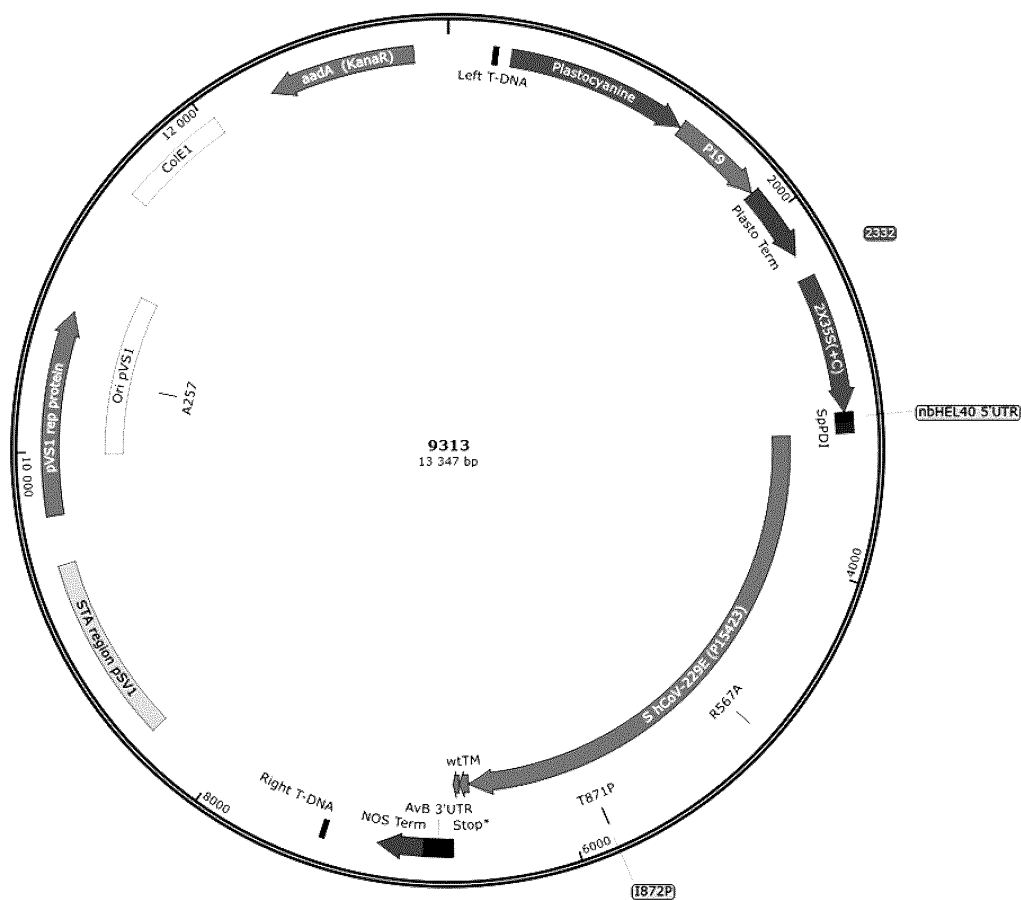


Figure 26E

