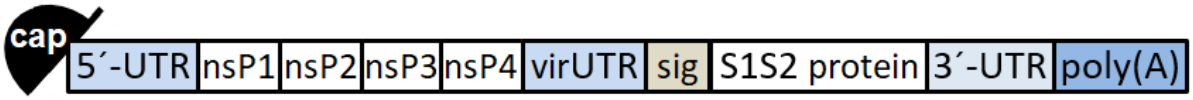
11891

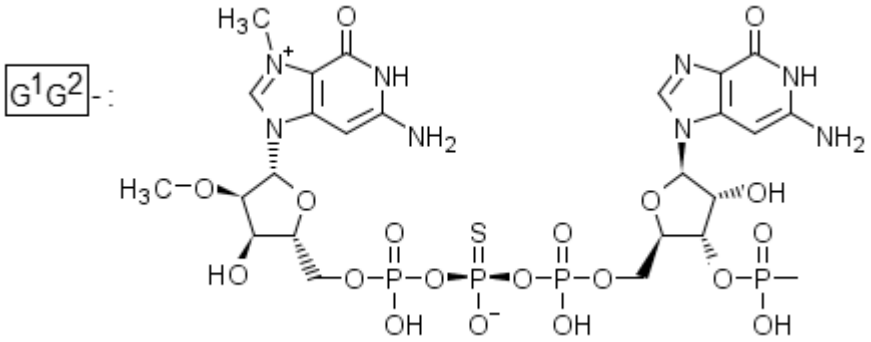
Description

Self-replicating messenger RNA encoding the full-length SARS-CoV-2 spike glycoprotein.

Schematic



UTR = Untranslated region; nsP1, nsP2, nsP3 and nsP4 = Venezuelan equine encephalitis virus (VEEV) RNA-dependent RNA polymerase; virUTR = 5´-UTR derived from VEEV; sig = extended signal sequence of the S glycoprotein. S1S2 protein = S glycoprotein sequence containing mutations K986P and V987P.



5‘- capping structure

The 5‘- capping structure is **= $m^7G^+m^{2'}$-5'-p-(*R*)p^s-p-5'-G**

Table of features

Element	Description	Position
cap	cap: $m^7G^+m^{2'}$-5'-p-(*R*)p^s-p-5'-G	1-2
5’-UTR	5´-untranslated region derived from the Venezuelan equine encephalitis virus (VEEV)	3-46

nsP1	Venezuelan equine encephalitis virus (VEEV) RNA-dependent RNA polymerase (RNA replicase) with a subgenomic promotor starting in nsP4. – In conjunction with the virUTR, these sequences introduce a self-amplifying function.	47-1651
nsP2		1652-4033
nsP3		4034-5704
nsP4		5705-7528
virUTR	VEEV untranslated region encoding 5 nucleotides of the subgenomic promotor as well as replication and translation supporting sequence elements.	7529-7569
sig	S glycoprotein signal peptide (extended leader sequence), which guides translocation of the nascent polypeptide chain into the endoplasmic reticulum.	7570 - 7617
S1S2 protein	Codon-optimized sequences encoding full-length SARS-CoV-2 S glycoprotein; two mutations, K986P and V987, ensure that the S glycoprotein remains in an antigenically optimal pre-fusion conformation.	7618 - 11394
3’-UTR	3´-untranslated region comprising sequence elements derived from the amino-terminal enhancer of split (AES) mRNA and the mitochondrial encoded 12S ribosomal RNA, to confer RNA stability and highest total protein expression, followed by a further Venezuelan equine encephalitis virus (VEEV) derived sequence of the 26S mRNA.	11395-11808
poly(A)	A 110-nucleotide poly(A)-tail consisting of a stretch of 30 adenosine residues, followed by a 10-nucleotide linker sequence and another 70 adenosine residues.	11809-11918

Sequence / Séquence / Secuencia

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