

Certificate of Testing

For Research Use Only – Not for Human Use

Protein Name: SARS-CoV-2_Secto_FO-His (Spike)
 Lot Number: 20200418
 Date of Manufacture: 20200418
 Final Formulation: 50mM Tris pH 8.00, 150 mM NaCl, 0.25% L-His
 Dilution Recommendation: N/A
 Storage Condition: -80°C

Test	Result
Appearance	Clear solution, with no particles present
Protein Concentration (A ₂₈₀)	11.8 μM, 1.2 mg/mL (Ext. coefficient 138825 Abs 0.1% (=1 g/l) 0.982)
SDS-PAGE Coomassie Blue Stain, Non-Reduced	Band at expected MW with glycosylation, >95% purity
UV-Vis	Some scattering observed after freeze/thaw
nsEM	Well-folded sample with some background protein present

Signature:  _____

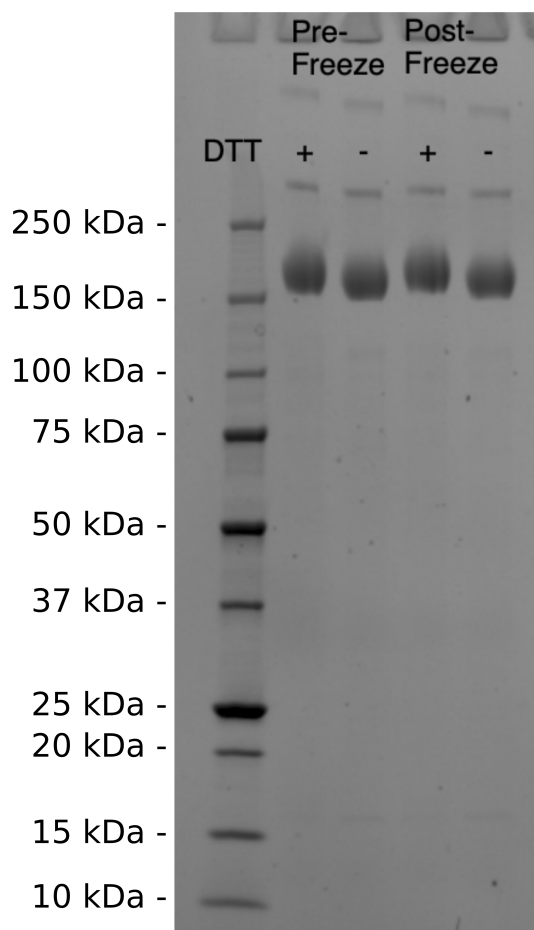
Title: RS Principal Date: 20200331

Attachments:

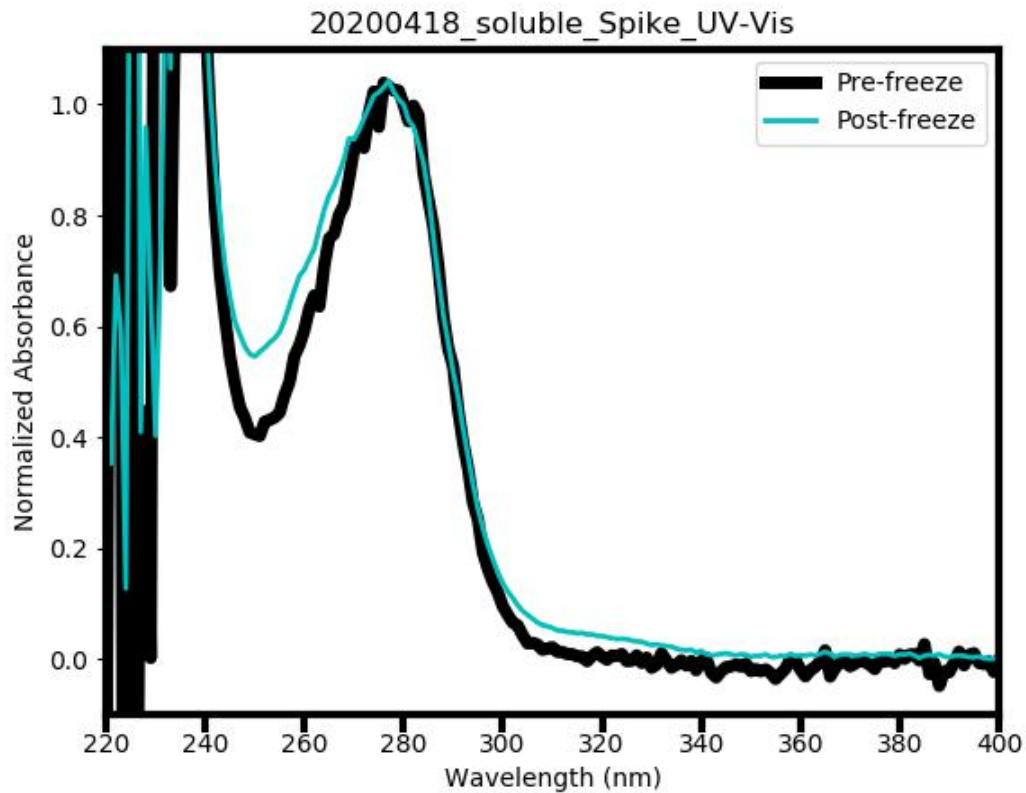
1. SDS-PAGE – reducing/nonreducing
2. UV-Vis
3. Negative stain electron microscopy
4. Amino Acid sequence

Attachment 1. SDS-PAGE

Lane 1 contains 5 uL of Bio-Rad Precision Plus Unstained molecular weight standard, with molecular weight of bands noted. Lane 2 contains ~1.5 ug of SARS-CoV-2_Secto_FO-His in reducing conditions prior to freeze/thaw; lane 3 contains the same without reducing agent; and lanes 4 and 5 are repeats of lanes 2 and 3 but post-freeze/thaw. No degradation is seen post freeze/thaw, and the sample is >95% pure Criterion 4-20% Tris-Glycine gel, 300V for 20 minutes. Stain Free.



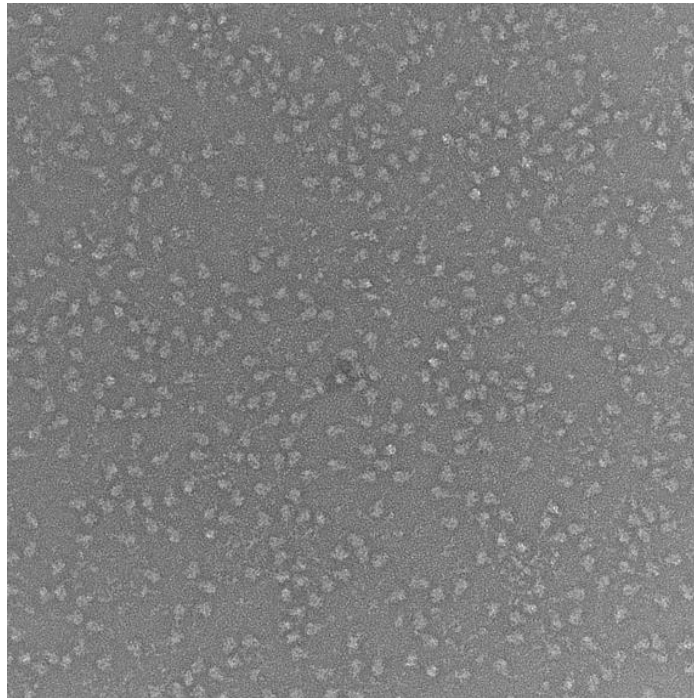
Attachment 2. UV-Vis



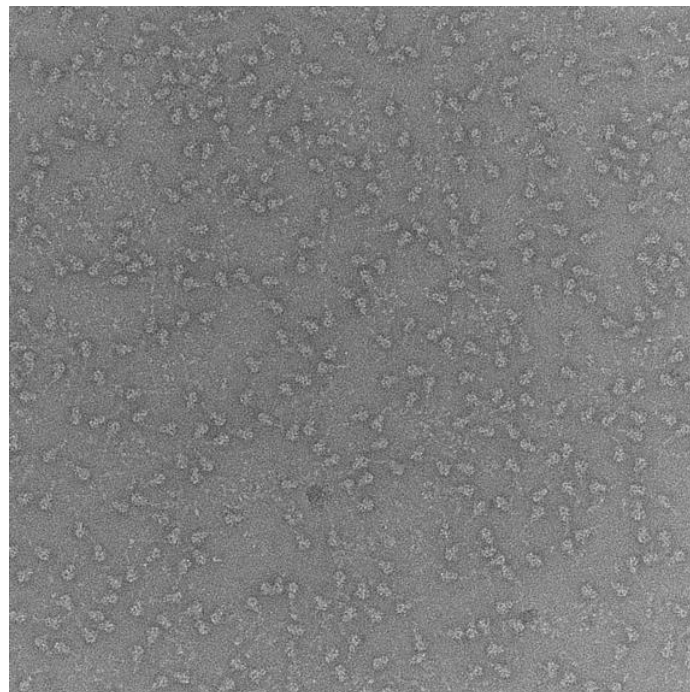
No scattering (high absorbance at 320 nm) is observed, which would otherwise be indicative of aggregation. Peak absorbance at 280 nm. Pre- and post-freeze/thaw samples look nearly identical.

Attachment 3. EM

Pre-freeze



Post-freeze



Negative stain electron microscopy shows well-folded protein of interest with no aggregate or background protein present.

Attachment 4. Amino Acid Sequence

MGILPSPGMPALLSLVSLLSVLLMGCVAETGTQCVNLTTRTQLPPAYTNS
FTRGVYYPDKVFRSSVLHSTQDLFLPFFSNVTWFHAIHVSGTNGTKRFDN
PVLPFNDGVYFASTEKSNIRGWIFGTTLDSKTQSLIVNATNVVIKVC
EFQFCNDPFLGVYHKNKSWMESEFRVYSSANNCTFEYVSQPFLMDLEG
KQGNFKNLREFVFNIDGYFKIYSKHTPINLVRDLPQGFSALEPLVDLPI
GINITRFQTLALHRSYLTSGDSSSGWTAGAAAYVGYLQPRTFLLKYNE
NGTITDAVDCALDPLSETKCTLSFTVEKGIYQTSNFRVQPTESIVRFPN
ITNLCPFGEVFNATRFASVYAWNKRKRISNCVADYSVLYNSASFSTFKCYG
VSPTKLNLCFTNVYADSFVIRGDEVQRQIAPGQTGKIADYNYKLPDDFTG
CUIAWNSNNLDSKVGGNYNYLYRFRKSNLKPFRDISTEIQAGSTPCN
GVEGFNCYFPLQSYGFQPTNGVGYQPYRVVLSFELLHAPATVCGPKKST
NLVKNKCVNFNFNGLTGTGVLTESNKKFLPFQQFGRDIADTTDAVRDPQT
LEILDITPCSFGGVSVITPGTNTSNQVAVLYQDVNCTEVPVAIHADQLTP
TWRVYSTGSNVFQTRAGCLIGAEHVNNSYECDIPIGAGICASYQTQTNSP
SGAGSVASQSIIAYTMSLGAENSVAYSNNNSIAIPTNFTISVTTEILPVSM
TKTSVDCTMYICGDSTECSNLLLQYGSFCTQLNRALTGIAVEQDKNTQEV
FAQVKQIYKTPPIKDFGGFNFSQILPDPSPKPSKRSFIEDLLFNKVTLADA
GFIKQYGDCLGDIAARDLCAQKFNGLTVLPPLLTDEMIAQYTSALLAGT
ITSGWTFGAGAALQIPFAMQMAYRFNGIGVTQNVLYENQKLIANQFNSAI
GKIQDLSLSTASALGKLQDVVNQNAQALNLTLVKQLSSNFGAISSVLNDIL
SRLDPPEAEVQIDRLITGRLQSLQTYVTQQLIRAAEIRASANLAATKMSE
CVLGQSKRVDFCGKGYHLMSFPQSAPHGVVFLHVTVYVPAQEKNFTTAPAI
CHDGKAHFPPREGVFSNGTHWFVTQRNFYEPQIITDNTFVSGNCDVWIG
IVNNTVYDPLQPELDSFKEELDKYFKNHTSPDVDLGDISGINASVVNIQK
EIDRLNEVAKNLNESLIDLQELGKYEQYIKGSGRENLYFQGGGGSGYIPE
APRDGQAYVRKDGWVLLSTFLGHHHHHHHH

Signal peptide

SARS-CoV-2_Secto_FO-His (Spike)

TEV cleavage site

Gly-Ser linker

Foldon

HisTag