

**DESCRIPTION**

<b>Source</b>	<i>Spodoptera frugiperda</i> , Sf 21 (baculovirus)-derived sars-cov-2 Nucleocapsid protein Met1-Ala419 (Pro13Leu, Glu31del, Arg32del, Ser33del, Arg203Lys, Gly204Arg), with a C-terminal 6-His tag Accession # YP_009724397.2
<b>N-terminal Sequence Analysis</b>	Protein identify confirmed by mass spectrometry.
<b>Predicted Molecular Mass</b>	46 kDa

**SPECIFICATIONS**

<b>SDS-PAGE</b>	45-55 kDa, under reducing conditions.
<b>Activity</b>	Bioassay data are not available.
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the protein by the LAL method.
<b>Purity</b>	>90%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 500 µg/mL in PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 3 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

**BACKGROUND**

SARS-CoV-2, which causes the global pandemic coronavirus disease 2019 (Covid-19), belongs to a family of viruses known as coronaviruses that are commonly comprised of four structural proteins: Spike protein (S), Envelope protein (E), Membrane protein (M), and Nucleocapsid protein (N) (1). While the S, E and M proteins build up the viral envelop, the N protein is involved transcription, replication and packaging of the viral RNA genome into a helical ribonucleocapsid (RNP) (2, 3). The SARS-CoV-2 N protein is a ~45 kDa protein composed of two independent structural domains connected by a linker region. The N-terminal region contains an RNA binding domain, the linker region interacts with the M protein and the C-terminal region contains a self-association domain (2,3). The SARS-CoV2 N protein shares 91% and 47% amino acid sequence identity with SARS-CoV-1 and MERS N protein, respectively. The SARS-CoV-2 N protein displays VSR (viral suppressor of RNA interference) activity in mammalian cells (4). In addition, the N protein is an abundant protein during coronavirus infection and displays high immunogenic activity (5, 6), so it has been used to develop serological diagnostic kit for Covid-19 IgM and IgG antibody tests (7). Within the N proteins, there are six mutations in the B.1.1.529 variant.

**References:**

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6. Guan, M. *et al.* (2004) Clin. Diagn. Lab. Immunol. **11**:287.
7. Liu, W. *et al.* (2020) J. Clin. Microbiol. doi: 10.1128/JCM.00461-20.