PRODUCT INFORMATION

SARS-CoV-2 Nucleocapsid Protein

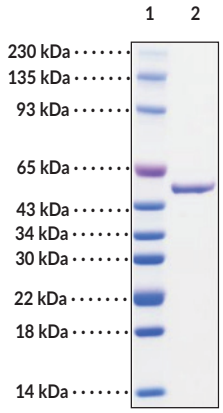
Item No. 30427

Overview and Properties

Synonyms:	2019-nCoV NP, 2019-nCoV Nucleocapsid Protein, 2019-nCoV Nucleoprotein, COVID-19 NP, COVID-19 Nucleocapsid Protein, COVID-19 Nucleoprotein, SARS-CoV-2 NP, SARS-CoV-2 Nucleoprotein, Severe Acute Respiratory Syndrome Coronavirus 2 Nucleocapsid Protein
Amino Acids:	1-419 (full length)
Molecular Weight:	49.7 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥90% estimated by SDS-PAGE
Supplied in:	50 mM Tris-HCl, pH 7.4, with 150 mM sodium chloride and 0.1 M glycine

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers
Lane 2: SARS-CoV-2 Nucleocapsid Protein

SDS-PAGE analysis using Coomassie Brillant Blue

Representative gel image shown; actual purity may vary between each batch.

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Description

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) nucleocapsid protein is a viral protein encoded by the *N* gene in SARS-CoV-2 RNA.[1] SARS-CoV-2 is a member of the *Betacoronavirus* genus of viruses and has 88% sequence identity with two bat-derived SARS-like CoVs.[2] SARS-CoV-2 nucleocapsid protein is composed of an N-terminal domain (NTD) that binds RNA, a disordered linker region that contains regulatory phosphorylation sites, a C-terminal domain (CTD) that mediates dimerization, and a C-terminal tail.[3] In a similar virus, SARS-CoV, the nucleocapsid protein packages the viral RNA into a helical ribonucleoprotein (RNP) complex that is a template for viral replication.[4] The SARS-CoV nucleocapsid protein is integral for viral self-assembly and is involved in cell cycle regulation. The SARS-CoV-2 nucleocapsid protein gene sequence is greater than 90% similar to the SARS-CoV nucleocapsid protein, and it contains 27 T cell epitopes that are identical to SARS-CoV T cell epitopes.[5] SARS-CoV-2 nucleocapsid protein inhibits the formation of stress granules, which sequester viral factors and are involved in the host antiviral response.[6] SARS-CoV-2 is the causative agent of COVID-19, a primarily respiratory illness characterized by fever, cough, and shortness of breath that can lead to life-threatening complications.[7-9] Cayman's SARS-CoV-2 Nucleocapsid Protein can be used as an antigen or for Western blot (WB), ELISA, protein-protein interaction studies, and other *in vitro* binding and *in vivo* functional assays.

References

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6. Zheng, Z.-Q., Wang, S.-Y., Xu, Z.-S., *et al.* SARS-CoV-2 nucleocapsid protein impairs stress granule formation to promote viral replication. *Cell Discov.* **7(1)**, 38 (2021).
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