



Product Data Sheet

□ Cat # NCOV15-R-50	Recombinant (<i>E. coli</i>) COVID-19 Nucleocapsid protein	Size: 50 ug
□ Cat # NCOV15-R-1	Recombinant (<i>E. coli</i>) COVID-19 Nucleocapsid protein	Size: 1 mg

SARS-CoV-2 virus (SARS-CoV-2), is a novel coronavirus emerged as a human respiratory pathogen and causing the 2020 pandemic named COVID-19. The SARS-CoV-2 genome is closely related to 2 bat-derived severe acute respiratory syndrome (SARS)-like coronaviruses (88% identity) and more distantly from 2 other human pathogenic coronaviruses, SARS-CoV (~79% identity) and MERS-CoV (~50% identity).

The genome of the coronavirus encodes 23 putative proteins including 4 major structural proteins: nucleocapsid [N protein], spike [S protein], membrane [M] and small envelope proteins [E].

The S protein is a glycoprotein essential for viral attachment to the host cell surface receptors and translocation into the infected cells; trimers of the S protein make up the spikes of the virus. The S protein is cleaved in host cells into S1 and S2 subunits; S1 protein binds the host receptor, while S2 mediates membrane fusion. A minimal receptor-binding domain [RBD] located in the S1 protein (aa. 318-510) can combine with the ACE2 receptor on host epithelial cells. While the S1 subunit of SARS-CoV-2 shares around 70% identity to that of the 2 bat SARS-like CoVs and human SARS-CoV, the core domains of RBD (excluding the external subdomain) are highly conserved.

Recombinant proteins of SARS spike protein have shown to be highly immunogenic as vaccines and produce neutralizing antibodies. Therefore, the spike proteins represent candidates for effective vaccine development.

Source and Forms of Protein

Recombinant COVID-19 Nucleocapsid was expressed in *E. coli*. It was expressed as a full-length protein containing a C-terminal His-tag. The protein migrates as a band of approximately 48 kDa by SDS-PAGE in reducing/denaturing conditions at a purity of 95%. Purified COVID-19 Nucleocapsid is supplied in a buffer containing 25 mM Tris.

Storage

Short-term: 1-2 weeks at 4°C.

Long-term: at -20°C or below in suitable aliquots after reconstitution. Can be frozen, but avoid multiple freeze/thaw cycles

Stability: 6-12 months at -20°C or below.

Shipping: 4°C for liquid solution and room temperature for lyophilized powder

Recommended Usage: This protein is suitable for uses such as an ELISA coating antigen or standard, use as an immunogen, or as a Western Blot positive control.

Western Blotting: Load 1-10 ng total protein as a control in Western blotting

ELISA: 0.2-2.0 ug/ml as a coating antigen

This product is for in vitro research use only.

Related Material available for ADI

Catalog#	Description
NCOVP11-A	Rabbit anti COVID-19 Nucleocapsid protein
NCOVP21-A	Rabbit anti COVID-19 Nucleocapsid protein
RV-404100	Recombivirus Human anti COVID-19/2019-nCoV Nucleocapsid IgG ELISA Kit
RV-404110	Recombivirus Human anti COVID-19/2019-nCoV Nucleocapsid IgM ELISA Kit
RV-404120	Recombivirus Mouse anti COVID-19/2019-nCoV Nucleocapsid IgG ELISA Kit
RV-404130	Recombivirus Mouse anti COVID-19/2019-nCoV Nucleocapsid IgM ELISA Kit
RV-404150	Recombivirus Monkey anti COVID-19/2019-nCoV Nucleocapsid IgG ELISA Kit
RV-404160	Recombivirus Monkey anti COVID-19/2019-nCoV Nucleocapsid IgM ELISA Kit
RV-404200	Recombivirus Human anti COVID-19/2019-nCoV Spike protein 1(S1) IgG ELISA Kit
RV-404210	Recombivirus Human anti COVID-19/2019-nCoV Spike protein 1 (S1) IgM ELISA Kit
RV-404220	Recombivirus Mouse anti COVID-19/2019-nCoV Spike protein 1(S1) IgG ELISA Kit
RV-404230	Recombivirus Mouse anti COVID-19/2019-nCoV Spike protein 1 (S1) IgM ELISA Kit
RV-404250	Recombivirus Monkey anti COVID-19/2019-nCoV Spike protein 1(S1) IgG ELISA Kit
RV-404260	Recombivirus Monkey anti COVID-19/2019-nCoV Spike protein 1 (S1) IgM ELISA Kit
RV-404270	Recombivirus Rabbit anti COVID-19/2019-nCoV Spike protein 1 (S1) IgM ELISA Kit
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