

**Synonym**

Nucleocapsid protein, NP, Protein N

**Source**

SARS-CoV-2 Nucleocapsid protein (D63G, R203M, D377Y), His Tag (NUN-C52Hs) is expressed from human 293 cells (HEK293). It contains AA Met 1 - Ala 419 (Accession # [QHO62115.1](#) (D63G, R203M, D377Y)). The mutations (D63G, R203M, D377Y) were identified in the SARS-CoV-2 Delta lineages (Pango lineage: B.1.617.2; GISAID clade: 21A, 21I, 21J; Nextstrain clade: G/478K.V1).

Predicted N-terminus: Met 1

**Molecular Characterization**

This protein carries a polyhistidine tag at the C-terminus

The protein has a calculated MW of 47.3 kDa. The protein migrates as 60-65 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

**Endotoxin**

Less than 1.0 EU per  $\mu\text{g}$  by the LAL method.

**Purity**

>95% as determined by SDS-PAGE.

**Formulation**

Lyophilized from 0.22  $\mu\text{m}$  filtered solution in PBS, pH 7.3 with 0.2 M Arginine with trehalose as protectant.

Contact us for customized product form or formulation.

**Reconstitution**

Please see Certificate of Analysis for specific instructions.

*For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.*

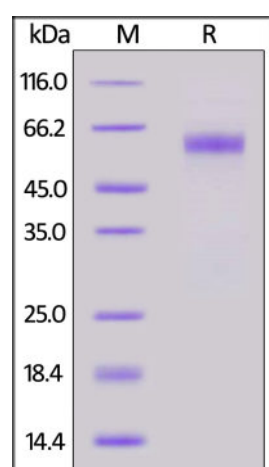
**Storage**

For long term storage, the product should be stored at lyophilized state at  $-20^{\circ}\text{C}$  or lower.

*Please avoid repeated freeze-thaw cycles.*

This product is stable after storage at:

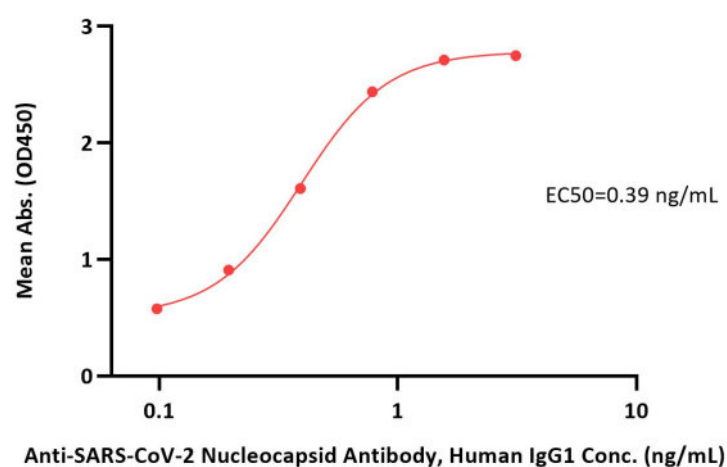
- $-20^{\circ}\text{C}$  to  $-70^{\circ}\text{C}$  for 12 months in lyophilized state;
- $-70^{\circ}\text{C}$  for 3 months under sterile conditions after reconstitution.

**SDS-PAGE**

SARS-CoV-2 Nucleocapsid protein (D63G, R203M, D377Y), His Tag on SDS-PAGE under reducing (R) condition. The gel was stained overnight with Coomassie Blue. The purity of the protein is greater than 95%.

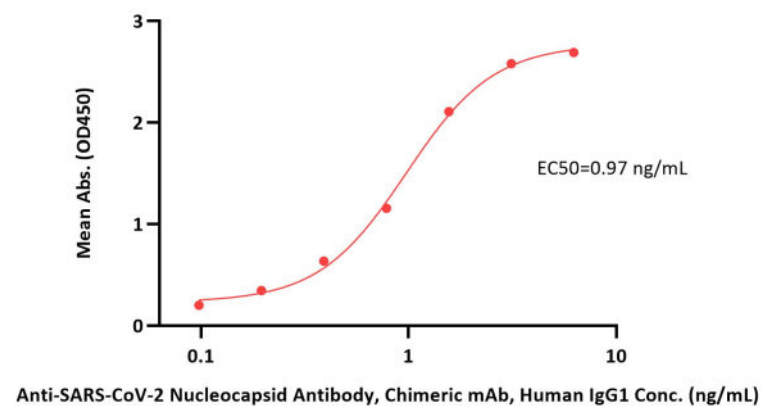
**Bioactivity-ELISA**

SARS-CoV-2 Nucleocapsid protein (D63G, R203M, D377Y), His Tag ELISA  
0.1  $\mu$ g of SARS-CoV-2 Nucleocapsid protein (D63G, R203M, D377Y), His Tag per well



Immobilized SARS-CoV-2 Nucleocapsid protein (D63G, R203M, D377Y), His Tag (Cat. No. NUN-C52Hs) at 1  $\mu$ g/mL (100  $\mu$ L/well) can bind Anti-SARS-CoV-2 Nucleocapsid Antibody, Human IgG1 (Cat. No. NUN-S41A1) with a linear range of 0.1-1 ng/mL (QC tested).

SARS-CoV-2 Nucleocapsid protein (D63G, R203M, D377Y), His Tag ELISA  
0.1  $\mu$ g of SARS-CoV-2 Nucleocapsid protein (D63G, R203M, D377Y), His Tag per well



Immobilized SARS-CoV-2 Nucleocapsid protein (D63G, R203M, D377Y), His Tag (Cat. No. NUN-C52Hs) at 1  $\mu$ g/mL (100  $\mu$ L/well) can bind Anti-SARS-CoV-2 Nucleocapsid Antibody, Chimeric mAb, Human IgG1 (Cat. No. NUN-M223) with a linear range of 0.1-2 ng/mL (Routinely tested).

## Background

Nucleocapsid (N) protein is the most abundant protein found in coronavirus. CoV N protein is a highly immunogenic phosphoprotein important for viral genome replication and modulation of cell signaling pathways. It was first identified by a research team while they were screening for ADP-ribosylated proteins during coronavirus (CoV) infection (Grunewald M. E., et al. 2017, *Virology*; 517: 62-68). The array of diverse functional activities accommodated in N protein makes it more than a structural protein but also an interesting target in the development of antiviral therapeutics. Because of the conservation of N protein sequence and its strong immunogenicity, N protein of coronavirus is chosen as a diagnostic tool.

## Clinical and Translational Updates

Please contact us via [TechSupport@acrobiosystems.com](mailto:TechSupport@acrobiosystems.com) if you have any question on this product.