

**Nucleocapsid Protein from SARS-Related Coronavirus 2, Wuhan-Hu-1 with C-Terminal Avi and Histidine Tags, Recombinant from HEK293 Cells**

**Catalog No. NR-55344**  
**BPS Bioscience Catalog No. 100779**

**For research use only. Not for use in humans.**

**Contributor and Manufacturer:**

BPS Bioscience, San Diego, California, USA

**Product Description:**

A recombinant form of the nucleocapsid (N) protein from severe acute respiratory syndrome-related coronavirus 2 (SARS-CoV-2), Wuhan-Hu-1 (GenPept: [YP\\_009724397](#)) was produced by transient transfection in human embryonic kidney HEK293 cells, purified by affinity chromatography and biotinylated.<sup>1,2</sup> NR-55344 contains the full-length SARS-CoV-2 N protein and features a C-terminal AviTag™ BirA biotinylation acceptor sequence fused to a hexa-histidine tag.<sup>1</sup> The predicted protein sequence is shown in Figure 1.<sup>1</sup> NR-55344 has a theoretical molecular weight of 48,000 daltons. The crystal structures for the N protein N-terminal domain and C-terminal domain from SARS-CoV-2 have been solved at 1.8 Å resolution (PDB: [7CDZ](#)) and 1.5 Å resolution (PDB: [7CE0](#)), respectively.<sup>3</sup>

Coronavirus N proteins have an N-terminal and C-terminal domain connected by an intrinsically disordered region that has not yet been structurally solved. The N protein is the central component of virions and packages viral genomic RNA into a ribonucleoprotein complex. The SARS-CoV-2 N protein suppresses host RNAi-mediated antiviral responses through double-stranded RNA-binding activity.<sup>3</sup>

**Material Provided:**

Each vial contains approximately 50 µg of purified recombinant protein in 40 mM Tris-HCl pH 8.0, 110 mM NaCl, 2.2 mM KCl, 3 mM dithiothreitol (DTT) and 20% glycerol. The concentration and volume are shown on the Certificate of Analysis.

**Packaging/Storage:**

NR-55344 was packaged aseptically in cryovials. The product is provided on dry ice and should be stored at -80°C immediately upon arrival. **Storage at warmer temperatures is not recommended due to a low bioburden.** Freeze-thaw cycles should be avoided.

**Citation:**

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: Nucleocapsid Protein from SARS-Related Coronavirus 2, Wuhan-Hu-1 with C-Terminal Avi and Histidine Tags, Recombinant from HEK293 Cells, NR-55344."

**Biosafety Level: 1**

Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the following publication: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, and National Institutes of Health. Biosafety in Microbiological and Biomedical Laboratories. 6th ed. Washington, DC: U.S. Government Printing Office, 2020; see [www.cdc.gov/biosafety/publications/bmb15/index.htm](http://www.cdc.gov/biosafety/publications/bmb15/index.htm).

**Disclaimers:**

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**References:**

1. Zhu, H., Personal Communication.
2. Wu, F., et al. "A New Coronavirus Associated with Human Respiratory Disease in China." Nature 579 (2020): 265-269. PubMed: 32015508.
3. Peng, Y., et al. "Structures of the SARS-CoV-2 Nucleocapsid and Their Perspectives for Drug Design." EMBO J. 39 (2020): e105938. PubMed: 32914439.
4. Benvenuto, D., et al. "The 2019-New Coronavirus Epidemic: Evidence for Virus Evolution." J. Med. Virol. 92 (2020): 455-459. PubMed: 31994738.

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Figure 1: Predicted Protein Sequence

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1  MSDNGPQNQR NAPRITFGGP SDSTGSNONG ERSGARSKQR RPQGLPNNTA
51  SWFTALTQHG KEDLKFPRGQ GVPINTNSSP DDQIGYYRRA TRRIRGGDGK
101 MKDLSRWYF YYLGTGPEAG LPYGANKDGI IWVATEGALN TPKDHIGTRN
151 PANNAIVLQ LPQGTTLPKG FYAEGSRGGS QASSRSSRS RNSSRNSTPG
201 SSRGTSPARM AGNGGDAALA LLLLDRLNQL ESKMSGKGQQ QQGQTVTKKS
251 AAEASKKPRQ KRTATKAYNV TQAFGRRGPE QTQGNFGDQE LIRQGTDYKH
301 WPQIAQFAPS ASAFFGMSRI GMEVTPSGTW LTYTAAIKLD DKDPNFKDQV
351 ILLNKHIDAY KTFPPTEPKK DKKKKADETQ ALPQRQKKQQ TVTLLPAADL
401 DDFSKQLQQS MSSADSTQAG GGLNDIFEAQ KIEWHEHHHH HH

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N protein – **Residues 1 to 419** (represents amino acid residues 1 to 419)  
 AviTag™ and hexa-histidine tag – Residues 422 to 442