

SARS-CoV-2 Nucleocapsid Protein (D63G & R203M & G215C & D377Y, His)

General Information

Protein Construction:	A DNA sequence encoding the SARS-CoV-2 Nucleocapsid (YP_009724397.2, with mutations D63G, R203M, G215C, D377Y) (Met1-Ala419) was expressed with a polyhistidine tag at the N-terminus. The mutations were identified in the SARS-CoV-2 variant (known as variant (AY.1,AY.3)) which emerged in the India.
Species:	SARS-CoV-2
Expression Host:	E. coli
Accession:	P0DTC9
Molecular Weight:	46.60 kDa (predicted)

QC Testing

Biological Activity:	Testing in progress
Purity:	> 95 % as determined by SDS-PAGE.
Endotoxin:	Please contact us for more information.
Formulation:	Lyophilized from sterile 50mM PB, 500mM NaCl, pH 7.4. Please contact us for any concerns or special requirements. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization. Please refer to the specific buffer information in the hard copy of CoA.

Preparation and Storage

Reconstitution:	A hardcopy of datasheet with reconstitution instructions is sent along with the products. Please refer to it for detailed information.
Stability & Storage:	Samples are stable for up to twelve months from date of receipt at -20°C to -80°C. Store it under sterile conditions at -20°C to -80°C. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Shipping:	In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

Protein Background

Coronaviruses are enveloped viruses with a positive-sense RNA genome and with a nucleocapsid of helical symmetry. Coronavirus nucleoproteins localize to the cytoplasm and the nucleolus, a subnuclear structure, in both virus-infected primary cells and in cells transfected with plasmids that express N protein. The coronavirus N protein is required for coronavirus RNA synthesis and has RNA chaperone activity that may be involved in template

switch. Nucleocapsid protein is the most abundant protein of coronavirus. During virion assembly, N protein binds to viral RNA and leads to the formation of the helical nucleocapsid. Nucleocapsid protein is a highly immunogenic phosphoprotein also implicated in viral genome replication and in modulating cell signaling pathways. Because of the conservation of the N protein sequence and its strong immunogenicity, the N protein of coronavirus is chosen as a diagnostic tool.

Reference

Van Boheemen S, et al. (2012), MBio. 3(6):e00473-12. Bisht H. et al., 2004, Proc Natl Acad Sci. 101 (17): 6641-6. Li W. et al., 2005, Science. 309 (5742): 1864-8.