

SARS-CoV-2 Nucleocapsid Protein (P13L & R203K & G204R & G214C, His)

General Information

Protein Construction:	The SARS-CoV-2 Nucleocapsid (YP_009724397.2, with mutations P13L, R203K, G204R, G214C) (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 C.37) which emerged in the Peru.
Species:	SARS-CoV-2
Expression Host:	E. coli
Accession:	P0DTC9
Molecular Weight:	46.73 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 a solution filtered through a 0.22 µm filter, containing 50 mM PB, 500 mM NaCl, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:	A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.
Stability & Storage:	It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted proteinsolutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.
Shipping:	In general, Lyophilized powders are shipping with blue ice.

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.