

DESCRIPTION

Source *Spodoptera frugiperda*, Sf 21 (baculovirus)-derived hcov-oc43 Nucleocapsid protein
Met1-Ile448, with a C-terminal 6-His tag
Accession # YP_009555245.1

N-terminal Sequence Analysis Identity confirmed by mass spectrometry

Predicted Molecular Mass 50 kDa

SPECIFICATIONS

SDS-PAGE 41-63 kDa, under reducing conditions

Activity Bioassay data are not available.

Endotoxin Level <0.10 EU per 1 µg of the protein by the LAL method.

Purity >90%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.

Formulation Lyophilized from a 0.2 µm filtered solution in PBS and NaCl with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 250 µg/mL in PBS.

Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

HCoV-OC43, a virus first isolated in 1960's that accounts for ~ 20% of the common cold, belongs to a family of viruses known as coronaviruses that are commonly comprised of a large plus-strand RNA genome and four structural proteins: Spike protein (S), Envelope protein (E), Membrane protein (M), and Nucleocapsid protein (N) (1, 2). Other well-known human coronaviruses include three viruses that cause relatively mild respiratory disease: HCoV-229E, HCoV-HKU1 and HCoV-NL63, plus three viruses that cause the Severe Acute Respiratory Syndrome (SARS-CoV), the Middle East Respirator Syndrome (MERS-CoV), and the global pandemic Covid-19 (SARS-CoV2). While the S, E and M proteins build up the viral envelop, the N protein is involved transcription, replication, and packaging of the viral RNA genome into a helical ribonucleocapsid (RNP) (3, 4). The CoV-OC43 N protein is a ~50 kDa protein composed of two independent structural domains connected by a linker region. Both the N-terminal and the linker regions contain RNA binding domains, while the C-terminal region is responsible for the oligomerization of the N protein (5). The CoV-OC43 N protein shares 64% amino acid sequence identity with CoV-HKU1 N protein. the N protein is an abundant protein during coronavirus infection and displays high immunogenic activity. Cross activity of antibodies among different strains should be rigorously tested when designing serological diagnostic kits (6, 7).

References:

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3. Chang, C.K. *et al.* (2006) *J. Biomed. Sci.* **13**:59.
4. Hurst, K.R. *et al.* (2009) *J. Virol.* **83**:7221.
5. Huang, C.Y. *et al.* (2009) *Protein Sci.* **18**:2209.
6. Chan, K.H. *et al.* (2005) *Clin Diagn Lab Immunol.* **12**:1317.
7. Mourez, T. *et al.* (2007) *J. Virol Methods.* **139**:175.