

DESCRIPTION

Source Human embryonic kidney cell, HEK293-derived hcov-oc43 Spike protein
Val15-Pro1297 (Arg754Ser, Arg757Ser), with a C-terminal 6-His tag
Accession # YP_009555241.1

N-terminal Sequence Analysis Val15

Predicted Molecular Mass 144 kDa

SPECIFICATIONS

SDS-PAGE >150 kDa, under reducing conditions.

Activity Measured by its ability to agglutinate mouse red blood cells. The ED₅₀ for this effect is 0.10-1.00 µg/mL.

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

Purity >95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.

Formulation Supplied as a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Shipping The product is shipped with dry ice or equivalent. Upon receipt, store it immediately at the temperature recommended below.

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

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

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.