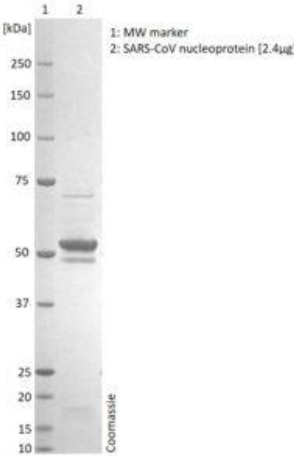


PRODUCT DATASHEET

Catalog No:	BSV-COV-PR-29
Pack Size	500 µg
Product Name:	SARS Coronavirus Nucleoprotein, His-Tag (HEK293)
Description:	Recombinant severe acute respiratory syndrome virus nucleoprotein (NCBI accession number AAR87518.1, AA2-422), N-terminally tagged with a 6x His-tag. Protein was produced in HEK293 cells and purified by immobilised metal affinity and ion exchange chromatography.
Species:	2019-nCoV, COVID-19
Molecular weight:	 <p>SDS-PAGE showing purified SARS-CoV nucleoprotein</p>
Accession No.:	AAR87518.1, AA2-422
Tag:	6x His-tag
Source:	HEC293 cells
Concentration:	1.30 ug/ul

Buffer:	50mM HEPES pH8.0, 280mM NaCl
Storage:	-80° C.
Background	<p>Coronaviruses (CoVs) are a diverse family of viruses which cause a variety of diseases in mammals and birds ranging from enteritis in cows and pigs and upper respiratory disease in chickens to potentially lethal human respiratory infections. Coronaviruses can cause a range of symptoms varying from mild symptoms such as the common cold to more serious respiratory illnesses. They primarily cause respiratory and enteric diseases in mammals and birds. Coronavirus symptoms include rhinorrhea, sneezing, cough, nasal obstruction, and bronchitis.</p> <p>SARS coronavirus (SARS-CoV) was identified in 2003. SARS-CoV is thought to be an animal virus from an as-yet-uncertain animal reservoir, perhaps bats, that spread to other animals (civet cats) and first infected humans in the Guangdong province of southern China in 2002. An epidemic of SARS affected 26 countries and resulted in more than 8000 cases in 2003. Since then, a small number of cases have occurred as a result of laboratory accidents or, possibly, through animal-to-human transmission (WHO, 2020).</p> <p>Coronaviruses encode five structural proteins in their genomes; namely, the Spike (S), Membrane (M), Envelope (E) glycoproteins, Hemagglutinin Esterase (HE) and Nucleoprotein (N). All envelope proteins and N protein is present in all virions but HE is only present in some beta coronaviruses (Tok and Tatar, 2017). There are three main groups of coronaviruses: alpha, beta, and gamma. Nucleoproteins, also known as nucleocapsid proteins, are phosphoproteins that are capable of binding to helix and have flexible structure of viral genomic RNA. It plays an important role in virion structure, replication and transcription of coronaviruses, as it localizes in both the replication/ transcriptional region of the coronaviruses and the ERGIC region where the virus is collected. It packages the positive strand viral genome RNA into a helical ribonucleocapsid (RNP) and plays a fundamental role during virion assembly through its interactions with the viral genome and membrane protein M. It also plays an important role in enhancing the efficiency of subgenomic viral RNA transcription as well as viral replication. There is structural similarity between porcine reproductive and respiratory syndrome virus (PRRSV), a member of Arteriviridae, suggesting a common origin for Coronaviridae and Arteriviridae nucleoproteins (Yu et al., 2006).</p>

REFERENCES

1. Tok and Tatar (2017). Structures and Functions of Coronavirus Proteins: Molecular Modeling of Viral Nucleoprotein International Journal of Virology & Infectious Diseases. Vol 2, 1.
2. Yu et al. (2006). Crystal Structure of the Severe Acute Respiratory Syndrome (SARS) Coronavirus Nucleocapsid Protein Dimerization Domain Reveals Evolutionary Linkage between Corona- and Arteriviridae. The Journal of Biological Chemistry, Vol. 281, No. 25, pp. 17134 –17139.
3. SARS (Severe Acute Respiratory Syndrome) factsheet. World Health Organisation (WHO), 2020.