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PRODUCT INFORMATION



SARS-CoV-2 nsp8 (recombinant)

Item No. 40882

Overview and Properties

Synonyms:	Severe Acute Respiratory Syndrome Coronavirus 2 nsp8, SARS-CoV-2 Non-structural Protein 8
Source:	Recombinant SARS-CoV-2 N-terminal His- and DYKDDK-tagged nsp8 expressed in <i>E. coli</i>
Amino Acids:	1-198
Uniprot No.:	PODTD1
Storage:	-80°C (as supplied); avoid freeze/thaw cycles by aliquoting protein
Stability:	≥1 year
Purity:	≥90%
Supplied in:	50 mM Tris-HCl, pH 7.5, with 200 mM sodium chloride and 20% glycerol
Endotoxin Testing:	< 1.0 EU/μg, determined by the LAL endotoxin assay
Protein	
Concentration:	<i>batch specific</i> mg/ml

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Description

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is an enveloped positive-stranded RNA virus and the causative agent of COVID-19, a primarily respiratory illness characterized by fever, cough, and shortness of breath that can lead to life-threatening complications.¹⁻⁵ The SARS-CoV-2 genome contains approximately 30 kilobases and 14 open reading frames (ORFs) that encode four structural proteins: spike, envelope, membrane, and nucleocapsid, as well as 16 non-structural proteins and 9 accessory factors.⁶ SARS-CoV-2 non-structural protein 8 (nsp8) is encoded within *ORF1ab* and is a cofactor and component of the SARS-CoV-2 decameric RNA replication transcriptional complex. It functions as an anchoring scaffold for the RNA transcription complex, with its N-terminal domain (NTD) binding to the RNA-dependent polymerase (RdRp) nsp12, the helicase nsp13, and RNA.⁷ SARS-CoV-2 nsp8 also functions as a virulence factor, binding to the host 7SL RNA component of the signal recognition particle to suppress membrane protein trafficking and impair host antiviral responses.⁸

References

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6. Romano, M., Ruggiero, A., Squeglia, F., *et al.* A structural view of SARS-CoV-2 RNA replication machinery: RNA synthesis, proofreading and final capping. *Cells* **9(5)**, 1267 (2020).
7. Treviño, M.Á., Pantoja-Uceda, D., D.V., L., *et al.* SARS-CoV-2 Nsp8 N-terminal domain folds autonomously and binds dsRNA. *Nucleic Acids Res.* **51(18)**, 10041-10048 (2023).
8. Banerjee, A.K., Blanco, M.R., Bruce, E.A., *et al.* SARS-CoV-2 disrupts splicing, translation, and protein trafficking to suppress host defenses. *Cell* **183(5)**, 1325-1339.e21 (2020).

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

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