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PRODUCT INFORMATION



SARS-CoV-2 nsp1 (recombinant)

Item No. 40879

Overview and Properties

Synonyms:	SARS-CoV-2 Host Translation Inhibitor nsp1, SARS-CoV-2 Non-structural Protein 1, Severe Acute Respiratory Syndrome Coronavirus 2 nsp1
Source:	Recombinant SARS-CoV-2 N-terminal His-tagged nsp1 expressed in <i>E. coli</i>
Amino Acids:	13-128
Uniprot No.:	PODTD1
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥90%
Supplied in:	50 mM Tris-HCl, pH 7.5, 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
Special Conditions:	Avoid repeated freeze/thaw cycles.

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 1 (nsp1) is a multifunctional protein and virulence factor that inhibits host mRNA translation, including translation of antiviral proteins such as IFN-β and IFN-λ1.⁷⁻⁹ It is composed of an N-terminal domain and a C-terminal domain connected *via* an unstructured 20-amino acid residue linker.^{9,10} The SARS-CoV-2 nsp1 C-terminal domain binds to the mRNA entry site of the 40S subunit of the host ribosome, which prevents host mRNA from entering, while the N-terminal binds to the 40S decoding center preventing accurate alignment of tRNA and mRNA.⁸⁻¹⁰ SARS-CoV-2 nsp1 also induces host mRNA degradation, prevents mRNA export from the nucleus to the cytoplasm, and binds to pre-rRNA in the nucleolus to disrupt rRNA biogenesis.^{7,9,11,12}

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

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