

Product Data Sheet

Cat # RP-1652
Cat # RP-1652-1-

Recombinant SARS-CoV-2 Papain-like Protease
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Size: 100 ug
Size: 1 mg

SARS-CoV-2 virus (SARS-CoV-2), is a novel coronavirus emerged as a human respiratory pathogen and causing the 2020 pandemic named COVID-19. The SARS-CoV-2 genome is closely related to 2 bat-derived severe acute respiratory syndrome (SARS)-like coronaviruses (88% identity) and more distantly from 2 other human pathogenic coronaviruses, SARS-CoV (~79% identity) and MERS-CoV (~50% identity).

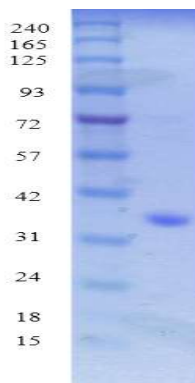
The genome of the coronavirus encodes 23 putative proteins including 4 major structural proteins: nucleocapsid [N protein], spike [S protein], membrane [M] and small envelope proteins [E].

The S protein is a glycoprotein essential for viral attachment to the host cell surface receptors and translocation into the infected cells; trimers of the S protein make up the spikes of the virus. The S protein is cleaved in host cells into S1 and S2 subunits; S1 protein binds the host receptor, while S2 mediates membrane fusion. A minimal receptor-binding domain [RBD] located in the S1 protein (aa. 318-510) can combine with the ACE2 receptor on host epithelial cells. While the S1 subunit of SARS-CoV-2 shares around 70% identity to that of the 2 bat SARS-like CoVs and human SARS-CoV, the core domains of RBD (excluding the external subdomain) are highly conserved.

The coronaviral proteases, papain-like protease (PLpro) and 3C-like protease (3CLpro), are attractive antiviral drug targets because they are essential for coronaviral replication. PLpro has the additional function of stripping ubiquitin and ISG15 from host-cell proteins to aid coronaviruses in their evasion of the host innate immune responses. Targeting PLpro with antiviral drugs may have an advantage in not only inhibiting viral replication but also inhibiting the dysregulation of signaling cascades in infected cells that may lead to cell death in surrounding, uninfected cells.

Source and Form of the Protein

Recombinant Papain-like Protease was expressed in *E. coli*. It was expressed as amino acids 1541-1858 of polyprotein corresponding to Accession# AAX16191.1 with a C-terminal His-tag. The protein migrates as a band of approximately 37 kDa by SDS-PAGE in reducing/denaturing conditions at a purity of >95%. Purified Papain-like-Protease is supplied in a buffer containing 50 mM Tris-HCL [pH 8.0] with 500 mM NaCl. It is supplied at a concentration of 1 mg/ml.



Storage

Short-term: 1-2 weeks at 4°C.

Long-term: at -20°C or below in suitable aliquots after reconstitution. Can be frozen, but avoid multiple freeze/thaw cycles

Stability: 6-12 months at -20°C or below.

Shipping: 4°C for liquid solution and room temperature for lyophilized powder

This product is for in vitro research use only.

Related Material available for ADI

Catalog#	Description
NCOV15-R-1	"Recombinant COVID-19 Nucleocapsid protein"
NCOVP11-A	Anti SARS-CoV-2/COVID-19 Nucleocapsid protein antibody
NCOVP21-A	Anti SARS-CoV-2/COVID-19 Nucleocapsid protein antibody
NCOVPC-S	Human anti SARS-CoV-2 positive control serum
NCOVSP-1	Synthetic COVID-19 antigen (For Lateral Flow & ELISA serology assays)
RP-1651	Recombinant SARS-CoV-2 3C-like Protease
RP-1652	Recombinant SARS-CoV-2 Papain-like Protease
RP-1653	Recombinant SARS-CoV-2 Envelop Protein
RP-1654	Recombinant SARS-CoV-2 Membrane Protein
RV-405000	SARS-COV-2 Neutralizing antibody/Inhibitor Compound screening ELISA Kit
RV-405100	Recombivirus Human anti SARS-CoV-2 (COVID-19) Nucleocapsid IgG ELISA Kit
RV-405110	Recombivirus Human anti SARS-CoV-2 (COVID-19) Nucleocapsid IgM ELISA Kit
RV-405120	Recombivirus Mouse anti SARS-CoV-2 (COVID-19) Nucleocapsid IgG ELISA Kit
RV-405140	Recombivirus Rabbit anti SARS-CoV-2 (COVID-19) Nucleocapsid IgG ELISA Kit
RV-405150	Recombivirus Monkey anti SARS-CoV-2 (COVID-19) Nucleocapsid IgG ELISA Kit
RV-405200	Recombivirus Human Anti SARS-CoV-2 (COVID-19) Spike protein 1(S1) IgG ELISA Kit
RV-405205	Recombivirus Human Anti SARS-CoV-2 (COVID) Spike protein 1(S1) IgA ELISA Kit
RV-405210	Recombivirus Human Anti SARS-CoV-2 (COVID) Spike protein 1(S1) IgM ELISA Kit
RV-405220	Recombivirus Mouse Anti SARS-CoV-2 (COVID) Spike protein 1(S1) IgG ELISA Kit
RV-405240	Recombivirus Rabbit anti SARS-CoV-2 (COVID-19) Spike protein 1(S1) IgG ELISA Kit
RV-405250	Recombivirus Monkey anti SARS-CoV-2 (COVID-19) Spike protein 1(S1) IgG ELISA Kit
RV-405260	Recombivirus Monkey anti SARS-CoV-2 (COVID-19) Spike protein 1(S1) IgM ELISA Kit
RV-405400	Recombivirus Human Anti SARS-CoV-2 (COVID-19) RBD IgG ELISA Kit
RV-405405	Recombivirus Human Anti SARS-CoV-2 (COVID-19) RBD IgA ELISA Kit
RV-405410	Recombivirus Human Anti SARS-CoV-2 (COVID-19) RBD IgM ELISA Kit
RV-405420	Recombivirus Mouse Anti SARS-CoV-2 (COVID-19) RBD IgG ELISA Kit
RV-405430	Recombivirus Mouse Anti SARS-CoV-2 (COVID-19) RBD IgM ELISA Kit
RV-405440	Recombivirus Rabbit anti SARS-CoV-2 (COVID-19) RBD IgG ELISA Kit
RV-405450	Recombivirus Monkey anti SARS-CoV-2 (COVID-19) RBD IgG ELISA Kit
RV-405460	Recombivirus Monkey anti SARS-CoV-2 (COVID-19) RBD IgM ELISA Kit
RV-405470	Recombivirus Rabbit anti SARS-CoV-2 (COVID-19) RBD IgM ELISA Kit
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