Recombinant SARS-CoV-2 PLpro, His-tagged

Cat. No. HUM-366 **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant SARS-CoV-2 papain-like protease (PLpro), part of the large replicase polyprotein 1ab (E1564-Y1882), expressed in E. coli cells with an N-terminal His-tag. SARS-CoV-2, previously known as the 2019 Novel Coronavirus (2019-nCoV), causes the pandemic COVID-19 disease.
Tag	His
Background	In December 2019 a novel coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), formerly known as the 2019 novel coronavirus (2019-nCoV) was identified in Wuhan, China, causing a world-wide pandemic. Three coronaviruses, SARS-CoV, MERS-CoV, and SARS-CoV-2 have been identified as being a highly pathogenic for humans, and there is currently no effective antiviral treatment. Therefore, studies are focused on rapid development of vaccines and antiviral drugs to prevent and treat coronavirus infection. There are several potential strategies to pharmacologically fight against the disease (COVID-19), including vaccines, monoclonal antibodies, oligonucleotide-based therapies, peptides, interferon therapies, and small-molecule drugs (Dömling & Gao, 2020). The coronaviral PLpro is an attractive antiviral drug target because it is essential for CoV replication. SARS-CoV-2 papain-like protease (PLpro), also known as SARS- CoV-2 PLpro, is a virally encoded cysteine protease that acts on three cleavage sites of the viral polyprotein to release mature non-structural proteins (nsp) 1, 2 and 3, a process that is essential for viral replication. Although the primary function of PLpro and 3CLpro is to process the viral polyprotein in a coordinated manner, PLpro has the additional function of stripping ubiquitin and ISG15 from host-cell proteins to help CoV

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	to evade the host innate immune responses. PLpro possesses deubiquitinating and deISGylating activities, thus negatively regulating the ubiquitin and ISG15-dependent host immune response during viral infection. PLpro also participates together with nsp4 in the assembly of virally-induced cytoplasmic double-membrane vesicles necessary for viral replication. PLpro is involved in inhibiting the production of cytokines and chemokines, that are responsible for the activation of the host innate immune response against viral infection. Consequently, this enzyme is an important molecular target in the design of SARS-CoV-2 antiviral drugs.
Purity	~90% purity.
Formulation	50mM sodium phosphate, pH7.5, 300mM NaCl, 150mM imidazole, 1mM DTT, 10% glycerol.
Notes	This product is intended for research and manufacturing uses only. It is not a diagnostic device. The user assumes all responsibility for care, custody and control of the material, including its disposal, in accordance with all regulations.
Type	Recombinant
ClassID 1	Infectious Disease

GENE INFORMATION

Synonyms	SARS-CoV-2 Papain-Like Protease (PLpro)

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