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PRODUCT INFORMATION



SARS-CoV-2 Papain-like Protease

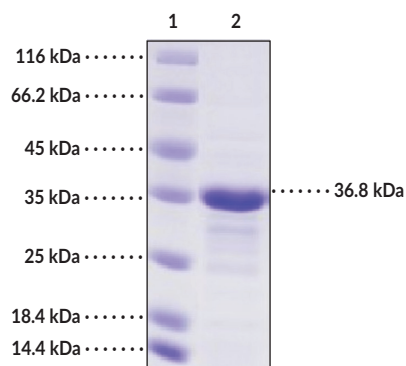
Item No. 31817

Overview and Properties

- Synonyms:** 2019-nCoV PL^{pro}, COVID-19-PL^{pro}, SARS-CoV-2 PL^{pro}, Severe Acute Respiratory Syndrome Coronavirus 2 Papain-like Protease
- Source:** Active recombinant SARS-CoV-2 N-terminal His-tagged papain-like protease expressed in *E. coli*
- Amino Acids:** 1,564-1,880
- Molecular Weight:** 36.8 kDa
- Storage:** -80°C (as supplied)
- Stability:** ≥1 year
- Purity:** ≥90% estimated by SDS-PAGE
- Supplied in:** Lyophilized from sterile 20 mM Tris, pH 7.4, with 500 mM sodium chloride
- Activity:** Measured by its ability to cleave a fluorogenic peptide substrate, Arg-Leu-Arg-Gly-Gly-AMC (RLRGGAMC).
- Specific Activity:** >80 pmols/min/μg

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

Image



Lane 1: MW Markers
Lane 2: SARS-CoV-2 Papain-like Protease

SDS-PAGE Analysis of SARS-CoV-2 Papain-like Protease. This protein has a calculated molecular weight of 36.8 kDa.

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

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
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PRODUCT INFORMATION



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 The SARS-CoV-2 papain-like protease (PL^{pro}) is encoded within the non-structural protein 3 (nsp3) region of ORF1ab. It cleaves non-structural proteins 1-3, which, together with non-structural proteins 4-16, form the replicase complex. In addition, it reverses certain post-translational modifications, preferentially removing interferon-stimulated gene product 15 (ISG15), but also removing ubiquitin, from host proteins with both actions leading to suppression of the host innate immune response.^{7,8} SARS-CoV-2 PL^{pro} decreases IFN- α -induced ISGylation of IFN regulatory factor 3 (IRF3) in A549 cells and inhibits the type I IFN response.⁸ Inhibition of SARS-CoV-2 PL^{pro} activity reduces SARS-CoV-2 replication and viral particle release from infected cells *in vitro* and increases the level of IRF3 ISGylation. Cayman's SARS-CoV-2 Papain-like Protease protein can be used for enzyme activity assays. This protein consists of 324 amino acids and has a calculated molecular weight of 36.8 kDa.

References

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