SARS-CoV-2 Papain-like Protease (PLpro)

Cat. # DB604

Background

Within the last two decades, SARS and MERS coronaviruses emerged as global health concerns causing severe acute respiratory syndromes. The SARS-CoV genome encodes several proteases including papain-like protease (PL2PRO; PLPro); this key enzyme along with 3CL-protease drives the early stage of infection by processing a large viral polypeptide into functional enzymes. SARS-CoV-2 PLPro shares 82% in protein sequence identity with PLPro from SARS-CoV. The SARS-CoV-2 PLPro was shown to have a deubiquitinating activity. Subsequently, it was shown that PLPro is also a deISGylase. PLPro cleaves ISG15 and Ubiquitin from synthetic substrates with high and low efficiency, respectively. PLPro represents an antiviral drug target for counteracting SARS-CoV-2 infections.

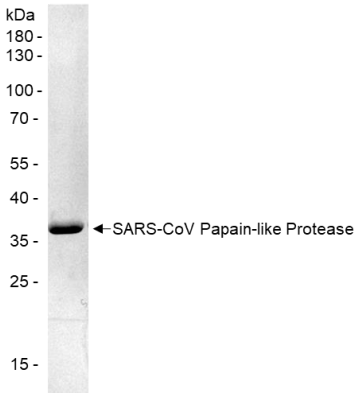
Alternate names

PL-PRO, PL2-PRO, NSP3

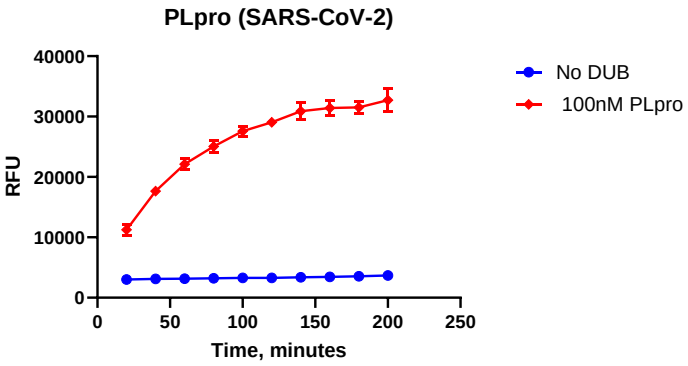
Product Information

Purity	≥ 90% by SDS-PAGE
Molecular Weight	37 kDa
Quantity	100 µg
Physical State	Liquid, 50 mM Tris-HCl pH 8.5, 150 mM NaCl, 1 mM DTT, 10% glycerol
Source	SAR-CoV-2 recombinant
Activity	This enzyme is active in the Ub-Rh110 and ISG15-CHOP assays.
Storage	-80° C. Avoid repeated freeze/thaw cycles

Product QC



SDS-Page Analysis of purified SARS-CoV-2 Papain-like Protease. Two µg of the enzyme was loaded on a 10-20% SDS-PAGE gel and stained with Coomassie brilliant blue.



Activity Assay of PLpro. 100nM PLpro was tested in a Ub-Rh110 assay showing robust DUB activity.

References

1. Wang, D., et al., JAMA, 2020. 323(11):1061.

2. Zhou P., et al., Nature, 2020. 579(7798):270-273.