

DESCRIPTION

Source *E. coli*-derived viral Papain-like Protease protein
Glu1541 - Lys1855 with a N-terminal 6-His tag
Accession # P0C6U8.1

Predicted Molecular Mass 37 kDa

SPECIFICATIONS

Activity Reaction conditions will need to be optimized for each specific application. We recommend an initial PLPro concentration of 20-100 nM when using Ubiquitin-AMC (U-550) or Ubiquitin-Rhodamine 110 (U-555) as a substrate.

Purity >95%, by SDS-PAGE under reducing conditions and visualized by Colloidal Coomassie® Blue stain.

Formulation Supplied as a solution in HEPES, NaCl and TCEP. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Shipping The product is shipped with dry ice or equivalent. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**

- 6 months from date of receipt, -70 °C as supplied.
- 3 months, -70 °C under sterile conditions after opening.

BACKGROUND

The Papain-like protease ("PLPro") from the human SARS coronavirus (Severe Acute Respiratory Syndrome coronavirus) is a cysteine protease located within the non-structural protein 3 (NS3) section of the viral polypeptide. PLPro activity is required to process the viral polyprotein into functional, mature subunits; specifically, PLPro cleaves a site at the amino-terminus of the viral replicase region. In addition to its role in viral protein maturation, PLPro possesses a deubiquitinating and deISGylating activity. *In vivo*, this protease antagonizes innate immunity by inhibiting IRF3-induced production of type I interferons. PLPro has been reported to hydrolyze both K48- and K63 linked poly-Ubiquitin chains *in vitro*. When used at low concentrations, the enzyme demonstrates a strong preference for K48-linked tetra-Ubiquitin chains which are primarily converted to di-Ubiquitin species.

References:

1. Frieman M., *et al.* (2009) J.Virol. **83**: 6689.
2. Lindner H.A., *et al.* (2007) Archv. Biochem. Biophys. **466**: 8.
3. Ratia K., *et al.* (2014) PLoS Pathog. **10**:e1004113.
4. Russell N., *et al.* (2016) FASEB Ubiquitin & Cell Reg. (poster)