

SARS-CoV-2 3CLpro/3C-like protease Protein (His)

General Information

Protein Construction:	A DNA sequence encoding the SARS-CoV-2 (2019-nCoV) 3CL Protease (YP_009725295.1) (Ser3264-Gln3569) was expressed with a N-terminal polyhistidine tagged. Predicted N terminal: Met
Species:	SARS-CoV-2
Expression Host:	Baculovirus Insect Cells
Accession:	YP_009725295.1
Molecular Weight:	35.31 kDa (predicted)

QC Testing

Biological Activity:	Measured by its ability to cleave a peptide substrate, Dabcyl-KTSAVLQSGFRKME-Edans. The specific activity is >5 pmols/min/μg;
Purity:	> 95 % as determined by SDS-PAGE.
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 20 mM Tris, pH8.0, 300 mM NaCl, 10% glycerol. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

3C-like protease (3CLpro) is the main protease of Humann Coronavirus. 3C-like protease (3CLpro) is a key enzyme, as it cleaves several sites to produce non-structural proteins that are essential for genome replication and Coronavirus virion production, such as an RNA-dependent RNA polymerase, a helicase, ribonucleases and 3CLpro itself, from two types of polyproteins (pp1a and pp1ab). SARS-CoV 3CLpro exists as a homodimer and each protomer has an active site.

Reference

Tomonari Muramatsu, et al. Autoprocessing mechanism of severe acute respiratory syndrome coronavirus 3C-like protease (SARS-CoV 3CLpro) from its polyproteins. FEBS Journal. 2013
Ziebuhr J, Molecular biology of severe acute respiratory syndrome coronavirus. Curr Opin Microbiol. 2004
Yang H, et al. The crystal structures of severe acute respiratory syndrome virus main protease and its complex with an inhibitor. Proc Natl Acad Sci USA. 2003

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