

PRODUCT INFORMATION

MERS-CoV M^{pro} (recombinant)

Item No. 40987

Overview and Properties

Synonyms: 3CL^{pro}, 3C-like Protease, Main Protease, nsp5
Source: Active recombinant MERS-CoV M^{pro} expressed in *E. coli*
Amino Acids: 1-306 of MERS-CoV M^{pro} (full length), 3,248-3,553 of K9N638
Uniprot No.: K9N638
Molecular Weight: 33.33 kDa
Storage: -80°C (as supplied)
Stability: ≥1 year
Purity: ≥85% estimated by SDS-PAGE
Supplied in: 20 mM HEPES, pH 7.5, 10% glycerol, 150 mM sodium chloride, 1 mM TCEP, and 1 mM EDTA

Protein

Concentration: *batch specific* mg/ml

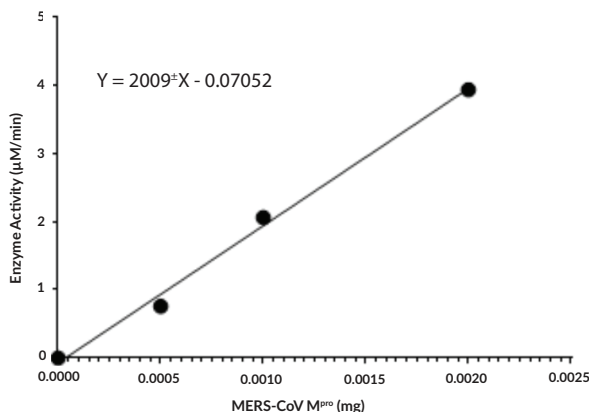
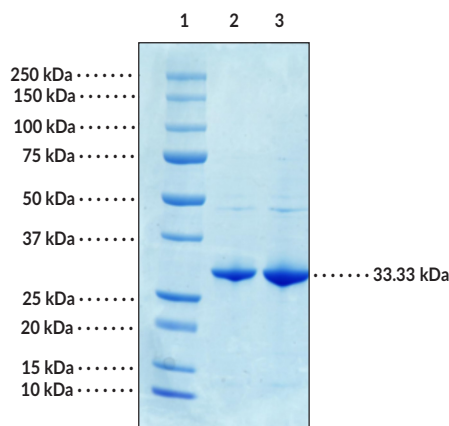
Activity: *batch specific* U/ml

Specific Activity: *batch specific* U/mg

Unit Definition: One unit is defined as the amount of enzyme required to produce 1 μM of EDANS per minute at 25°C in 20 mM Tris, pH 7.5, with 100 mM sodium chloride, and 1 mM EDTA in the presence of 15 μM of Dabcyl-K-SARS-CoV-2 replicase polyprotein 1ab (3235-3246)-E-EDANS (Item No. 37409).

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

Images



MERS-CoV M^{pro} activity was determined measuring fluorescence at 485 nm using 15 μM of Dabcyl-K-SARS-CoV-2 replicase polyprotein 1ab (3235-3246)-E-EDANS (Item No. 37409).

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

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Middle East respiratory syndrome coronavirus (MERS-CoV) is an enveloped positive-stranded RNA virus, a member of the *Betacoronavirus* genus, and the causative agent of MERS, an acute respiratory disease that often leads to pneumonia and renal failure.^{1,2} The MERS-CoV main protease (M^{pro}), also known as 3C-like protease (3CL^{pro}), is encoded by non-structural protein 5 (nsp5), exists as a homodimer, and is composed of a chymotrypsin-like catalytic domain and helical domain.^{3,4} It is involved in processing polyprotein 1a (pp1a) at positions 4-16, which produces 13 nsps, and in inhibiting the host antiviral innate immune response.^{3,5,6} Inhibition of MERS-CoV M^{pro} activity reduces MERS-CoV replication in infected cells *in vitro*.⁷ MERS-CoV M^{pro} inhibition also increases survival and decreases lung viral titers and edema in MERS-CoV-infected transgenic mice expressing the gene encoding human dipeptidyl peptidase 4 (DPP-4), which is the functional receptor of MERS-CoV.^{7,8} Cayman's MERS-CoV M^{pro} (recombinant) protein can be used for enzyme activity assays. MERS-CoV M^{pro} activity reflects its concentration-dependent dimerization ($K_d = \sim 7\text{-}8\ \mu\text{M}$), an intrinsic property of the enzyme.⁹

References

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