

# SARS-CoV-2 3CL-Mpro protein

Full length protein

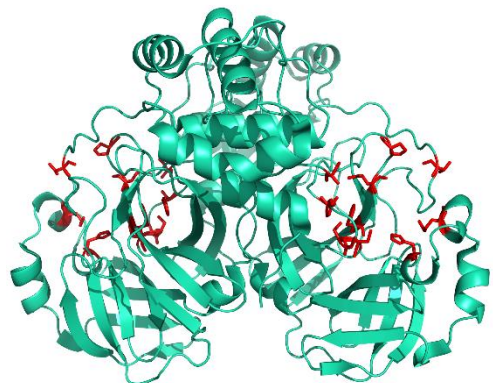
Cat. no. P2020-019

## Product Information

Protein:	SARS-CoV-2 3CL-Mpro, tag free (~ 36 kDa)
Sequence:	SGFRKMAFPSGKVEGCMVQVTCGTTTLNGLWLDVVVYCPRHVICTSEDMLNPNYEDLLIR KSNHNFLVQAGNVQLRVIGHSMQNCVLKLVDTANPKTPKYKFVRIQPGQTFSVLACYNG SPSGVYQCAMRPNFTIKGSFLNGSCGSGVGFNIDYDCVSFCYMHHMELPTGVHAGTDLEGN FYGPFVDRQTAQAAGTDTTITVNVLAWLYAAVINGDRWFLNRFTTTLNDFNLVAMKYNYE PLTQDHVDILGPLSAQTGIAVLDMCASLKELLQNGMNGRTILGSALLEDEFTPFDDVVRQC SGVTFQ
	N-terminal His-tag (removed) not shown in sequence.
Source:	Recombinantly expressed in E.coli Rosetta2 (DE3).
Tag(s):	tag-free
Purification:	Purified by affinity chromatography and subsequent buffer exchange. Tag removal by protease digest followed by reaction cleanup (IMAC).
Formulation:	PBS, pH 7.4; contains Glycerol as protectant Liquid, stored and shipped at -80 °C.
Purity:	> 90 % (will be determined by densitometry of Coomassie stained gel, example next page)
Concentration:	Will be determined by BCA-Assay.
Long-term storage:	No recommendations.
Comment:	N-terminal His-Tag was removed to restore protease activity.

## **Background Information:**

The new coronavirus SARS-CoV-2 expresses two proteases, the papain-like protease (PLpro) and 3C-like protease (3CLpro). Both belong to the group of cysteine proteases, as they have a cysteine residue at their catalytic site. Their main function is the processing of the viral polyprotein, that contains two cleavage sites to build up the viral replicase complex. Additionally, PLpro has the ability of removing ISG15 and ubiquitin from viral proteins expressed in the cell, this enables evasion from the innate immune response by the host. This represents an interesting target for drug development. This is because it not only would inhibit viral replication, but would also prevent the massive immunological response that results from the over-activation of the host's immune system. Such an over-activation can lead to damage of the uninfected cells and thus to a worsening of the patient's condition.



*Structural model of the 3C-like protease (3CL-Mpro) of SARS-CoV-2 shown as active dimer. The amino acids relevant for binding of the substrate are highlighted (red).*

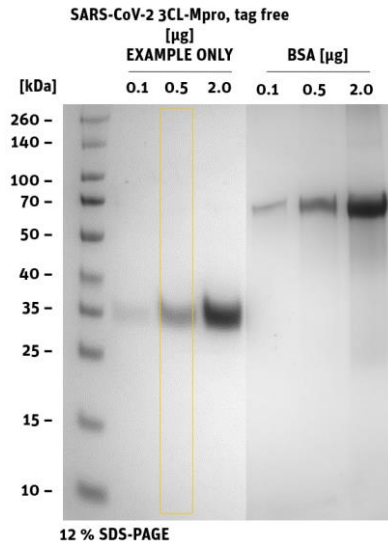
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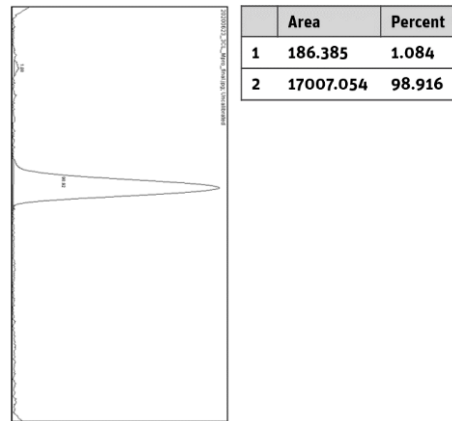
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## Product Information

Quality Information (provided for each lot):

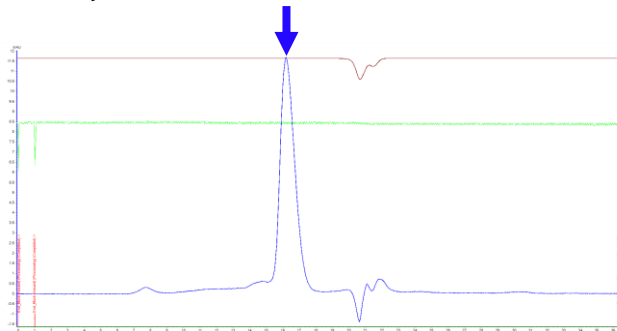


SDS-PAGE/Coll.Coomassie

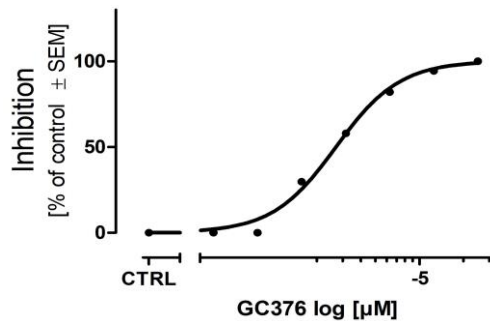


Histogram (of marked lane in gel picture)

Activity Information (general information, not lot specific):



Analytic size exclusion chromatography (SEC) of the purified protein.



Inhibition of Protease 3CL-Mpro by GC376 (2% DMSO).