Product Information

3CL, Mpro protease chromogenic substrate peptide

SARS-CoV2 Main protease chromogenic substrate peptide, pNA-peptide substrate, lyophilized

SAE0181

Product Description

This hexapeptide, Thr-Ser-Ala-Val-Leu-Gln-pNA, is a substrate peptide for both the Main protease (Mpro) from the SARS coronavirus,[1,2] and also the Mpro of SARS-Cov2.[3] This substrate allows measurement of the activity of Mpro, using a standard plate reader or spectrophotometer. Proteolytic cleavage by Mpro will release the *p*-nitroaniline (pNA) group from the peptide (TSAVLQ), with a maximum absorption peak at 405 nm (A_{405} of 0.00916 at 1 µM):

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Thr-Ser-Ala-Val-Leu-Gln-pNA

Reagent

This product is lyophilized from 0.1% TFA in H_2O.

Storage/Stability

The product is stable in lyophilized form for at least 5 years when stored at –20 °C.

The product has a limited lifetime in solution. Long-term storage in solution should be avoided.

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Solubilization:

The peptide is soluble in water at a concentration of 20 mg/mL. Alternatively, the peptide is soluble in DMSO at a concentration of 20-50 mg/mL.

Procedure

Working reagent concentrations:

Peptide: suggested working concentration = 200 µg/mL

Mpro: we recommend using Mpro, Cat. No. SAE0172, at a working concentration of 2-20 µg/mL.

Assay buffer: Mpro protease is active under a wide variety of conditions and temperatures. However, we strongly advise against use of Tris-based buffers, because of their interactions with the given substrate.

Recommended assay buffer: 25 mM HEPES buffer, pH 7.0, 0.2% TWEEN® 20

Reaction temperature: 0-30 °C

The reaction can be stopped by addition of acetic acid to a final concentration of 2%.

References

1. Liu, P. *et al.*, Potent inhibitors of SARS-CoV-2 3C-like protease derived from N-substituted isatin compounds. *Eur. J. Med. Chem.*, **206**, 112702 (2020).
2. Liu, Z. *et al.*, Virtual screening of novel noncovalent inhibitors for SARS-CoV 3C-like proteinase. *J. Chem. Inf. Model.*, **45(1)**, 10-17 (2005).
3. Li, C. *et al.*, Maturation mechanism of severe acute respiratory syndrome (SARS) coronavirus 3C-like proteinase. *J. Biol. Chem.*, **285(36)**, 28134-28140 (2010).

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