

## 2019nCoV (SARS-CoV-2) Mpro (3CLpro, 3C-Like protein, Nsp5)

### About Coronavirus Mpro (Coronavirus 3CLpro, 3C-Like protein)

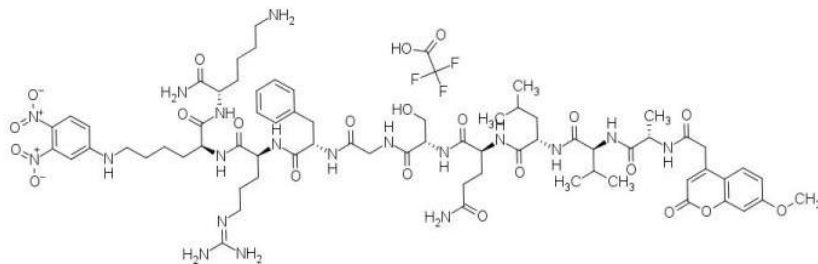
COVID-19 pandemic is caused by 2019nCoV (SARS-CoV-2) infection. 2019nCoV contains 16 Non-structure protein (Nsp1-Nsp16) that may be drugable targets for antiviral compounds discovery against COVID-19<sup>1</sup>.

2019nCoV (SARS-CoV-2) Mpro (Main Protease, Nsp5), also called 3C-Like Protein (3CLpro). The 2019nCoV (SARS-CoV-2) Mpro (3CLpro) mediates processing at 11 distinct cleavage sites, including its own autoproteolysis, and is essential for coronavirus replication. The coronavirus Mpro (3CLpro) exhibits a conserved three-domain structure and catalytic residues. <sup>1,2</sup>

### High-throughput screening (HTS) assay development of coronavirus Mpro (3CLpro) for antiviral compounds

HTS Approach: Fluorescence resonance energy transfer (FRET) assay for time-dependent kinetic analysis

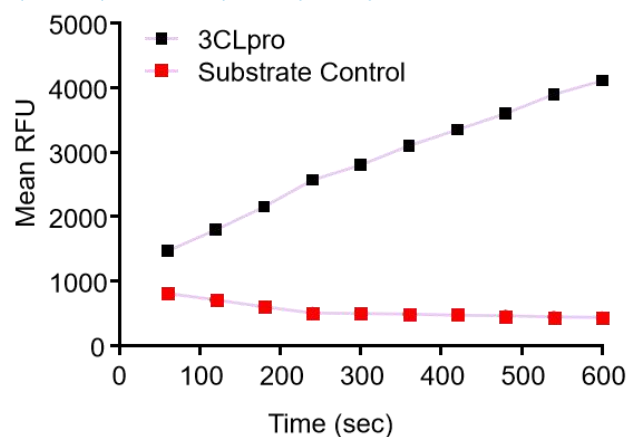
#### 1. FRET Substrate: MCA-AVLQSGFR-Lys(Dnp)-Lys-NH<sub>2</sub><sup>2</sup>



Name: MCA-Ala-Val-Leu-Gln-Ser-Gly-Phe-Arg-Lys(Dnp)-Lys-NH<sub>2</sub>  
 Molecular weight: 1514.66  
 Formula: C<sub>69</sub>H<sub>99</sub>N<sub>17</sub>[N<sup>+</sup>]<sub>2</sub>O<sub>18</sub>[O<sup>-</sup>]<sub>2</sub>

#### 2. Simple 2019nCoV (SARS-CoV-2) Mpro (3C-Likepro) activity assay development Protocol<sup>2</sup> :

[2019nCoV \(SARS-CoV-2\) Mpro \(3C-Likepro\) activity assay development Protocol article](#) 








## References

- 1 Gordon, D. E. *et al.* A SARS-CoV-2-Human Protein-Protein Interaction Map Reveals Drug Targets and Potential Drug-Repurposing. *BioRxiv*, doi:10.1101/2020.03.22.002386 (2020).
- 2 Jin, Z. *et al.* Structure of M(pro) from COVID-19 virus and discovery of its inhibitors. *Nature*, doi:10.1038/s41586-020-2223-y (2020).

## SARS-CoV-2 (2019nCoV) Non-structure protein (Nsp) Recombinant Antigens

- Recombinant Proteins Of SARS-CoV-2 (2019nCoV) Drugable Target For High-throughput screening (HTS) assay development of antiviral compounds against COVID-19

Name of Non-structure protein of SARS-CoV-2 (2019-nCoV, novel coronavirus)	Name of Gene in Coronavirus	GeneMedi's Recombinant Antigens For Activity Assay	High-throughput screening (HTS) assay development information and protocols
(PLpro) papain-like proteinase	Nsp3	<a href="#">GMP-V-2019nCoV-PLpro001</a>	Download 
Mpro (main protease,3CLpro)	Nsp5	<a href="#">GMP-V-2019nCoV-Mpro001</a>	Download 
Nsp10-CysHis,GFL protein	Nsp10	<a href="#">GMP-V-2019nCoV-Nsp10-01</a>	Download 
RNA-dependent RNA polymerase(RdRP)	Nsp12	<a href="#">GMP-V-2019nCoV-RdRP001</a>	Download 
2'-O-ribose methyltransferase	Nsp16	<a href="#">GMP-V-2019nCoV-Nsp16-01</a>	Download 
Nsp3-X domain(Macro domain)	Nsp3	<a href="#">GMP-V-2019nCoV-Nsp3X-01</a>	