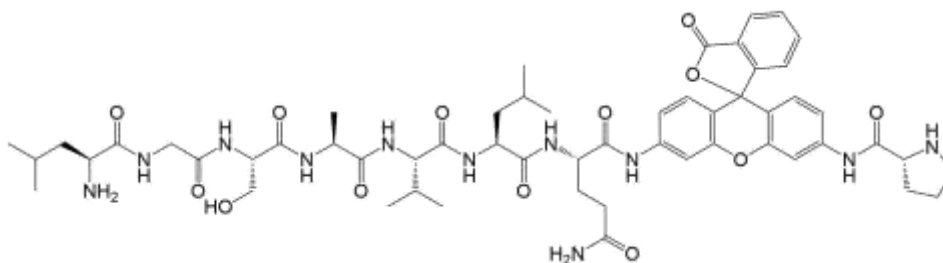


MATERIAL DATA SHEET

SARS-CoV-2 3CL Protease Substrate, Rh110-conjugated
Cat. # S-720

The 3CL protease (aka 3CL^{pro}, M^{pro} or "Main" Protease) from the human SARS-CoV-2 coronavirus (Severe Acute Respiratory Syndrome coronavirus 2) is a C30-type cysteine protease located within the non-structural proteins 3 (NS3) section of the viral polypeptide. 3CL^{pro} activity is required to process the viral polyprotein into functional, mature subunits, and there are 11 or more sites of cleavage, many containing the sequence LQ[S/A/G]; the protease cleaves c-terminal to the glutamine amino acid. Along with the CoV-2 Papain-Like Protease (catalog number E-611), 3CL^{pro} presents an attractive target for therapeutic intervention for COVID-19. Because no human proteases with a similar cleavage specificity are known, inhibitors of 3CL^{pro} are unlikely to cause mechanism-based toxicity.

This peptide substrate (LGS AVLQ-Rh110-dP) consists of a naturally occurring cleavage site for SARS-CoV-2 3CL protease conjugated to a quenched, c-terminal Rhodamine 110 dye. 3CL protease activity releases the dye to fluoresce with high signal-to-background ratios in either kinetic or end-point assays.

Product Information**Quantity:** 200 µg**Formula Weight:** 1096.3 Da**Structure:****Physical/Chemical Characteristics****Formulation:** 4 mM in DMSO**Purity:** > 95% by HPLC

Use & Storage	
Use:	LGS AVLQ-Rh110-dP is a fluorogenic substrate for measuring the 3CL protease activity of coronaviruses. The sequence is derived from the SARS CoV-2 3CL ^{pro} . Release of Rhodamine 110 fluorescence can be monitored with excitation and emission wavelengths of 485 nm and 535 nm, respectively. Conditions will need to be optimized for each specific application. We recommend an initial substrate concentration of 4-20 µM.
Stability & Storage:	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. Protect from light. <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied • 6 months, -20 to -70 °C after opening.
Shipping:	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended.

Literature	
References:	Chen, Y.W. <i>et al.</i> (2020) F1000Research 9 :129. Pillaiyar, T., <i>et al.</i> (2016) J. Med. Chem. 59 : 6595. Zhang, L. <i>et al.</i> (2020) Science 368 :409.

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