Store at -80°C

SARS-CoV-2 Spike RBD (318-541) Recombinant Protein (mFc-Tag)

#41701

100 µg

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Entrez-Gene ID #43740568
UniProt ID #P0DTC2

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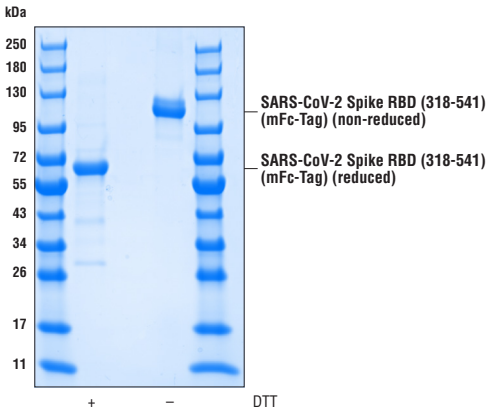
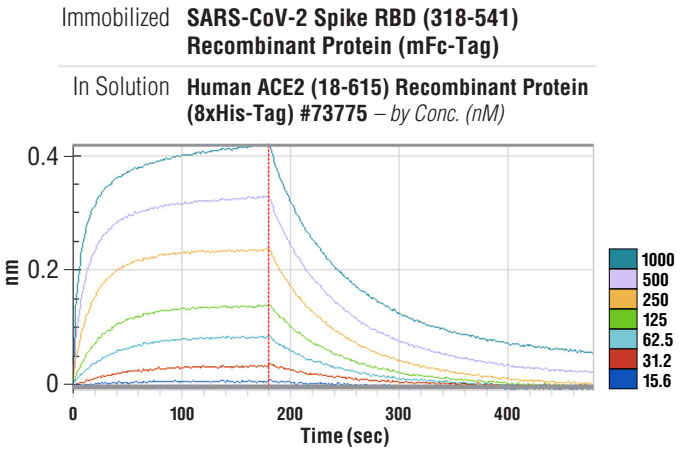
Description: SARS-CoV-2 Spike RBD (318-541) Recombinant Protein (mFc-Tag) is derived from a recombinant expression construct corresponding to the host receptor-binding domain (RBD) of SARS-CoV-2. The expressed protein contains a murine Fc-Tag at its carboxy terminus.

Background: The cause of the COVID-19 pandemic is a novel and highly pathogenic coronavirus, termed SARS-CoV-2 (severe acute respiratory syndrome coronavirus-2). SARS-CoV-2 is a member of the Coronaviridae family of viruses (1). The genome of SARS-CoV-2 is similar to other coronaviruses, and is comprised of four key structural proteins: S, the spike protein, E, the envelope protein, M, the membrane protein, and N, the nucleocapsid protein (2). Coronavirus spike proteins are class I fusion proteins and harbor an ectodomain, a transmembrane domain, and an intracellular tail (3,4). The highly glycosylated ectodomain projects from the viral envelope surface and facilitates attachment and fusion with the host cell plasma membrane. The ectodomain can be further subdivided into host receptor-binding domain (RBD) (S1) and membrane-fusion (S2) subunits, which are produced upon proteolysis by host proteases at S1/S2 and S2' sites. S1 and S2 subunits remain associated after cleavage and assemble into crown-like homotrimers (2,4). In humans, both SARS-CoV and SARS-CoV-2 spike proteins utilize the angiotensin-converting enzyme 2 (ACE2) protein as a receptor for cellular entry (5-7). Spike protein subunits represent a key antigenic feature of coronavirus virions, and therefore represent an important target of vaccines, novel therapeutic antibodies, and small-molecule inhibitors (8,9).



The purity of SARS-CoV-2 Spike RBD (318-541) Recombinant Protein (mFc-Tag) was determined by densitometry after SDS-PAGE of 2 µg of protein followed by staining with Coomassie Blue. Purity values were determined from the DTT-reduced samples (+).



Binding kinetics between SARS-CoV-2 Spike RBD (318-541) Recombinant Protein (mFc-Tag) (immobilized) and Human ACE2 (18-615) Recombinant Protein (8xHis-Tag) #73775 (in solution, at indicated concentrations). The vertical red line (180 sec) indicates addition of PBS to induce dissociation. Binding was detected with an anti-mouse Fc biosensor. Values on y-axis indicate binding response signals recorded for 7 different concentrations of Human ACE2 (18-615) Recombinant Protein (8xHis-Tag) #73775 (15.6, 31.2, 62.5, 125, 250, 500 and 1000 nM).

Molecular Weight: 110 kDa (non-reduced); 70 kDa (reduced)

Formulation:
Expression Host: Human (HEK293 cells)
Supplied in a PBS solution (pH 7.2).

Purity: 92%, determined by SDS-PAGE.

Storage: Stable at -80°C for 3 years after receipt. Avoid repeated freeze-thaw cycles.

Background References:

(1) Zhou, P. et al. (2020) *Nature* 579, 270-3.
(2) Tortorici, M.A. and Veesler, D. (2019) *Adv Virus Res* 105, 93-116.
(3) Li, F. et al. (2006) *J Virol* 80, 6794-800.
(4) Li, F. (2016) *Annu Rev Virol* 3, 237-61.
(5) Shang, J. et al. (2020) *Nature* 581, 221-4.
(6) Wrapp, D. et al. (2020) *Science* 367, 1260-3.
(7) Yan, R. et al. (2020) *Science* 367, 1444-8.
(8) Yuan, Y. et al. (2017) *Nat Commun* 8, 15092.
(9) Amanat, F. and Krammer, F. (2020) *Immunity* 52, 583-9.

Applications: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **FC-FP**— Flow cytometry-Fixed/Permeabilized **FC-L**— Flow cytometry-Live **E-P**—ELISA-Peptide
Species Cross-Reactivity: **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse
All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.