

Anti-COVID-19 & SARS-CoV S glycoprotein [CR3022] Standard Size Ab01680-15.0

This antibody does not have a J-chain and therefore presents as a hexamer, rather than a pentamer.

This reformatted human antibody was made using the variable domain sequences of the original Human IgG1 format, for improved compatibility with existing reagents, assays and techniques.

Isotype and Format: Human IgM, Kappa

Clone Number: CR3022

Alternative Name(s) of Target: Spike protein; COVID19; COVID 19; S protein; SARS-CoV S protein; S glycoprotein; E2; Peplomer protein; Spike protein S1; SARS Coronavirus; SARS-CoV-2; SARS CoV 2; 2019-nCoV; Ab1680.10; Ab1680.15; Ab1680.16

UniProt Accession Number of Target Protein: P59594

Published Application(s): crystallography, NTRL, SPR, ELISA, IF

Published Species Reactivity: SARS-CoV-2 (COVID-19) & SARS Coronavirus

Immunogen: The original monoclonal antibody was generated through an scFv library derived from a peripheral blood lymphocytes of a patient exposed to the SARS-CoV.

Specificity: This antibody binds the amino acids 318-510 in the S1 domain of the SARS-CoV Spike protein as well as SARS-CoV-2 (COVID-19) Spike protein. The antibody also binds to P462L-substituted S318-510 fragments of the SARS spike protein. The binding epitope is only accessible in the "open" conformation of the spike protein (Joyce et al. 2020).

Application Notes: This antibody binds to both SARS-CoV and SARS-CoV-2 with high affinity (PMID: 16796401 & 32065055). The initial characterization of the binding of this antibody was performed by ELISA and indicates potential for the development of diagnostic assays, as both virus-capture assays, or as controls in serological assays measuring immune-responses to virus exposure. Human IgG1, IgG3, IgM and IgA isotypes are available to mimic antibody responses seen in COVID19 ([Amanat et al. 2020](#)). Human IgG2 and IgG4 subtypes, which are also seen in a small subset of COVID-19 patients, are also available to investigate their role in the response to SARS-CoV-2. The original human IgG1 version of the antibody works synergistically in combination with another non-competing SARS antibody CR3014 and is a potential candidate for passive immune prophylaxis of SARS-CoV infection (Meulen et al., 2006). The original antibody (human IgG1) was also reported to bind the 2019-nCoV RBD (KD of 6.3 nM). This antibody has been attributed a potential to be developed as a therapeutic agent, alone or in combination with other

neutralizing antibodies for treatment of 2019-nCoV infections (Tian et al., 2020). Bates et al. 2021 (PMID: 32766589) used CR3022 in a immunofluorescence assay.

Antibody First Published in: ter Meulen et al. Human Monoclonal Antibody Combination against SARS Coronavirus: Synergy and Coverage of Escape Mutants PLoS Med. 2006 Jul; 3(7): e237 [PMID:16796401](#)

Note on publication: Describes the discovery and original characterization of this antibody.

Product Form

Size: 50 µg Purified antibody.

Purification: Affinity Purified using a recombinant lectin column

Supplied In: PBS with 0.02% Proclin 300.

Storage Recommendation: Store at 4°C for up to 3 months. For longer storage, aliquot and store at -20°C.

Concentration: 1 mg/ml.

Important note – This product is for research use only. It is not intended for use in therapeutic or diagnostic procedures for humans or animals.