Anti-COVID-19 & SARS-CoV S glycoprotein [CR3022] Bulk Size Ab01680-11.0-BT

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 IgG2, 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" confromation 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-ompeting 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: 1 mg Purified antibody in bulk size.
Purification: Protein A affinity purified
Supplied In: PBS only.
Storage Recommendation: Store at 4^{o}C for up to 3 months. Note, this antibody is provided without added preservatives, it is therefore recommed this antibody be handled under sterile conditions. For longer storage, aliquot and store at -20^{o}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.