

Anti-S protein (RBD) [aRBD-5] Bulk Size Ab03532-1.159-BT

Isotype and Format: Mouse IgG1-Fc fusion

Clone Number: aRBD-5

Alternative Name(s) of Target: SARS CoV 2 S glycoprotein; COVID-19 Spike protein; RBD; Receptor Binding Domain; E2 glycoprotein; E2; Human coronavirus 2 spike glycoprotein; Peplomer protein; S glycoprotein; SARS coronavirus 2 S protein; SARS coronavirus 2 Spike Protein; SARS CoV 2 Spike protein; SARS CoV 2; SARS-CoV-2 S protein; SARSCoV2; SARS-COV-2 S protein; SARS-COV-2 Spike glycoprotein; SARSCOV2 Spike protein; Severe acute respiratory syndrome 2 spike glycoprotein; Severe acute respiratory syndrome virus 2 spike glycoprotein; Spike glycoprotein; 2019-nCoV; SARS-CoV2

UniProt Accession Number of Target Protein: P0DTC2

Published Application(s): Blocking, neutralizing, SPR, ELISA

Published Species Reactivity: SARS-CoV-2

Immunogen: The original antibody was generated by immunizing two alpacas with highly purified recombinant SARS-CoV-2 RBD, and developing a VHH library. The antibody was isolated by panning against SARS-CoV-2 RBD.

Specificity: The antibody binds the Spike protein of the SARS-CoV-2.

Application Notes: The VHH and VHH with IgG1 Fc formats demonstrated strong binding to both RBD and the entire ectodomain (S1+S2) of SARS-CoV-2 spike in ELISA, with a low nanomolar 50% effective concentration (EC50 respectively 0.674 nM and 1.016 nM). The binding affinity of the VHH format and VHH-Fc formats to RBD were also measured using surface plasmon resonance, with KD values of 16.3 nM and 1.25 nM respectively. Both VHH and Fc fusion formats could block RBD-ACE2 interaction in a dose-dependent manner, as characterized by competitive ELISA. Furthermore, the fusion of two VHHs with nonoverlapping epitopes resulted in a hetero-bivalent VHHs, aRBD-2-5, which showed significantly higher RBD binding affinities (KD of 59.2 pM). Similarly, the Fc fusion also showed enhanced binding affinities, with KD values of 12.3 pM. The homo- and hetero-bivalent VHHs exhibited potent neutralizing ability against SARSCoV-2 inoculated onto Vero E6 cells. The 50% neutralization dose was 1.22 ng/ml (0.043 nM) for aRBD-2-5. Finally, the ND50s for aRBD-2-5-Fc was 11.8 ng/ml (0.107 nM) (Ma et al, 2021; PMID:33658349).

Antibody First Published in: Ma et al. Potent Neutralization of SARS-CoV-2 by Hetero-bivalent Alpaca Nanobodies Targeting the Spike Receptor-Binding Domain *J Virol.* 2021 Mar 3;95(10):e02438-20.

[PMID:33658349](#)

Note on publication: The original paper describes the generation and characterization of the antibody

Product Form

Size: 500 µg Purified antibody in bulk size.

Purification: Protein A affinity purified

Supplied In: PBS only.

Storage Recommendation: Store at 4°C for up to 3 months. Note, this antibody is provided without added preservatives, it is therefore recommended this antibody be handled under sterile conditions. 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.