

Anti-Spike protein [Ty1] Bulk Size Ab02061-34.11-BT

Isotype and Format: Camelid VHH, His-Tagged

Clone Number: Ty1

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; TY-1

UniProt Accession Number of Target Protein: P0DTC2

Published Application(s): biolayer interferometry, inhibit, NTRL, ELISA, FC, IF

Published Species Reactivity: SARS Coronavirus 2 (SARS-Cov-2)

Immunogen: The original antibody was generated by immunizing an adult male alpaca. Four rounds of immunizations were carried out during a 60 day period. For the first two rounds SARS-CoV-2 S1-sheep-FC was used as an antigen and for the last two rounds SARS-CoV-2 RBD was used as an immunogen. Selection of specific binders was done by two consecutive rounds of phage display and panning against RBD immobilized on magnetic beads.

Specificity: This antibody binds the receptor binding domain (RBD) of the SARS-CoV-2. Ty1 binds to an epitope on the RBD accessible in both the 'up' and 'down' conformations and that Ty1 sterically hinders RBD-ACE2 binding.

Application Notes: This alpaca-derived single domain antibody targets the RBD of the SARS-CoV-2 spike glycoprotein and potently neutralizes the virus. Ty1 successfully neutralized SARS-CoV-2 pseudotyped viruses in vitro at an IC₅₀ of 0.77 µg/ml (54 nM). The binding specificity of Ty1 to spike protein was determined by flow cytometry. Ty1 was also able to recognize the virus infected Vero E6 cells in an immunofluorescence assay. It is also reported that Ty1 recognizes and binds the viral spike protein with high specificity in its native conformation in SARS-CoV-2 infected cells. RBD bound to surface-immobilized Ty1 with high affinity in the 5-50 nM range in Biolayer Interferometry (Hanke et al., 2020).

Antibody First Published in: Hanke et al. An alpaca nanobody neutralizes SARS-CoV-2 by blocking receptor interaction. *BioRxiv* (2020) [PMID:](#)

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

Product Form

Size: 500 µg Purified antibody in bulk size.

Purification: Purified by Immobilized Metal Affinity Chromatography

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.