InVivo BioTech Services GmbH
a BRUKER company

Anti-Spike (RBD) Antibody_AK3401

Description:

InVivo offers a series of different monoclonal antibodies for the detection of the Spike protein from SARS-CoV-2. All antibodies come from hybridoma cell lines that were generated by immunization with the recombinant full-length Spike protein (S) or the receptor-binding domain (RBD).

This antibody has been validated by ELISA and is specifically directed against an epitope that is located on the RBD. Additionally, ELISAs with directly coated antigens proved that this antibody also binds to Spike protein B.1.1.7 and different RBD variants (B.1.1.7, B.1.1.28.1, B.1.1.7 E484K and B.1.351).

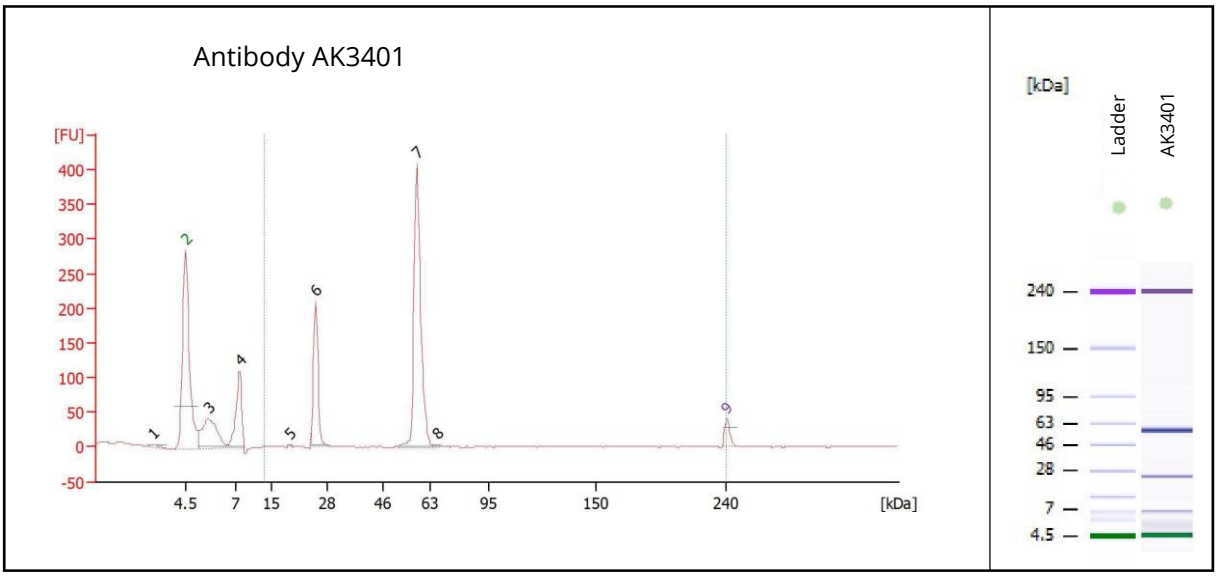
All antibodies are produced exclusively under serum-free conditions from hybridoma and purified through one-step purification with Protein-A affinity chromatography.

Product-ID:	AK3401
Host:	Mouse
Clonality:	Monoclonal
Isotype:	IgG
Subclass:	mIgG2aκ
Formulation:	Liquid, PBS, pH 7.4, 0.2 µm sterile filtered
Concentration:	≥ 0.5 mg/ mL
Purity:	≥ 90% (via analytical CGE under reducing conditions)
Conjugate:	Unconjugated
EC_{50} RBD*:	2.117 nM
EC_{50} S1*:	1.117 nM
EC_{50} S*:	0.424 nM
Specificity:	S (tested for: Wuhan and B.1.1.7)
	RBD (tested for: Wuhan, B.1.1.7, B.1.1.28.1, B.1.1.7 E484K and B.1.351)

*EC_{50} values for 20 nM of coated antigen (Wuhan origin)

The product is for research use or for further manufacturing only.

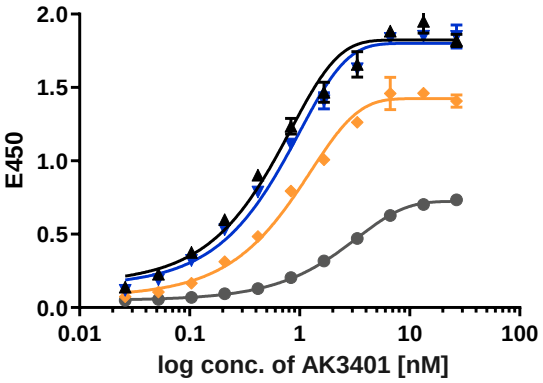
Purity (analytical CGE, under reducing conditions):

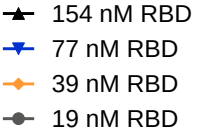


Peak	Size [kDa]	% of Total	Peak Identification
1	2.9	0.0	Unknown
2	4.5	0.0	Lower Marker
3	5.6	0.0	System Peak
4	7.9	0.0	System Peak
5	19.3	0.3	Unknown
6	25.3	Peak Value 1	Light Chain AK3401
7	58.2	Peak Value 2	Heavy Chain AK3401
8	67.2	0.5	Unknown
9	240.0	0.0	Upper Marker

Summation of peak values 1 and 2 results in a purity of ≥ 90%

Protein Activity (ELISA):

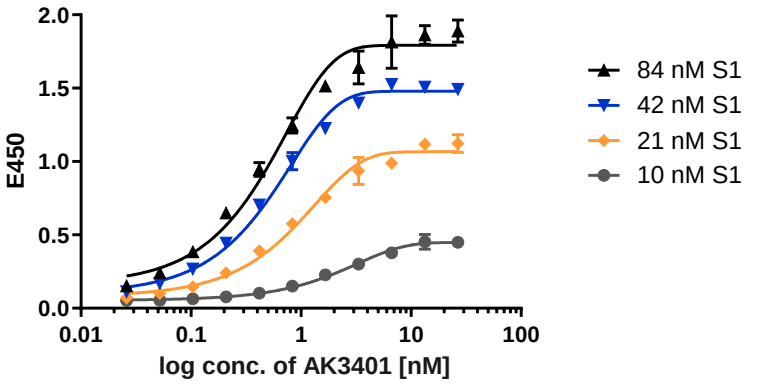




	154 nM RBD	77 nM RBD	39 nM RBD	19 nM RBD
EC_{50} [nM]	0.5171	0.6327	0.8365	2.516

For ELISA analyses immunoassay plates were coated with different concentrations of SARS-CoV-2 RBD (19, 39, 77 and 154 nM). Antibody AK3401 was applied at concentrations ranging from 26.67 nM to 0.026 nM.

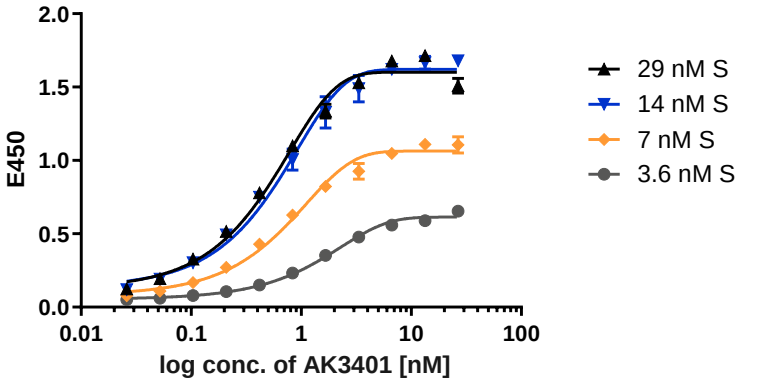
Bound antibody AK3401 was detected using Goat Anti-Mouse-IgG-HRP (10 ng/mL) and TMB. Determined EC_{50} of antibody AK3401 for 20 nM RBD is 2.117 nM.



	84 nM S1	42 nM S1	21 nM S1	10 nM S1
EC_{50} [nM]	0.4551	0.5326	0.9286	2.430

For ELISA analyses immunoassay plates were coated with different concentrations of SARS-CoV-2 S1 (10, 21, 42 and 84 nM). Antibody AK3401 was applied at concentrations ranging from 26.67 nM to 0.026 nM.

Bound antibody AK3401 was detected using Goat Anti-Mouse-IgG-HRP (10 ng/mL) and TMB. Determined EC_{50} of antibody AK3401 for 20 nM S1 is 1.117 nM.

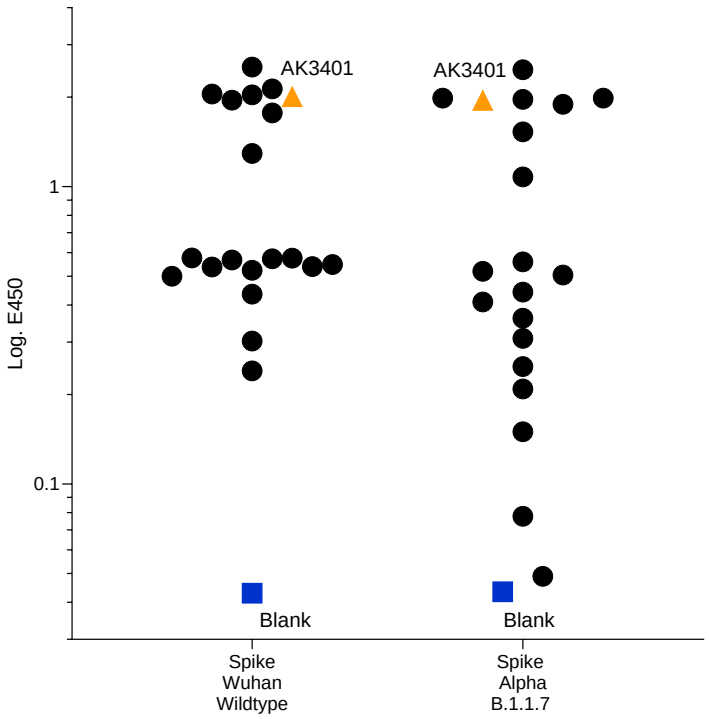


	29 nM S	14 nM S	7 nM S	3.6 nM S
EC_{50} [nM]	0.5057	0.5967	0.7486	1.715

For ELISA analyses immunoassay plates were coated with different concentrations of SARS-CoV-2 Spike spike protein (3.6, 7, 14 and 29 nM). Antibody AK3401 was applied at concentrations ranging from 26.67 nM to 0.026 nM.

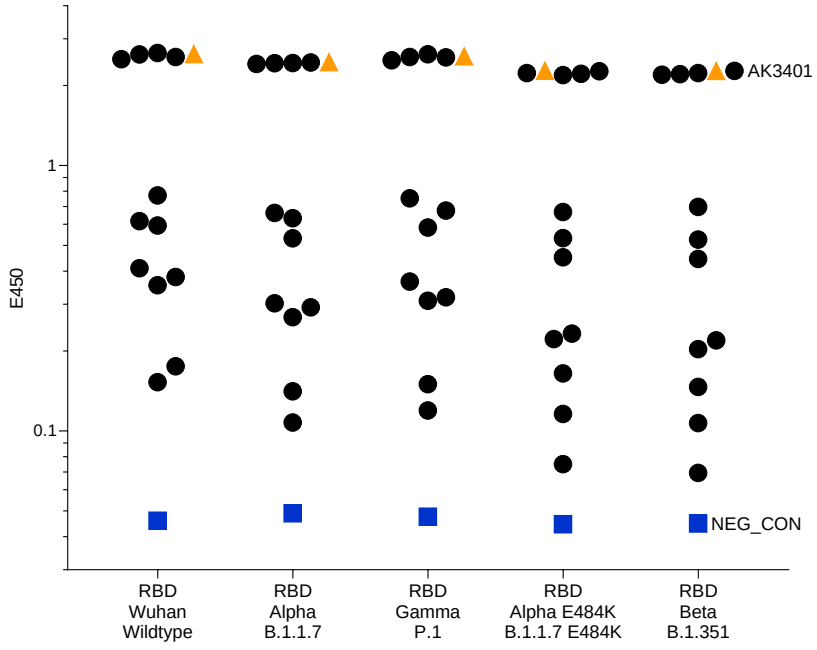
Bound antibody AK3401 was detected using Goat Anti-Mouse-IgG-HRP (10 ng/mL) and TMB. Determined EC_{50} of antibody AK3401 for 20 nM Spike protein is 0.424 nM.

Binding activity to SARS-CoV-2 Spike protein and receptor-binding domain variants (ELISA):



Binding activity of AK3401 to coated SARS-COV-2 Spike protein (Wuhan origin vs. B.1.1.7) in comparison to 19 other monoclonal mouse hybridoma antibodies targeting the Spike protein.

Bound antibodies were detected using anti- mouse-IgG antibodies conjugated to HRP in an in-house SARS-CoV-2 IgG ELISA.



Binding activity of AK3401 to different coated SARS-COV-2 receptor binding domain variants (RBD Wuhan, B.1.1.7, B.1.1.28.1, B.1.1.7 E484K and B.1.351) in comparison to 12 other monoclonal mouse hybridoma antibodies targeting the RBD and a negative control antibody (NEG_CON).

Bound antibodies were detected using anti-mouse-IgG antibodies conjugated to HRP in an in-house SARS-CoV-2 IgG ELISA. The negative control is a monoclonal mouse hybridoma antibody which does not bind the RBD of SARS-CoV-2.