

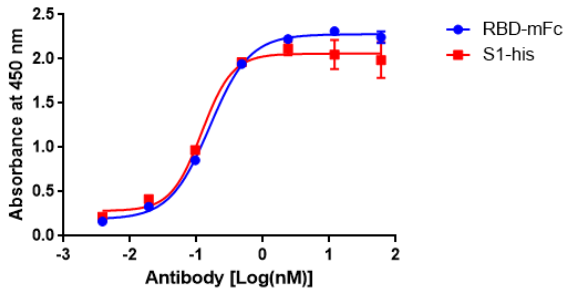
Anti-SARS-CoV-2 RBD antibody (A19A)

Cat. No.	Ab-P0065
Product name	Anti-SARS-CoV-2 RBD antibody (A19A)
Size	100 µg
Biological source	Human
Recombination	CHO cell
Antibody product type	Primary antibody
Clone	Recombinant monoclonal
Species reactivity	SARS-CoV-2 virus
Form	Liquid
Storage	Store at -20°C. Avoid multiple freeze-thaw cycles.
purity	>90% by SDS-PAGE
Concentration	1mg/ml
Storage buffer	PBS (pH7.4)
Clonality	Monoclonal
Molecular weight	About 150 kDa
Isotype	IgG1
Recommended Dilutions	1/5,000 – 1/10,000
Backgrounds	The Spike protein is a large type I transmembrane protein containing two subunits, S1 and S2, mediate the attachment and membrane fusion respectively. The receptor binding domain (RBD) is responsible for recognizing the cell surface receptor, and depending on the virus, either N-terminal domain (NTD) or C-terminal domain (C-domain) can act as RBD. In addition to ACE2 and other surface protein receptors, many coronavirus, such as MERS-CoV, HCoVOC43, and HCoV-HKU1, infect host cells through the binding of NTD region of spike protein and host sialic acid receptors. Since the RBD area is located between NTD areas, the need for research on NTD areas that can interfere with the binding with receptors due to these three dimensional characteristics is growing.

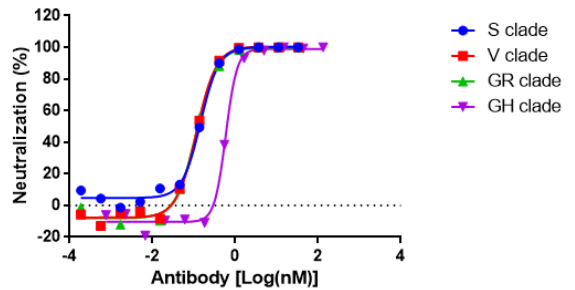
Note : For research use only. Not for use in other procedures.

Data results

< ELISA Binding Affinity test >



< Neutralization Activity(PRNT assay) >

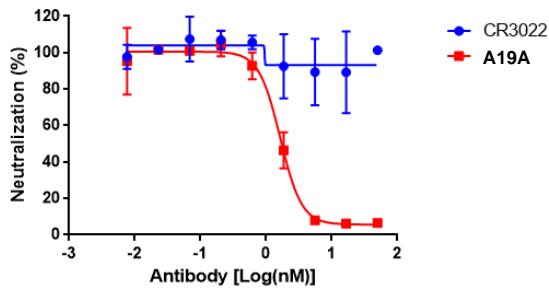


Receptor Binding Protein (RBD) of SARS-CoV-2 Spike Protein is a domain that binds to ACE2 receptor of host cells, which is being studied as a key domain of the development of treatments and vaccines.

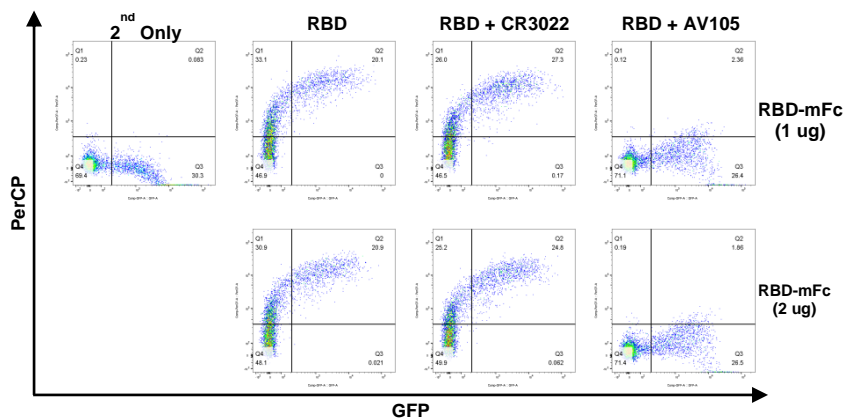
The binding affinity between the COVID-19 human antibody A19A and the SARS-CoV-2 virus was measured. ELISA result showed high binding affinity between A19A and both S1 protein of SARS-CoV-2 and RBD protein of SARS-CoV-2.

The neutralizing ability of the COVID-19 human antibody A19A was confirmed through the Plaque reduction neutralization test (PRNT) assay, a golden standard assay that measures the neutralizing ability of viruses. As a result of PRNT assay, the COVID-19 human antibody A19A showed high neutralizing ability to SARS-CoV-2 of the S, V, GR, and GH systems.

<RBD:ACE2 blocking assay(ELISA) >



<RBD:ACE2 blocking assay(FACS) >



Host cell's ACE2 binding to RBD of SARS-CoV-2 is a key pathway for infection, and effective antibody therapy should be more competitively bound to RBD of SARS-CoV-2 than ACE2 of host cell.

The competitive ELISA blocking assay and FACS blocking assay (which using transient expression of human ACE2) test confirmed that the COVID-19 human antibody A19A competitively binds to RBD when ACE2 of host cell binds to RBD of SARS-CoV-2. This means that A19A competitively combines with RBD better than ACE2 to indirect demonstrate its neutralizing ability.

< Binding activity to mutant RBD proteins (ELISA)>

	A19A	CR3022	Negative Control
RBD_P384L	2.178	2.287	0.074
RBD_T385I	2.159	2.284	0.055
RBD_K417N	2.202	2.087	0.057
RBD_S477I	2.253	2.051	0.054
RBD_L452M	2.299	2.049	0.056
RBD_V382L	2.139	2.021	0.051
RBD_A520S	2.09	2.001	0.048
RBD_Y453F	2.23	1.96	0.058
RBD_V483A	2.168	1.843	0.058
RBD_P479S	2.162	1.842	0.049
RBD_S477N	2.138	1.834	0.046
RBD_A344S	2.167	1.804	0.055
RBD_A522S	2.183	1.788	0.053
RBD_P330S	2.182	1.777	0.051
RBD_A522V	2.096	1.766	0.06
RBD_I468V	2.102	1.76	0.046
RBD_T478I	2.139	1.717	0.052
RBD_N501Y	2.157	1.662	0.046
RBD_S494P	2.106	1.59	0.047
RBD_A475V	2.145	1.471	0.05
RBD_G476S	2.047	1.463	0.048
RBD_V483F	1.951	1.35	0.051
RBD_N439K	2.064	1.268	0.061
RBD_V367F	2.32	1.233	0.052
RBD_WT	2.068	1.167	0.057
RBD_G446V	2.382	0.968	0.063

The result of ELISA showed COVID-19 human antibody A19A has a high binding affinity not only for wild type RBD but also for a variety of mutation type RBD.