

SARS-CoV-2 (COVID-19) Spike Neutralization Recombinant Antibody | SARS-CoV-2 recombinant antibody

SARS-CoV-2 (COVID-19) Spike Neutralization Single Domain Antibody [A10]

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA40988	Llama	Virus	Neutralization Assay, ELISA

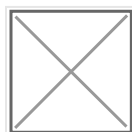
PRODUCT SYNONYMS

SARS-CoV-2 (COVID-19) Spike Neutralization; Monoclonal Recombinant Antibody; SARS-CoV-2 (COVID-19) Spike Neutralization Single Domain Antibody [A10]; SARS-CoV-2 (COVID-19) Spike S1 Antibody; Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2); Surface Glycoprotein; Spike protein; surface glycoprotein; SARS-CoV-2 recombinant antibody

PRODUCT SPECIFICATIONS

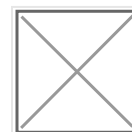
Host	Llama
Reactivity	Virus
Clonality	Monoclonal
Clone Number	A10
Purity/Purification	SARS-CoV-2 (COVID-19) Spike Neutralization Antibody is affinity chromatography purified via Nickel column. Antibody is supplied as a His-tagged purified protein. It also contains a myc-tag for detection.
Form/Format	Liquid; SARS-CoV-2 (COVID-19) Spike Neutralization Antibody is supplied in PBS.
Applicable Applications for SARS-CoV-2 recombinant antibody	NTRL (Neutralization Assay), ELISA
Immunogen	SARS-CoV-2 S protein RBD containing C-terminal His Tag. The protein was expressed in human 293 cells (HEK293). It contains amino acids Arg 319 - Lys 537.
Research Area	Infectious Disease, COVID-19
NCBI Organism	SARS-CoV-2
Preparation and Storage	SARS-CoV-2 (COVID-19) Spike Neutralization Antibody should be stored in working aliquots at -20 degree C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

IMAGES



Application Data

Figure 5 Pseudovirus neutralization assayAntibodies: SARS-CoV-2 (COVID-19) Spike RBD Antibodies, AAA40988 (A10) and SD9855 (E10). Luciferase reporter virus-like particles and 293T-hsACE2 cells were used for the assay. After 72 hrs incubation infectivity was measured by luciferase expression using Promega Renilla-Glo Luciferase Assay System. Infectivity was measured as RLUs and no sAb control was set to 100% infectivity. Neutralization activity of AAA40988 (A10) and SD9855 (E10) was measured over a serial dilution series to determine the half-maximal inhibitory concentration (IC50). Both AAA40988 (A10) and SD9855 (E10) exhibited a dose dependent neutralizing effect on both alpha pseudoviruses, and the combination of the two showed a significantly synergistic effect.



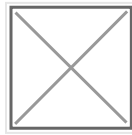
Application Data

Figure 4 Pseudovirus neutralization assayAntibodies: SARS-CoV-2 (COVID-19) Spike RBD Antibodies, AAA40988 (A10) and SD9855 (E10). Luciferase reporter virus-like particles and 293T-hsACE2 cells were used for the assay. After 72 hrs incubation infectivity was measured by luciferase expression using Promega Renilla-Glo Luciferase Assay System. Infectivity was measured as RLUs and no sAb control was set to 100% infectivity. Neutralization activity of AAA40988 (A10) and SD9855 (E10) was measured over a serial dilution series to determine the half-maximal inhibitory concentration (IC50). Both AAA40988 (A10) and SD9855 (E10) exhibited a dose dependent neutralizing effect on both wild-type pseudoviruses, and the combination of the two showed a significantly synergistic effect.



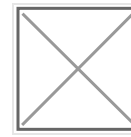
ELISA

Figure 3 ACE2-RBD binding inhibitory ELISA Antibodies: SARS-CoV-2 (COVID-19) Spike RBD Antibodies, AAA40988 (A10) and SD9855 (E10). ACE2-RBD binding inhibitory ELISA was performed using RBD protein of SARS-CoV-2 variants (wild-type and alpha) as coating antigens at 1ug/mL and the anti-SARS-CoV-2 (COVID-19) RBD antibody (AAA40988 and SD9855) as the capture antibody, followed by incubation with 20 ng/mL human ACE2-Fc. Bound h-ACE2-Fc was detected with a goat anti-human IgG-HRP conjugate (1:20,000 dilution) using the TMB chromogenic substrate system. Both AAA40988 (A10) and SD9855 (E10) exhibited a dose dependent inhibitory effect on ACE2 binding to RBDs of wild-type and alpha strains, and the combination of the two (A10+E10) showed a significantly synergistic effect.



Application Data

Figure 1 Neutralization Assay of SARS-CoV-2 Pseudovirus by SARS-CoV-2 Spike Antibody Neutralization antibody: Anti-SARS-CoV-2 Spike S1 antibody, AAA40988, dilution: 0.1 - 200 ng/mL. Pseudovirus: SARS-CoV-2 Spike Pseudovirus, 95-200. Cells: ACE2-overexpressing 293T cell. Diluted antibody was incubated with Spike pseudovirus at 37 degree C for 1 hr. ACE2-overexpressing 293T cells were added in each well and incubated at 37 degree C for 48 hrs. Luminescence reporter reagent was added in each well and the final results were read with the luminescence plate reader. Percent inhibition is calculated based on the RLU value.



ELISA

Figure 2 ELISA Validation with RBDs of SARS-CoV-2 Variants Antibodies: SARS-CoV-2 (COVID-19) Spike RBD Antibody, AAA40988. A direct ELISA was performed using RBD protein of SARS-CoV-2 variants (wild-type, alpha, beta, gamma and Delta) as coating antigens at 1ug/mL and the anti-SARS-CoV-2 (COVID-19) RBD antibody (AAA40988) as the capture antibody, followed by anti-cMyc-tag antibody (PM-7669) at 1ug/mL. Secondary: Goat anti-mouse IgG HRP conjugate at 1:5000 dilution. AAA40988 binds to RBDs of wild-type and alpha but not to the beta, gamma and Delta variants.

ADDITIONAL INFORMATION

Related Product Information for SARS-CoV-2 recombinant antibody	Coronavirus disease 2019 (COVID-19), formerly known as 2019-nCoV acute respiratory disease, is an infectious disease caused by SARS-CoV-2, a virus closely related to the SARS virus (1). The disease is the cause of the 2019-20 coronavirus outbreak (2). The structure of 2019-nCoV consists of the following: a Spike protein (S), hemagglutinin-esterase dimer (HE), a membrane glycoprotein (M), an envelope protein (E) a nucleocapsid protein (N) and RNA. Coronavirus invades cells through Spike (S) glycoproteins, a class I fusion protein. It is the major viral surface protein that coronavirus uses to bind to the human cell surface receptor. It also mediates the fusion of host and viral cell membrane, allowing the virus to enter human cells and begin infection (3). The spike protein is the major target for neutralizing antibodies and vaccine development (4). The protein modeling suggests that there is strong interaction between Spike protein receptor-binding domain and its host receptor angiotensin-converting enzyme 2 (ACE2), which regulate both the cross-species and human-to-human transmissions of COVID-19 (5). The recent study has shown that the SARS-CoV-2 spike protein binds ACE2 with higher affinity than SARS-CoV spike protein (6).
Product Categories/Family for SARS-CoV-2 recombinant antibody	Primary Antibodies
References	Gorbalenya. bioRxiv: 2020. Hui et al. Int J Infect Dis. 2020;91:264-266. Belouzard et al. Viruses. 2012;4(6):1011-33. Lee et al. J Virol. 2006;80(8):4079-87. Wan et al. J Virol. 2020. Wrapp et al. Science. 2020.

NCBI AND UNIPROT INFORMATION

NCBI GI #	1791269090
NCBI GeneID	43740568
UniProt Accession #	P0DTC2

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

