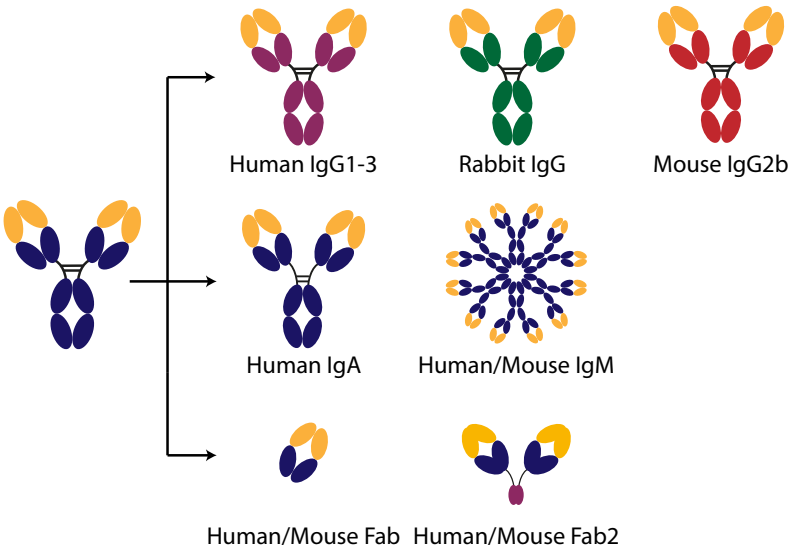
absolute antibody

Recombinant Coronavirus Antibodies

Absolute Antibody offers a variety of recombinant coronavirus reagents to support COVID-19 research and diagnostics, including anti-SARS-CoV-2 spike glycoprotein and nucleoprotein antibodies, anti-human immunoglobulin antibodies and ACE2 Fc fusion proteins.

All reagents are recombinantly produced, which ensures batch-to-batch reproducibility and enables engineering into a wide range of species, isotypes and subtypes. In addition, all reagents are manufactured in a completely animal- and animal-component free production platform, resulting in highly pure antibodies with low endotoxin levels.



Anti-SARS-CoV-2 Spike Glycoprotein Antibody [clone CR3022]

The anti-SARS clone CR3022 has been shown to have high affinity for the SARS-CoV-2 virus, and scientists worldwide are using the antibody to evaluate mono- and combination-therapy potential and for serological controls in COVID-19 diagnostic assays. Our recombinant antibody technology allows us to offer this clone in a wide variety of engineered formats, including:

- Human IgG1-4, IgA, IgM and IgE for use in neutralization assays and as serological controls
- Rabbit, mouse and cat formats for detection applications, co-labelling studies and animal model research
- Antibody fragments, such as human and mouse His-tagged Fab and Fab2 formats
- Fc Silent™ formats, to study effector function and the role of antibody-dependent enhancement (ADE)
- ISOblend™ standard, which contains human IgG1, IgG3, IgM and IgA formats formulated at equal amounts for use as a control or calibrator in COVID-19 diagnostic tests

Recombinant Antibody Services

Absolute Antibody offers antibody sequencing, engineering and recombinant expression as royalty-free services to customers worldwide. In particular, we are supporting several therapeutic antibody projects for COVID-19, including the production of gram quantities of human antibodies sequenced from recovering patients. Contact us to discuss your custom project!

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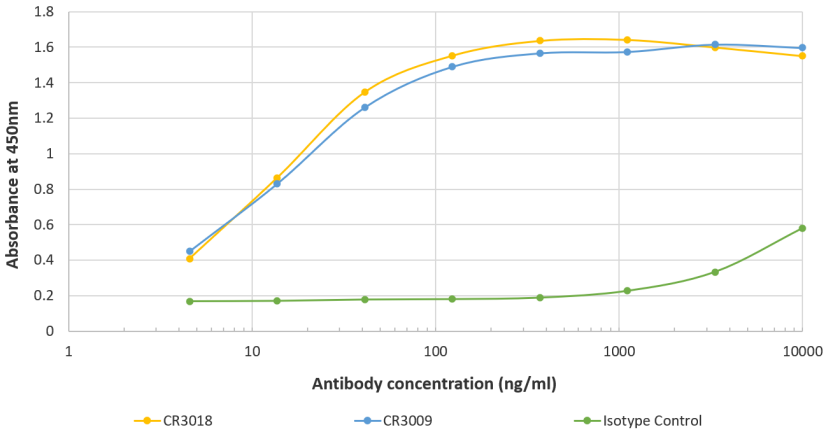
Anti-SARS-CoV-2 Nucleoprotein Antibodies

We offer two anti-SARS-CoV-2 nucleoprotein (nucleocapsid) antibodies for COVID-19 research and diagnostics, both available in engineered formats such as human IgG1, IgG3, IgM and IgA; antibody fragments; and species such as rabbit and mouse. Competitive ELISA of both anti-nucleocapsid antibodies suggests that they bind different, non-overlapping epitopes of the N protein of SARS-CoV. Thus, a combination of these two antibodies is suggested for virus capture assays. The figure to the right shows the ELISA binding curve of both antibodies in rabbit IgG format to SARS-CoV-2 nucleoproteins.



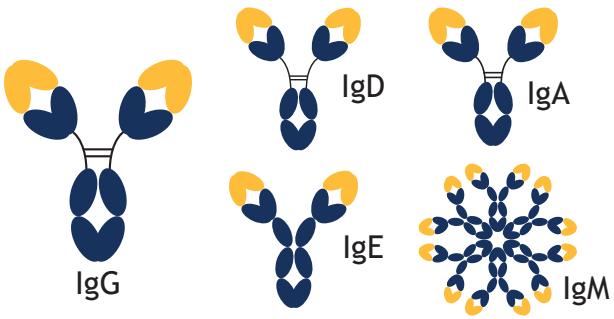
ELISA binding curve of anti-SARS-CoV-2 (COVID-19) & SARS-CoV Nucleoprotein antibodies CR3018 (Ab01690-23.0) and CR3009 (Ab01691-23.0) to SARS-CoV-2 N.

Anti-SARS-CoV-2 Spike Protein & RBD Antibodies and Nanobodies

Our catalog includes various antibodies against the receptor binding domain (RBD) of SARS-CoV-2. First, we partnered with University of Zurich to offer synthetic nanobodies (sybodies) in newly engineered formats, for use as serological controls and in COVID-19 therapeutic development. The original sybodies show potential for the development of inhalable drugs, while the sybodies fused to Fc domains are useful as controls, provide varied effector function, and permit increased half-life in *in vivo* studies. We also offer two neutralizing anti-spike and RBD antibodies (CV1 and CV30) obtained from a SARS-CoV-2 patient, recombinantly produced and engineered into new formats.

Anti-Human Immunoglobulin Antibodies

We offer a panel of recombinant anti-human immunoglobulin antibodies, which includes antibodies for human IgG, IgM, IgA, IgE and IgD, as well as anti-human kappa and lambda light chain antibodies for detection of all human antibodies. Available formats include human, mouse, rabbit and goat backbones, as well as antibody fragments, with other formats available upon request.



These antibodies can be used to test for anti-SARS-CoV-2 antibodies in COVID-19 diagnostic tests. They can also be used as secondary antibodies to detect a primary antibody in methods such as western blot, immunohistochemistry, and immunofluorescence staining for microscopy or flow cytometry. If you require secondary antibodies in other species, we also offer anti-immunoglobulin antibodies for non-human primates, rabbits, goats, dogs, sharks and other species.

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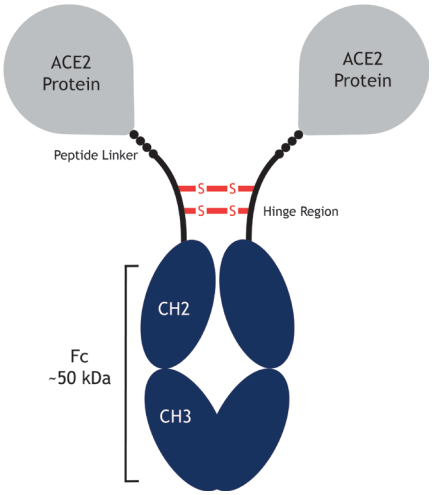
ACE2 Fc Fusion Proteins

Our catalog includes two ACE2 Fc fusion proteins useful for coronavirus research. The Fc fusion proteins consist of the Fc domain of human IgG genetically linked to ACE2, the host cell receptor to which SARS-CoV-2 binds in order to initiate COVID-19 infection. The advantages of using ACE2 Fc fusion proteins lie mainly in their significantly increased half-life and stability compared to free ACE2 protein.



We offer two types of ACE2 Fc fusion proteins, one with wild-type ACE2 (catalog # Pr00439) and one with the inactivated form of ACE2, ACE2-NN (catalog # Pr00441). Both Fc fusion proteins are offered as LALA mutants, which inactivates the Fc fragment to prevent potential antibody-dependent enhancement (ADE).

Other Coronavirus Antibodies

We offer a collection of more than 30 anti-coronavirus antibodies, largely obtained from B-cell sequencing of human patients. All are now produced recombinantly and available in engineered formats to open up new experimental possibilities for *in vitro* and *in vivo* use. We have various clones to detect SARS and MERS spike protein, as well as an anti-bovine coronavirus antibody. While this collection has not been shown to detect SARS-CoV-2, the antibodies are available to support further research into the coronavirus family.

Delta-G-VSV Pseudotyping System

Our sister company Kerafast offers a Delta-G-VSV Pseudotyping System for coronavirus research. It is a reverse genetics system in which the G protein of vesicular stomatitis virus (VSV) has been deleted, allowing for the production of VSV pseudotypes with the envelope glycoproteins of heterologous viruses, including those that typically require high-level containment such as coronaviruses. Because the infectivity of the VSV pseudotypes is restricted to a single round of replication, research can be performed using just BSL-2 containment.

The system, developed by the Michael Whitt laboratory at University of Tennessee, enables studies of SARS-CoV-2 viral entry and COVID-19 vaccine effectiveness at a lower biosafety level than required for live coronavirus. Scientists can insert SARS-CoV-2 spike protein into the modified VSV, as well as rapidly screen for neutralizing antibodies.

License Your Coronavirus Reagents

Both Absolute Antibody and our sister company Kerafast partner with academic institutions worldwide to license and facilitate access to investigators' lab-made reagents. If your lab has created coronavirus-related research tools, contact us to discuss how to quickly and easily share your materials with the global scientific community. Time-consuming Material Transfer Agreements (MTAs) are eliminated and a portion of the proceeds is returned to the developing lab.

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