Aalto Bio Reagents

SARS-CoV-2

SARS-CoV-2 Proteins and Antibodies for Diagnostic Testing

COVID-19, which is caused by the SARS-CoV-2 virus, was declared a Public Health Emergency by the World Health Organisation (WHO) in January 2020 due to the disease's unprecedented international spread. The deadly virus has mutated, as expected, since it first emerged in Wuhan in the Hubei province of China causing highly-transmissible variants which continue to pose a serious threat to the success of vaccination and upcoming treatments.



Recombinant SARS-CoV-2 Proteins

Coronaviruses are enveloped positive sense RNA viruses that affect many species and have the potential to cause pandemic disease outbreaks. All viruses have Nucleocapsid (N), Spike (S), Envelope (E) and Membrane (M) structural proteins and some also encode a hemagglutinin–esterase (HE) protein.

The N protein plays a fundamental role during virion assembly through its interactions with the viral genome and membrane protein M. It also has an essential role in enhancing the efficiency of subgenomic viral RNA transcription as well as viral replication.

Among all structural proteins of SARS-CoV-2, the S protein is the main antigenic component that is responsible for inducing host immune responses and neutralizing antibodies. This makes it the principal focus of therapeutic and vaccine design for COVID-19. The S protein of SARS-CoV-2 is located on the surface of the viral particles and is comprised of two functional units, S1 and S2. The N-terminal S1 subunit is responsible for virus-receptor binding and the C-terminal S2 subunit mediates virus-cell membrane fusion.

The Receptor Binding Domain (RBD) is a key functional component within the S1 subunit that is responsible for binding of SARS-CoV-2 to the host's ACE2 receptor. Mutations in the Spike protein, predominantly in the RBD, have given rise to the more transmissible variants (UK, Brazilian, South African, and Indian) that have caused a surge in infections worldwide.

Aalto Bio Reagents offers a broad range of recombinant SARS-CoV-2 N, S and RBD proteins for the production of serology assays.

Product	Code	Host
Recombinant SARS-CoV-2 Spike S1-S2 Chimeric Protein	BM 6422	Insect cell
Recombinant SARS-CoV-2 Nucleocapsid Protein	BM 6424	Insect cell
Recombinant SARS-CoV-2 Nucleocapsid Protein	CK 6404-b	E. coli
Recombinant SARS-CoV-2 Nucleocapsid Protein (UK Variant B.1.1.7)	BU 6438	E. coli
Recombinant SARS-CoV-2 Nucleocapsid Protein (SA Variant B.1.351)	BU 6439	E. coli
Recombinant SARS-CoV-2 Nucleocapsid Protein (Brazilian Variant P.1)	BU 6441	E. coli
Recombinant SARS-CoV-2 Spike RBD Antigen	BF 6443	Mammalian
Recombinant SARS-CoV-2 Spike Glycoprotein (UK Variant B.1.1.7)	BU 6451	Hek293
Recombinant SARS-CoV-2 Spike Glycoprotein (SA Variant B.1.351)	BU 6452	Hek293
Recombinant SARS-CoV-2 Spike Glycoprotein (Brazilian Variant P.1)	BU 6453	Hek293





Purified Human Proteins



Disease State Human Plasmas



Polyclonal Antisera









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SARS-CoV-2 Antibodies

Nucleic acid (NA) testing by real-time reverse transcriptase-polymerase chain reaction (RT-PCR) remains the gold standard when it comes to the diagnosis of SARS-CoV-2 infection. However, this type of test requires a well-equipped laboratory and has a long turnaround time, which does not suit the highly infectious nature of the virus.

Rapid antigen tests are low cost and are the preferable method for high volume screening, particularly in the context of incoming travellers at airports, students returning to education and employees resuming work in areas of high interaction such as production facilities and construction sites.



The N protein of SARS-CoV-2 is expressed abundantly during infection making it an ideal target for viralantigen based detection and was the marker of choice for initial antigen tests.

With the emergence of SARS-CoV-2 variants, demand is increasing from both diagnostic assay producers and vaccine manufacturers alike for antibodies that specifically recognise and target proteins to the various S and RBD mutations, such as the Brazilian, South African and UK strains.

Product	Code
Mouse monoclonal antibody to SARS-CoV-2 Nucleocapsid Protein	CA 1360
Mouse monoclonal Antibody to SARS-CoV-2 Spike RBD	BF 1354
Recombinant Chimeric Antibody to SARS-CoV-2 Spike RBD	BF 1358
Affinity Purified Goat Anti-SARS-CoV-2 Nucleocapsid Protein	BF 2414

SARS-CoV-2 Biospecimens

Constant validation of tests is needed to ensure that they detect the emerging variants. Through our collection centres in South America, Europe and the US, we offer high quality biological samples to meet the evolving needs of vaccine developers, research institutions and the diagnostic industry.

We also offer single member anti-SARS-CoV-2 seroconversion panels to measure the IgM and IgG antibody response over time, as well as seroconversion panels from healthy donors both pre and post vaccination.

For more information on any of our SARS-CoV-2 related products please contact us on info@aaltobioreagents.com



Matrix Nasopharyngeal swabs Nasal swabs Plasma & Serum Saliva

Variants UK (B.1.1.7) - Alpha Indian (B.1.617.2) - Delta Brazilian (P.1 and P.2) - Gamma Peruvian (C.37) - Lambda



Purified Human Proteins

Veterinary



Disease State Human Plasmas



Polyclonal Antisera





Mouse Monoclonal Antibodies



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