

COVID-19 ELISA Kits

Total Antibody, IgG, IgM Kits

Coronaviruses (CoV) are a large family of viruses that cause illness ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV). A novel coronavirus (nCoV) is a new strain that has not been recently identified in humans end of 2019, it had been named SARS-Cov-2 virus causing COVID-19 disease.

Atlas Medical is introducing three new kits using the ELISA technique to detect the antibody response to COVID-19 infection. Detecting antibodies to SARS-CoV-2 virus could tell if a patient has been infected with COVID-19, either currently or in the past. It will also provide very important information for diagnosis, management and recovery from COVID-19 and will help researchers to evaluate how many people in the population have been infected, which is important for planning infection control.

ELISA is a simple and high sensitive laboratory technique, well established and documented within science and medicine, results can typically be produced within 1 to 2 hours of collecting a patient sample and it can be easily automated to offer high throughput which helps cutting down the time of diagnosis.

Characteristics & Ordering Information

Test Name	COVID-19 Total Ab ELISA	COVID-19 IgM ELISA	COVID-19 S1-RBD IgG ELISA
Reference No.	8.14.45.0096	8.14.46.0096	8.14.47.0096
Method	Manual ELISA	Manual ELISA	Manual ELISA
Packaging	96 Tests/Kit	96 Tests/Kit	96 Tests/Kit
Test Principle	Double Antigen Sandwich	Capture ELISA	Indirect ELISA
Testing Time	70 Minutes	70 Minutes	70 Minutes
Sample Material	Serum or Plasma	Serum or Plasma	Serum or Plasma
Sample Volume	10 µl	10 µl	10 µl

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Virus Structure & Clinical Application

Coronaviruses are large spherical particles with surface projections. The average diameter of the virus particle is around 120 nm (0.12 μm).

The viral envelope consists of a lipid bilayer where the membrane (M), envelope (E), Hemagglutinin-esterase (HE) and spike (S) proteins are anchored.

Inside the envelope, there is the nucleocapsid, which is formed from multiple copies of the nucleocapsid (N) proteins, which are bound to the positive-sense single-stranded RNA genome.

The S-protein mediates receptor binding and membrane fusion as a mechanism of cell entry. It consists of two subunits; S1 & S2. S1 contains a receptor binding domain (RBD), which is responsible for recognizing and binding with the cell surface receptor while S2 subunit is the "stem" of the structure, which contains other basic elements needed for the membrane fusion. SARS-CoV-2 virus can infect the human respiratory epithelial cells through interaction with the human ACE2 receptor. The spike protein is the common target for neutralizing antibodies and vaccines

The N-protein is the most abundant protein in coronavirus and it is a highly immunogenic phosphoprotein. It is normally very conserved and often used as a marker in diagnostic assays.

Spread Vs. Prevention

The disease can spread from person to person through small droplets from the nose or mouth which are spread when a person with COVID-19 coughs or exhales. These droplets land on objects and surfaces around the person and can be caught by others who might contact these surfaces.

Major symptoms of infection include fever, tiredness & dry cough. Some people may experience aches and pain, nasal congestion, runny nose, soar throat or diarrhoea.

Washing hands regularly with soap and water or using alcohol-based hand sanitizer, maintaining at least 1 metre distance between people, avoiding touching the face, covering the mouth and nose when coughing or sneezing, refraining from smoking and other activities that weaken the lungs and practicing physical distancing by avoiding unnecessary travel and staying away from large groups of people are important measures to prevent transmission of the disease and slowing down the infection rate.

