ALPHA DIAGNOSTIC INTERNATIONAL

SARS-COV-2 Neutralizing antibody/Inhibitor Compound screening ELISA Kit Cat# RV-405000

The SARS-COV-2 Neutralizing antibody/Inhibitor compound screening kit is a competitive inhibition assay that can be used to screen for the presence of neutralizing antibodies or inhibiting compounds. Each ELISA plate is pre-coated with SARS-COV-2 Spike 1 protein. A mix of sample and biotinylated ACE2 is added to each well, in the presence of a neutralizing antibody, the antibody would bind to the coated Spike 1 protein preventing ACE2 from completing a protein:protein reaction. The reaction is then detected by Streptavidin HRP. In the presence of a neutralizing antibody or chemical, the signal will decrease. As the concentration or affinity or the inhibiting compound increases, the intensity of the signal will decrease. The SARS-COV-2 Neutralizing antibody/Inhibitor compound kit can be used as a high throughput screening tool to detect potential therapeutic drugs, monoclonal antibodies, or screen serum or plasma for the presence of neutralizing antibodies.

Example of results using SARS-COV-2 Neutralizing antibody kit

Polyclonal antibody	A450
1:10 dilution	0.148
1:100 dilution	1.519
Buffer only	2.425
NSB	0.042

Human Serum	A450
NHS + SARS-COV-2 Polyclonal ab	1.853
NHS alone	2.427
Buffer only	2.425
NSB	0.042

SARS-COV-2 ELISA Kit features

- Recombinant HEK293 expressed SARS-COV-2 S1 pre-coated plate, ready-to-use 96-well breakable strip plate, suitable for multiple runs over 6 months
- Includes one positive control Rabbit polyclonal antibody
- **Assay length**: 1 hour & 45 minutes. 3 incubation steps at room temperature
- **Storage:** 2-8ºC (whole kit). No need to aliquot or store reagents separately.
- **Shelf life**: 6 months

Contains all necessary reagents. For in vitro research use only.

Assay Procedure: Allow all reagents to reach room temperature. Arrange and label required number of strips.

Step 1. Pipette 10 ul of sample and 90 ul of 1X Biotinylated ACE2 into each well and incubate for 1 hour at room temperature.
Step 2. Wash the wells 3X with 300 ul of wash buffer for each well
Step 3. Add 100 ul of Streptavidin-HRP to each well and incubate for 30 minutes at room temperature
Step 4 Wash the wells 3X with 300 ul of wash buffer for each well
Step 5. Add 100 ul of TMB Substrate solution to all wells, mix gently, and incubate at room temperature for 15 minutes.
Step 6. Pipette 100 ul of stop solution into each well and mix gently. Measure at 450 nm w/ 630 nm as a reference filter if available.

Performance Characteristics

Precision: Intra-assay: <10% Inter-assay: <10%
Minimum recommended dilution:
Serum & Plasma: 10-fold
Note: Minimum recommended dilution represents the dilution which is needed to eliminate matrix interference effects. The assay protocol has a built-in 10-fold dilution, samples may be added to each well without pre-dilution.

Species reactivity: The ELISA Kit is species independent; it can be used to test antibodies of any species.

General Information

SARS-CoV-2 virus (SARS-CoV-2), is a novel coronavirus emerged as a human respiratory pathogen and causing the 2020 pandemic named COVID-19. The SARS-CoV-2 genome is closely related to 2 bat-derived severe acute respiratory syndrome (SARS)-like coronaviruses (88% identity) and more distantly from 2 other human pathogenic coronaviruses, SARS-CoV (~79% identity) and MERS-CoV (~50% identity). The genome of the coronavirus encodes 23 putative proteins including 4 major structural proteins: nucleocapsid [N protein], spike [S protein], membrane [M] and small envelope proteins [E]. The S protein is a glycoprotein essential for viral attachment to the host cell surface receptors and translocation into the infected cells; trimers of the S protein make up the spikes of the virus. The S protein is cleaved in host cells into S1 and S2 subunits; S1 protein binds the host receptor, while S2 mediates membrane fusion. A minimal receptor-binding domain [RBD] located in the S1 protein (aa. 318-510) can combine with the ACE2 receptor on host epithelial cells. Recombinant proteins of SARS spike protein have shown to be highly immunogenic as vaccines and produce neutralizing antibodies. Therefore, the spike proteins represent candidates for effective vaccine development.

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