

Anti SARS-CoV-2 S (Spike) protein-antibody, mouse monoclonal (E4)

65-102 50µg

Shipping and Storage: Ship at 4°C or -20°C and store at -20°C. Do not freeze.

Immunogens: RBD (receptor-binding domain) within SARS-CoV-2 Spike protein

Form: 1 mg/ml in PBS- with 50% glycerol, filter-sterilized, azide-free.

Purification: IgG fraction, affinity-purified with Protein A

Isotype: murine IgG1 kappa

Reactivity: Receptor Binding Domain of SARS-CoV-2 Spike protein.

Neutralizing activity is synergistic with a monoclonal antibody G2 clone.

Applications :

1. Western blotting (1-10 µg/ml).
2. Immunofluorescence staining (10 µg/ml)
3. Neutralizing antibody assay (as a positive control).

Background: New coronavirus (SARS-CoV-2) suddenly emerged in Wuhan City, China, at the end of 2019. SARS-CoV-2 gradually became attenuated in the process of transitioning to alpha strain, delta strain, and more recent mutant strains called BA.2, BA.5, BA.2.75. Currently, Omicron strain vaccines developed by Moderna and Pfizer use mRNA derived from BA.2 viruses, but most of the prevalent virus strains are now replaced by BA.5 and BA.2.75 mutant strains.

This mouse monoclonal antibody (MAbs) was developed as a tool for research of the mutant strains in which SARS-CoV-2 gradually changes. The S-protein of SARS-CoV-2 is cleaved into S1 and S2 subunits containing RBD regions by subtilisin-like protease Furin in host cells. Epitope-recognizing MAb E4 derived from RBD regions in S1 subunit of the S-protein recognize neutralizing epitope. It reacts to the same extent as any of the previously predominant SARS-CoV-2 mutants. Neutralizing activity is strongly with E4 MAb and weak with G2 MAb. An interesting point is that significant synergism is found in the presence of both MAbs (1:1).

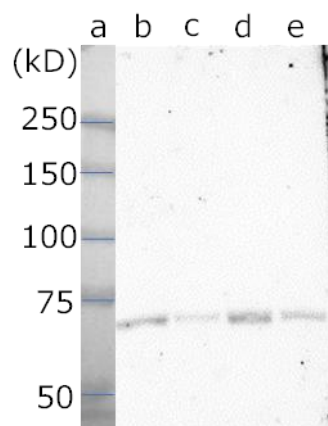


Fig. 1. Identification of SARS-CoV-2 S Protein by Western Blotting with anti-SARS-Cov2 S monoclonal antibody (E4).

Samples: Culture supernatants of SARS-CoV-2 infected Vero/TMPRSS2 cells.

- (a) Molecular weight marker proteins
- (b) Wuhan strain
- (c) BA.5
- (d) BA.2
- (e) BA.2.75

Note that this antibody reacted all strains so far tested.

Antibody concentration: 10 µg/ml

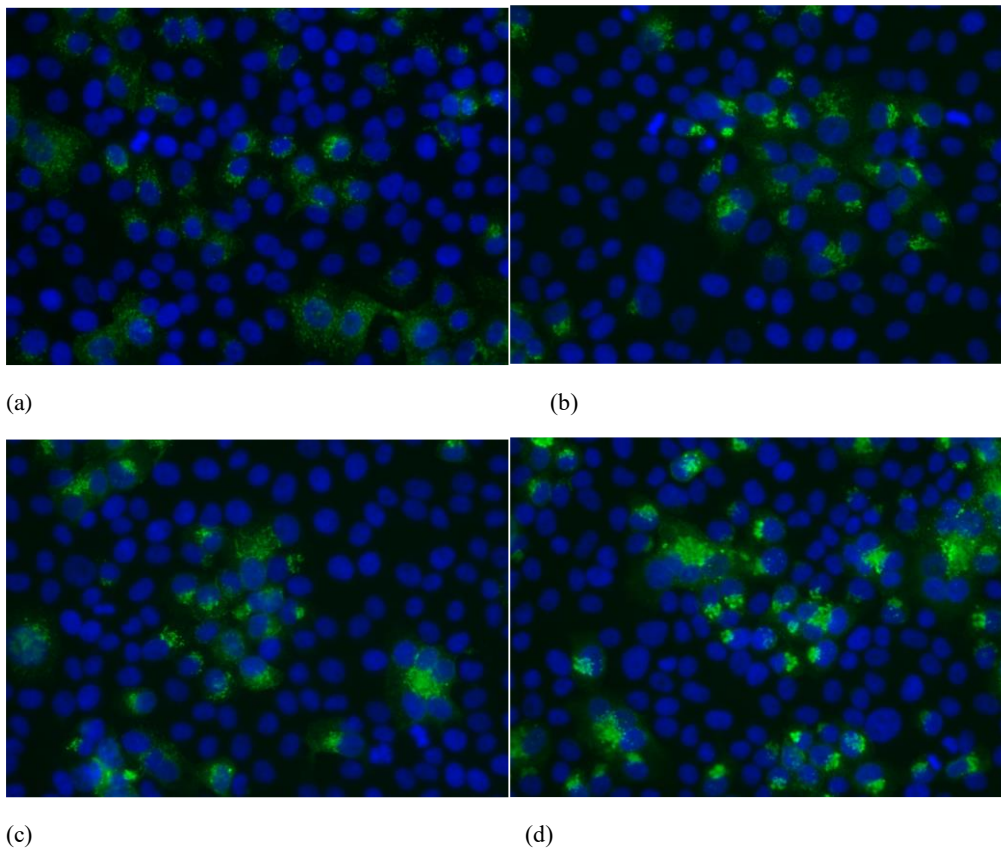


Fig.2. Staining of SARS-CoV-2 S protein in the virus-infected cells (Vero/TMPRSS2) by indirect immunostaining with anti-Spike monoclonal antibody, E4.

(a) Wuhan strain; (b) BA.2; (c) BA.2.75; (d) BA.5

Fixed with 4% HCHO/PBS

Antibody concentration: 10 µg/ml. **Note that all strains were reacted with this monoclonal antibody.**

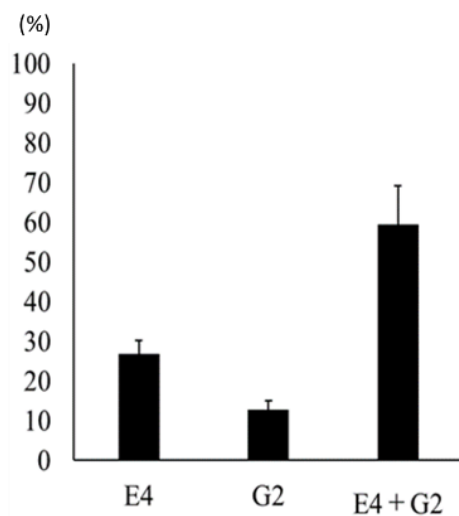


Fig.3. The binding inhibition activities of monoclonal antibodies. Inhibition of binding activities of CoV-2 RBD to ACE2 (SARS-CoV-2 receptor molecules) by monoclonal antibodies, E4, G2 and E4+G2 was measured by using Detection Kit (MBL, CODE 5360).

Related Products 65-103 Anti SARS-CoV-2 S (spike) Protein-Ab (G2), 50 µg