

DESCRIPTION

Species Reactivity	SARS-CoV-2
Specificity	Detects SARS-CoV-2 Spike S2 Subunit in direct ELISAs.
Source	Recombinant Monoclonal Rabbit IgG Clone # 2812E
Purification	Protein A or G purified
Immunogen	<i>E. coli</i> -derived recombinant human SARS-CoV-2 Spike S2 Subunit Met697-Pro1213
Conjugate	Alexa Fluor Plus 405 Excitation Wavelength: 404 nm Emission Wavelength: 455 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

Western Blot	Optimal dilution of this antibody should be experimentally determined.
ELISA	Optimal dilution of this antibody should be experimentally determined.

DATA

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

SARS-CoV-2, which causes the global pandemic coronavirus disease 2019 (Covid-19), belongs to a family of viruses known as coronaviruses that also include MERS and SARS-CoV-1. Coronaviruses are commonly comprised of four structural proteins: Spike protein(S), Envelope protein (E), Membrane protein (M) and Nucleocapsid protein (N) (1). SARS-CoV-2 Spike Protein (S Protein) is a glycoprotein that mediates membrane fusion and viral entry. The S protein is homotrimeric, with each ~180-kDa monomer consisting of two subunits, S1 and S2 (2). As with most coronaviruses, proteolytic cleavage of the S protein into two distinct peptides, S1 and S2 subunits, is required for activation. The S1 subunit is focused on attachment of the protein to the host receptor while the S2 subunit is involved with cell fusion (2-4). A metalloproteinase, angiotensin-converting enzyme 2 (ACE-2), has been identified as a functional receptor for SARS-CoV2, similar to SARS-CoV-1, through interaction with a receptor binding domain (RBD) located at the C-terminus of S1 subunit (5, 6). The S2 subunit of SARS-CoV-2 shares 90% and 41% amino acid sequence identity with the S2 subunit of SARS-CoV-1 and MERS, respectively. It has been demonstrated the S Protein can invade host cells through the CD147/EMMPRIN receptor and mediate membrane fusion (7, 8).

References:

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3. Belouzard, S. *et al.* (2009) *Proc. Natl. Acad. Sci. USA* **106**:5871.
4. Millet, J.K. and G. R. Whittaker (2015) *Virus Res.* **202**:120.
5. Li, W. *et al.* (2003) *Nature* **426**:450.
6. Wong, S.K. *et al.* (2004) *J. Biol. Chem.* **279**:3197.
7. Wang, X. *et al.* (2020) <https://doi.org/10.1038/s41423-020-0424-9>.
8. Wang, K. *et al.* (2020) *bioRxiv* <https://www.biorxiv.org/content/10.1101/2020.03.14.988345v>.

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