

DESCRIPTION	
<b>Species Reactivity</b>	SARS-CoV-2
<b>Specificity</b>	Detects SARS-CoV-2 Membrane (M) protein in direct ELISAs.
<b>Source</b>	Monoclonal Mouse IgG <sub>2B</sub> Clone # 1046317
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Chinese Hamster Ovary cell line CHO-derived SARS-CoV-2 Membrane (M) protein Met1-Asn21 Accession # YP_009724393.1
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

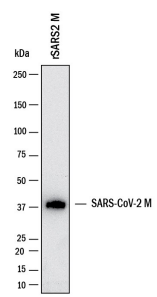
**APPLICATIONS**

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.

	Recommended Concentration	Sample
<b>Western Blot</b>	2 µg/mL	Recombinant SARS CoV-2 Membrane protein
<b>Immunocytochemistry</b>	3-25 µg/mL	immersion fixed HEK293 human embryonic kidney cell line transfected with SARS-CoV-2 Membrane protein

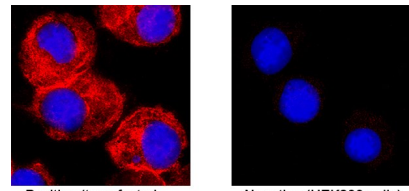
**DATA**

**Western Blot**



**Detection of SARS-CoV-2 Membrane by Western Blot.**  
Western blot shows recombinant SARS CoV-2 Membrane. PVDF membrane was probed with 2 µg/mL of Mouse Anti-SARS-CoV-2 Membrane Monoclonal Antibody (Catalog # MAB11038) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for Membrane at approximately 40 kDa (as indicated). This experiment was conducted under reducing conditions and using Western Blot Buffer Group 1.

**Immunocytochemistry**



**SARS-CoV-2 Membrane in HEK293 human embryonic kidney cell line transfected.**  
SARS-CoV-2 Membrane was detected in immersion fixed HEK293 human embryonic kidney cell line transfected (positive staining) and HEK293 human embryonic kidney cell line (non-transfected, negative staining) using Mouse Anti-SARS-CoV-2 Membrane Monoclonal Antibody (Catalog # MAB11038) at 3 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. Staining was performed using our protocol for Fluorescent ICC Staining of Non-adherent Cells.

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 0.5 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## BACKGROUND

SARS-CoV-2, which causes the global pandemic coronavirus disease 2019 (Covid-19), belongs to a family of viruses known as coronaviruses that are commonly comprised of four structural proteins: Spike protein(S), Envelope protein (E), Membrane protein (M), and Nucleocapsid protein (N) (1). M protein is the most abundant structural protein in the coronavirus membrane, and it is predicted to span the membrane three times, with a short N-terminal domain outside the viral envelope and a long C-terminal domain inside the virion (2). SARS-CoV-2 M protein is a 222 amino acid (aa) glycoprotein that is composed of an 18 aa N-terminal domain on the viral surface, 3 transmembrane domains, and a 122 aa C-terminal domain inside the viral envelope. SARS-CoV-2 M protein shares 89.14%, 98.6%, 98.2%, and 38.36% aa similarity with SARS-CoV-1, bat SARS-CoV, pangolin SARS-CoV, and MERS-CoV M proteins, respectively (3). The M protein of coronavirus plays an important role in assembly of viral particles by interacting with other structural proteins, especially with the E protein (4, 5). In SARS-CoV-2, M protein, combined with E protein, regulates intracellular trafficking of the S Protein and its unique furin-mediated processing (6).

## References:

1. Wu, F. *et al.* (2020) *Nature* **579**:265.
2. Mousavizadeh, L. and S. Ghasemi (2020) *J. Microbiol. Immunol. Infect.* doi:10.1016/j.jmii.2020.03.022.
3. Thomas, S. (2020) *Pathog. Immun.* **5**:342.
4. Masters, P.S. (2006) *Adv. Virus. Res.* **66**:193.
5. Corse, E. and C.E. Machamer (2003) *Virology* **312**:25.
6. Boson, B. *et al.* (2020) *bioRxiv* doi:10.1101/2020.08.24.260901.