

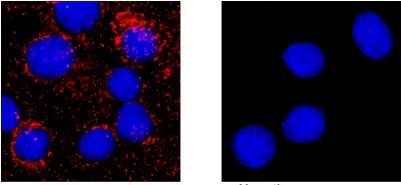
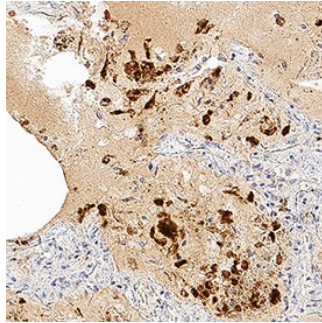
DESCRIPTION	
Species Reactivity	SARS-CoV-2
Specificity	Detects SARS-CoV-2 membrane (M) protein in direct ELISAs.
Source	Monoclonal Mouse IgG _{2B} Clone # 1041508
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived SARS-CoV-2 membrane (M) protein with a C-terminal His tag Arg101-Gln222 Accession # YP_0097243693
Formulation	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
Immunocytochemistry	8-25 µg/mL	Immersion fixed HEK293 human embryonic kidney cell line transfected with SARS-CoV-2
Immunohistochemistry	3-25 µg/mL	Immersion fixed paraffin-embedded sections of SARS-CoV-2 infected human lung

DATA

Immunocytochemistry	Immunohistochemistry
 <p>Positive (transfected HEK293 cells)</p> <p>Negative (wild type HEK293 cells)</p> <p>SARS-CoV-2 Membrane Protein in HEK293 Human Cell Line Transfected with SARS-CoV-2. SARS-CoV-2 Membrane Protein was detected in immersion fixed HEK293 human embryonic kidney cell line transfected with SARS-CoV-2 (positive staining) and HEK293 human embryonic kidney cell line (non-transfected, negative staining) using Mouse Anti-SARS-CoV-2 Membrane Monoclonal Antibody (Catalog # MAB10690) at 8 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.</p>	 <p>SARS-CoV-2 Membrane Protein in SARS-CoV-2 infected human lung. SARS-CoV-2 Membrane Protein was detected in immersion fixed paraffin-embedded sections of SARS-CoV-2 infected human lung using Mouse Anti-SARS-CoV-2 Membrane Monoclonal Antibody (Catalog # MAB10690) at 3 µg/mL for 1 hour at room temperature followed by incubation with the Anti-Mouse IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC001). Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # CTS013). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to immunoreactive profiles scattered throughout the tissue. Staining was performed using our protocol for IHC Staining with VisUCyte HRP Polymer Detection Reagents.</p>

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	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
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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:

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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.