

DESCRIPTION

Species Reactivity	MERS-CoV
Specificity	Detects MERS-CoV Spike RBD in direct ELISAs.
Source	Monoclonal Mouse IgG _{2A} Clone # 1038345
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese Hamster Ovary cell line CHO-derived MERS-CoV Spike RBD Glu367-Tyr606 Accession # YP_007188579.1
Conjugate	Alexa Fluor 350 Excitation Wavelength: 346 nm Emission Wavelength: 442 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.

	Recommended Concentration	Sample
Flow Cytometry	0.25-1 µg/10 ⁶ cells	MERS-CoV Spike protein bound to CD26 in HEK293 Human Cell Line Transfected with Human CD26 and eGFP

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

MERS-CoV (also known as HCoV-EMC), which causes the Middle East Respiratory Syndrome (MERS), was first reported in Saudi Arabia in 2012 as a novel coronavirus (1). Coronaviruses are a family of viruses that are commonly comprised of a large plus-strand RNA genome and four structural proteins: Spike protein (S), Envelope protein (E), Membrane protein (M), and Nucleocapsid protein (N). There are two well-known human coronavirus families that infect humans: Alpha coronaviruses which includes HCoV-229E and HCoV-NL63; beta coronaviruses that includes MERS-CoV, HCoV-OC43, Severe Acute Respiratory Syndrome (SARS-CoV), and global pandemic Covid-19 (SARS-CoV2) (2). The MERS-CoV Spike Protein (S Protein) is a glycoprotein that mediates membrane fusion and viral entry, and it consists of two subunits, S1 and S2. The S1 subunit is focused on attachment of the protein to the host receptor while the S2 subunit is involved with cell fusion (3). Located within the S1 subunit is the receptor binding domain (RBD). The RBD is responsible for the binding of MERS-CoV to dipeptidyl peptidase IV (DPP4, also known as human CD26) (4). The RBD of MERS-CoV shares 24% and 21% amino acid sequence (aa) identity with SARS-CoV RBD and SARS-Cov2 RBD, respectively. The low aa sequence identity is consistent with the finding that MERS-CoV and SARS-CoV bind different cellular receptors (4). The S1 subunit, especially the RBD region, of MERS-CoV was commonly targeted for vaccinations or antiviral therapies (5-7).

References:

1. Zaki, A.M. *et al.* (2012) *N. Engl. J. Med.* **367**:1814.
2. Ogimi, C. *et al.* (2020) *J Pediatric Infect Dis Soc* doi: 10.1093/jpids/piaa037.
3. Li, Y. *et al.* (2019) *Engineering.* **5**:940.
4. Raj, V.S. *et al.* (2013) *Nature* **495**:251.
5. Corti, D. *et al.* (2016) *J. Infect. Public Health* **9**:231.
6. Tang, X.C. *et al.* (2014) *Proc. Natl. Acad. Sci. USA* **111**:E2018.
7. Jiang, L. *et al.* (2014) *Sci. Transl. Med.* **6**:234ra59.

PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc., and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.