

DESCRIPTION

Species Reactivity	HCoV-OC43
Specificity	Detects HCoV-OC43 Nucleocapsid in direct ELISA.
Source	Monoclonal Mouse IgG ₁ Clone # 1051436
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Sf-21 (baculovirus)-derived hcov-oc43 Nucleocapsid Met1-Ile448 Accession # YP_009555245.1
Conjugate	Alexa Fluor 405 Excitation Wavelength: 405 nm Emission Wavelength: 421 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.

Flow Cytometry	Titration recommended for optimal concentration with starting range of 0.1-1 µg/1 million cells. Sample used for this experiment was HEK293 cells transfected with HCOV-OC43-N or HEK293 cells transfected with an irrelevant protein.
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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

HCoV-OC43, a virus first isolated in 1960's that accounts for ~ 20% of the common cold, belongs to a family of viruses known as coronaviruses 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) (1, 2). Other well-known human coronaviruses include three viruses that cause relatively mild respiratory disease: HCoV-229E, HCoV-HKU1 and HCoV-NL63, plus three viruses that cause the Severe Acute Respiratory Syndrome (SARS-CoV), the Middle East Respirator Syndrome (MERS-CoV), and the global pandemic Covid-19 (SARS-CoV2). While the S, E and M proteins build up the viral envelop, the N protein is involved transcription, replication, and packaging of the viral RNA genome into a helical ribonucleocapsid (RNP) (3, 4). The CoV-OC43 N protein is a ~50 kDa protein composed of two independent structural domains connected by a linker region. Both the N-terminal and the linker regions contain RNA binding domains, while the C-terminal region is responsible for the oligomerization of the N protein (5). The CoV-OC43 N protein shares 64% amino acid sequence identity with CoV-HKU1 N protein. the N protein is an abundant protein during coronavirus infection and displays high immunogenic activity. Cross activity of antibodies among different strains should be rigorously tested when designing serological diagnostic kits (6, 7).

References:

1. St-Jean, J.R. *et al.* (2004) *J. Virol.* **78**:8824.
2. Vabret, A. *et al.* (2003) *Fr Clin Infect Dis.* **36**:985.
3. Chang, C.K. *et al.* (2006) *J. Biomed. Sci.* **13**:59.
4. Hurst, K.R. *et al.* (2009) *J. Virol.* **83**:7221.
5. Huang, C.Y. *et al.* (2009) *Protein Sci.* **18**:2209.
6. Chan, K.H. *et al.* (2005) *Clin Diagn Lab Immunol.* **12**:1317.
7. Mourez, T. *et al.* (2007) *J. Virol Methods.* **139**:175.

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