

Product Specification Sheet

Middle Eastern Respiratory syndrome Coronavirus (MERS-CoV) Spike protein antibodies

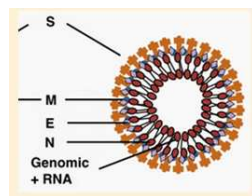
Cat # MERS121-A

Rabbit anti MERS-Spike protein (1-1297aa) IgG, aff pure

Size: 100 ul

MERS is a viral respiratory infection caused by the newly identified **MERS-coronavirus (MERS-CoV)**. MERS-CoV is a betacoronavirus derived from bats. Camels have been shown to have antibodies to MERS-CoV, but the exact source of infection in camels has not been identified. A strain of MERS-CoV known as HCoV-EMC/2012 found in the first patient in London in 2012 was found to have a 100% match to Egyptian tomb bats. Early reports compared the virus to severe acute respiratory syndrome (SARS), and it has been referred to as Saudi Arabia's SARS-like virus. ERS can range from asymptomatic disease to severe pneumonia leading to the acute respiratory distress syndrome. Renal failure, disseminated intravascular coagulation (DIC) and pericarditis have also been reported. MERS have high fatality rate, 77 deaths in 187 confirmed cases. MERS-CoV has been reported or by direct or indirect contact with others who have a travel history consistent with exposure in the Middle East. However, the origin of the infection in most cases remains unknown. Sera samples from European sheep, goats, cattle, and other camelids had no such antibodies. Human or animals diagnostic serology is based upon PCR or ELISA or antibody neutralization tests.

The virus MERS-CoV is a new member of the beta group of coronavirus, Betacoronavirus, lineage C. MERS-CoV genomes are phylogenetically classified into two clades, clade A and B, and is more closely related to the bat coronaviruses HKU4 and HKU5 (lineage 2C) than it is to SARS-CoV (lineage 2B) (2, 9), sharing more than 90% sequence identity with their closest relationships, bat coronaviruses HKU4 and HKU5.



Coronaviruses are a positive ssRNA genome of about 27-32kb that codes for structural protein genes - namely the **Spike (S), Envelope (E), Membrane (M), and Nucleocapsid (N)** genes - as well as the Polymerase. The presence of MERS viral antibodies (N, E and S) have been used to detect the infected animal or humans. MERS-CoV utilizes receptor, dipeptidylpeptidase 4 (DPP4), for binding to DPP4-expressing cells via the Spike protein. S1 subunit mediates virus binding to cells expressing DPP4 through its **receptor-binding domain** (RBD, 367-606 aa) region and an S2 subunit that mediates virus-cell membrane fusion. A truncated RBD domain (377-588)-Fc protein binds efficiently to DPP4. Antibodies to the RBD domain also protect animals from MERS infection.

- Membrane (M) protein 25-30 kDa
- Nucleocapsid (N) protein 50-60kD
- ◆ Envelope (E) protein 9-12 kD
- ↑ Spike (S) protein 150kD

Source of Antigen and Antibodies

Antigen	Recombinant novel coronavirus (HCoV-EMC/2012) Spike Protein ECD (cat# MERSS126-R-10)
Ab Host/type	Rabbit, monoclonal IgG, aff. pure (Cat# MERS121-A) Supplied with 0.05% azide as preservative
2-Ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
-ve control	Cat # 20009-1, Rabbit (non-immune) Serum IgG, purified, suitable for ELISA, Western, IHC as -ve control

Form & Storage

pure IgG

100 ul solution lyophilized powder
Buffer: PBS pH 7.4, with 5% Trehalose and 0.05% azide
Reconstitute powder in 100 ul water

Stability: 6-12 months at -20oC or below.

Recommended Usage

Western Blotting: An initial dilution of 1:500-2K is recommended for Western. Users must optimize antibody dilution depending upon the nature of samples and other technical conditions.

ELISA (1:10-50K; using 50-100 ng antigen/well).

Histochemistry & Immunofluorescence: not tested.

Specificity and cross reactivity: This Antibody is specific for MERS-Cov spike protein (1-1297 a.a) and recombinant protein. Cross reactivity with other proteins has not been tested. MERS-CoV Spike protein ECD is conserved in the bat coronaviruses HKU4 (64%), HKU5 (59%) and BtCoV (58%), strains. Antibodies and recombinant proteins to various MERS proteins are available for control studies.

General References: Sandervan (2012) mBio.3:e00473-12.2; Muller MA (2012) mBio3(6):e00515-12.; ChanJF (2012) J Infect.65(6):477-89. Hemida, MG (2013) Euro Surveillance 18 (50). Guery B (2013) Lancet; 381:2265.

This product is for in vitro research use only.

Related material available from ADI

- MERS121-A Rabbit anti-MERS Spike protein (1-1297 a.a) IgG, aff pure
- MERSS126-R-10 Recombinant (S19) Purified MERS Spike protein ECD (1-1297 a.a, His-tag, ~157 kda, low Endotoxin)
- MERSS12-A Rabbit Anti-MERS Spike protein S1 protein peptide, C-terminal IgG, aff pure
- MERSS21-M Mouse monoclonal Anti-MERS Spike protein S2 protein (726-1296 a.a) IgG, aff pure
- MERSS22-A Rabbit Anti-MERS-Spike protein S2 protein (726-1296 a.a) IgG,
- RV-402200-1 Recombivirus Human Anti-Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Spike protein 1 (S1) antibody (IgG) ELISA kit, 96 tests
- RV-402210-1 Recombivirus Camel Anti-Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Spike protein 1 (S1) antibody (IgG) ELISA kit, 96 tests
- RV-402220-1 Recombivirus Bat Anti-Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Spike protein 1 (S1) antibody (IgG) ELISA kit, 96 tests
- RV-402230-1 Recombivirus Pig Anti-Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Spike protein 1 (S1) antibody (IgG) ELISA kit, 96 tests
- RV-402240-1 Recombivirus Cow Anti-Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Spike protein 1 (S1) antibody (IgG) ELISA kit, 96 tests
- RV-402250-1 Recombivirus Goat/Sheep Anti-Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Spike protein 1 (S1) antibody (IgG) ELISA kit, 96 tests
- RV-402300-1 Recombivirus Human Anti-Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Spike protein 2 (S2) antibody (IgG) ELISA kit, 96 tests
- RV-402310-1 Recombivirus Camel Anti-Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Spike protein 2 (S2) antibody (IgG) ELISA kit, 96 tests
- RV-402320-1 Recombivirus Bat Anti-Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Spike protein 2 (S2) antibody (IgG) ELISA kit, 96 tests
- RV-402330-1 Recombivirus Pig Anti-Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Spike protein 2 (S2) antibody (IgG) ELISA kit, 96 tests
- RV-402340-1 Recombivirus Cow Anti-Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Spike protein 2 (S2) antibody (IgG) ELISA kit, 96 tests
- RV-402350-1 Recombivirus Goat/Sheep Anti-Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Spike protein 2 (S2) antibody (IgG) ELISA kit, 96 tests

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