**EUROIMMUN AG · Seekamp 31 · 23560 Luebeck (Germany) · Telephone: +49 451 5855 0 · E-mail: vet-info@euroimmun.de · http://vet.euroimmun.com**

**Antigen**
Purified S1 antigen of MERS coronavirus (MERS-CoV S1)

**Evaluation**
Semiquantitative evaluation using ratio values:
- Extinction value of the sample over the extinction value of the calibrator

**Result interpretation**
EUROIMMUN recommends interpreting results as follows:
- Ratio < 0.8: negative
- Ratio \(\geq 0.8\) to < 1.1: borderline
- Ratio \(\geq 1.1\): positive

**Sample dilution**
Camelid serum or plasma, 1:101 in sample buffer

**Reagents**
Ready for use, with the exception of the wash buffer (10 x), colour-coded solutions

**Test procedure**
30 min (37°C) / 30 min (37°C) / 15 min (room temperature), fully automatable

**Measurement**
450 nm, reference wavelength between 620 nm and 650 nm

**Test kit format**
96 break-off wells, kit includes all necessary reagents

**Order no.**
EI 2604-9601 GK

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**Technical data**

**Application**
The most reliable laboratory diagnostic methods for confirmation of suspected MERS-CoV infections include the direct detection of MERS-CoV using polymerase chain reaction (PCR) and the detection of antibodies against MERS-CoV using indirect immunofluorescence (IIFT), ELISA, or neutralisation tests. The EUROIMMUN Anti-MERS-CoV ELISA Camel (IgG) contains purified spike protein domain S1 antigen of MERS coronavirus (MERS-CoV S1), which is known to be well suited for diagnostics as it combines high sensitivity and high specificity. IgG antibodies can be detected approximately 3 weeks after infection and persist for years. Cross reactions with other coronaviruses, especially bovine coronavirus, need to be taken into account in serological diagnostics, which, however, can be reduced using a recombinant spike protein as antigen. Thus, positive results should be confirmed using a different test method, ideally a neutralisation assay.
The ELISA test kit provides a semiquantitative in vitro assay for antibodies of class IgG against MERS coronavirus in serum or plasma of camels. The test kit contains microtiter strips each with 8 break-off reagent wells coated with purified S1 antigen of MERS coronavirus (MERS-CoV S1). In the first reaction step, diluted samples are incubated in the wells. In the case of positive samples, specific IgG antibodies (also IgA and IgM) will bind to the antigens. To detect the bound antibodies, a second incubation is carried out using an enzyme-labelled anti-camel IgG (enzyme conjugate) catalysing a colour reaction.

To confirm assay sensitivity, 151 sera from camels collected in Dubai were analysed and results were compared to in-house assays of the Institute of Virology, University of Bonn, Germany. To assess assay specificity, 20 sera from camels collected in Germany with negative predictive value and, additionally, 13 camel sera from the UAE negative for MERS-CoV antibodies but positive for bovine coronavirus antibodies in a recombinant IFA were tested. Sensitivity and specificity of the EUROIMMUN Anti-MERS-CoV ELISA Camel (IgG) both amounted to 100%.

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