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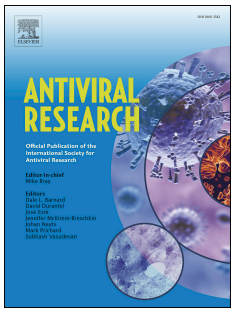

A novel double-antigen sandwich ELISA for the species-independent detection of Crimean-Congo hemorrhagic fever virus-specific antibodies

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A novel double-antigen sandwich ELISA for the species-independent detection of Crimean-Congo hemorrhagic fever virus-specific antibodies

Miriam A. Sas [a], Loic Comtet [b], Fabien Donnet [b], Marc Mertens [a], Zati Vatansever [c], Noel Tordo [d], Philippe Pourquier [b], Martin H. Groschup [a*]

[a] Institute of Novel and Emerging Infectious Diseases, Friedrich-Loeffler-Institut, Federal Research Institute for Animal Health, Greifswald-Isle of Riems, Germany,

[b] IDvet, Grabels, France,

[c] Faculty of Veterinary Medicine, Kafkas University, Kars, Turkey,

[d] Unit Antiviral Strategies, Institut Pasteur, Paris, France

[*] martin.groschup@fli.de

Abstract

Crimean-Congo hemorrhagic fever (CCHF) is a tick-borne disease in humans caused by the CCHF virus (CCHFV). The detection of anti-CCHFV antibodies in animals is used to reveal infection risk areas. Therefore a simple, quick and reliable multispecies assay for the detection of CCHFV-specific antibodies is needed. This work presents the development and validation of a novel CCHF double-antigen ELISA for the detection of anti-CCHFV nucleoprotein antibodies. The test requires 30µl of serum, and results are obtained within 90 minutes. As the ELISA is based on recombinant N-protein of the IbAr10200 virus, it can be run under standard biosafety conditions. For assay validation, sera from 95 cattle and 176 small ruminants from CCHF-endemic regions (origin: Albania, Cameroon, Kosovo, Former Yugoslav Republic of Macedonia, Mauritania, Pakistan, Turkey) served as a positive