

Characterization and evaluation of the minimal infection dose of Lumpy Skin Disease virus strain Macedonia 2016

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Lumpy Skin Disease virus (LSDV), Sheeppox virus and Goatpox virus belong to the genus Capripox virus of the Poxviridae family. LSDV, which was first described in southern Africa, can be found regularly in wide areas of Africa. In 2013, LSDV was also detected in the Middle East and in 2015 the virus spread to southern Europe. Besides high fever and ocular and nasal discharge, LSDV leads to clinical symptoms like emaciation, lesions of the skin, temporary reduction in milk production, and sometimes death. For the control of LSDV, only live attenuated vaccines (LSDV Neethling strain and derivatives) are commercially available, which are currently not authorized in the European Union.

In our work, we examined the minimal infection dose of an LSDV strain isolated from infected cattle during an outbreak in 2016 in Macedonia. We inoculated cattle using different amounts of infectious virus (10^2 CCID₅₀/ml, 10^4 CCID₅₀/ml, 10^6 CCID₅₀/ml, 10^7 CCID₅₀/ml) and clinical symptoms as well as viral genome load and serological response were analyzed. Differences between the inoculation groups regarding clinical course and molecular and serological response will be discussed.

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