

## THE EFFECT OF *MYCOPLASMA BOVIS* INFECTION ON PERIPHERAL BLOOD LEUKOCYTE ACTIVITY IN THE CALVES

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*Mycoplasma bovis* is known as etiologic agent of pneumonia, arthritis and mastitis in cattle. It was previously confirmed that *M. bovis* possesses both immunostimulating and immunosuppressive properties. The aim of the study was to evaluate the effect of *M. bovis* on bovine peripheral leukocyte activity *in vivo* conditions.

The study was carried out on clinically healthy calves divided into two groups: experimental and control. The experimental calves were infected with the field *M. bovis* strain three times at 48 hour intervals. Instead the control animals were administered with phosphate buffered saline. Blood samples were collected each day up to day 9 following the first *M. bovis* infecting dose and then weekly until day 30 when the calves were euthanized to obtain the lung samples. In the blood samples phagocytic activity (*Phagotest*<sup>TM</sup>) and oxygen metabolism (*Phagoburst*<sup>TM</sup>) of peripheral blood leukocytes were evaluated using flow cytometry according to the manufacturer's instruction (*Glycotape Biotechnology GmbH*, Berlin, Germany). The *M. bovis* antigen was detected in the lung samples by immunohistochemistry using mouse anti-*Mycoplasma bovis* monoclonal antibody (*Millipore*).

Positive immunolabelling for *M. bovis* in the bronchiolar epithelial cells in the lungs of the experimental calves confirmed the infection efficacy. The percent of phagocytic granulocytes in the blood of experimental calves did not significantly differ from the control. However, the mean fluorescence intensity (MFI) for granulocytes visibly increased on day 9 post the first infecting dose and it was significantly higher than the control on day 16. Following the calf infection the percent of phagocytic monocytes was increased throughout the study when compared to the control, with the exception of days 9 and 16. The MFI for monocytes in the experimental calves was in general slightly higher than the control. For the oxygen metabolism the percent of activated leukocytes was significantly increased on day one post the first infecting dose of *M. bovis* however after that it suddenly decreased and had similar or lower values than the control up to day 30. However the MFI was generally increased in the experimental calves throughout the study when compared to the control.

The general stimulation of phagocytic activity and oxygen metabolism of peripheral blood granulocytes and monocytes following the calf infection with *M. bovis* can show the activation of host defence mechanisms for the pathogen elimination.

**Keywords:** *MYCOPLASMA BOVIS*, CATTLE, IMMUNE RESPONSE

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