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EVALUATION OF THE INTERLEUKIN (IL)-1B AND IL-8 GENE EXPRESSION IN HEALTHY SHEEP UDDERS INFUSED WITH LIVE LACTOCOCCUS LACTIS: PRELIMINARY DATA

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Introduction: Previous studies demonstrated that the intramammary infusion of live *Lactococcus lactis* into the quarters of healthy cattle leads to a rapid and considerable innate immune response. The aim of this study was to assess the effect of the intramammary infusion of live *L. lactis* on interleukin (IL)-1β and IL-8 gene expression in milk somatic cells from healthy sheep.

Materials and Methods: Eleven healthy udders were considered in the study: 7 were untreated and used as controls and 4 were infused with 2 ml of a live culture of *L. lactic* for seven consecutive days. Milk samples were collected before treatment (day 0) and 3, 7 and 15 days after the first dose (days 3, 7 and 15, respectively). Milk cell pellets were used for RNA extraction. SYBR Green RT-qPCR assays were performed by using designed sheep-specific primers for IL-1β and IL-8.

Results: IL-1β and IL-8 gene expression remained rather steady during the trial in the control group. On the contrary, fluctuations for both interleukins were observed in the treated group: a sharp drop on day 3, then a significant increase on day 7 and again a drop on day 15.

Conclusions: Our preliminary results seem to suggest that the infusion of live *L. lactis* is able to modulate the host immune response. Further investigations are needed to provide scientific evidence. This study was supported by the Italian Ministry of Health, grant number RF-2010-2373040.

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