

**Title: Intramammary administration of lipopolysaccharides at parturition on goat immune system and colostrum composition.**

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Abstract: This study evaluated the effect of an intramammary administration (IA) of lipopolysaccharides (LPS) from *Escherichia coli* (O55:B5) to dairy goats at parturition on the immune status and colostrum composition. Twenty goats were randomly assigned to one of two experimental groups. The treatment (TRT) group (n=10) received an IA of saline solution (2mL) containing 50µg LPS per gland immediately after parturition, whereas the control (CON) group (n=10) received an IA without LPS. Rectal temperature (RT) was measured, and blood samples were collected at parturition (0h; before IA), and then at 3h, 12h as well as d1, d2, d4, d7, d15 and d30 relative to IA. Colostrum samples were collected at 3h and 12h relative to IA. Immunoglobulin G and M concentrations on blood and colostrum were measured using an EIA commercial kit. In the TRT group, RT increased after the IA (PIA×T =0.007), whereas the CON group reduced RT after IA. Blood IgG concentrations in the TRT group were higher than in the CON group (PIA=0.022). However, no effect on blood IgM concentrations was detected. The TRT group showed higher IgG and IgM concentrations on colostrum compared to the CON group (44.2±5.73 and 28.8±4.91 mg/mL, 989.9 [690.0-1420.2] and 578.0 [410.9-813.0] µg/mL respectively; PIA=0.034, PIA=0.038). In conclusion, IA with LPS induces a systemic immune reaction, increasing both RT and IgG plasma concentrations and increases colostrum IgG and IgM concentrations during the first 12 hours after treatment.

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