

PSVII-30 - Intracellular toll-like receptors correlates positively with interferon-stimulated genes during the peri-implantational period in beef cattle

📅 Tuesday, Jul 10 ⌚ 12:00 PM – 1:00 PM

The objective of this study was to assess the possible interrelations between expression patterns of intracellular toll-like receptors (TLR) and interferon-stimulated genes (ISG) during the peri-implantational period in peripheral blood mononuclear cells of two beef cattle breeds. Thirty Parda de Montaña and 19 Pirenaica multiparous cows were synchronized to estrus and artificially inseminated (AI). Pregnancy diagnosis was performed by ultrasonography on day 37 and confirmed 91 days post-AI. Blood samples were drawn on days 18 and 21 after AI. Gene expression of TLR7, TLR8, ISG15, OAS1 and MX2 was analysed by real time PCR. Pearson correlation coefficient (r) test was used to identify possible relationships between gene expression levels of TLR and ISG with JMPPro statistical software (SAS Institute Inc., Cary, NC). On day 37, pregnancy was confirmed in 35 dams. In pregnant dams, TLR7 expression was positively correlated with ISG15 expression on day 18 ($r=0.34$; $P<0.05$), and TLR8 expression was positively correlated with ISG15 ($r=0.65$ and $r=0.70$; $P<0.05$) and MX2 expression ($r=0.42$ and $r=0.69$; $P<0.05$) on days 18 and 21, respectively. In non-pregnant dams, positive association was also observed between TLR8 and ISG15 on day 18 ($r=0.55$; $P<0.05$). These results confirm that embryo signalling during the recognition period may lead to activation of a wide range of immune signals in local and peripheral tissues. Positive association observed between TLR8 and ISG15 in non-pregnant dams could be consequence of embryo signalling in dams that suffered embryo loss afterwards. Our results indicate that intracellular TLR7 and TLR8 are positively associated to ISG15 and MX2 during pregnancy establishment in beef cattle.

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