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Program: Applied Science and Technology

Title: “Detection of Galectin Expression and its Modulation in Goat Peripheral Blood”

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Goats

Pathogens



PAMPS modulated the expression and secretion of galectins

Probiotics



Mushroom probiotics affected the secretion of galectins

Periparturient Period



Galectins were expressed and secreted during the periparturient period

RESEARCH QUESTIONS / PROBLEMS:

- Are Galectin genes expressed and secreted in goat peripheral blood during the periparturient period?
- If LPS modulates the expression of TIM-3 in blood and neutrophils?
- Whether Pathogen-associated molecular patterns activate TLR signaling pathway?
- If PAMPs affect galectin gene expression and secretion in goat blood?
- What is the effect of mushroom (*Coriolus versicolor*) probiotics in the secretion of galectins in goat plasma?

METHODS:

- Phenotypic parameters were measured by checking body weight, body condition, FAMACHA scores and Packed cell volume
- Gene expression was determined using RT-PCR techniques
- Galectin concentration and secretion was determined using ELISA
- Flow cytometry was used evaluated the expression of TIM-3 on neutrophils

RESULTS / FINDINGS:

- Galectins are transcribed and translated in goat blood.
- There was a change in the expression of galectins during the periparturient period.
- Different PAMPs modulated the expression of genes involved in the TLR pathway
- Galectin expression and secretion can be modulated by different PAMPs
- The receptor for LGAL-9 ,TIM-3 is expressed on the surface of neutrophils and can be affected by bacterial infection.

SIGNIFICANCE / IMPLICATIONS:

- This research opens a whole new window into galectin gene expression and modulation in goat blood as well as understanding the immune system of goats, to improve goat production and health and also in the design of immune-modulatory strategies for animal and human health.