

## Effects of Caprine Arthritis-Encephalitis Virus (CAEV) Infection on the Expression of Cathelicidin Genes in Goat Blood Leukocytes

**Authors :** Daria Reczynska, Justyna Jarczak, Michal Czopowicz, Danuta Sloniewska, Karina Horbanczuk, Wieslaw Jarmuz, Jaroslaw Kaba, Emilia Bagnicka

**Abstract :** Since people, animals and plants are constantly exposed to pathogens they have developed very complex systems of defense. Among ca. 1000 antimicrobial peptides from different families so far identified, approximately 30 belonging to cathelicidin family can be found in mammals. Cathelicidins probably constitute the first line of defense because they can act at a physiological salt concentration which is present in healthy tissues. Moreover, the low salt concentration which is present in infected tissues inhibits their activity. In goat bactenecin 7.5 (BAC7.5), bactenecin 5 (BAC5), myeloid antimicrobial peptide 28 (MAP28), myeloid antimicrobial peptide 34 (MAP34 A and B), goat bactenecin3.4 (ChBac3.4) were identified. Caprine arthritis-encephalitis (CAE) caused by small ruminant lentivirus (SRLV) is economic problem. The main CAE symptoms are weight loss, arthritis, pneumonia and mastitis (significant elevation of the somatic cell count and deterioration of some technological parameters). The study was conducted on 24 dairy goats. The animals were divided into two groups: experimental (SRLV-infected) and control (non-infected). The blood samples were collected five times: on the 1st, 7th, 30th, 90th and 150th day of lactation. The levels of transcripts of BAC7.5, BAC5, MAP28 and MAP34 genes in blood leucocytes were measured using qPCR method. There were no differences in mRNA levels of studied genes between stages of lactation. The differences were observed in expressions of BAC5, MAP28 and MAP34 genes with lower levels in the experimental group. There was no difference in BAC7.5 expression between groups. The decreased levels of transcripts of cathelicidin genes in blood leucocytes of SRLV-infected goats may indicate the disturbances of homeostasis in organisms. It can be concluded that SRLV infection seems to inhibit expression of cathelicidin genes. The study was financed by a grant from the National Scientific Center No. UMO-2013/09/B/NZ/03514.

**Keywords :** goat, CAEV, cathelicidins, blood leukocytes, gene expression

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