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# CUTTING EDGE

# PATHOLOGY

## Programme and Abstract Book



## Poster Presentations ESVP/ECVP

### **P109 DETERMINATION OF TELOMERASE HTERT EXPRESSION IN BOVINE LEUKAEMIA VIRUS (BLV) INFECTED CATTLE**

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**Introduction:** Bovine leukaemia is characterised by a persistent lymphocytosis and B cell malignant lymphosarcoma development after extended latency periods. Telomerase catalytic subunit (hTERT) has been shown to play a critical role not only in telomere homeostasis but also in cellular survival, DNA repair, and genetic stability. The aim of the studies was determination of hTERT expression and telomerase activity in BLV infected animals.

**Materials and Methods:** Telomerase activity was analysed by Real-Time PCR in blood, lymphatic organs and dendritic cells of leukaemic and healthy cows. The telomere length and fluorescence intensity was determined with the use of fluorescence in situ hybridisation (FISH). The hTERT expression was investigated in immunofluorescence (IF) test with the use of monoclonal antibody.

**Results:** In all samples from BLV infected cows high activity of telomerase and expression of hTERT was found. The highest telomerase activity was detected in spleen and bone marrow, in cows with persistent lymphocytosis telomerase activity the highest in lymph node. The level of telomerase activity showed correlation with hTERT expression and telomere length.

**Discussion (and/or Conclusions):** Telomerase – a telomere – synthesising reverse transcriptase compensates the loss of telomere associated with cell division. hTERT encodes the catalytic subunit of telomerase and is present in most immortalised and cancer cells. Telomeres are important structures for the correct function and stability of chromosomes. Telomerase activity is expressed in most human tumour tissues, but not in normal tissues, except for those of the germline. Telomerase activity and hTERT expression almost always correlate with disease severity in lymphoproliferative disorders.

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### **P110 IMMUNOHISTOCHEMICAL STUDY OF CUTANEOUS IMMUNE RESPONSE AND KERATIN EXPRESSION IN GOATS WITH SARCOPTIC MANGE**

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**Introduction:** Sarcoptic mange is one of the most important ectoparasitic diseases of goats in Greece. The aim of our study was to assess the cellular immune response and the expression of various cytokeratins in skin lesions of naturally infested goats with sarcoptic mange.

**Materials and Methods:** Selected cases of 40 goats with sarcoptic mange and 8 clinically healthy goats were studied. Human skin biopsies were also used as controls. Skin biopsies were fixed in zinc salts fixative. Tissue sections were immunostained against T-cell subpopulations (CD3, CD4, CD8, WC1 $\gamma\delta$  TCR), B cells (CD21), dendritic cells (CD1b), macrophages (CD68) and cytokeratins (CKAE1/AE3, CKMNF116, CK34BE12, CK14, CK19, CK7 and CK5/6).

**Results:** The study of lymphocytic infiltrate showed a predominance of the CD3+ subpopulation (169.94 $\pm$ 39.13 cells/mm<sup>2</sup>) while CD21+ cells were sparse. In the dermal infiltrate, a predominance of CD4+ (91.95  $\pm$  24.41 cells/mm<sup>2</sup>) over CD8+ T cells (22.8 $\pm$ 9.33 cells/mm<sup>2</sup>) was observed. The CD4/CD8 ratio of lesional skin was 4.03 $\pm$ 1.54/1. The  $\gamma\delta$ + lymphocytes were expressed significantly (34.20 $\pm$ 9.70 cells/mm<sup>2</sup>) in dermis. Moreover, numerous CD1b+ and CD68+ cells were found in dermis, especially perivascularly. In scabietic skin, as the degree of epidermal hyperplasia increased, there was an altered expression of CKMNF116, CK19, and CK14 in most layers of the suprabasal epithelium and the outer root sheath of hair follicles. No difference was observed in immunostaining of CK5/6, CKAE1/AE3, CK34BE12 and CK7.

**Discussion:** The findings of our study emphasise that sarcoptic mange infestation stimulates the upregulation of antigen-presenting cells and T-lymphocyte subpopulations and alters the expression of certain cytokeratins as well.

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