

**IMMUNOHISTOCHEMICAL STUDIES OF EPIDERMAL DIFFERENTIATION, CELL PROLIFERATION AND p53 MUTATION IN BOVINE OCULAR SQUAMOUS CELL CARCINOMA**

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**AIM OF THE STUDY:** Immunohistochemical characterization of cells of Bovine Ocular Squamous Cell Carcinoma (BOSCC) was carried out using a panel of 4 antibodies able to detect epidermal differentiation, overexpression of p53 and proliferation index.

**MATERIALS & METHODS:** Thirty-two samples from nineteen bovine ocular tumours were collected. Material was fixed in 10% formalin, embedded in paraffin and stained for routine histopathological diagnosis. Immunohistochemical analysis, using the Avidin-Biotin-Peroxidase method (ABC), was performed. The following antibodies were used: a) for characterization of epidermal differentiation, monoclonal anti-human involucrin (NCL) and polyclonal anti-human profilaggrin (ZYMED); b) for cell proliferation studies polyclonal anti-human Ki67 (NCL); c) for p53 overexpression polyclonal anti-human p53 (NCL). Positivity was evaluated by semi-quantitative methods for both Ki67 (by two independent observers) and p53.

**RESULTS:** BOSCC was diagnosed in all samples, nine being well differentiated, five moderately differentiated and five poorly-differentiated. Involucrin revealed positivity only on squamous cells in the late stage of differentiation. Profilaggrin marked all cellular types. Ki67 index ranged from 14.2% to 21.6% in well-differentiated BOSCC, and from 19.3% to 34.6% in poorly-differentiated ones. Anti p53 antibody was positive in 10 of 15 BOSCC tested.

**CONCLUSIONS:** In all cases of BOSCC, cells reaching the final program of differentiation were present. There was significant correlation between proliferation index and degree of differentiation. Immunoreactivity for p53 is frequent in BOSCC.