

CELL SIGNALING, CELL THERAPY AND CANCER THERAPEUTICS

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Evidence of the crosstalk between AMPK and TGF-beta signaling pathways, in salivary gland tumors

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Background: Salivary Gland Tumors-SGT (s) are distinguished due to its heterogeneity and the uncertainty of the consequence of patients from the various cancers. Target: *LKB1* gene and *SMAD4* which are the central element of important routes messaging TGF- β , AMPK and Wnt/ β -catenin in cells; there is no study based on the existence of the relationship between the expression of these genes in SGT (S).

Aim: To provide evidence of the crosstalk between AMPK and TGF-beta signaling pathways, in salivary gland tumors.

Method: 40 fresh tissue samples from the patients SGT (S) include Warthin s Tumor (WT), Pleomorphic Adenoma (PA), Carcinoma ex Pleomorphic, Salivary Duct Carcinoma (SDC), Mucoepidermoid Carcinoma (MEC), and the healthy subjects salivary gland tissue was prepared. The amount of and the expression pattern mRNA genes which were under study by the way of "Real-Time PCR" was measured.

Result: All samples apart from CexPA showed decreased expression substantially in the LKB. Expressed *SMAD4* showed a significant increase in all the samples. Results suggest a possible relationship between reduced expressions of *LKB1* and increased expressed *SMAD4* in SGT (S). In cancer cells, eliminating or reducing *LKB1* leading to increased expression of *SMAD4* plays a fundamental role that stimulates the transformed epithelial cells into Mesenchymal cells.

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