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Hyperprolactinaemia changes the hyaluronic acid amount in the lacrimal gland of female mice

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In this study, the aim was to investigate the impact of the metoclopramide-induced hyperprolactinaemia about amount of hyaluronic acid (HA) in the lacrimal gland of female mice. 20 adult female mice were randomly divided into two groups with 10 animals each: non control group (CTR, 0.2 mL of saline solution) and experimental group (HPRL, 200 μg/day of metoclopramide). Treatments lasted for 50 consecutive days. On the 50th, all animals were euthanized in proestrus phase and lacrimal glands removed and blood collected. The lacrimal glands were processed for morphological analysis. The right gland was placed in 10% buffered formaldehyde for processing immunohistochemistry and left lacrimal gland was placed in acetone to the biochemical process for extracting and quantifying hyaluronic acid by fluorometric assay ELISA-like. The results were submitted to statistical analysis with significance level $\alpha<0.05$. The results showed by immunohistochemical analysis and the biochemical analysis revealed significant decrease on amount of hyaluronic acid. These results suggest that hyperprolactinaemia contributes to ocular dryness and it may lead to dry eye.

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Clusterin/ApoJ: How glycosylation modulates the function of this apolipoprotein

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Clusterin (CLU), also known as Apolipoprotein J (ApoJ) is a highly glycosylated extracellular chaperone. In humans it is expressed in a broad spectrum of tissues and related to a plethora of pathophysiological processes such as M. Alzheimer, atherosclerosis and cancer where the protein exerts a cytoprotective role. In its dominant form it is expressed as a secretory protein (sCLU) which during maturation is N-glycosylated and cleaved intra-cellularly in to α- and a β-chain connected by five symmetrical disulfide bonds. In early studies we examined the role of the carbohydrate moieties in the vectorial secretion of ApoJ at the apical surface of polarized epithelial cells. If N-glycosylation is inhibited by tunicamycin treatment the protein is secreted in equal amounts at both cell surfaces demonstrating that the carbohydrates are dispensible for the acquisition of a transport competent conformation, however indicating a role of the carbohydrate moieties in the vectorial transport of this protein. Recently, it has been demonstrated that besides the predominant sCLU, rare intracellular CLU forms are expressed in stressed cells. Since these isoforms do not enter nor complete the secretory pathway, they display either no or only core glycosylation and are not proteolytically processed. Due to their sparsity, these intracellular forms are functionally poorly characterized. To evaluate the functions of these stress-induced intracellular forms, we first examined whether these isoforms display chaperone activity then investigate the impact of glycosylation and proteolytic maturation on this activity.

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