

Comparative study of 2 models of induction of Hypoxia in squamous cell oral carcinoma cells, evaluating morphological, protein and metabolic changes

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Resume

Objetives. We will evaluate the morphological, protein and metabolic changes presented in oral squamous cell carcinoma.

Methods. We used the method of chemical hypoxia induced by cobalt chloride (CoCl₂) and the model of hypoxia induced by coverslips. The cell lines used are: HaCaT, CAL27, SCC9 and SCC25. We have 3 experimental groups for each cell line: Control group (normoxia), CoCl₂ Group and hypoxia induced by the coverslip. Analyses are performed after 24h of hypoxia. The morphological changes evaluated by microscopic analysis include dynamic behaviors of extension, retraction and protrusions, membrane undulations, formation of lamelolipodia. In addition, levels of labeling of hypoxia-associated protein (HIF-1 α) by immunocytochemistry, lipid droplets by the Nile Red marker, and oxidative stress are evaluated by the ROS tracker probe.

Preliminary results. Both models induce changes in cell morphology in 2 COCE cell lines (CAL27 and SCC9) by inducing hypoxia for 24 hours. In addition, the formation of lipid droplets was observed in both situations. However, this effect was more evident in the coverslip method compared to the CoCl₂ method. Regarding the marking of HIF-1 α in the two models, nuclear signal is detected.

Conclusions. Our preliminary results suggest that coverslip-induced hypoxia and CoCl₂ are suitable models for characterizing physiological changes to better understand how oral carcinoma cells respond and adapt to hypoxia.

Key words. Tumor microenvironment, HIF 1, cobald chloride hypoxia, variant of coverslip hypoxia

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