

Hypoxia induces Galectin-3 and Bcl-2 over-expression in human umbilical vein endothelial cells (HUVECs)

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Angiogenesis, the growth of new blood vessels from pre-existing endothelium, is a critical phenomenon occurring during development and tissue regeneration. In pathological conditions such as inflammation and malignancies, hypoxia represent one of the most important driver of angiogenesis, mainly via the release of nitric oxide [1]. Here we investigate the behavior of human umbilical vein endothelial cells (HUVECs) treated with 100 mM CoCl₂ for 24 hours, a condition mimicking hypoxia by the stabilization of HIF-1 α and HIF-2 α [2,3]. MTT and wound healing assays were performed to evaluate cell migration and proliferation, respectively, while Bcl-2 and Galectin-3 expression levels were analyzed by western blotting. We showed that hypoxic condition resulted in reduced proliferation and migration with increased expression of Galectin-3 and Bcl-2. These preliminary results provide new insights in the characterization of Galectin-3/Bcl-2 interplay in endothelial cell survival under hypoxic condition, and will contribute to a better understanding of hypoxia influences on tumor angiogenesis.

References

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Keywords

HUVEC; hypoxia; Galectin-3; Bcl-2.