

S.09- evaluation of the antiangiogenic activity of zinc in renal adenocarcinoma in a hypoxic microenvironment

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Renal cancer is a common urologic malignancy, and therapeutic options for metastatic disease are limited. Most clear cell renal cell carcinomas (ccRCC) are associated with loss of Von Hippel-Lindau tumor suppressor (VHL) function and deregulation of hypoxia pathways. This deregulation induces angiogenesis, promoting tumor growth and metastasis. Vascular endothelial growth factor (VEGF), a pro-angiogenic factor, is overexpressed in ccRCC, contributing to its aggressive nature. Zinc (Zn), an essential micronutrient, has garnered attention for its potential in cancer therapy. While Zn deficiency increases cancer risk, Zn supplementation exhibits anticancer effects, inhibiting proliferation and migration of some types of cancer. However, conflicting evidence regarding Zn's association with RCC necessitates further research to elucidate its role in renal carcinogenesis. This study aimed to evaluate the effect of Zinc Chloride on angiogenesis regulator genes in ccRCC under normoxic and hypoxic conditions. The MTS (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium-bromide) assay was used to define cell viability of different Zn concentrations on ccRCC cells. The expression of HIF-1 α and VEGF- α genes from the 786-0, 786-0 + Zn, 786-0 hypoxia and 786-0 hypoxia + Zn samples was evaluated by RT-qPCR and Western blot. Cell viability assays demonstrated that 100mM of Zn on ccRCC cells showed a significant inhibitory effect. Gene expression analysis by RT-qPCR comparing 786-0 with and without Zn supplementation, under normoxia and hypoxia conditions, showed decreased levels of HIF-1 α - $73.75 \pm 20.32\%$ ($P < 0.001$ vs. 786-0); $67.99 \pm 4.26\%$ ($P < 0.001$ vs. 786-0 hypoxia) and VEGF- α - $60.72 \pm 17.58\%$ ($P < 0.05$ vs. 786-0); $56.62 \pm 8.07\%$ ($P < 0.05$ vs. 786-0 hypoxia). Western Blot data corroborated the RT-qPCR results. Zinc Chloride demonstrates an antiangiogenic potential in ccRCC cells. Additional experiments are going to be done to comprehensively understand the pathophysiological mechanisms of Zinc Chloride as a novel treatment for ccRCC. Keywords: Angiogenesis, Cancer, Zinc

S.10- Epigenetic alterations in *Aedes fluviatilis* embryonic cells in the absence of *Wolbachia pipientis*

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The *Aedes fluviatilis* is a mosquito found in South and Central America and its a possible vector of Chikungunya virus (CHICKV). An important characteristic of this insect is its natural hosting of *Wolbachia pipientis*, an intracellular bacterium found in a wide range of arthropods, being mostly known for altering host reproduction through mechanisms like parthenogenesis, feminization, male lethality, and cytoplasmic incompatibility. In previous studies of our group, there were established *Aedes fluviatilis* embryo cell lines with and without the *Wolbachia pipientis*. In the same study, it was noticed differences in cell growth, energy sources and immunity between the two cell types. In this way, is clear that this bacteria can cause a lot of changes in the host, however, the information about epigenetic alterations, which means changes on gene expression without altering DNA sequence, caused by this bacteria is limited. Based on that, this project aims to analyze the activity of histone modification and RNA alteration, two important epigenetics markers, on *Aedes fluviatilis* cells with and without *Wolbachia pipientis*. For that, we have used the qPCR technique to compare the expression of CBP, Gnc5 (histone acetyltransferases), EZH2 (histone methyltransferase), METTL3, METTL14 (RNA methyltransferase) and YTH (m6a binder). Also, we have analyzed the effect of a deacetylase inhibitor (sodium butyrate) on those cells. Preliminary results show that hyperacetylation induced by sodium butyrate reduces the viability of cells with the bacteria starting with concentrations of 0,5mM. With this study, it is expected to better understand the impacts of *Wolbachia pipientis* on its host. Keywords: *Aedes fluviatilis*, Epigenetics, *Wolbachia pipientis*