The Role of Translationally Controlled Tumor Protein in Murine Melanoma
(B16-F1 E B16-F10)


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Introduction: The TCTP (Translationally Controlled Tumor Protein) is widely expressed in various tissues and organisms, which points to a fundamental role in signaling or biochemical pathways. Different studies have already established their involvement in the regulation of cell cycle and proliferation, as well as in malignancy and as protector factor against stress and apoptosis. The aim was to evaluate the role of TCTP in murine melanoma (B16-F1 and B16-F10).

Material and Methods: For this purpose, we used antibodies that recognize TCTP protein for immunodetection in melanoma cellular extracts. In order to evaluate the expression pattern of the TPT1 gene, total RNA and mRNA was obtained to perform PCR and relative quantification by real-time PCR assays. GAPDH gene was used as endogenous control, samples and primers standardizing. Results and Discussion: In immunoblots we identified the presence of TCTP in extracts. B16-F1 showed less intensity of protein bands than B16-F10, suggesting a higher expression level of TCTP in B16-F10 cell line. In the same way, we performed PCR and qPCR using specific primers for murine TCTP. We observed greater intensity in the band for the cDNA of strain B16-F10. It has been demonstrated that greater TCTP expression in tumor cell lines results in increase of malignancy and tumor invasiveness. The expression of TCTP in B16-F1 may help explain its lower motility in vitro, therefore its low metastatic potential, while B16-F10 strain is highly metastatic. Conclusion: TCTP could be a tool in studies for determination of melanoma aggressiveness, as a tumor marker. Furthermore, advances in the knowledge of TCTP functions may suggest this molecule or molecular partners as therapeutic targets for anticancer drugs design. Our perspective is applying the RNAi technology to study the function of TPT1 gene and TCTP protein influence in cellular dynamics of murine melanomas.

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