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Target therapy for bone metastatic prostate cancer with micro RNA145 inhibits tumor growth *in vivo*

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Background: The metastatic prostate cancer presents unfavorable, without cure and with high comorbid and low quality of life. Micro RNA (miRNA) is a class of non-coding RNA responsible for the expression control of at least 30% of human genes. Here we present the effects of treatment with miRNAs 145 in a pre-clinical model of disseminated bone metastatic prostate cancer.

Methods: The pre-clinical model was created by the intra-cardiac injection of the cell line containing luciferase gene PC3-Luc-C6 in nude mice (Balb/c). Tumor growth was evaluated with *in vivo* bioluminescence (IVIS). After the full establishment of the bone metastasis at day 21 we treated the animals with three tail vein injections. They were analyzed weekly until day 48.

Results: The model of bone metastatic prostate cancer was well stablished with diffuse metastasis on day 21. We treated the animal intravenously with the microRNA conjugated with atelocollagen on days 21, 24 and 27. Immediately in a period of one week after the treatment the tumor stops to grow and reduces the activity. After this temporally tumor suppressor action, the tumors starts to grow again.

Conclusion: In animals with diffuse metastatic disease, the treatment with mir145 leads to a temporally response due to a fast degradation of these microRNAs and to cancer cells mechanisms of scape and resistance. Further studies with this purpose and design will permit the development of novel target drugs based on microRNAs for suppressing the metastatic prostate cancer growth.

Biography

Alexandre Iscaife graduated in medicine by Medical School of the State University of Campinas - FCM / UNICAMP, residency in General Surgery and Urology by the Paulista Medical School - EPM / UNIFESP. As an undergraduate the focus of research was experimental and angiogenesis surgery. He is currently attending physician of prostate sector of the Division of Urology, Faculty of Medicine, USP (USP) and researcher at the Urology Laboratory (LIM55) - USP where investigates molecular target treatment pathways and experimental models of prostate cancer. Has experience in the area of urology, with emphasis on Prostatic Hyperplasia, Oncology and Endourology.

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