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MAIN FIELDS OF RESEARCH; ABSTRACT

The biological relevance of miRNAs in chondrosarcoma progression

Chondrosarcoma (CS) is a rare form of cancer and the second most frequent bone sarcoma. Chondrogenic tumors are known for being non-responsive to chemotherapy and radiotherapy, leaving surgical resection as the cornerstone treatment. Unfortunately, when tumors metastasize, patients have a poor prognosis (5-year survival rate <10%–25%). Thus, the main focus needs to be on the identification of diagnostic and prognostic biomarkers with pivotal roles in the metastatic process and potential for drug targeting, which will consequently improve the outcome of CS patients. microRNAs (miRNAs) were already shown to have therapeutic, as well as diagnostic/prognostic potential in several sarcomas. With a focus on circulating tumor-derived regulatory molecules as non-invasive biomarkers, our group recently started to investigate miRNAs in different types of sarcoma, with special emphasis in CS and osteosarcoma (OS). Thus, we are interested in identifying and understanding the biological role of miRNAs that are aberrantly regulated in CS. For that, we performed a sequencing study of smallRNAs in a clinical panel of chondrogenic tumor samples and we are currently studying the contribution of the selected deregulated miRNAs in CS progression, both *in vitro* and *in vivo*. In addition, I am working in the identification of the genes which are directly targeted by the chosen miRNA and in understanding their biological and therapeutic value in CS.

SPECIAL TECHNIQUES AND EQUIPMENT

RNA NEXT-GEN SEQUENCING / MIRNA TRANSCRIPTOMIC ANALYSIS / MURINE ORTHOTOPIC XENOGRAFT MODELS