



MÁSTER EN INVESTIGACIÓN BIOMÉDICA
Research Project Proposal
Academic year 2026-2027

Project Nº 03

Title: *Exploiting neutrophils for adoptive cell immunotherapy in cancer metastasis*

Department/ Laboratory *Dinámica de la respuesta inmunitaria antitumoral*

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Summary: *Tumor metastasis rather than local primary tumor growth is the most frequent event leading to the death of cancer patients. Metastasis in cancer are characterized to be highly enriched in infiltrating neutrophils that mostly promote local immunosuppression, contributing to metastasis resistance to immunotherapy. Recent findings have shown that neutrophils, believed to be cells with very low plasticity, show different transcriptomic states ranging from immunostimulating to immunosuppressive responses. Likewise, recent findings have shown that in certain immunotherapies, neutrophils shift from protumor to antitumor and that they are required for effective antitumor responses. This project aims to understand if neutrophils can be stimulated ex vivo to acquire antitumor features, if adoptive transfer of such neutrophils allows efficient targeting of the metastatic site and antitumor effects. Using mouse neutrophil cell lines profoundly mimicking neutrophil biology, confocal microscopy and in vivo therapeutic settings the project will look for the potential exploitation of neutrophils in cancer as a metastasis specific therapy.*

yes	X
no	

Does the project include the possibility of supervised animal manipulation to complete the training for animal manipulator?