



Research Project Proposal

Academic year 2022-2023

Project Nº 54 ASIGNADO

Title: *Improving the efficacy of oncolytic viruses for the treatment of solid tumors*

Department/ Laboratory *Laboratory of Biological Therapies for Pediatric Solid Tumors*

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Summary

Atypical teratoid/rhabdoid tumors (AT/RT) and central nervous system primitive neuroectodermal tumors (CNS-PNET) are pediatric brain tumors with poor survival and life-long negative side effects. The goal of this TFM is to evaluate the efficacy and mechanism of action of the oncolytic adenovirus Delta-24-ACT, which was engineered to express the costimulatory ligand 4-1BBL to potentiate the antitumor immune response of the virus, in AT/RT and CNS models. We will characterize Delta-24-ACT determinants for infection and replication in a panel of AT/RT and PNETs cell lines. Viral replication and cytotoxicity will be assessed *in vitro* in a battery of CNS-PNET and AT/RT cell lines. *In vivo*, efficacy will be determined in different orthotopic mouse models, including early and established tumor models, and a disseminated AT/RT lesion model. Additionally, several tools will be developed in the context of this TFM such as bioluminescence cell lines and metastatic cell lines that will be used in the experimental work. At the end of this work the student will be familiar with pediatric brain tumors, oncolytic viruses and immunotherapy.

yes	X
no	

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