Propuesta de Trabajo Fin de Máster
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MÁSTER EN MÉTODOS COMPUTACIONALES EN CIENCIAS

Proyecto Nº 18
Título: **Computational Mechanistic based Modelling applied to the development of Oncolytic virus**
Departamento/ Laboratorio: Tecnología y Químicas Farmacéuticas; Facultad de Farmacia y Nutrición
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Resumen: Over the past two decades, oncolytic viral therapy (OVT) has received a growing interest as a novel class of immunotherapy agents for cancer treatment. Although not completely understood, the mechanism of action of oncolytic viruses (OV) relies in their ability to selectively infect and replicate in cancer cells, thus triggering a direct lytic effect on infected tumor cells as well as inducing a systemic anti-tumor immunity which ultimately lead to tumor regression. To further support the clinical development of this therapeutic strategy, we need a better understanding of the physical and biological barriers affecting OV exposure after its administration, as well as a characterization of the relationship between exposure and the pharmacological effects.   In this regard, computational mechanistic modelling can provide quantitative understanding of the key processes governing OV disposition, distribution to target site and subsequent pharmacological response. These models also provide a platform to explore *in silico* a wide range of hypothesis and biological scenarios, otherwise impractical to accomplish from an experimental point of view, to further guide drug development and clinical use.   Therefore the objective of this work is to develop a computational model based on mechanistic principles leveraging data already publicly available gathered from either from pre-clinical (in vitro, animal in vivo studies) and clinical trials. The analyses will be performed using the Non-Linear Mixed effects approach with the softwares NONMEM and/or Monolix.

OPTATIVAS RECOMENDADAS   1.   2.   3.