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Research Project Proposal
Academic year 2020-2021

Máster en Investigación Biomédica

Project Nº 42 ASIGNADO
Title: Characterization of the role of DYSTYK, a dual serine/threonine tyrosine kinase and in non-small cell lung cancer.

Department/ Laboratory *Laboratorio de biomarcadores, Programa de tumores sólidos. CIMA.*

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Summary

The present proposal deals with one of the unmet needs in early lung cancer patient management: the identification of new druggable driving molecular alterations in early tumors for which other targetable mutations are not found. Many NSCLC patients cannot benefit yet either from molecular targeted or immune related therapies. There is a need for finding new targetable driver genetic alterations.

A thorough analysis of the lung cancer cases included in the TCGA database shows significant amplification of Dual serine/threonine and tyrosine protein kinase (DSTYK) in more than 30% of lung ADC and about 18% of lung SCC patients. DSTYK is a cytoplasmic non-receptor kinase which has been associated to FGFR signaling and ERK pathway activation. We hypothesize that inhibition of DSTYK might be a new management option in the adjuvant or more advanced settings of the subpopulation of NSCLC amplified patients.

We have recently generated relevant preliminary data showing that inhibition of DSTYK has significant tumor growth effects in preclinical models. In the present project, we will analyze the tumor driving properties of DSTYK and perform experiments to confirm these preclinical findings. We will also generate data, which could help to develop specific small molecule inhibitors.

For this purpose, we will use different approaches. We will use syngeneic mouse models generated in our laboratory and a plethora of in vitro assays to assess the tumorigenic effects of DSTYK.

yes	**X**	**Does the project include the possibility of supervised animal manipulation to complete the training for animal manipulator?**
no		