



Research Project Proposal
Academic year 2019-2020

Project Nº 15					
Title: <i>Treatment of hepatocellular carcinoma by targeting the non-coding genome</i>					
Department/ Laboratory Gene therapy department / Lab 406 / CIMA					
Director 1 <i>Puri Fortes</i> Contact: <i>pfortes@unav.es</i> Codirector: <i>Name and surname of the codirector</i> Contact: <i>Contact e-mail</i>					
Summary <i>Short summary of the project with a maximum extension of 250 words, including the goals and the methodology that will be used.</i>					
<p>Hepatocellular carcinoma (HCC) is the third cause of cancer-related death in the world. New therapies that increase patient survival are an urgent medical need. Trying to develop personalized medicine for the treatment of HCC several studies have analysed tumor transcriptomes to identify driver genes. They have focused predominantly in the coding genome and have identified drivers such as TP53 or b-catenin, which are non-druggable. In our laboratory, we have identified a collection of long non-coding RNAs upregulated in HCC that associate with several clinical and genetic parameters, including worse prognosis. We believe that several of them will be essential for cell proliferation and could serve as tumor targets for the treatment of HCC.</p> <p>With this aim in mind, the Master student will work in close proximity with molecular biologists, medical doctors and bioinformatic experts. Guilt-by-association studies will be carried out to predict lncRNA function. In addition, to assess the therapeutic interest of our candidates, inhibition studies will be carried out. Gene silencing with the CRISPR-Cas system and/or inhibition with antisense oligonucleotides (ASOs) will be used. After inhibition, cell proliferation, cell cycle, apoptosis and senescence will be studied. Our ultimate goal is the clinical development of the ASOs for the treatment of specific patients with HCC.</p>					
<table border="1"> <tr> <td>yes</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>no</td> <td><input type="checkbox"/></td> </tr> </table>	yes	<input checked="" type="checkbox"/>	no	<input type="checkbox"/>	Does the project include the possibility of supervised animal manipulation to complete the training for animal manipulator?
yes	<input checked="" type="checkbox"/>				
no	<input type="checkbox"/>				