

**Research Project Proposal**  
Academic year 2017-2018

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| <b>Project Nº 15</b>   |
| <b>Title: A murine immune competent model of hepatocellular carcinoma to develop immunotherapeutic strategies</b>  |
| <b>Department/ Laboratory Laboratory of Experimental Immunology, Program of Immunology and Immunotherapy, Center for Applied Medical Research (CIMA).</b>  |
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| <p><b>Summary</b></p> <p>Cancer immunotherapy has obtained promising results, leading to the approval of checkpoint inhibiting antibodies for different tumors. However, there are still patients who do not respond to these therapies. Hepatocellular carcinoma (HCC) is the most relevant liver malignancy, with few therapeutic options. Due to the particular liver environment, anti-HCC immunotherapies should be developed in orthotopic models, as opposed to commonly used subcutaneous models. In the present project we propose to characterize an orthotopic HCC model induced by hydrodynamic administration of plasmids encoding oncogenes and antigens, in order to dissect their immunological features and use it next as a test bench for immunotherapies. The project includes the following. (i) set-up and optimization of the tumor model (plasmid and antigen administration) for tumor growth, (ii) immune characterization of tumor-bearing mice: characterization of different immune populations (antigen-specific effector lymphocytes, antigen presenting cells, immune suppressive cells, soluble mediators, etc), (iii) time-course studies to track immune changes over time, and (iv) analysis of the effect of different immunotherapies on tumor growth and on immune cell subsets. To accomplish these goals methodology will include plasmid preparation, handling and monitoring of tumor-bearing animals, immunological characterization (ELISPOT, ELISA, flow cytometry, cell proliferation, lytic assays).</p> <p><b>References</b> Llopiz D et al Oncoimmunology 2015; Llopiz D et al Oncotarget 2017</p> |