

Título del Proyecto	PHOTOACTIVABLE NANOPARTICLES TO IMMUNOSTIMULATE THE TUMOUR MICROENVIRONMENT IN PANCREATIC CANCER
Nº de expediente asignado	AC18/00107
Abstract	<p>There is a pressing medical need to develop innovative therapeutic approaches that improve the outcome and survival of pancreatic cancer patients. The development of immunotherapies has represented a breakthrough that has revolutionized oncology treatments, but with little effect in pancreatic tumors since they are considered non-immunogenic tumors or with a tolerogenic/ immunosuppressive tumor microenvironment (TME). Turning pancreatic tumors to immunogenic could open new avenues making them candidates for immunotherapies. This can be achieved by integrating techniques from two Key Enabling Technologies (KETs), nanotechnology and photonics.</p> <p>Nanoparticles have shown preferential accumulation in tumor sites through (i) the enhanced permeability and retention effect (EPR), and (ii) the receptor-mediated internalization when they are opportunely functionalized with specific ligands. Moreover, nanoparticles can also be designed to penetrate into the tumor stroma, interact with both tumor pancreatic cancer cells and cells of the TME, and efficiently release their cargo at the targeted site allowing to achieve a particular therapeutic response.</p> <p>We propose the development of photoactivable nanoemulsions composted by bioactive sphingolipids for a dual action aimed to increase the immunogenicity of pancreatic tumors by i) reverting the tolerogenic/immunosuppressive tumor microenvironment of pancreatic cancer by modulating the phenotype of tumor associated immune cells</p>

	(e.g. tumor-associated macrophages), and ii) mediating the infiltration of T effector lymphocytes (Teff), to reset the immunogenicity of pancreatic tumors, and make them candidates for the development of combinatory therapies with checkpoint inhibitors and/or other immune therapies such as bispecific antibodies
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	  <p style="text-align: center;"><i>"Una manera de hacer Europa"</i></p>

Enlaces:

<http://euronanomed.net/>

<http://euronanomed.net/wp-content/uploads/2019/04/2018-PANIPAC.pdf>

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