This project is funding by "European innovative research & technological development projects in nanomedicine"

VISION

The Era-NET Euronanomed III project PANIPAC combines innovative approaches in the field of nanomedicine to provide solutions to a clinical demand, the need for new and novel innovative therapeutic approaches to improve the outcome and survival of Pancreatic ductal adenocarcinoma (PDAC) patients, currently the 4th leading cause of cancer-related death world-wide. Despite the fact that significant improvements in other types of tumours have been seen in the last years due to advances in immunotherapy, life expectancy after diagnosis of PDAC continues to be the lowest. To date immunotherapy is not a realistic treatment option for PDAC due to its inherent immunosuppressive microenvironment. T**urning pancreatic tumors into immunogenic tumors** could open new treatment avenues making them candidates for immunotherapies. This exciting and novel project encompasses multidisciplinary and translational research aiming to develop innovative nanosystems for PDAC.

OBJECTIVE

PANIPAC project aims to generate an impact in the treatment of pancreatic cancer, making use of the evidences of immunological responses stimulated by Photodynamic therapy (PDT) treatment, enhanced by appropriate nanoparticles (NPs).

We propose the development of Nanoparticles Activated by Light (NALs), composed of bioactive lipids and able to penetrate and accumulate in pancreatic tumors, to induce a controlled inflammatory reaction in the tumour microenvironment of PDAC and reset the immunogenicity for an improved response to immunotherapies.

IMPACT

To date, little advancement has been made to improve the overall survival of patients with PDAC. Understanding that the majority of PDAC patients are diagnosed at an advanced stage when metastases are present at multiple secondary organ sites, what is desperately needed are new, more aggressive, and radical therapeutic options to combat this cancer.

Our ambition is to provide a technological solution that allows pancreatic cancer patients benefiting from immunotherapeutics, and ultimately increasing their life expectancy after diagnosis. This project displays a high innovation potential based on our transdisciplinary patient-oriented research approach, by pulling together all the assets (samples, models, technology, and preclinical and clinical expertise) required to conduct this ambitious and unique initiative.

Since traditional chemotherapeutics have failed and immunotherapy has so far no proven to be effective in PDAC, if successful, our novel proposal has the potential to make an enormous socio-economic impact on how we treat this disease.

CONSORTIUM

The PANIPAC consortium consists of 5 partners from 3 European countries comprising 2 universities, 2 research organizations, and 1 SMEs, all of them with a recognise expertise and high track-record in their specific research fields.