**DOTTORATO DI RICERCA IN BIOLOGIA CELLULARE E DELLO SVILUPPO**

**39 CYCLE**

**Project proposal for a Sapienza PhD scholarship**

**PNRR ex-DM118 research line**

**Title: Exploiting computational models toward personalised therapeutic strategies in Pancreatic ductal adenocarcinoma**

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**Description(1000 characters)**

This PhD project will attempt to tackle PNRR ‘Health cluster’ objectives of achieving innovative, sustainable, cost-effective and people-centered solutions in health care. To this general scope we will take advantage of SignalingProfiler to propose a novel, interdisciplinary approach to identify personalized anticancer treatments, according to the patient-specific proteogenomic profile. The project will focus on pancreatic adenocarcinoma (PDAC), whichremains one of the deadliest of all cancer types and will exploit publicly-available multi-omics and single-cell datasets from large cohorts of patients, to computationally dissect, at the system level, the intra-cellular and inter-cellular mechanisms that favor the establishment of a fibrotic barrier that protects the PDAC and make it untreatable.We will explore how the individual patient molecular background contributes to the homeostasis of these processes to accelerate the identification of novel personalized therapeutic strategies.

**References**

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**Pertinent Publications of the proponent (last 5 years)**

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2. Lo Surdo P, Iannuccelli M, Contino S, Castagnoli L, Licata L, Cesareni G, et al. SIGNOR 3.0, the SIGnaling network open resource 3.0: 2022 update. Nucleic Acids Res. 2022 Oct 16;gkac883.

3. Palma A, Cerquone Perpetuini A, Ferrentino F, Fuoco C, Gargioli C, Giuliani G, et al. Myo-REG: A Portal for Signaling Interactions in Muscle Regeneration. Front Physiol. 2019;10:1216.