Pancreatic be done as a master thesis project

Technology, Development

Pancreatic cancer is a highly lethal malignancy with increasedincidence by 1, 23 fold in the last 6 years (2010-2016)(1, 2) with survival rate less than 10% (1), number of pancreatic cancer deaths is estimated to overpass Colorectal andbreast cancer deaths by the year 2030 (3). Therefore; Emerged the urgent needfor new treatment approaches and also pre-clinical validation tools for such a breakthrough. A system modellingthe development and biology of pancreatic carcinoma is needed, multiple methodshave been tested and all led to valuable clinical insights: Monolayer celllines(4), Genetically engineered murine model(5) , Xenograft(6) and three dimensional cultures (7). Recently Organotypic models have been introduced as systemreplicating the complex 3D organization of Pancreatic adenocarcinoma(PDA) usingMatrigel (8, 9). However, only limited trials tointerrogate therapeutic approaches using Pancreatic organoids(10) compared to comprehensive model of Intestinaland colonic organoids(11). We propose to investigate retrospectively the ability of pancreaticorganoid model to predict therapeutic outcome using survival assays: gamma H2ax, Apoptosis and Colony forming assay (CFA) to detect Patients radiation resistanceand correlate it to the available clinical outcome dataset of organoids sourcepatients as we hypotheses that tested Pancreatic organoid radiation therapy sensitivity/resistancewill have a good correlation to actual tumour response/progression.

If such a studywere successful for Pancreatic cancer, then a prospective trial should follow onthe way to identify the personalized optimal treatment. The Proposed work will be done as a master thesis project for6 months (May-November 2018) and targeting to test 10-22 patient’s organoids samplein a

cooperation with Internal medicine department, Klinikum rechts der Isar, TechnicalUniversity of Munich where a living Organoids Bio Bank from Pancreatic cancer patientis already established using fine needle aspirations (FNS) or resectedpancreatic tissue and is planned to be a part of academic research paper.