



RESEARCH TOPIC MECM_33

Identification of tissue signatures to predict and intercept the malignant evolution of intraductal papillary mucinous neoplasms (IPMNs)

Curriculum

MECM Standard

Research Area

Gastro - Onco

Laboratory name

Plasticity, Fibrosis and Cancer Lab

Research Supervisor

Dr. Sara Lovisa sara.lovisa@hunimed.eu

Dr. Gennaro Nappo gennaro.nappo@hunimed.eu

Abstract

Intraductal papillary mucinous neoplasms (IPMNs) are precursor lesions of pancreatic cancer, identifiable as cystic lesions, progressing from low-grade to high grade dysplasia, and eventually to invasive carcinoma. The currently used consensus guidelines for the clinical management of IPMNs do not allow to precisely discriminate benign and malignant cysts nor to predict the evolution of these lesions. The aim of this project is to identify a histological signature of malignant progression to be employed for risk prediction and improved patient surveillance. To this purpose, the candidate will conduct an extensive histopathological profiling of human IPMN evolution by integrated spatially-defined reconstruction of tissue architecture, multi-omics investigation of cellular and soluble components, and correlation with the currently employed imaging, biochemical and clinical assessments in order to identify new markers predicting malignant degeneration.

Main technical approaches

Cellular and molecular biology, histology, single-cell omics, handling and processing of human samples

Scientific references

1. Gonda et al. N Engl J Med 2024 [PMID: 39231345]
2. Ohtsuka et al. Pancreatology 2024 [PMID: 38182527]
3. Erreni et al. Front Immunol [PMID: 39575252]
4. Toninelli et al. Trends Cancer 2023 [PMID: 37673713]



Type of contract

Scholarship of € 24.500 gross per year awarded by Istituto Clinico Humanitas. This sum is subject to IRPEF income tax and exempt from social security contributions.

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