

Project Highlight: **Hi-ROC**

Targeting hypoxia with heavy
ions to gain control of
radioresistant cancers

Joint Transnational Call for Proposals (2024)

Identification or Validation of Targets for
Personalised Medicine Approaches (PMTargets)



EP PerMed

European Partnership
for **Personalised Medicine**

Swipe to learn more



Hypoxia is a key driver of resistance to photon radiotherapy (RT) in solid cancers. Given carbon ion RT's superior efficacy in hypoxic tumors, it is emerging as a pivotal approach.

The **HI-ROC project** aims to develop a non-invasive biomarker/signature to identify hypoxia for treatment selection. We will use genetic, transcriptomic, microbiota, cellular, and imaging features of patients with unresectable locally advanced lung cancer, high-risk head and neck cancer, and soft tissue sarcoma treated with photon RT. The biomarker will guide future trials and the development a beta prototype for an in vitro device to detect clinically relevant hypoxia.

Coordinator



COUNTRY:
Italy



PRINCIPAL INVESTIGATOR:
Ester Orlandi

ORGANISATION:
Centro Nazionale di
Adroterapia Oncologica

FUNDED BY:
Fondazione Regionale
per la Ricerca (FRRB)

Other partners

COUNTRY:
France



PRINCIPAL INVESTIGATOR:
Sandrine Pereira

ORGANISATION:
Neolys Diagnostics

FUNDED BY:
French National Research
Agency (ANR)

COUNTRY:
Germany



PRINCIPAL INVESTIGATOR:
Andrea Mairani

ORGANISATION:
Heidelberg University Hospital

FUNDED BY:
Federal Ministry of Education
and Research (BMBF)

COUNTRY:
Italy



PRINCIPAL INVESTIGATOR:
Paolo Zunino

ORGANISATION:
Politecnico di Milano

FUNDED BY:
Ministero dell'università e della
ricerca (MUR)

COUNTRY:

Italy

**PRINCIPAL INVESTIGATOR:**

Tiziana Rancati

ORGANISATION:

Fondazione IRCCS Istituto
Nazionale dei Tumori di Milano

FUNDED BY:

Fondazione Regionale per la
Ricerca (FRRB))

COUNTRY:

Netherlands

**PRINCIPAL INVESTIGATOR:**

Andre Dekker

ORGANISATION:

Maastricht University

FUNDED BY:

The Netherlands Organisation
for Health Research and
Development (ZonMw)

COUNTRY:

Luxembourg

**PRINCIPAL INVESTIGATOR:**

Guillaume Vogin

ORGANISATION:

Luxembourg Institute of
Health

FUNDED BY:

National Research Fund
(FNR)



EP PerMed

European Partnership
for **Personalised Medicine**



**Co-funded by
the European Union**

EP PerMed has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101137129.

www.eppermed.eu