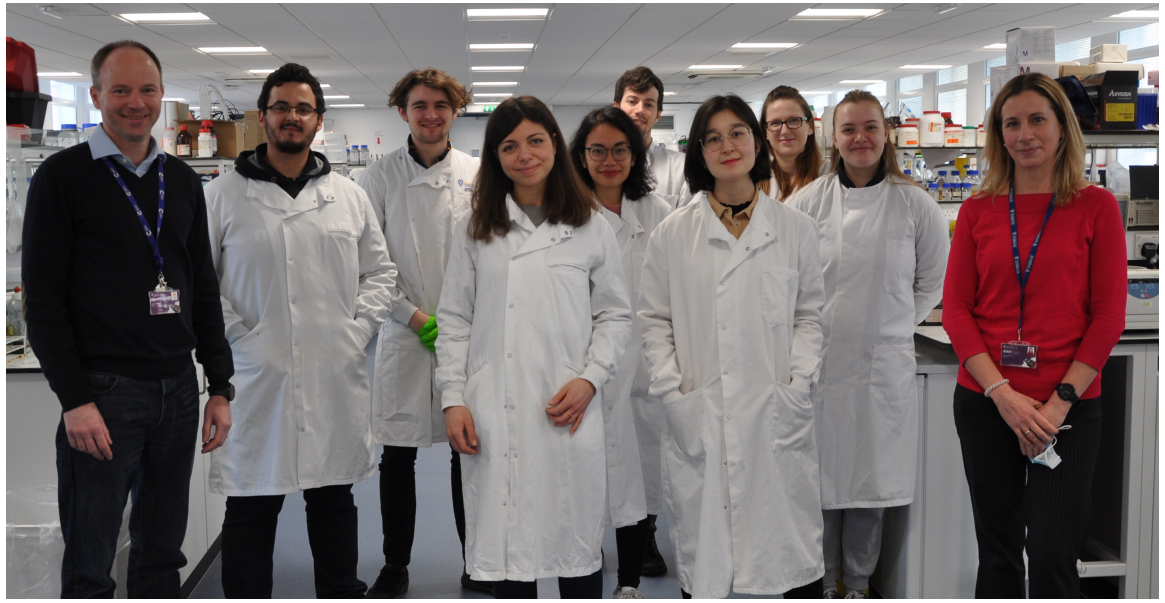
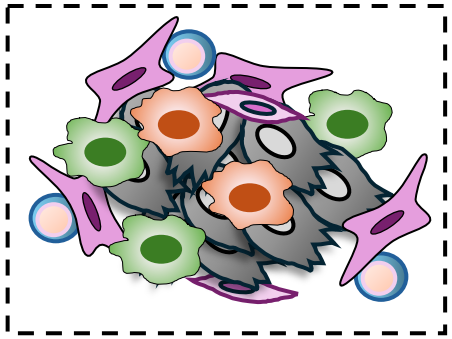
OUR RESEARCH INTERESTS & EXPERTISE

UNIVERSITY OF LIVERPOOL

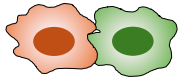
The Liverpool TME Team (2013 -)
Co-leads: Prof Ainhoa Mielgo & Prof Michael Schmid



Tumour microenvironment (TME)



Macrophages



Pancreatic cancer

- One of the most lethal cancer types
- Highly metastatic (main site = liver)
- Rich and immunosuppressive TME

Some of the biggest challenges in defeating cancer are influenced by the TME

METASTASIS

- *Astuti et al., Nature Cancer, 2024*
- *Raymant et al., Nat. Comms, 2024*
- *Luckett et al., Cancer Research, 2024*
- *Ireland et al., Frontiers in Immunol, 2020*
- *Nielsen et al., Nat. Cell. Biol, 2016*

IMMUNOSUPPRESSION

- *Abudula et al., British Journal of Cancer, 2025*
- *Freeman et al., Frontier in Immunol. 2024*
- *Quaranta et al., Cancer Research, 2018*
- *Figueiredo et al., Frontiers in Immunol. 2018*

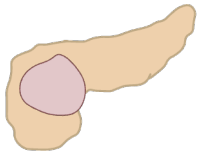
DRUG RESISTANCE

- *Bellomo et al., Gut, 2022*
- *Ireland et al., Oncogene, 2018*
- *Ireland et al., Cancer Research, 2016*

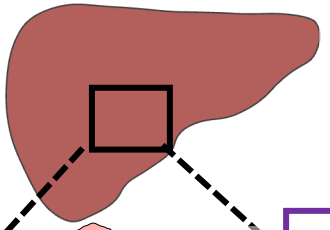
OUR MAIN GOAL & OUR RESOURCES

UNIVERSITY OF LIVERPOOL

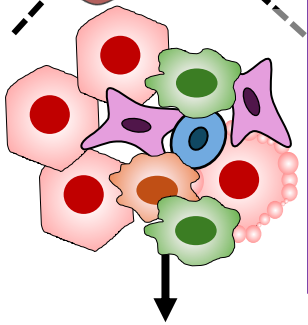
Primary PDAC tumour



Inter-organ communication



Pre-met liver



Changes in the liver
- **Biomarkers**
- **Therapeutic targets**
  to detect & prevent liver metastasis

Predisposition to liver metastasis

Effective collaborations with clinicians (NHS)

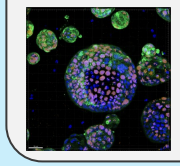
- Liverpool ECMC
- Clatterbridge centre
- Liverpool Royal Hospital

- *Surgeons*
- *Medical oncologists*
- *Pathologists*
- *Research nurses*
- *Statisticians*
- *Biobank managers*

Discovery Research
Biomarker & Target identification

Patient samples

Pre-clinical models

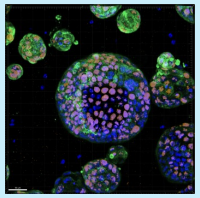


- *In vitro*
- *Ex-vivo*
- *In vivo*

bench ⟷ *bedside*

Research

Translational Research
Biomarker & Target validation



Interrogating samples with advanced technologies

- Transcriptomics
- Proteomics
- Metabolomics
- Flow/Mass cytometry
- Hyperion
- In vivo Imaging

HORIZON EUROPE
CURRENT & NEW PARTNERSHIPS

UNIVERSITY OF LIVERPOOL

Current Collaborators

Collaborators:
Jenn Morton (CRUK Scotland Institute)
Neil Henderson (University Edinburgh)
Owen Samson (CRUK Scotland Institute)
David Tuveson (CSHL, USA)
Michelle Binder (Florey Institute, Australia)
Mark Glenn (University of Liverpool)

NHS partners:
Daniel Palmer
Peter Szatmary
Paula Ghaneh
Chris Halloran
Susanne Burdak-R
Robert Jones

Liverpool Shared Research Facilities (LIV-SRF)

Research nurses, Patients & their families

Current Funders

CANCER RESEARCH UK

northwest cancer research

MRC Medical Research Council

Clatterbridge Cancer Charity

pancreatic cancer research fund

New partnerships we are looking for:

- **Experts in delivery systems to therapeutically target specific macrophages *in vi*tro and *in vivo***
- **Computational biologists for in depth omics data analysis**

Our capabilities align strongly with calls under **Horizon Europe Health**, and in particular with the **Cancer Mission**.

Cluster 1 Health

Redefining Medical Imaging with AI-Powered Innovation

TRIACK AI

TÜRKİYE

https://traick.ai/

Horizon Europe 2026-2027, Health Cluster, Cancer Mission
Brokerage event FR-UK, January 22, 2026

Medical Diagnosis with AI

Traick software utilizes advanced artificial intelligence and machine learning algorithms on ultrasound imaging data to support physicians and technologists in accurate and standardized diagnosis.

traick

REDEFINING MEDICAL IMAGING WITH AI-POWERED INNOVATION

TRIACK AI | TÜRKİYE

Track AI: A cloud-based clinical decision support platform analyzing thyroid and breast ultrasound images with ACR TIRADS/BIRADS, predicting radiologic and pathologic malignancy risk.

- Automated AI Scoring (ACR TIRADS/BIRADS)
- Fast, Standardized, Consistent Assessment
- Predict Malignancy Risk (Radiologic & Pathologic Data)
- Improve Diagnostic Accuracy & Reduce Variability
- Support Evidence-Based Decision-Making
- Enhance Early Detection & Patient Outcomes
- Ensure Scalability, Data Security, & Compliance

Horizon Europe 2026-2027, Health Cluster, Cancer Mission | Brokerage event FR-UK, January 22, 2026

FUTURE-PROOFING DIAGNOSTICS: OUR MULTI-ORGAN ROADMAP

CORE EXPERTISE

Development and Implementation of a Artificial Intelligence-Based Tirads Scoring Clinical Decision Support System for Differential Diagnosis of Thyroid Nodules.

Scaling from Thyroid & Breast (Soft Tissue) to full-body diagnostic orchestration.

NEAR-TERM HORIZON

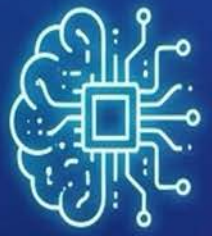
Expanding into Abdominal and Prostate imaging to cover high-volume screening needs.

LONG-TERM VISION

Integrated AI analysis for Neurological (Brain), Thoracic (Lung), and Musculoskeletal (Joints/Bones) clinical pathways.

GOAL: A SINGLE, UNIFIED AI ORCHESTRATION LAYER FOR ALL POINT-OF-CARE RADIOLOGICAL ASSESSMENTS

OUR EXPERTISE



AI & DATA SCIENCE MASTERY

Professional and Academic know-how on Data Science, Image Processing and Deep Learning.

EXTENSIVE HOSPITAL NETWORK

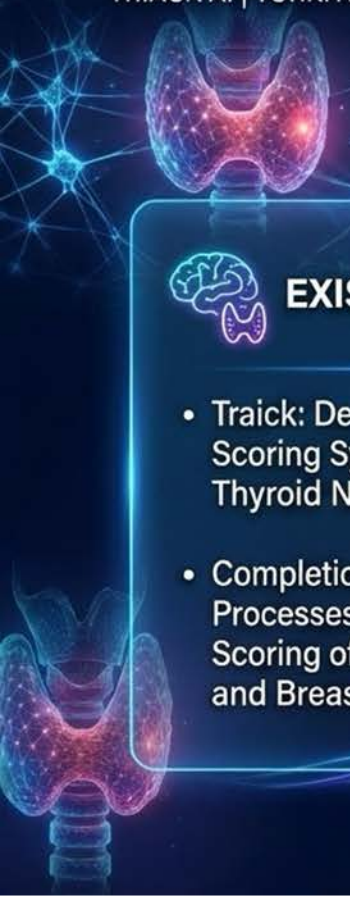
Strong network consists of Turkish hospitals for medical data gathering, labelling and digital Health solutions pivotting.

QUALIFIED ENGINEERING TEAM

10+ employee capacity qualified with engineering, artificial intelligence and software development for tailored projects.

Redefining Medical Imaging with AI-Powered Innovation

TRIACK AI | TÜRKİYE | https://traick.ai/ | Horizon Europe 2026-2027, Health Cluster, Cancer Mission | Brokerage event FR-UK, January 22, 2026



EXISTING LOCAL PROJECTS

- Traick: Development of an AI-Based TIRADS Scoring System for Differential Diagnosis of Thyroid Nodule
- Completion of Validation and Market Entry Processes of AI Algorithms for Detection and Scoring of Nodules in Handheld Thyroid and Breast Ultrasound Images

EXISTING INTERNATIONAL PROJECTS

- ITEA4: MIRAI-MDT
- Next-Generation AI-Enhanced Radiology and Clinical Intelligence for Oncology MDT, FFP submission Phase

TRIACK AI

Potential Needs of Additional Partners

HIS, RIS, PACS Integration Partners

Compliance and Regulation Tech Experts

Hospitals/Research Centers for medical data gathering, labelling and digital Health solutions pivoting.

Artificial intelligence and software development partners.

TRAICK AI

THANK YOU FOR YOUR ATTENTION

LET'S CONNECT

info@traick.ai

burcu@traick.ai

https://traick.ai/

Making every move count

An introduction to Medicines Discovery Catapult

Dr Ahmed El-Rayis
Business Development Manager (UK and Europe)
Medicines Discovery Catapult
Ahmed.el-rayis@md.catapult.org.uk
Website: md.catapult.org.uk

CATAPULT Medicines Discovery

What else you need to know about us

Not-for-profit, commercially driven.

140+ exceptional people.

Based at **Alderley Park**, UK.

We reinvest in the **Life Sciences sector**.

Co-funded by **industry and government**.

Part of the **Innovate UK Catapult Network**.

An introduction to Medicines Discovery Catapult

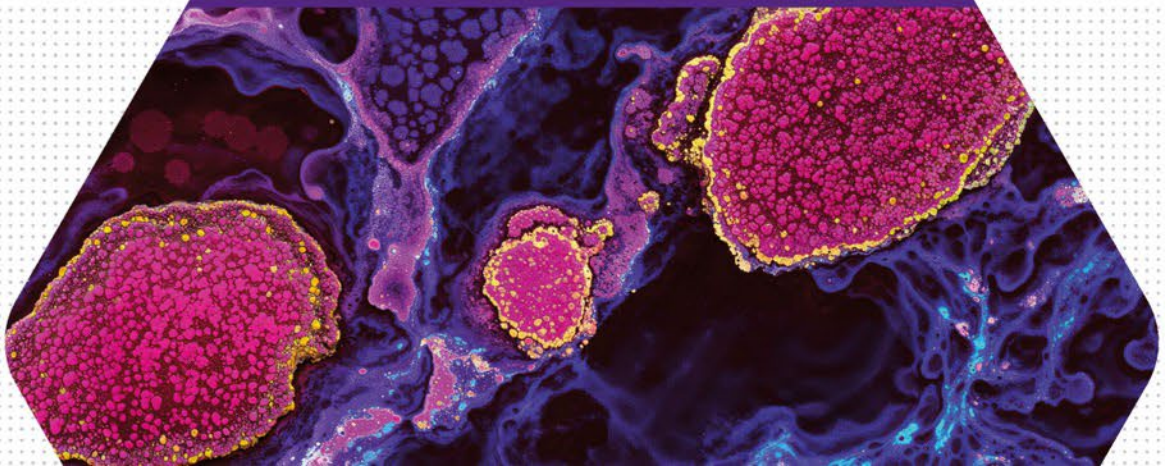
Oncology

Neuroscience

Our therapeutic areas

Immunology

Infectious Disease



MDC - Integrated Biology to deliver a bespoke solution

In vitro biology | In vivo biology | Clinical biology

Translational Biology Platforms

Future direction - back translation: taking learnings from the clinic back to basic biology to validate / build better models

- *in vitro* molecular tools and advanced microscopy for superior understanding of target & drug
- Interaction between therapeutic and target
- CPSA – TE assay for small molecule protein stabilisation

- Evaluating drug mechanism of action in complex multi-cell cultures (primary and iPSC)
- Phenotypic analysis specific to disease biology
- Biomarker analysis in assays
- Bespoke assay design for therapeutic mechanism
- Medium throughput analysis

- Biodistribution
- Multiple imaging modalities
- Radiochemistry
- Efficacy studies
- Labelling cells / therapeutic
- *Ex vivo* tissue, cell and blood/serum analysis
- Biomarker and cellular phenotyping

- Analysis of phenotypic response *ex vivo* in patient samples
- Evaluation of biomarkers in clinical samples
- Evaluation of cell phenotypes in blood and tissue
- Patient stratification and evaluation of exploratory biomarkers

Where required patient sample sourcing, Virtual R&D and bioinformatics support

CATAPULT Medicines Discovery

Biomarkers

Our expertise includes:

Application of advanced analytical technologies to identify novel biomarkers and drug responses.

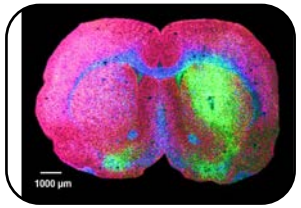
Design of bespoke biomarker strategies and assays, delivering data to accelerate drug development.

Analysis to unlock insights from complex datasets, enhancing clinical translation and bringing innovative therapies to patients faster.

Biomarkers – Application of Targeted and Untargeted Methods for Clinical Utility

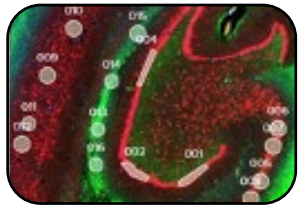
- Aim – Bespoke and multi-modal biomarker analysis for a deeper understanding of drugs and disease to ensure better translation into the clinic.
- Developed and validated assays can be run to GCLP to allow clinical decisions to be made within drug development programs
- Bespoke data analysis and embed into project teams.

Tissue Analysis



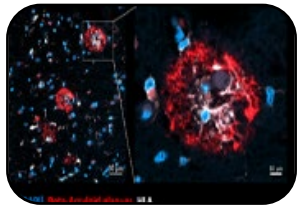
Lipidomics, Proteomics and Metabolomics

Mass Spectrometry Imaging (DESI)



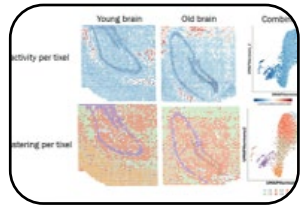
Transcriptomics

(GeoMx)

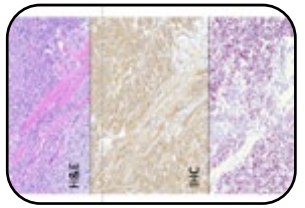


Cell Type Profiling and Target Engagement

(HiRes/Confocal microscopy)

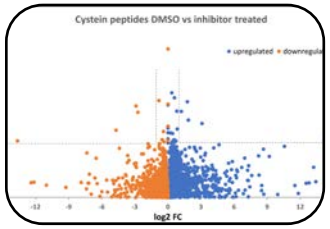


Spatial Epigenetics



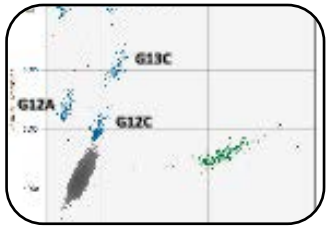
IHC/ISH

Liquid Analysis



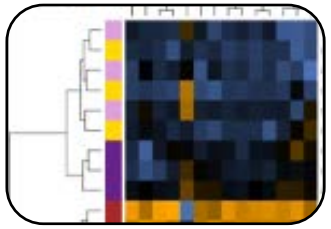
Circulatory Metabolomics, Lipidomics and Proteomics

(LC-MS/MS)



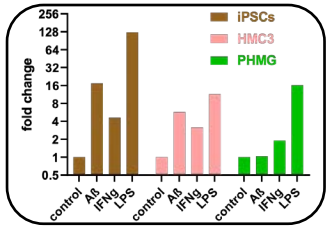
cfDNA

(ddPCR)



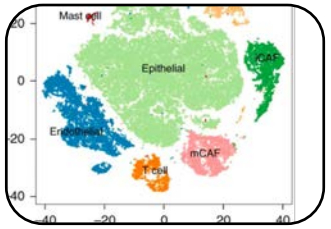
cfRNA

(Nanostring)



Liquid Biomarkers

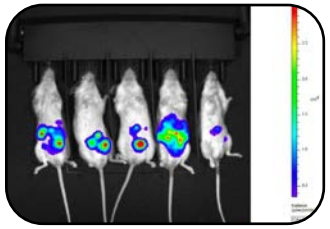
(Luminex/Simoa)



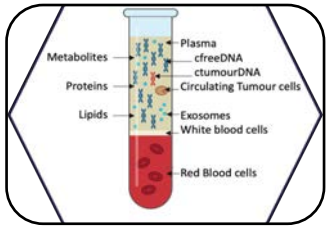
Single Cell Sequencing

(10x)

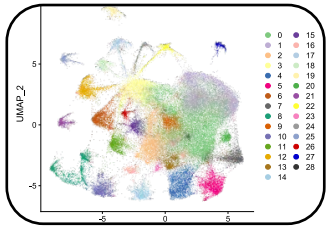
Core Capabilities



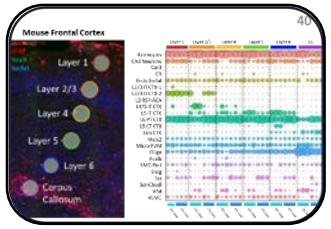
In vivo Imaging



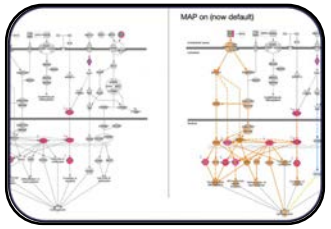
Source high quality patient samples through established tissue networks



NGS



Bespoke Data Analysis Pipelines

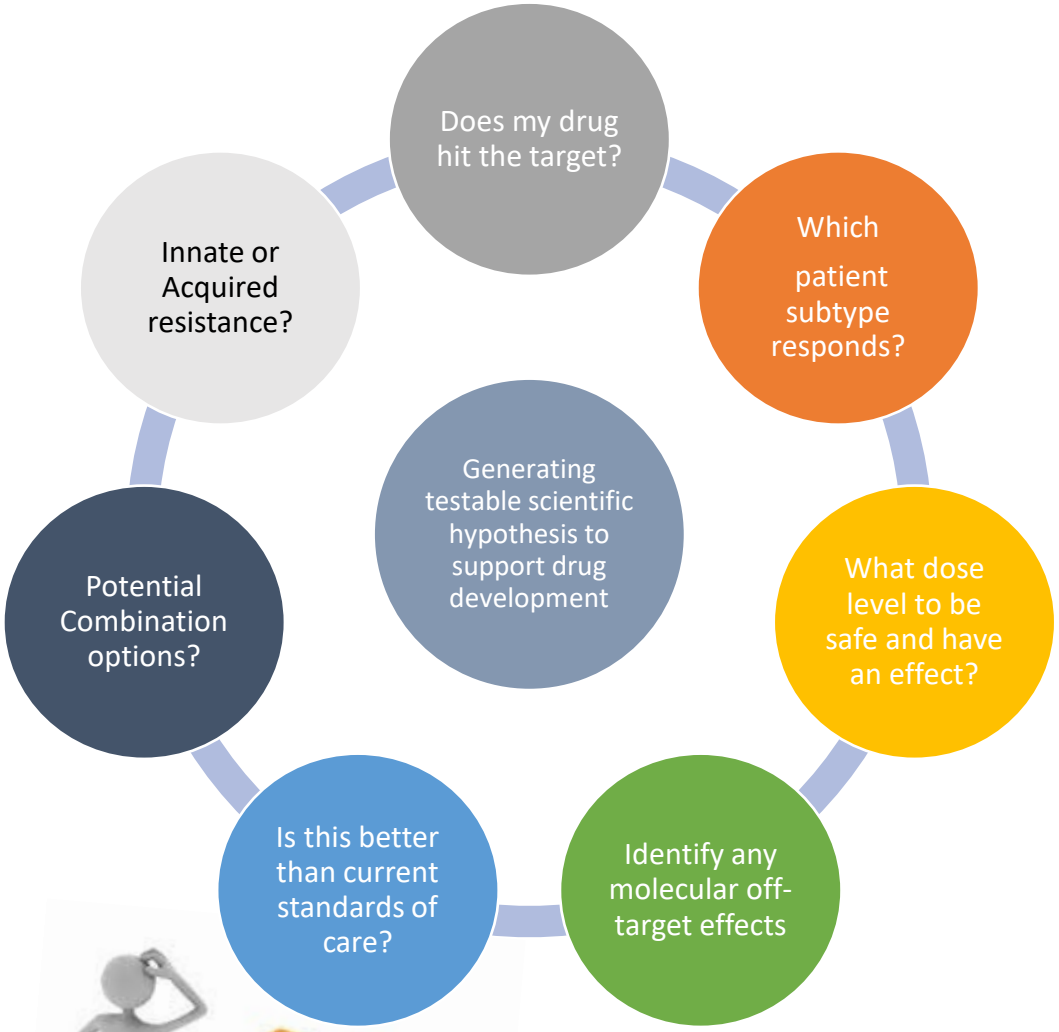


Pathway Analysis

CATAPULT Medicines Discovery

Biomarkers - How we can position and support in early phase clinical studies

- **We start by understanding the challenge, develop a solution to answer the key questions**
- Tailored biomarker solutions – Address key challenges in drug development.
- Multi-modal biomarker analysis – Gain deeper insights into drug mechanisms and disease biology.
- De-risking drug development – Identify and mitigate failure points early.
- Robust biomarker strategies – Validate key indicators across preclinical and clinical stages.
- Data-driven decisions – Support Go/No-Go milestones for clinical success.

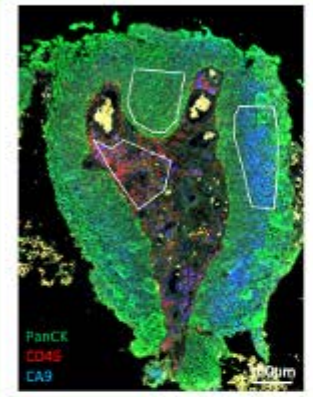


Develop Translational biomarker strategy → Clinical Sample access → Molecular Pathway analysis → Bespoke target engagement assays → Diagnostic tool validation → Support Better Clinical Study Design

CATAPULT Medicines Discovery

Biomarkers – Translational and Clinical Support

Target validation - Disease Positioning of Oncology Targets

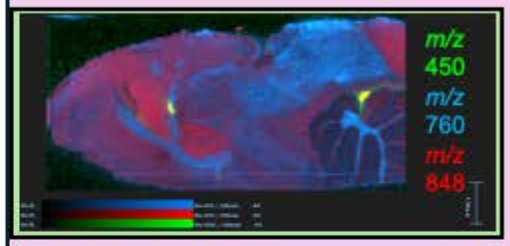


Normoxic Tumour
Hypoxic Tumour
Stroms

Full transcriptional profiling of tumour and stroma regions

- Getting valuable insights from tumour biopsies through spatial biology
- Acquire quality tissue samples across different disease types
- Map the expression of novel oncology targets across various tumour types and within tumour regions using spatial biology techniques.
- Identify the specific cell types expressing the target.
- Determine other cell types present and their potential roles in disease progression and interactions with the target of interest.

Drug Distribution – Where does the drug locate within the tumour



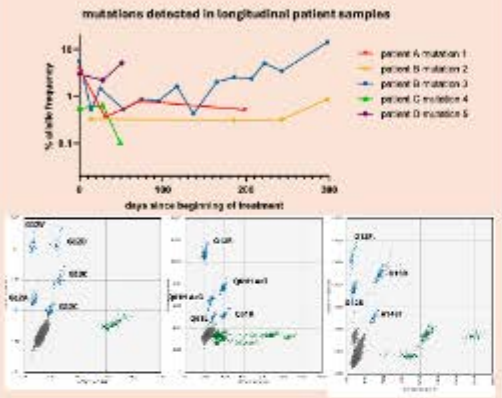
Overlay – Crizotinib (green) over endogenous phospholipids

SYGNATURE DISCOVERY

Waters
THE SCIENCE OF WHAT'S POSSIBLE.

- Investigated drug distribution and blood-brain barrier (BBB) penetration using mass spectrometry imaging (MSI)
- Used label-free MSI method to avoid interference with BBB permeability.
- Developed methods for small molecules, which can also be adaptable for larger compounds.
- Drugs were identified highly localised in blood vessels and ventricles, with minimal distribution in surrounding tissue.
- Drug distribution data can be integrated with biomarker mapping for deeper insights.

Advancing Cancer Drug Development with Multiplexed ctDNA Assays



- Validated a high-sensitivity ddPCR assay for multiple KRAS and BRAF mutations in circulating tumour DNA (ctDNA).
- Multiplexed detection of 14 KRAS mutations in just 3 reactions, conserving samples for clinical trials.
- Applied in phase I trials, confirming known mutations and identifying new variants for precision medicine.

Develop bespoke Pharmacodynamic assays for early-phase trials

- MDC work closely with partners to design pharmacodynamic (PD) assays to measure target engagement, pathway modulation and biomarker response in patient samples.
- Leverage advanced platforms including immunoassays, mass spectrometry and gene expression analysis ensuring sensitive and specific PD readouts.
- Validated for use in good clinical laboratory practice (GCLP), enabling integration into early phase clinical studies to inform dosing strategies, patient selection and treatment efficacy.

CATAPULT Medicines Discovery

Dr Ahmed El-Rayis
Business Development Manager (UK and Europe)
Medicines Discovery Catapult
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France-UK CollaborativeResearch MatchmakingEvent

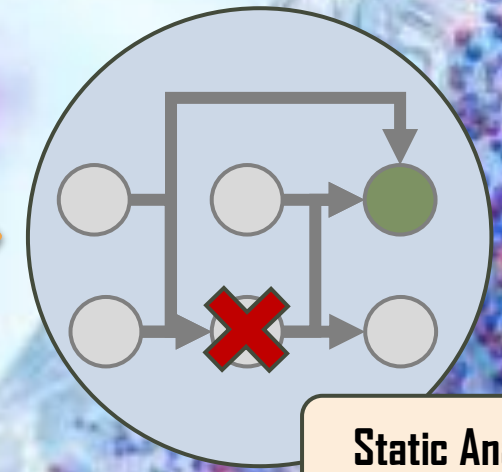
Franck Delaplace

franck.delaplace@univ-evry.fr

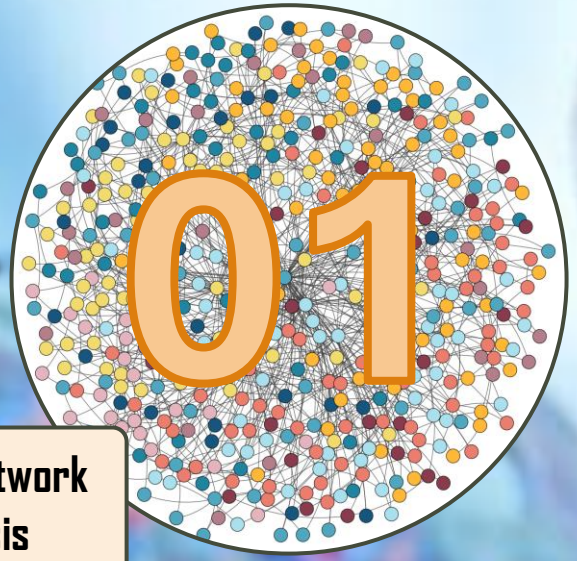
FROM DATA TO NETWORK FOR PREDICTION ...

A formal framework for therapeutic prediction based on network analysis

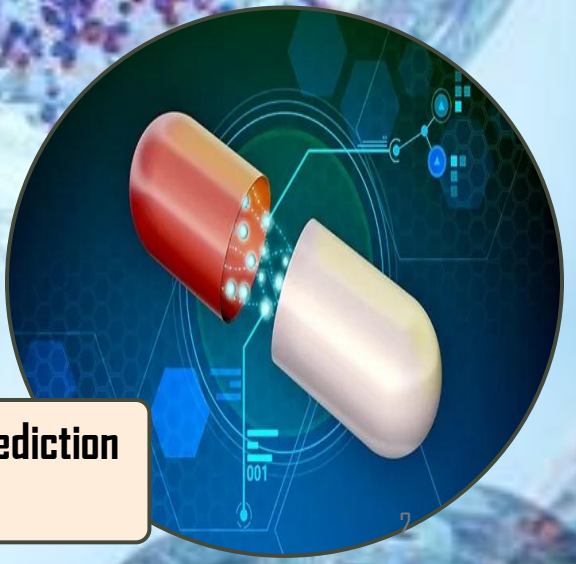
Gene Data
RNA Seq



Static Analysis
Dynamic Analysis
Controllability



Boolean Network
Synthesis



Therapeutic prediction
Etiology

CONTROLLABILITY

Controlling the cell fate based on gene action ...

Out of Frame Indel
e.g. Non Sense Mutation

Node/Link Deletion

In Frame Indel
e.g. Miss Sense Mutation

Node/Link Addition

Disease = Network perturbation

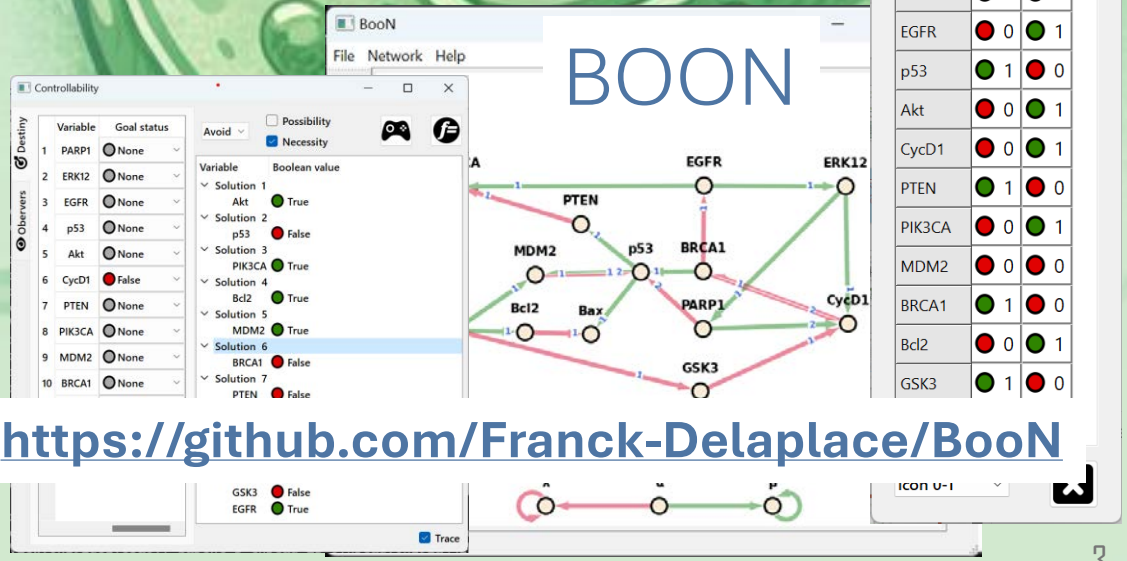
Model action = Abduction

$$F = \begin{cases} x_1 = f_1(x_1, \dots, x_n) \\ \dots \\ x_i = f_i(x_1, \dots, x_n) \\ \dots \\ x_n = f_n(x_1, \dots, x_n) \end{cases}$$

$$F = \begin{cases} x_1 = f_1(x_1, \dots, x_n) \\ \dots \\ x_i = 0 \\ \dots \\ x_n = f_n(x_1, \dots, x_n) \end{cases}$$

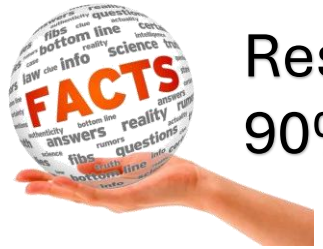
$$F = \begin{cases} x_1 = 1 \\ \dots \\ x_i = 0 \\ \dots \\ x_n = f_n(x_1, \dots, x_n) \end{cases}$$

BOON



https://github.com/Franck-Delaplace/BooN

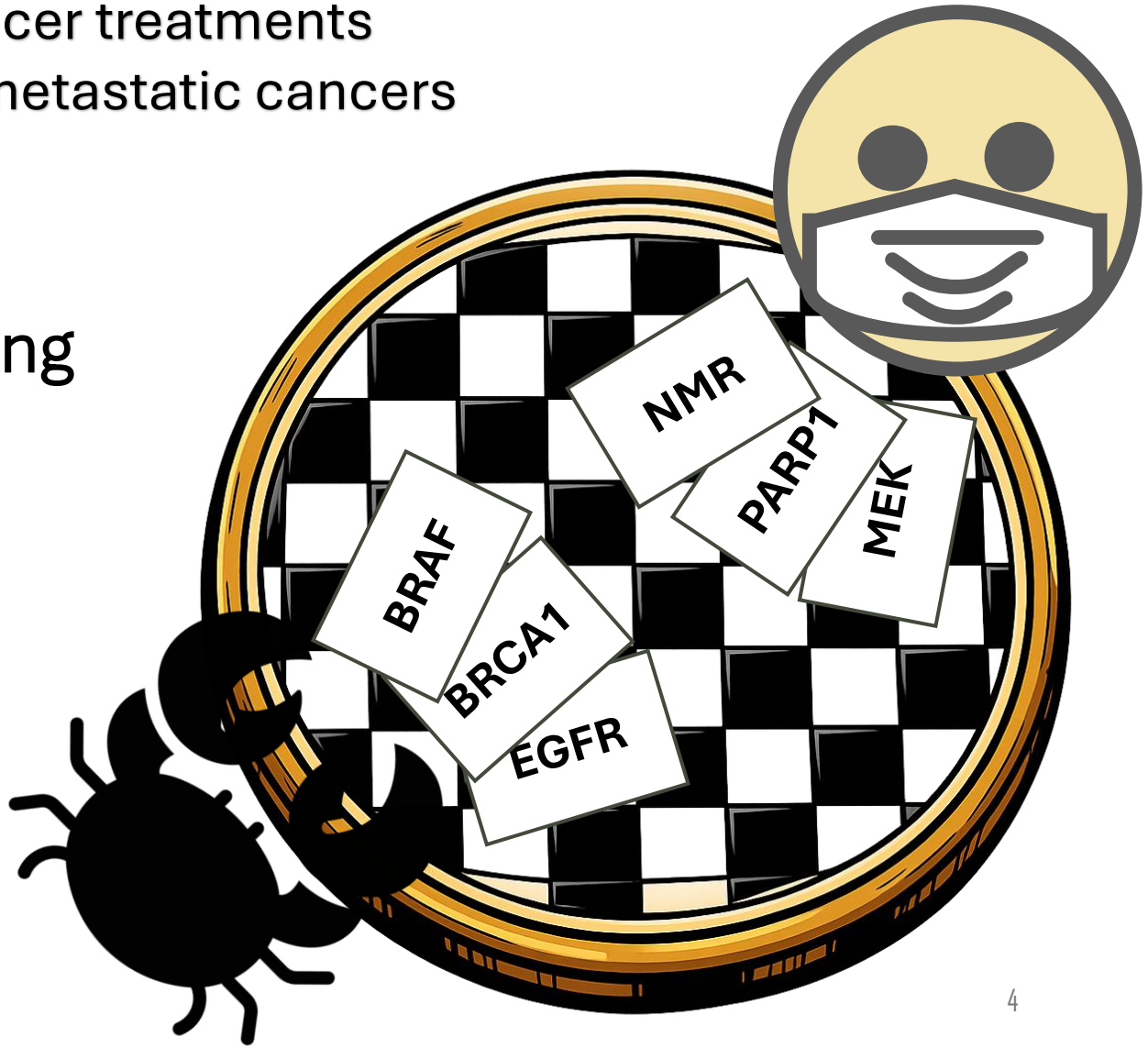
Toward Secondary Resistance Analysis



Resistance > 50% for some cancer treatments
90% of deaths in patients with metastatic cancers

Need of model for investigating the causes and the therapy

Game theory
Two player game



THE AGA KHAN UNIVERSITY

Cluster 1 Health

AI-enabled Virtual Human Twins (VHTs) for Early Cancer Risk Prediction and Decision Support

Dr. Amos Kipkorir Langat, Ph.D., Postdoctoral Research Fellow in Integrated Data Science and Health Informatics

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Emai: Amos.langat@aku.edu

Website: https://www.aku.edu/uc-nbi/Pages/home.aspx

Horizon Europe 2026-2027, Health Cluster, Cancer Mission
Brokerage event FR-UK, January 22, 2026

Topic(s) of interest:

- HORIZON-MISS-2026-02-CANCER-01: Virtual Human Twin (VHT) Models for Cancer Research
- HORIZON-HLTH-2027-03-TOOL-04: Virtual Human Twins (VHTs) for integrated clinical decision support

Objectives

- Develop an AI-enabled VHT framework for cancer risk prediction & early detection
- Personalised prevention pathways and integrated clinical decision support
- Privacy-preserving federated modelling for cross-border collaboration

Expertise:

- Bayesian modelling + machine learning for health prediction
- Robust methods for missing data, measurement error & bias
- Federated analytics, multi-site validation, uncertainty quantification
- Translation into usable clinical/policy decision tools

Existing partnerships & partner needs:

- Existing: multi-institutional public health modelling collaborations; SSA/EU networks
- Seeking: cancer cohorts/registries (EHR + imaging), OMOP/FHIR platforms, clinical validation sites,
  ethics/governance & regulatory science partners, SMEs/startups for deployment

Previous / ongoing projects

- Ongoing work on Bayesian/ML modelling, real-world evidence pipelines, and capacity building

THANK YOU

EDHEC BUSINESS SCHOOL

Chair Management in Innovative Health – EDHEC

UNLEASH TOMORROW

Ranked programmes among the best in the world

TOP 10

Business School in Europe

Financial Times, 2025

4th

Master in Management worldwide

Financial Times 2024

6th

Master in Finance

Worldwide
Financial Times, 2024

4th

GMBA on ESG criteria

Worldwide
Financial Times, 2024

2nd

BBA in France

Challenges 2026

EDHEC BUSINESS SCHOOL

Management in Innovative Health Chair (MIH)

The Management in Innovative Health Chair (MIH) is a multidisciplinary research and teaching chair hosted by EDHEC, dedicated to understanding and accelerating innovation in healthcare systems.

The Chair focuses on:

- Digital health and AI-driven transformation of care pathways
- Patient empowerment, behavioral change, and trust in innovation
- Value-based healthcare, outcomes, and real-world evidence
- Innovation ecosystems, public–private partnerships, regulation, ethics and AI compliance

The **MIH Chair operates at the intersection** of management sciences, health economics, marketing, data science, and public policy, with strong engagement from hospitals, pharma, medtech, startups, and regulators.

The **MIH Chair is particularly experienced in bridging technical innovation with real-world adoption**, a critical success factor in many EU-funded projects. **Contribution to 3 Consortia for European Grant Applications**

EDHEC BUSINESS SCHOOL

Expertise Relevant for European Projects

Behavioral & Societal Dimensions

- Design and evaluation of behavioral interventions (prevention, adherence, digital usage)
- Analysis of trust, acceptance, risk perception, and ethical concerns related to AI and digital health
- Patient, citizen, and professional engagement

Innovation, Adoption & Impact

- Market access, diffusion of innovation, and scale-up strategies
- Business models for digital health, AI, and medical technologies,
- Socio-economic impact assessment and exploitation pathways

Data, AI & Governance

- Human-centric and trustworthy AI adoption frameworks
- Use of real-world data (RWD) and real-world evidence (RWE) from a managerial and behavioral perspective
- Governance, transparency, and alignment with EU regulations (AI Act, data governance, ethics)

Communication, Dissemination

- Design of high-impact dissemination and communication strategies
- Stakeholder mapping and multi-actor engagement
- Development of training, capacity-building, and upskilling programs (professionals, managers, students)

EDHEC BUSINESS SCHOOL

What EDHEC Brings to a Consortium

EDHEC is a strong complementary partner, especially when projects require:

- Non-clinical but essential expertise on adoption, behavior, trust, and value

- Translation of technological innovation into societal, organizational, and economic impact

- Structuring exploitation, dissemination, and sustainability beyond the project lifecycle

Chair is committed **to supporting impact-driven European research**, contributing robust scientific expertise while ensuring that innovation effectively reaches patients, professionals, and society.

EDHEC BUSINESS SCHOOL

What EDHEC Brings to a Consortium

Loick Menvielle – PhD
Director Chair Management in Innovative Health
loick.menvielle@edhec.edu

Vision and Values within the Chair:

"While ethical concerns arise, it is critical to center the conversation on how these technologies are adopted and made use of by primary stakeholders, particularly patients, whose experiences and outcomes stand to be most impacted."

innovative-health@edhec.edu

Simone Whale – MBA
Project Manager - Chair Management in Innovative Health
simone.whale@edhec.edu

EDHEC BUSINESS SCHOOL

UNLEASH
TOMORROW

Eupnoos
Breath Taking AI

Cluster 1 Health

Drug toxicity monitoring

Arshia Gratiot

Eupnoos

UK

arshia@eupnoos.com

Horizon Europe 2026-2027, Health Cluster, Cancer Mission
Brokerage event FR-UK, January 22, 2026

Instructions

- **HORIZON-MISS-2026-02-CANCER-03 – Pragmatic clinical trials to optimise immunotherapeutic interventions**

- **Topic of Interest**
  Pragmatic, real-world clinical trials in refractory cancers focused on **early detection, monitoring, and optimisation of cardiopulmonary toxicity** associated with immunotherapies (ICIs, ADCs, bispecifics, and combination regimens).

- **Project Objective**
  To embed **low-burden, continuous cardiopulmonary monitoring** into pragmatic oncology trials, enabling **earlier identification of subclinical lung and cardiac-related toxicity**, support adaptive treatment decisions (dose modification, interruption, rechallenge), and improve patient safety, treatment tolerability, and trial completion.

- **Expertise**
  Eupnoos is a deep-tech health company specialising in **audiomics**—AI-based analysis of breathing acoustics captured via smartphones or MEMS sensors—to generate **non-invasive digital biomarkers of cardiopulmonary dysfunction** (airway obstruction, restriction, congestion, inflammatory lung injury), deployable in decentralised and pragmatic trial settings.

- **Partnerships & Needs**
  Existing collaborations with academic hospitals, clinicians, and pharmaceutical partners across the UK and EU. Seeking oncology trial sponsors, Comprehensive Cancer Centres, cardiology and pulmonology leads, biostatistics/health-economics partners, patient organisations, and regulatory/HTA expertise.

- **Relevant Experience**
  Participation in multi-site feasibility and clinical studies involving **remote cardiopulmonary monitoring**, with ongoing projects spanning oncology safety, heart-lung interaction, and real-world deployment of digital biomarkers within EU and international research frameworks.

Gut and Cyst Microbiome as Markers of PDAC Risk in Individuals under Surveillance

Bill Greenhalf

The University of Liverpool

UK

greenhaf@liv.ac.uk (livecmc@liverpool.ac.uk) +44 (0)151 795 8030

https://www.ecmcnetwork.org.uk/centres/liverpool

Horizon Europe 2026-2027, Health Cluster, Cancer Mission
Brokerage event FR-UK, January 22, 2026

Do you believe that the lifetime risk of PDAC in a BRCA2 mutation carrier is 10%?

Do you believe that the lifetime risk of PDAC after identification of a main duct IPMN is 40%?

Do you believe that the lifetime risk of PDAC after identification of a branch duct IPMN is 15%?

Do you believe that PDAC in every BRCA2 carrier is driven by failure of Homologous Recombination Repair?

Do you believe that the lifetime risk of PDAC in a BRCA2 mutation carrier is 10%?

Prevalence of PDAC at 50 << 1% - Do NOT screen

Do you believe that the lifetime risk of PDAC after identification of a main duct IPMN is 40%?

Prophylactic surgery for all patients

Do you believe that the lifetime risk of PDAC after identification of a branch duct IPMN is 15%?

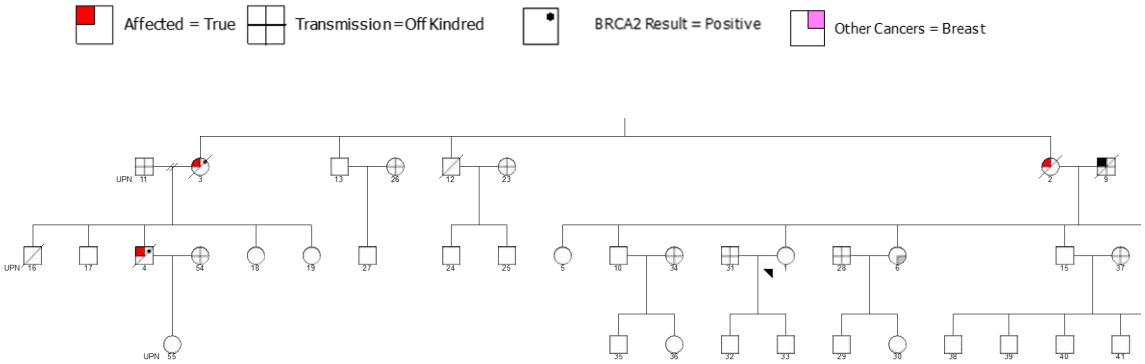
Surveillance? Or nothing

Do you believe that PDAC in every BRCA2 carrier is driven by failure of Homologous Recombination Repair?

PARP inhibitors will work for all patients with germline mutations

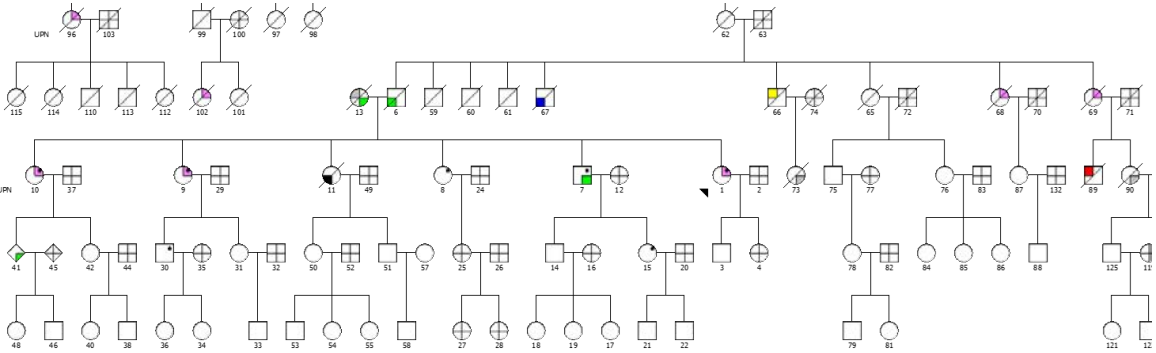
EUROPAC

High-Risk



In families with strong evidence of autosomal dominant predisposition BRCA mutation prevalence is 18.9%

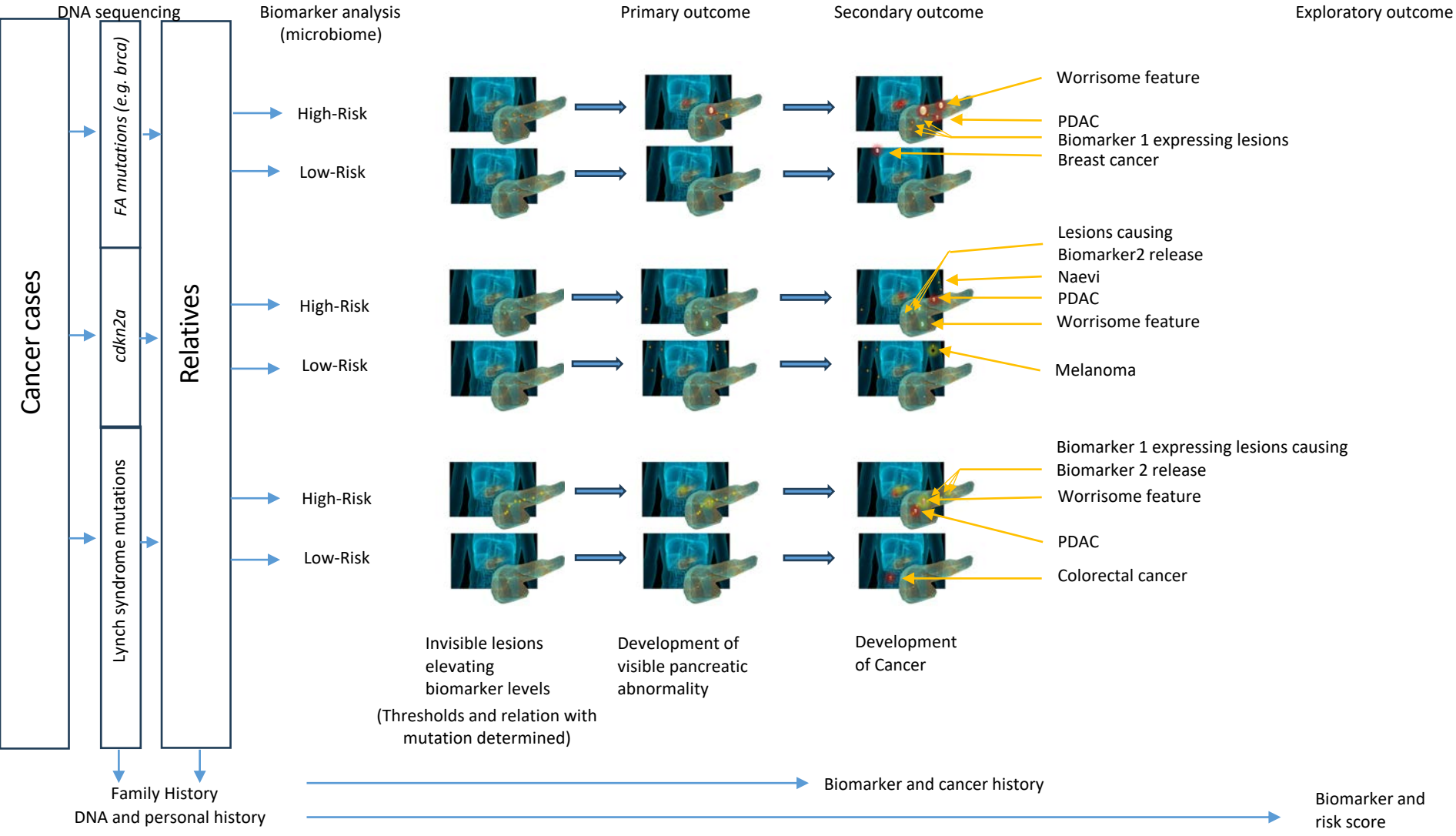
Low-Risk



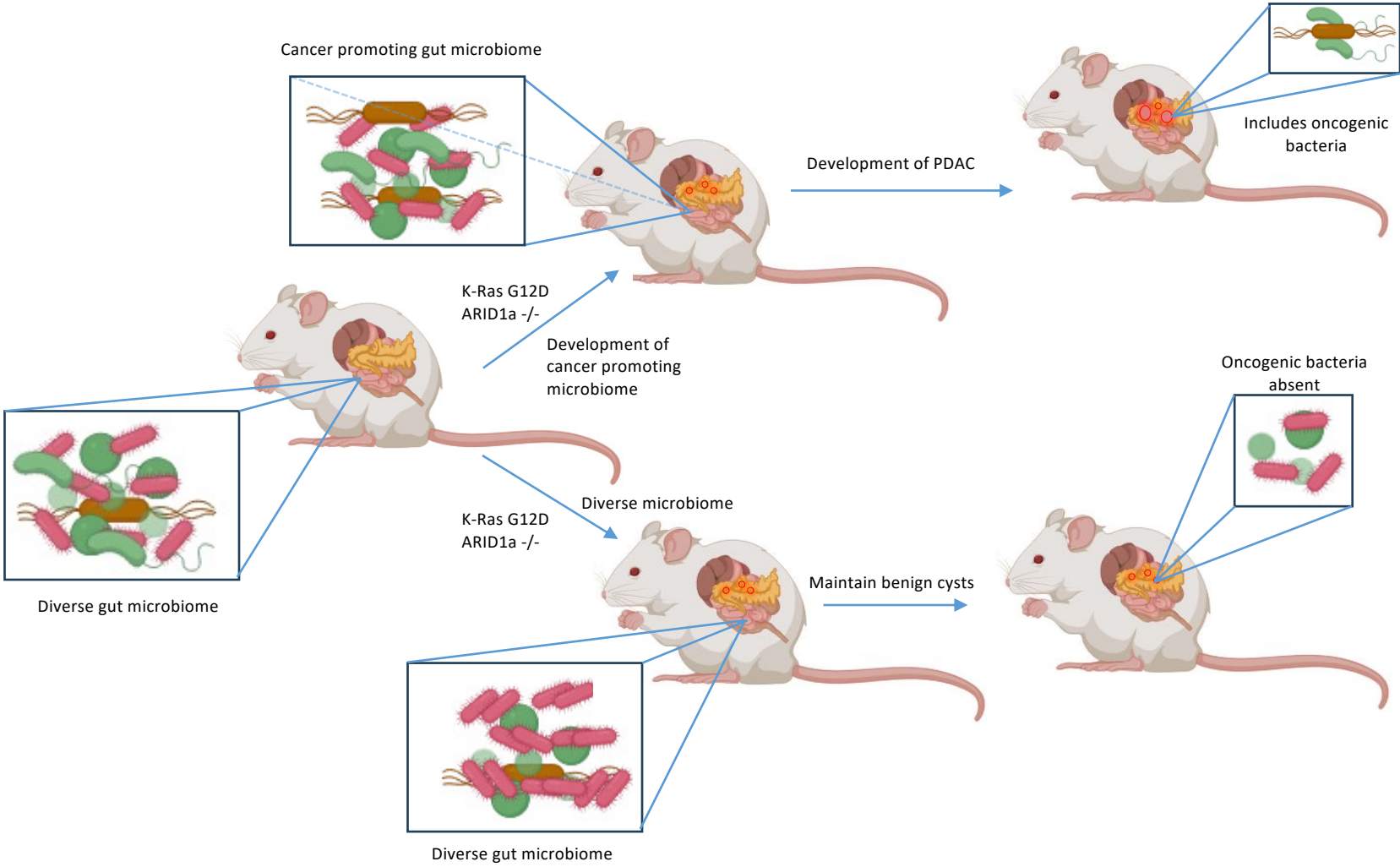
In 173 families (3,728 individuals) with high breast cancer risk, only 14 PDAC cases seen

In families with breast cancer and PDAC, PDAC was as likely to be in 3rd as 1st degree relatives of early onset breast (1st degree PDAC cases mostly seen with breast cancer over 55)

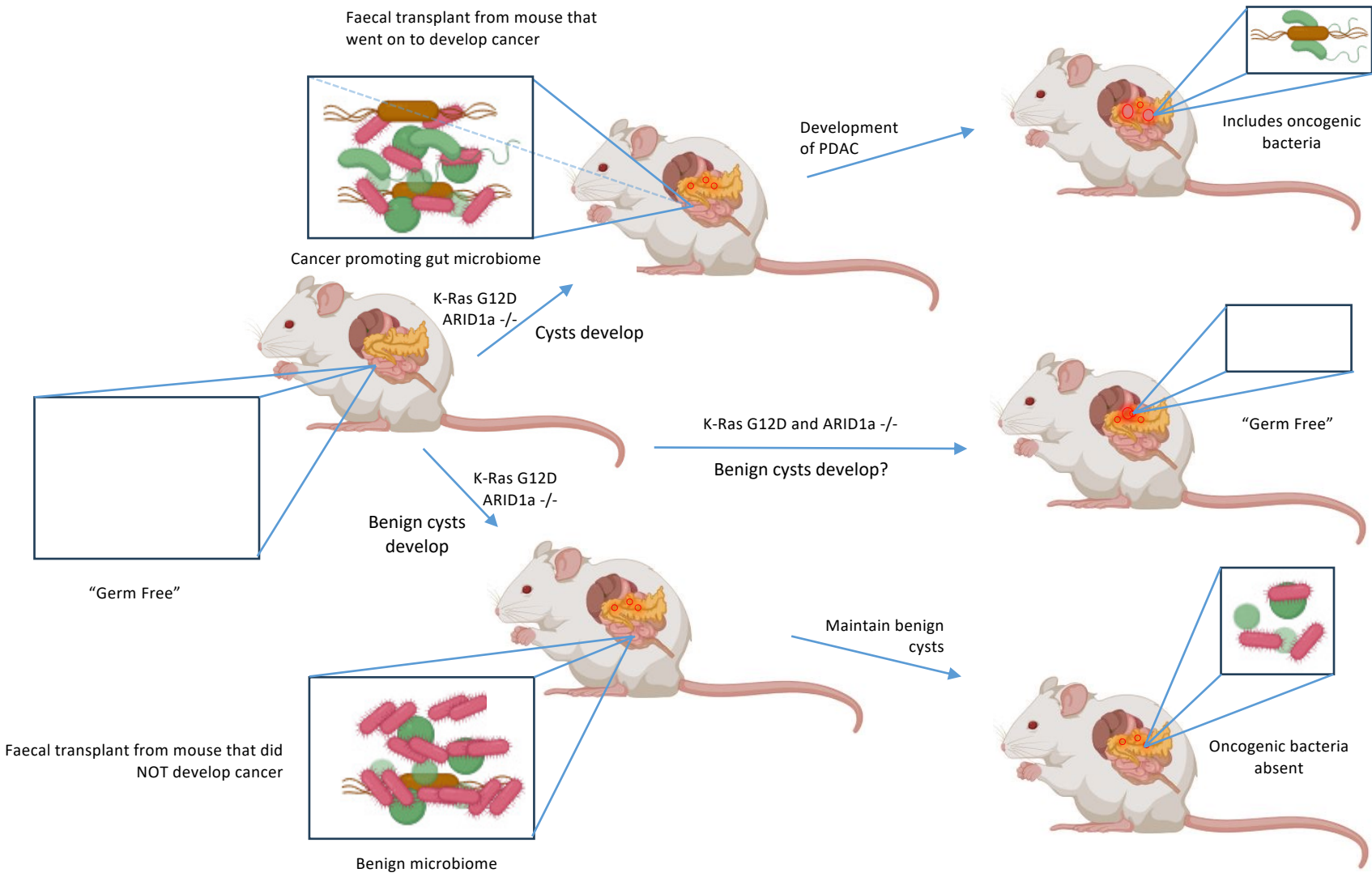
Clinical study to identify context specific risk



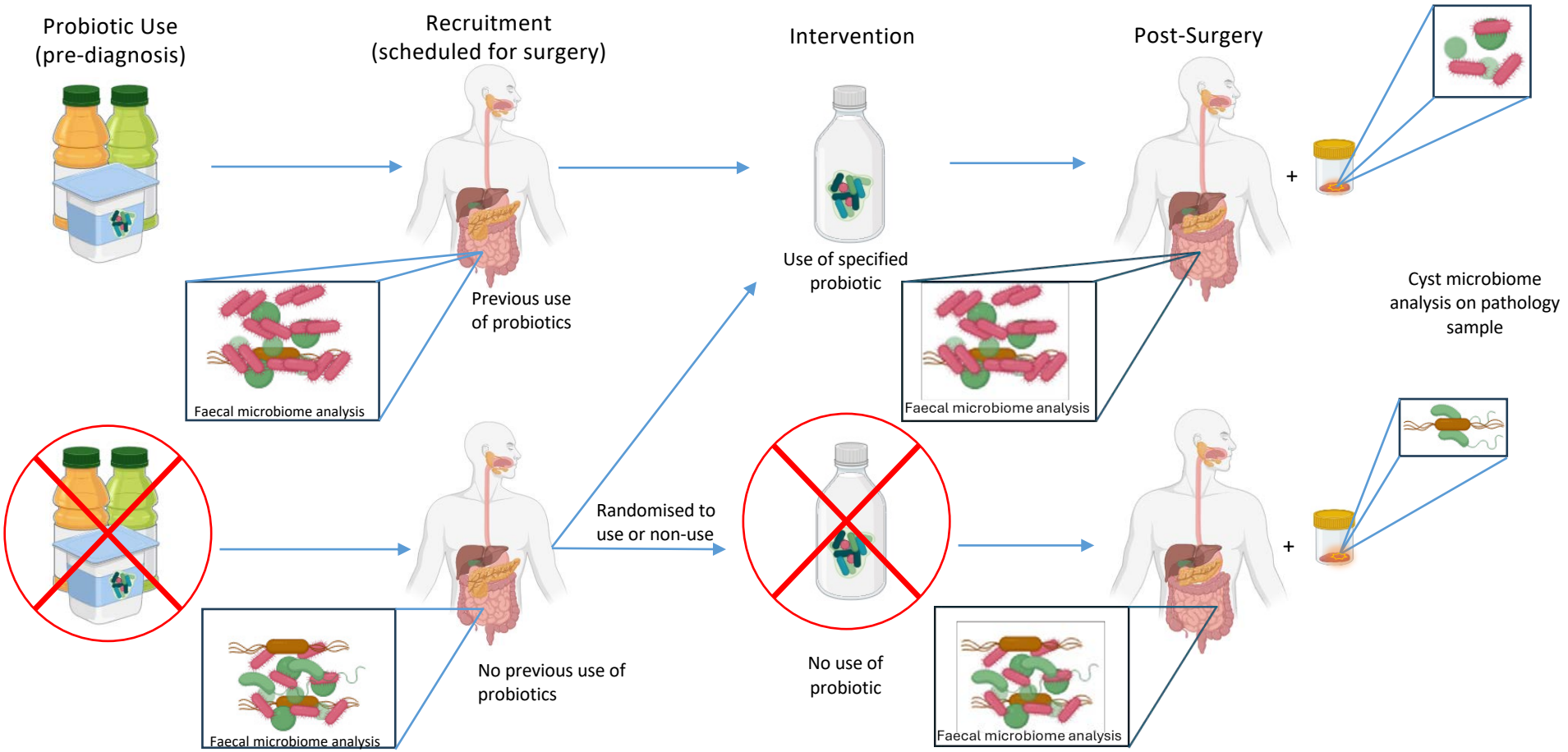
Mouse model to show microbiome influences risk of cyst progression



Mouse model to show microbiome influences risk of cyst progression



Clinical study to show cyst microbiome can be modified



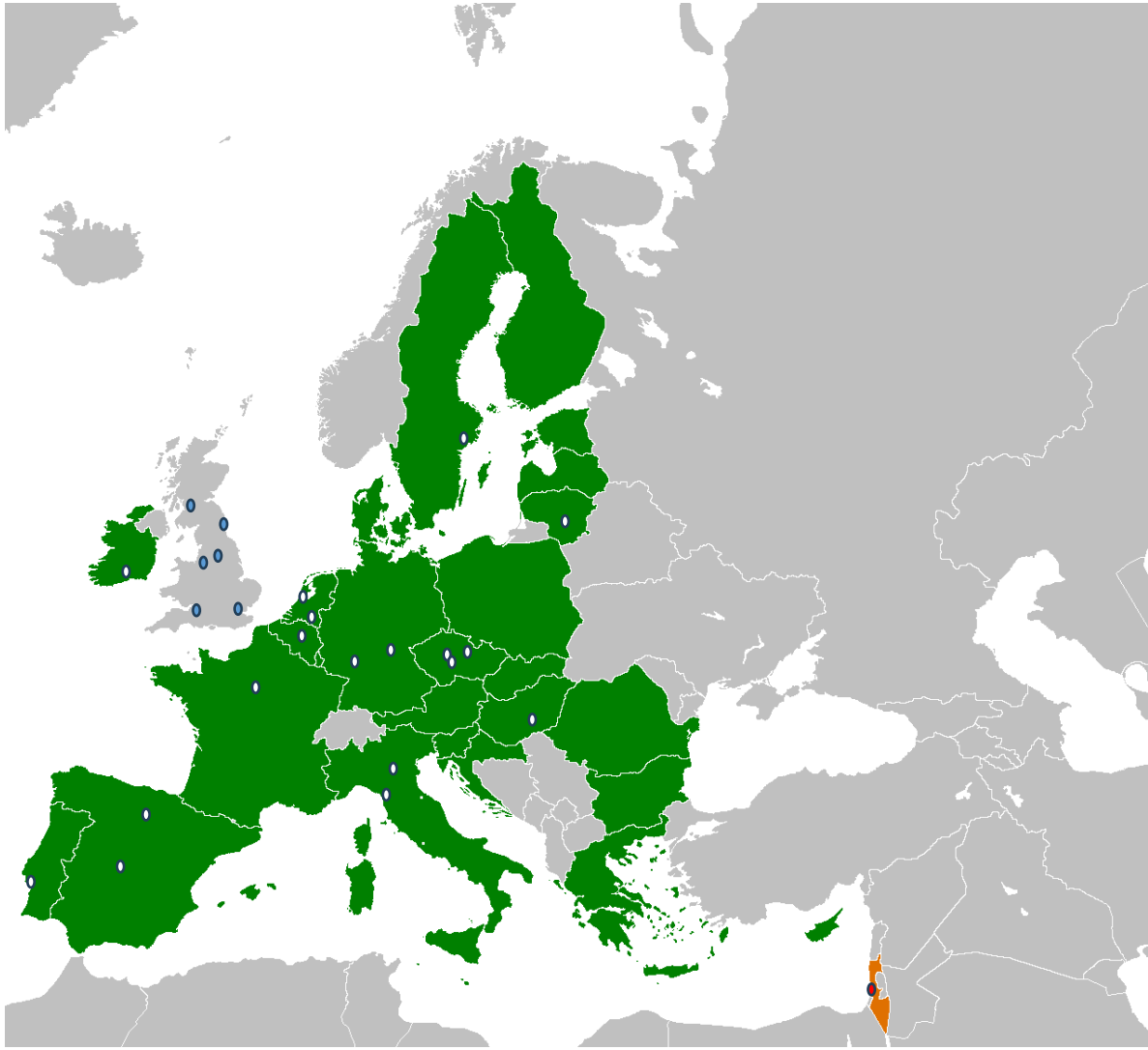
We need more clinical sites
We need new ideas for work packages
We need new diverse geographic and cultural contexts

COntext Specific Mutations In Cancer Development

COSMIC

HORIZON-MISS-2024-CANCER-01-03

University of Liverpool
Fundación Rioja Salud
Tyndall National Institute (University College Cork)
Proteomedix
Sentron
Immunovia
Weizmann Institute of Science
Spanish National Cancer Research Center
German Cancer Research Center
University of Pisa
Radboud University Medical Centre
King's College London
The Leeds Teaching Hospital
The Newcastle upon Tyne Hospitals NHS Foundation Trust
University of Hradec Kralove
University Hospital Erlangen
ECRIN European Clinical Research Infrastructure Network
IDIBELL-CERCA; FIMABIS, FIB-H120, MU
Karolinska Institutet
Beaujon hospital, APHP
University Hospital of Heidelberg
National Cancer Institute, Vilnius
Semmelweis University
University of Glasgow
Military University Hospital Prague
Champalimaud Foundation
University of Verona
Bristol University
Pancreatic Cancer Europe
AMIRES The Business and Innovation Management Institute



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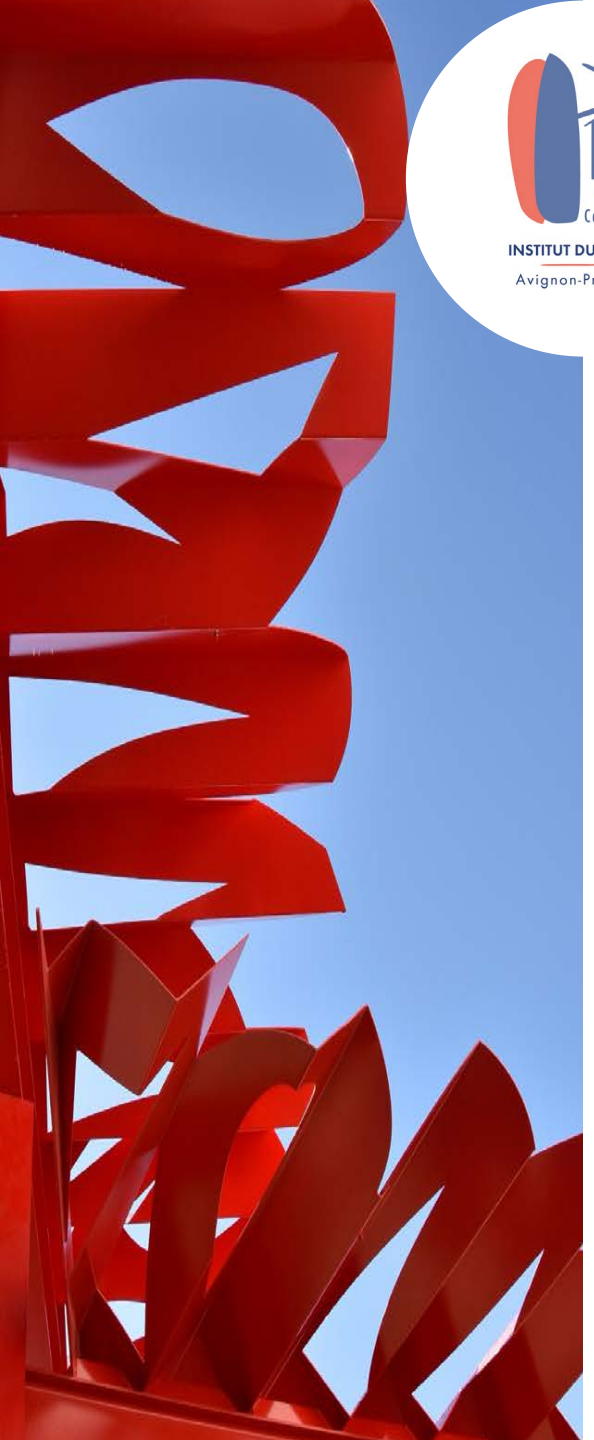
INSTITUT DU CANCER
Avignon-Provence

GUT MICROBIOTA AND ABEMACICLIB PHARMACOKINETICS:

UNDERSTANDING VARIABILITY IN DRUG EXPOSURE

Léa Retournard
Avignon-Provence Cancer Institute
l.retournard@isc84.org

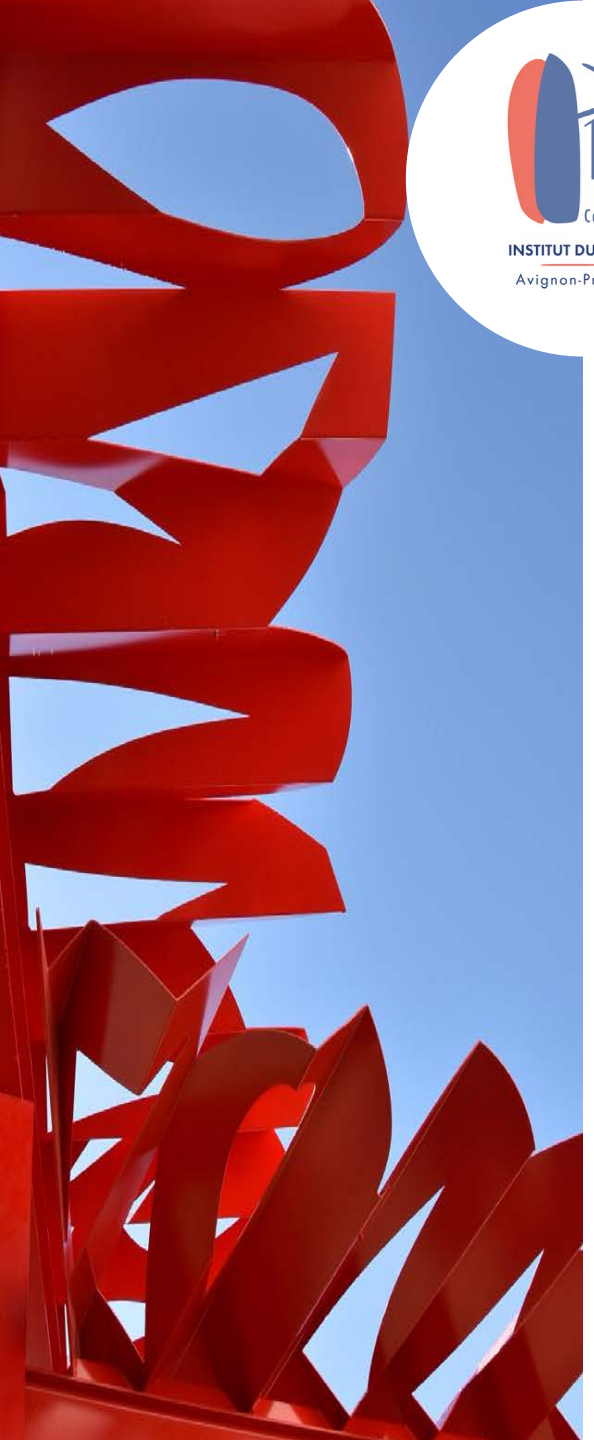


CLINICAL UNMET NEED

Why Do patients Respond Differently to the Same Oral Anticancer Drug ?

- Abemaciclib[1] is an inhibitor of cyclin-dependent kinases 4 and 6. It is mainly prescribed for the treatment of early breast HR+ HER2- N+ cancer at high risk of recurrence and for the first line treatment of metastatic HR+ HER2- breast cancer
- Abemaciclib[1] is widely prescribed across Europe in HR-positive breast cancer, yet clinicians observe major inter-patient variability in drug exposure, tolerance, and outcomes
- One major missing piece in precision oncology is the gut microbiota — a metabolic organ that can modify drugs before they even reach systemic circulation

1. *Verzenio (abemaciclib) tablets package insert. Indianapolis, IN: Lilly USA, LLC; 2023 March.*

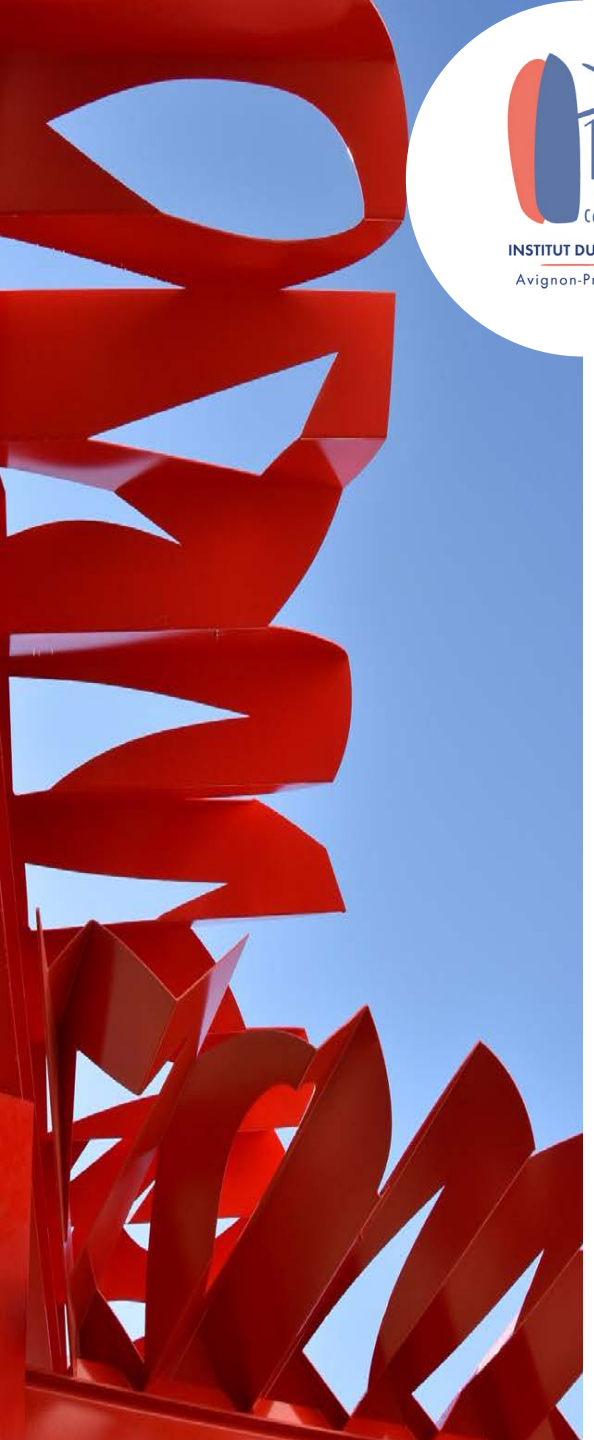


SCIENTIFIC RATIONALE

The Gut microbiota: a missing determinant of drug exposure

- Gut microbiota as a metabolic “organ” can participate in drug metabolism through direct or indirect interactions to alter its bioavailability, stability, activity, toxicity, or excretion and influence the individual’s response to drugs.[2]
- There is emerging evidence regarding the capability of faecal microbiota to predict treatment response in breast cancer and being directly implied in chemotherapy resistance and development of side-effects.[3]
- A clinical analysis indicated, in 14 metastatic breast cancer patients treated with CDK4/6 inhibitors, machine learning algorithms evidenced four bacterial species as a discriminant for responders (Bifidobacterium longum and Ruminococcuss callidus) and non-responders (Clostridum innocuum, Schaalia odontolytica).[4]

2. Weersma, R.K.; Zhernakova, A.; Fu, J. Interaction between drugs and the gut microbiome. Gut 2020, 69, 1510–1519.
3. Terrisse S, Derosa L, Iebba V, Ghiringhelli F, Vaz-Luis I, Kroemer G, et al. Intestinal microbiota influences clinical outcome and side effects of early breast cancer treatment. Cell Death Differ. 2021;28:2778–96.
4. Schettini F, Fontana A, Gattazzo F, Strina C, Milani M, Cappelletti MR, Cervoni V, Morelli L, Curigliano G, Iebba V, Generali D. Faecal microbiota composition is related to response to CDK4/6-inhibitors in metastatic breast cancer: A prospective cross-sectional exploratory study. Eur J Cancer. 2023 Sep;191:112948.



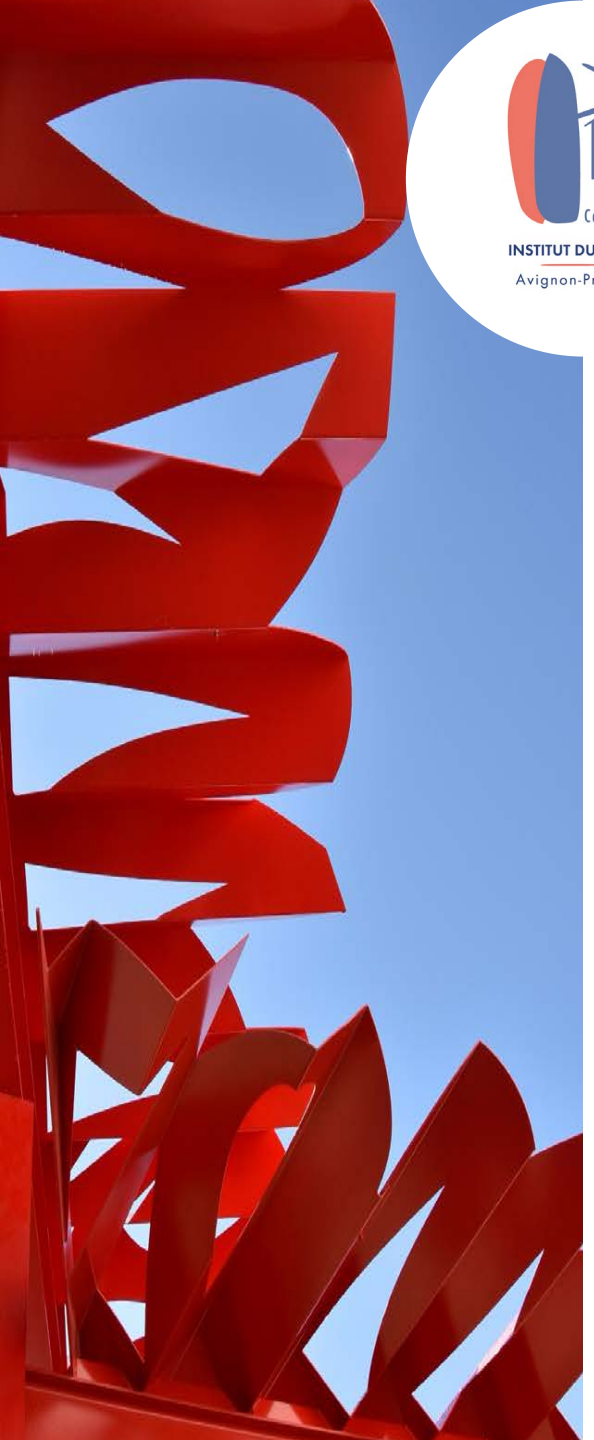
PROOF OF CONCEPT STUDY

A pragmatic clinical study combining pharmacokinetics and microbiota analysis

• We designed a prospective clinical study combining plasma drug concentration measurements and shotgun metagenomic analysis of stool samples, collected longitudinally during treatment.

• This proof-of-concept study aims to identify microbiota signatures associated with drug bioavailability and microbiota changes induced by treatment.

• The protocol is simple, compatible with routine oncology practice, and designed as a proof-of-concept.



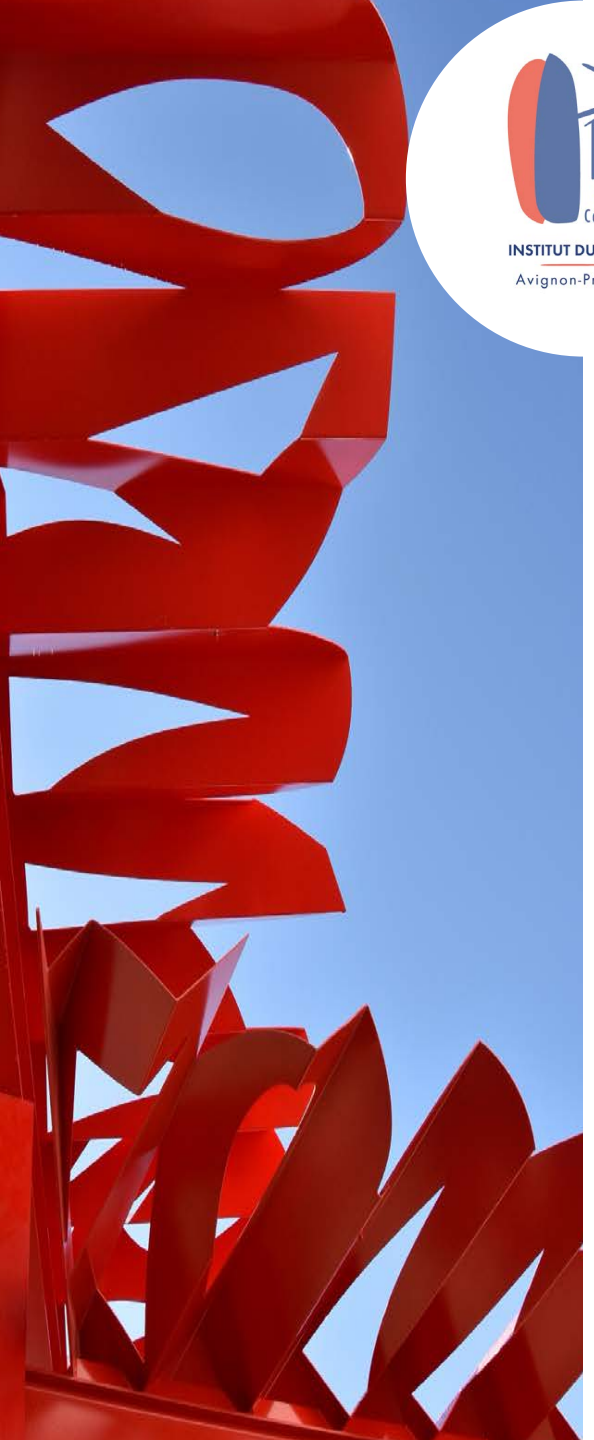
VISION

A multicentre European clinical network

Our long-term vision is to move toward microbiota-informed dosing strategies or companion biomarkers for oral anticancer drugs.

This work directly addresses key Horizon Europe priorities: precision medicine, reduction of treatment toxicity, and improved effectiveness of cancer therapies.

If successful, this approach could be extended beyond breast cancer to many oral anticancer agents used across Europe.



WHAT WE ARE LOOKING FOR

We are seeking **clinical oncology centres** in France and the UK treating breast cancer patients with abemaciclib and interested in joining a multicentre study.

Participating centres would:

- include patients under routine care,
- collect one blood sample and one stool sample per cycle,
- contribute to a shared European dataset on microbiota and drug exposure.

We also welcome partners with expertise in **microbiome bioinformatics** and **data integration**

PIONEER
An Integrated System for Proactive Palliative Care

Dilem Hizlan,PhD
Galata Innovation
Turkiye

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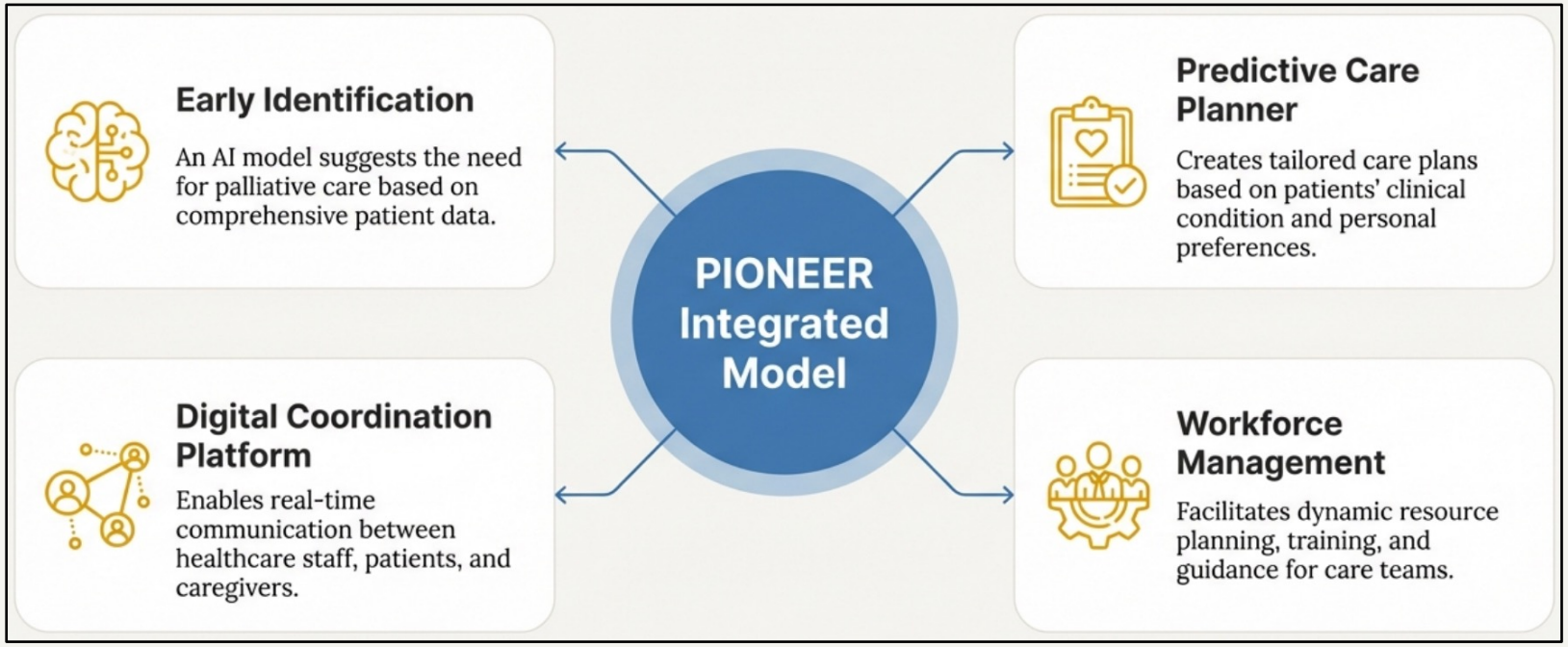
https://www.galatainnovation.com/

Horizon Europe 2026-2027, Health Cluster, Cancer Mission
Brokerage event FR-UK, January 22, 2026

HORIZON-MISS-2026-02-CANCER-04: Earlier and more precise palliative care

RIA, Project Budget: 5 million € (3 projects) Deadline: 15 September 2026

Objective: PIONEER aims to develop an AI-supported, integrated model that enables the early start and personalized management of palliative care for cancer patients. The model combines clinical data, patient-reported outcomes (PROs), measurements from digital monitoring devices, and healthcare staff assessments to predict care needs in advance.

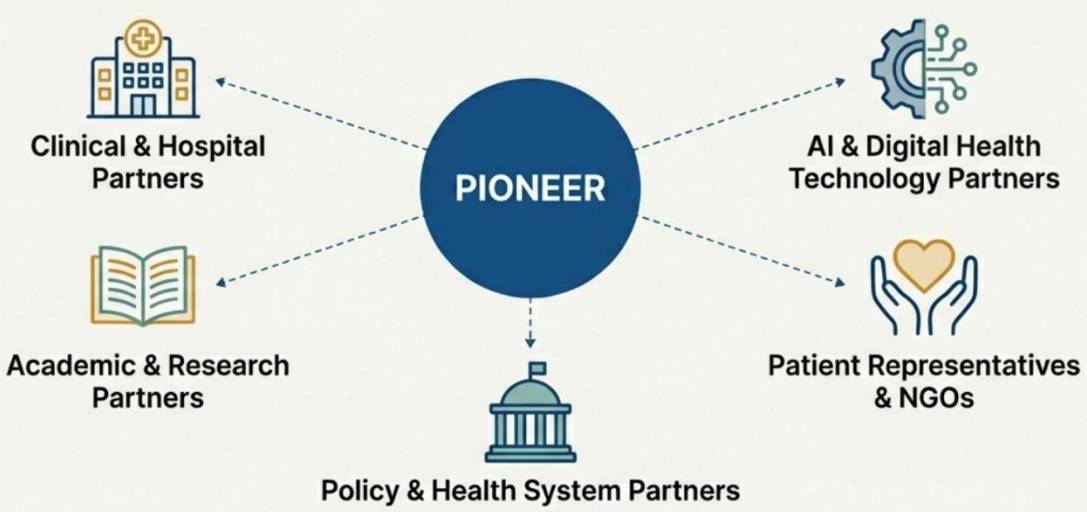


- Pilots in different EU and Associated Countries
- Training and guidance

HORIZON-MISS-2026-02-CANCER-04: Earlier and more precise palliative care

GALATA innovation

- Ecosystem Building
- Proposal Development
- Project Management for Horizon Europe, EUREKA, Interreg and Partnership projects



- **Current Members**
  - AI & digital health technology developers in ES (GR & DE – TBC)
  - Academic partner& clinical site in TR
  - Hospital (Palliative care unit) in CZ
- **Looking for**
  - Clinical sites
  - Academic partner in palliative care
  - Patient Representatives
  - Policy and Health System Standardization Partners