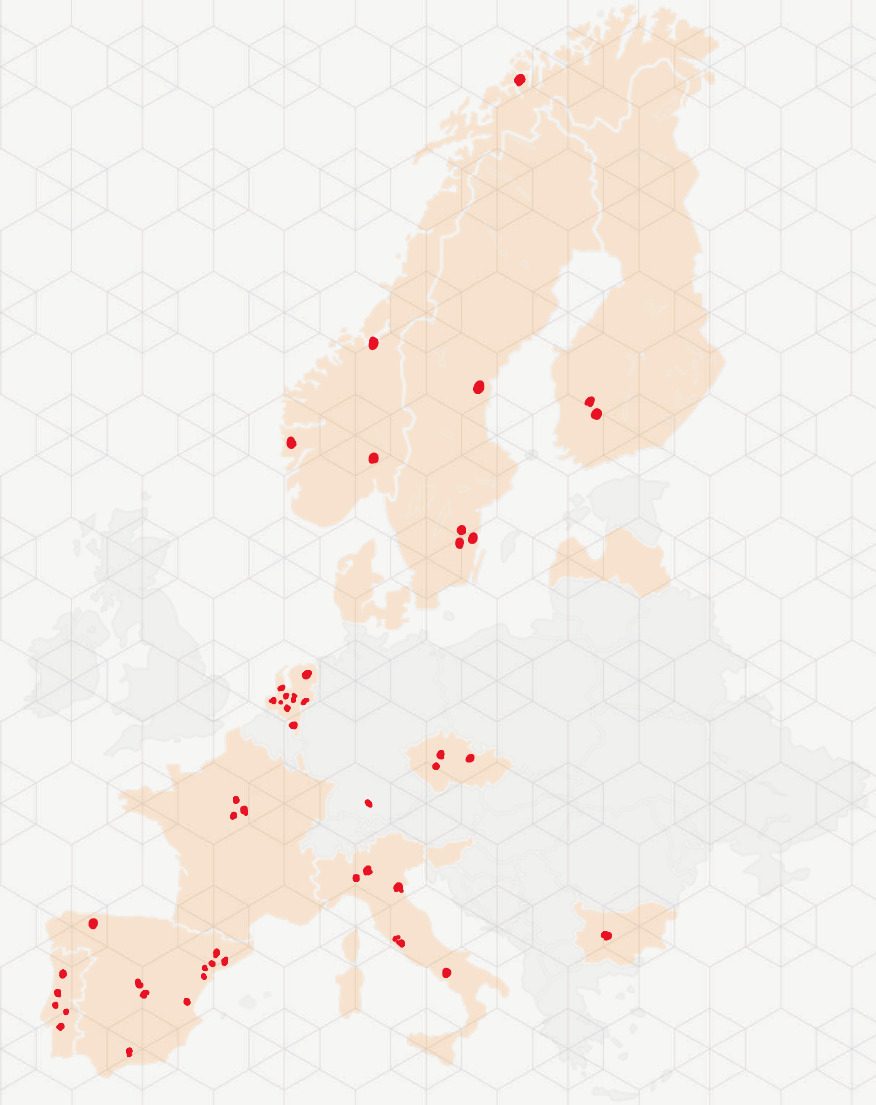


EATRIS Imaging

European Infrastructure
for Translational Medicine



Our Translational Imaging Centres



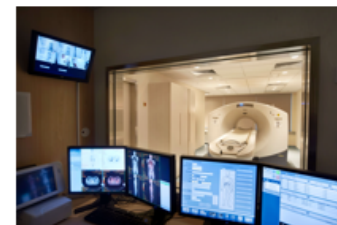
48 centres, 10 countries

- Molecular imaging
- Tracer development
- Supporting drug development
- Immunology, neurology, oncology
- Rare diseases
- Personalised Medicine

Molecular Imaging Capabilities

PET Imaging

- Radiolabeling of antibodies, cells, biologics, nanoformulations
- Translation from rodent -> non-human primate -> human
- Standardized and validated production of immuno-PET agents
- Multimodal whole-body imaging (PET/CT, PET/MRI)



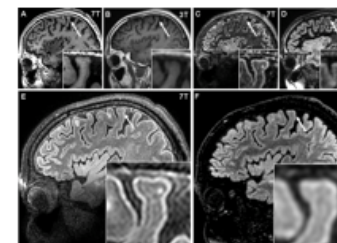
Tracer development

- 100+ validated tracers with confirmed target selectivity
- New PET, SPECT, fluorescent, US and contrast imaging agents
- Customized synthesis using ^{11}C , ^{18}F , ^{64}Cu , ^{68}Ga , ^{89}Zr , ^{111}In , ^{123}I , ^{124}I
- Data analysis, image interpretation and quantification



Ultra-High Field MRI

- Several core facilities with 7T high res clinical MRI scanners
- Development of tailored coils and sequences
- Detailed study of tissue morphology, function and metabolism
- Chemotherapy monitoring: ^1H , ^{31}P , ^{13}C , ^{19}F , ^{23}Na , ^{17}O spectroscopy



Partnering with industry



1 PROJECT REQUEST

Project goals
Confidentiality
Letter of engagement

3 EXPLORATION

Project design
Project plan

2 IDENTIFY PARTNERS

Find eligible sites
Company selects partner

4 PROJECT INITIATION

Milestones, budgets
Bilateral contract between
site(s) and company



Partnering examples



REQUEST: H/D exchange MS capacity/expertise for fragment based drug discovery

RESULT: Setup of pilot study with institute in Prague, CZ
Present: long term collaboration



REQUEST: Develop translational imaging method in fibrosis research

RESULT: Multi-site imaging & biology expert team assembled
preclinical *in vivo* model + imaging modality (PET) Study performed in Finland, the Netherlands



REQUEST: Long term access to translational imaging capabilities for immuno-inflammation R&D

RESULT: GSK-EATRIS imaging hub



Multi-site collaboration to develop imaging tools for GSK:

- Novel PET ligands as inflammation markers
- MRI for characterisation of inflammation
- Optical imaging in RA, OA, etc.

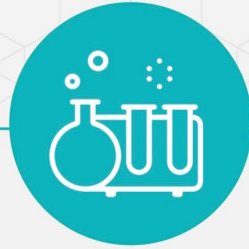
6 EATRIS institutions coordinated by **EATRIS**

- Covered by master research agreement, GSK funded
- Fast-time to contract and initiation of projects
- Pre-competitive or GSK asset development possible

Imaging Hub - outputs so far



3 years into collaboration
3 years extended



12 active projects
(3 preclinical, 2 clinical, 1 co-funded PhD, 2 scouting, 4 public co-funded applications)



15 molecular (tracer) targets under exploration



8 organisations/ legal entities involved



More than 20 legal agreements established



2016 – Framework established



2017 - Announced



2020 – Extended

Working with global pharma creating better research tools

Dr Rogier Thurlings, Rheumatologist, Radboudumc, The Netherlands (EATRIS member)

“We are very positive about the collaboration in the GSK Immune Inflammation Imaging Hub. The Hub forms a unique platform for interaction between academia and industry. Its dedication towards clinical implementation increases the chance that our patients profit from imaging-guided drug development.”

Developing an Active Scientific Agenda

eatris



WGs in formation around 3 themes

1. Radiomics



- Advanced image analysis for stratification and prediction of outcomes
- Validation of novel ML/DL algorithms (incl. omics data integration)
- Focus on workflow standardization and (training of) clinician end-user

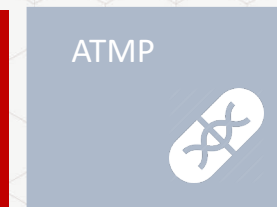
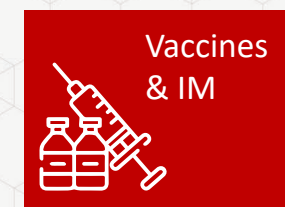
Platform Synergies:



2. Cell Tracking



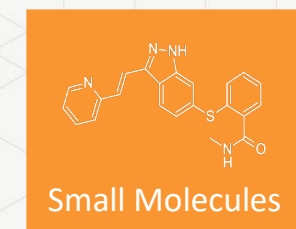
- Longitudinal tracking (location, quantity, viability) of (transplanted) cells
- PET tracers (incl. reporter genes, labelled antibodies)
- Focus on solid tumors, objective comparison of modalities, immunogenicity



3. (Virtual) EU Tracer Factory



- Platform for the exchange of (novel) tracers for research & clinical use
- Academic tracer development and synthesis (radiochemistry)
- Support translation (incl. training GMP, exchange of SOPs) into EU domain

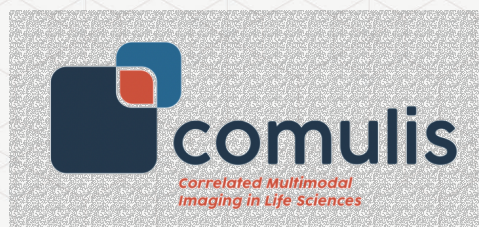


EATRIS Infrastructure Development

Synergise with initiatives in the imaging (user) community



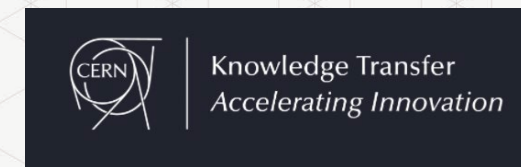
QUALITY & REPRODUCIBILITY WEBINARS
Tackling reproducibility issues in drug development



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Translational Trends

