# WELCOME TO THE PRISMAP SCHOOL ON RADIONUCLIDE PRODUCTION

## Introduction & Overview

Leuven, 27-31 May 2024

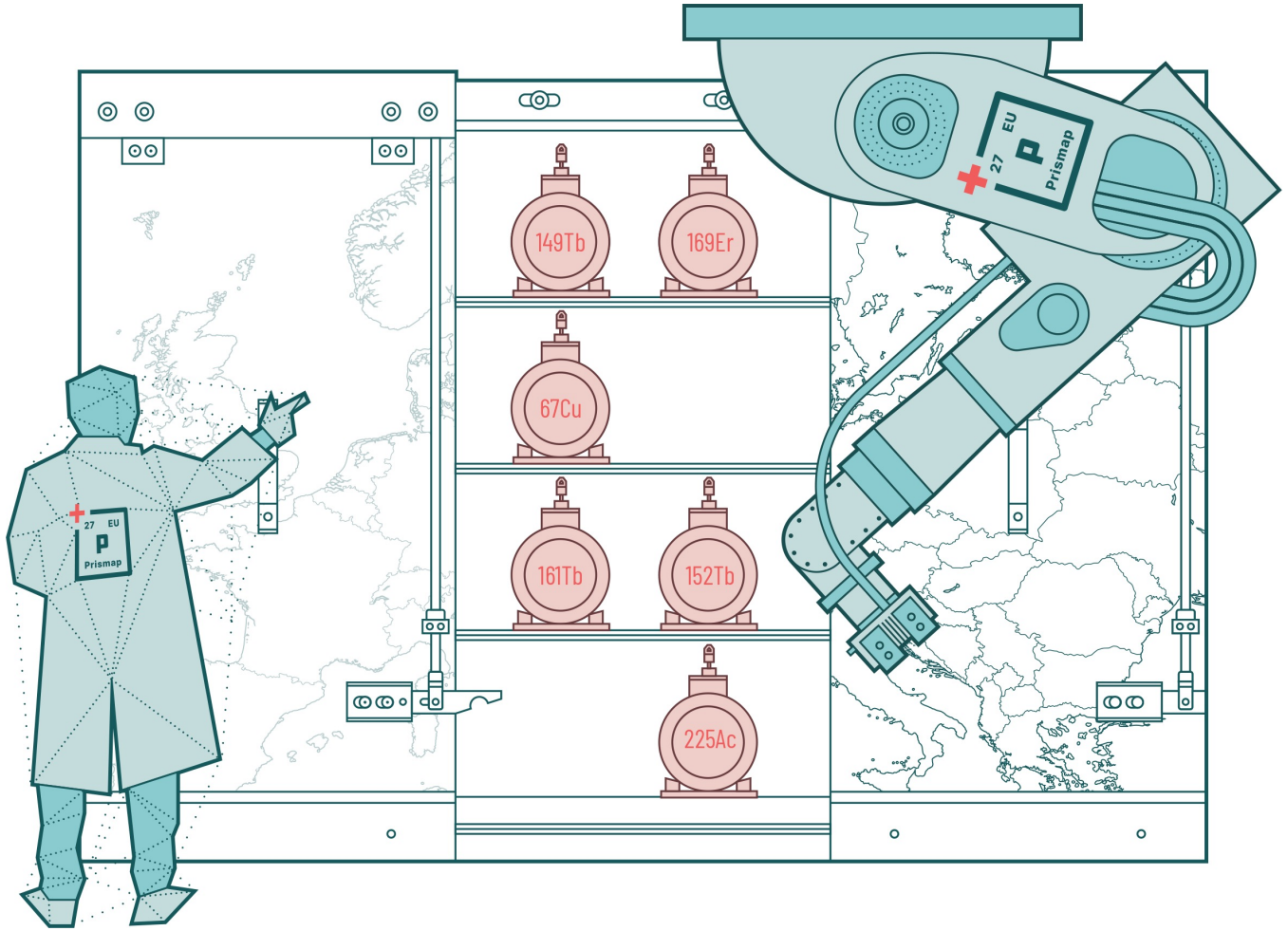
# PRISMAP

## The European Medical Radionuclide Programme

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101008571 (PRISMAP).

# PRISMAP

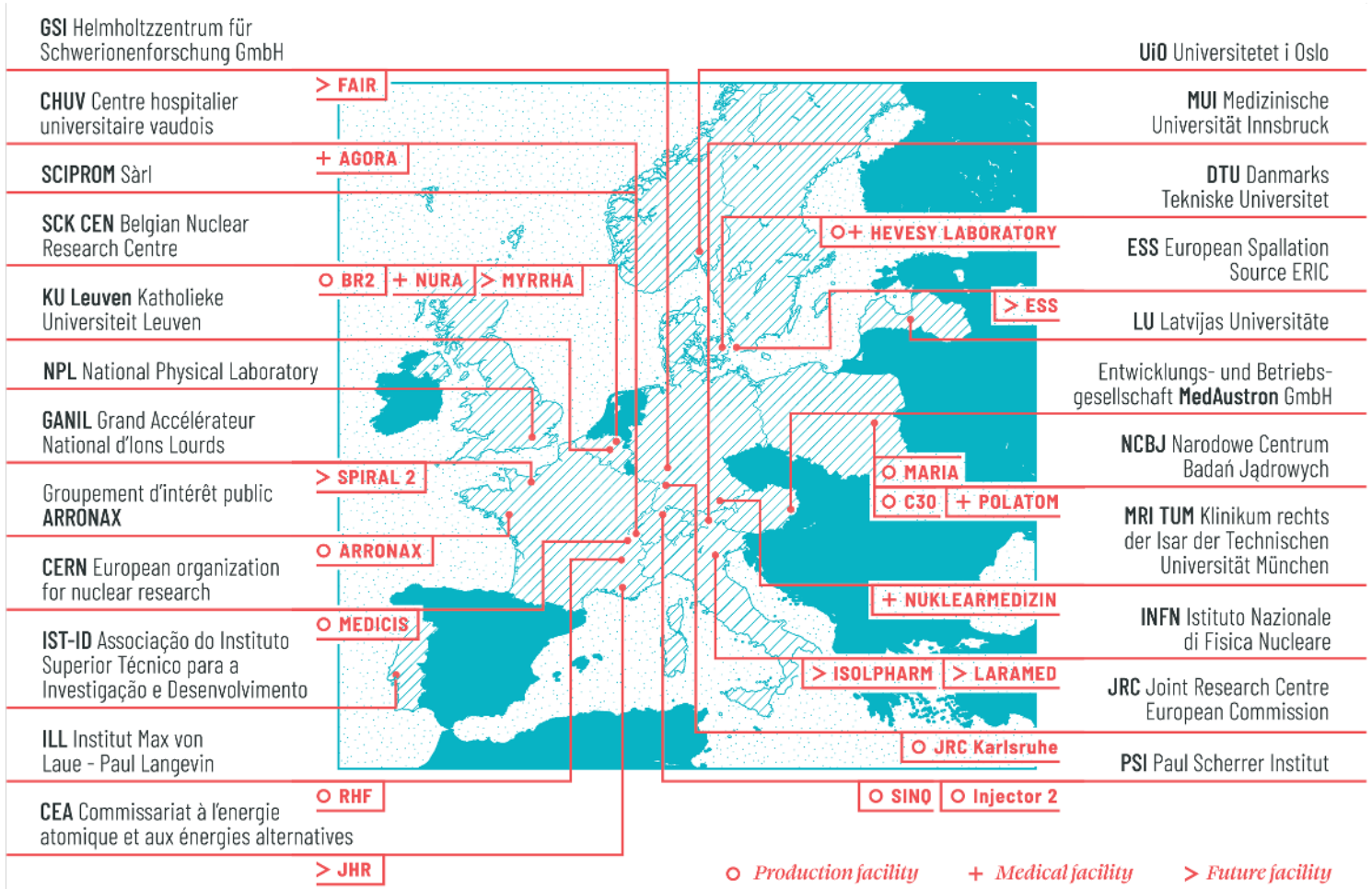
https://www.prismap.eu/radionuclides/user-forum/




- European infrastructure programme
- Provides transnational **access to novel radioisotopes** for medical research, as well as **access to facilities for biological research** with those isotopes.
- Excellence-based selection by a User Selection Panel. Two calls for project per year.
- **Open User Forum** to stay informed about our programme and to contribute to its future.

27 EU PRISMAP Medical Radionuclides

# PRISMAP

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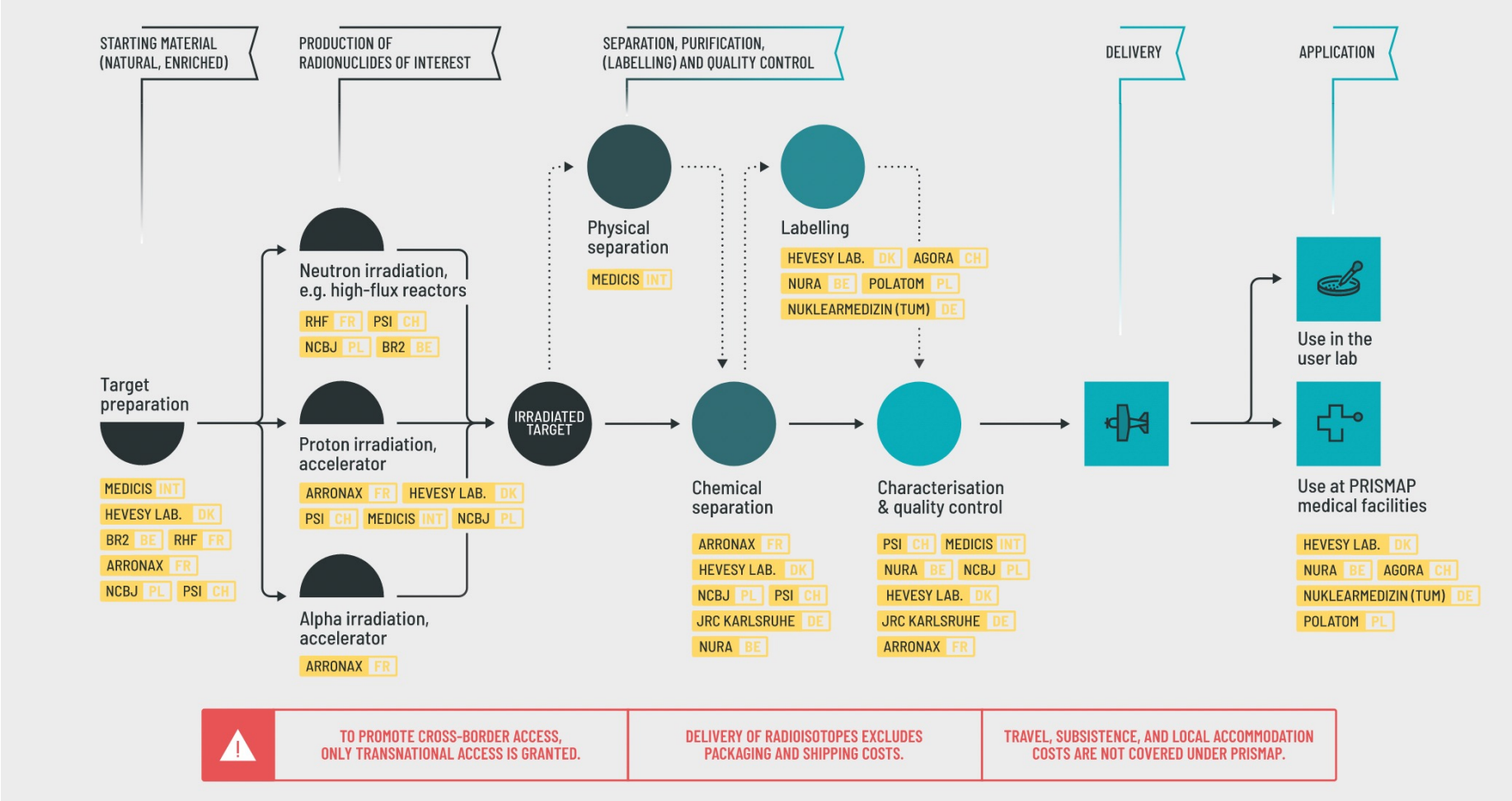
# PRISMAP


STARTING MATERIAL (NATURAL, ENRICHED)
PRODUCTION OF RADIONUCLIDES OF INTEREST
SEPARATION, PURIFICATION, (LABELLING) AND QUALITY CONTROL
DELIVERY
APPLICATION
Target preparation
MEDICIS INT
HEVESY LAB. DK
BR2 BE
RHF FR
ARRONAX FR
NCBJ PL
PSI CH
Neutron irradiation, e.g. high-flux reactors
RHF FR
PSI CH
NCBJ PL
BR2 BE
Proton irradiation, accelerator
ARRONAX FR
HEVESY LAB. DK
PSI CH
MEDICIS INT
NCBJ PL
Alpha irradiation, accelerator
ARRONAX FR
IRRADIATED TARGET
Physical separation
MEDICIS INT
Labelling
HEVESY LAB. DK
AGORA CH
NURA BE
POLATOM PL
NUKLEARMEDIZIN (TUM) DE
Chemical separation
ARRONAX FR
HEVESY LAB. DK
NCBJ PL
PSI CH
JRC KARLSRUHE DE
NURA BE
Characterisation & quality control
PSI CH
MEDICIS INT
NURA BE
NCBJ PL
HEVESY LAB. DK
JRC KARLSRUHE DE
ARRONAX FR
Use in the user lab
Use at PRISMAP medical facilities
HEVESY LAB. DK
NURA BE
AGORA CH
NUKLEARMEDIZIN (TUM) DE
POLATOM PL
TO PROMOTE CROSS-BORDER ACCESS, ONLY TRANSNATIONAL ACCESS IS GRANTED.
DELIVERY OF RADIOISOTOPES EXCLUDES PACKAGING AND SHIPPING COSTS.
TRAVEL, SUBSISTENCE, AND LOCAL ACCOMMODATION COSTS ARE NOT COVERED UNDER PRISMAP.

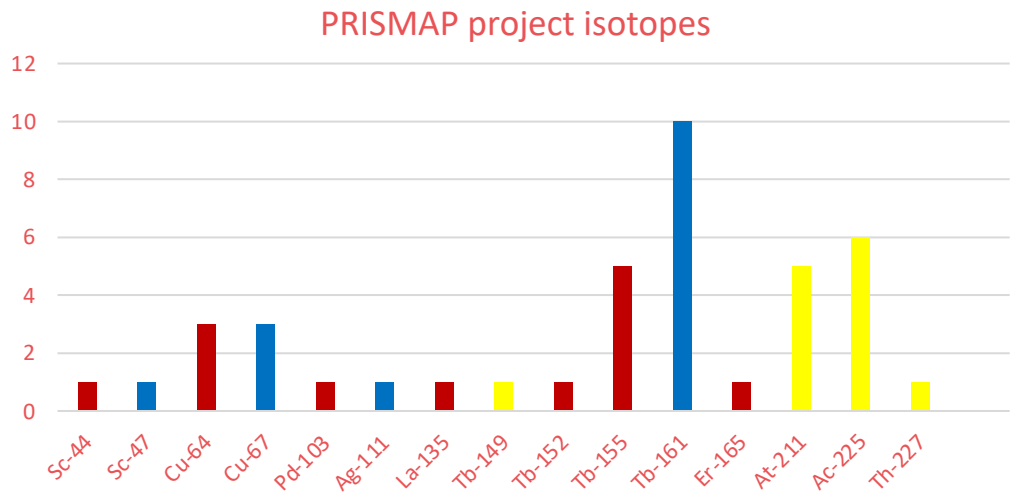
# PRISMAP portfolio

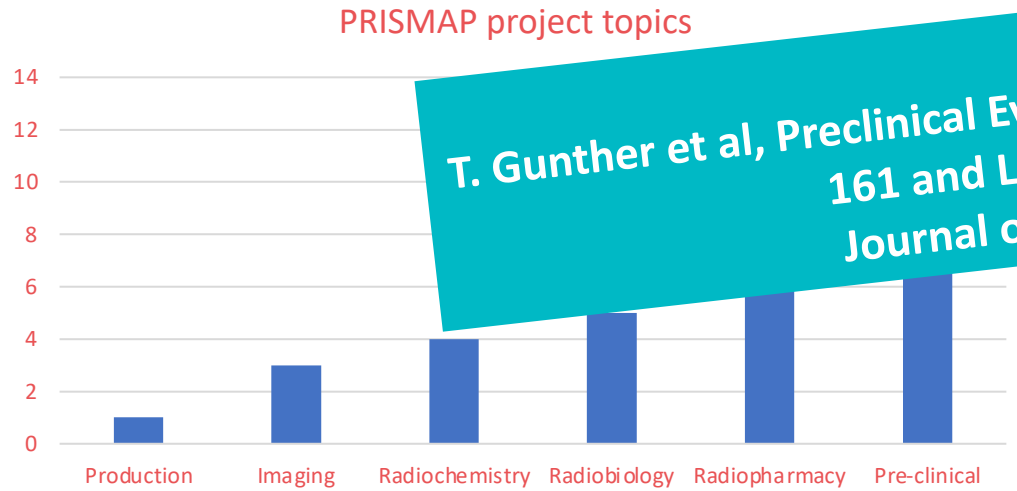
New facilities will be needed across Europe to supply medical institutions for patient care


*https://www.prismap.eu/radionuclides/portfolio/*

- PRISMAP went already through 4 calls
- Many isotopes require high-energy projectiles and/or mass separation to reach the necessary quality
  - ➢ Mass separation currently only available at CERN MEDICIS
- PRISMAP only offers transnational access for research purpose towards first-in-human trials

# Projects overview

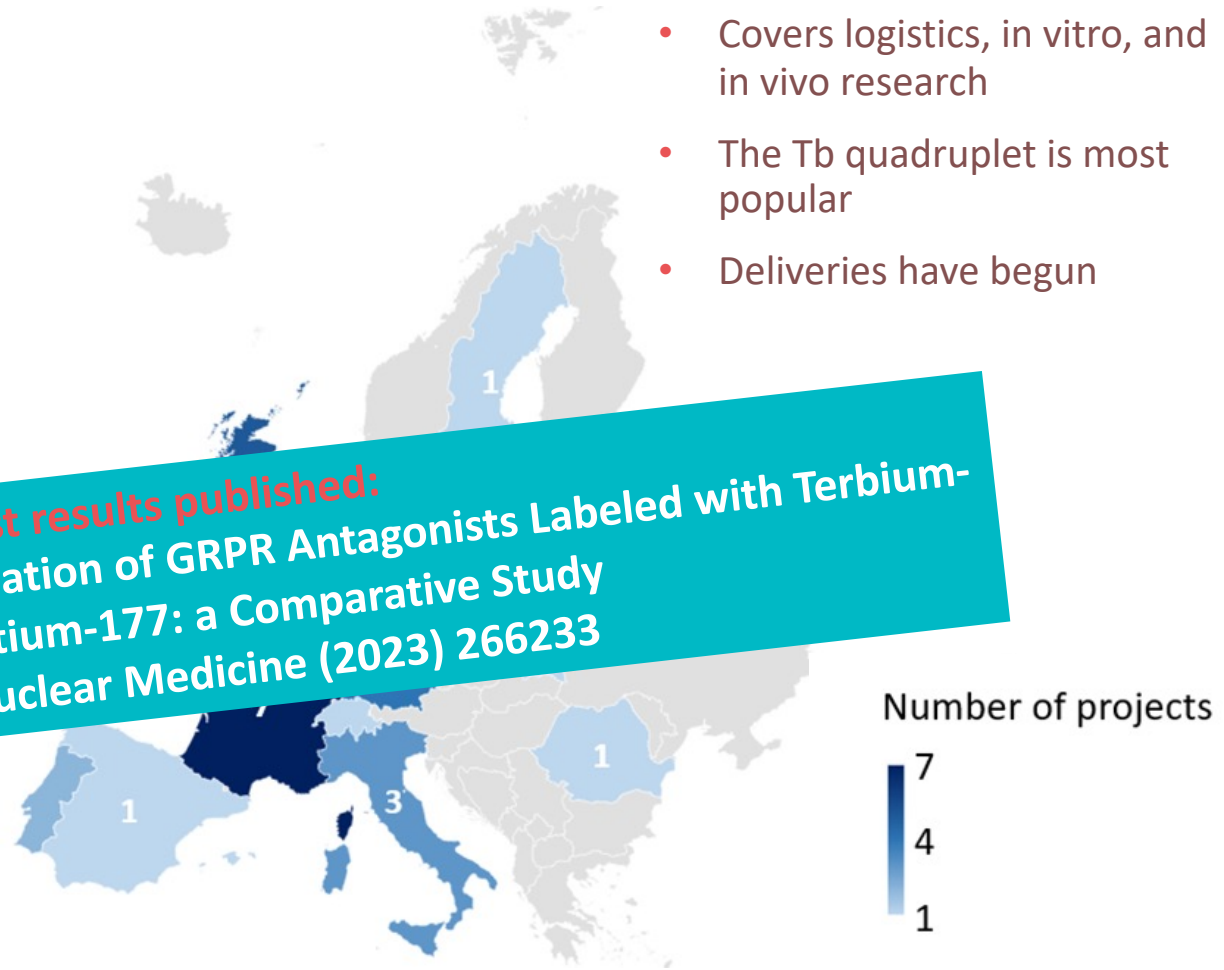



- 32 accepted projects so far
- Covers logistics, in vitro, and in vivo research
- The Tb quadruplet is most popular
- Deliveries have begun

**First results published:**

**T. Gunther et al, Preclinical Evaluation of GRPR Antagonists Labeled with Terbium-161 and Lutetium-177: a Comparative Study Journal of Nuclear Medicine (2023) 266233**

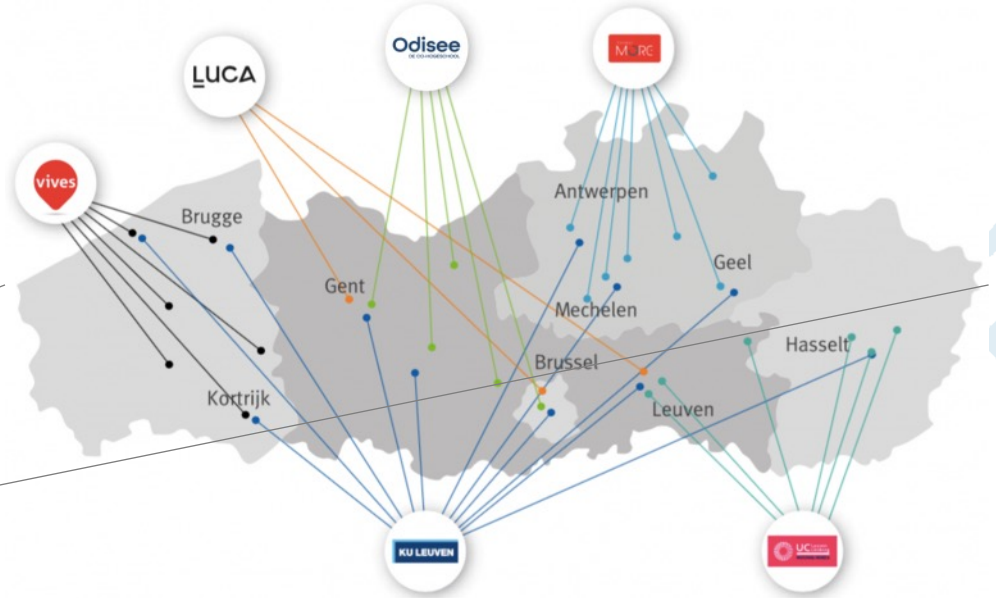



*https://www.prismap.eu/access/user-projects/*


KU LEUVEN

# KU Leuven

- Founded in 1425
- 23 campuses across Flanders
- 60,000 students across 15 Faculties
- >20,000 staff
- 3 main Groups:
  - Humanities & Social Sciences
  - Science & Technology
  - Biomedical Sciences
- #1 European university for innovation!



# KU Leuven


Gasthuisberg
Biomedical sciences
KU Leuven
Arenberg
Science & Technology
Arenberg III
Science
SINT-MAARTENSDAL
Louvain / Leuven
Martin's Klooster Hotel
Leuven
M – Museum
Kruidtuin
Auditorium Wolfspoort
TERBANK
GELZANG
Groot Begijnhof Leuven
NIEUW KWARTIER
GROENEVELD
Sportoase Leuv
HEVERLEE
TER DUIN
Dyle
Waversebaan
N253
N264
N251
N3
R23

# Gasthuisberg: Working on three locations


UZ LEUVEN

LEUVEN

**UZ Gasthuisberg**
Nuclear Medicine department
Cyclotron; $^{68}$Ga gen; $^{99m}$Tc gen
Radiochemistry (R&D and GMP)

moSAIC
www.saic.be

**O&N1**
**moSAIC**
Molecular small animal imaging centre
Animal experiments
µPET- µSPECT-µPET/MR-µPET/CT-MR-CT
Biolumin & fluorescence
Radiochemistry lab:$^{125}$I, $^{89}$Zr, $^{155}$Tb, $^{177}$Lu,$^{161}$Tb, $^{213}$Bi/$^{225}$Ac,…)

RADIOPHARMACEUTICAL RESEARCH
KU LEUVEN

**O&N2**
Offices Radiopharmaceutical Research
Organic synthesis lab, bioconjugation chemistry, SDS-page, autoradiography
Radio-LC-HRMS

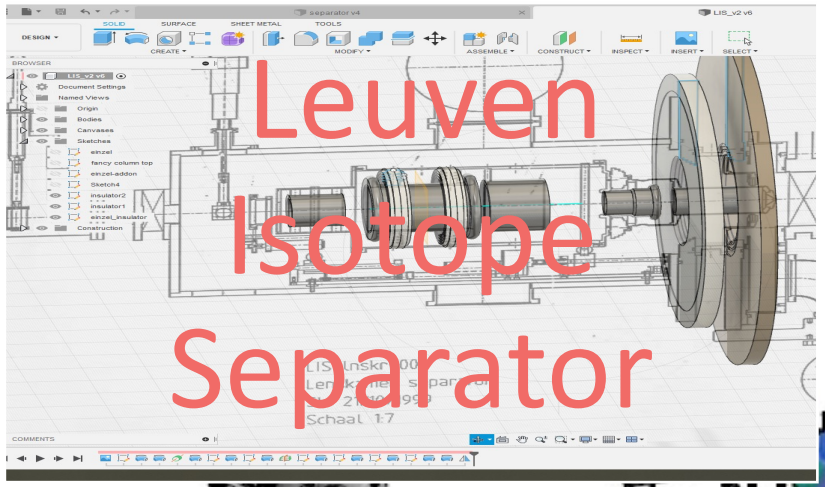
# PRISMAP SCHOOL ON RADIONUCLIDE PRODUCTION

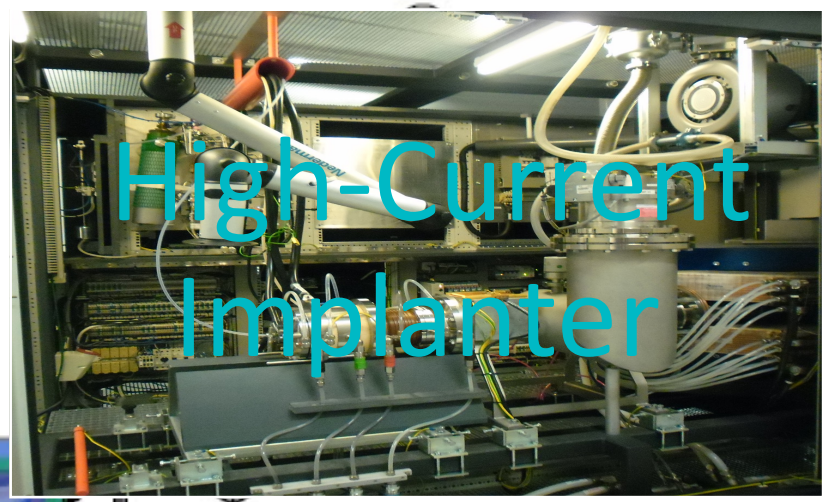
## Overview of the week ahead

# Programme day by day

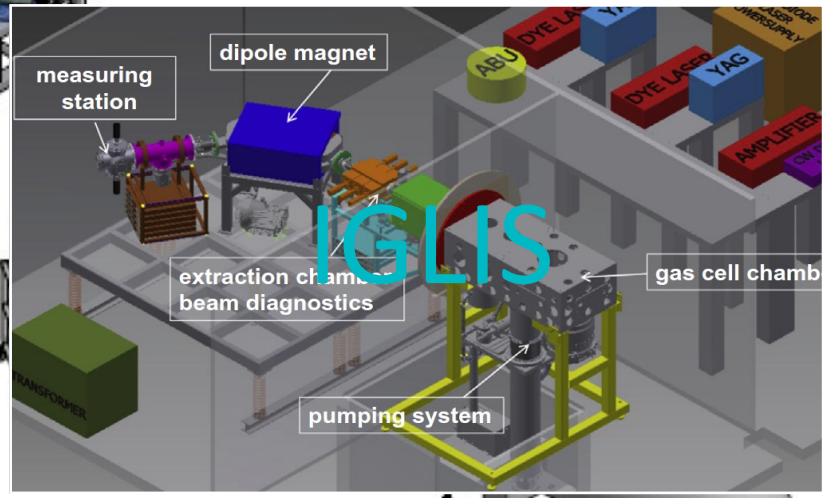
- Monday 27 May – Introductions
  - Introduction by Thomas Elias Cocolios
  - Nuclear reactions by Riccardo Raabe
  - Medical practice by Christophe Deroose
  - Icebreaker afternoon
- Tuesday 28 May – ISOL production
  - The ISOL technique by Thomas Elias Cocolios
  - Targets by Stefano Corradetti
  - Ion Sources by Mia Au
  - Separators by Julien Michaud
  - Collections by Laura Lambert
  - Sputtering by Lino Pereira & friends
  - Industrial fair
- Wednesday 29 May – Cyclotrons
  - Lab session 1
  - Medical cyclotrons by Jean-Michel Geets
  - Exotic cyclotrons by Nathalie Michel
  - Poster session
- Thursday 30 May – Reactors
  - Radionuclides from reactors by Michiel Van de Voorde
  - Stable isotope enrichment by Laurent Bigot
  - Lab session 2
  - School dinner
- Friday 31 May – Purification & Logistics
  - Radiochemistry by Zeynep Talip
  - Quality control by Kristof Baete
  - Transport by Clive Naidoo

# Lab sessions







# Social programme

- Monday afternoon: icebreaker
  - Starting with an escape game in the center of Leuven
  - Followed by a degustation of local secrets
- Tuesday: Industrial fair
  - Featuring local industry partners from the field
  - Cocktail evening in the Machinezaal
- Wednesday: Poster session
  - In the registration hall
  - With drinks!
- Thursday: School dinner
  - At restaurant De Hoorn
  - Close to the Leuven marina

# Housekeeping

- We are financed for this event by the European Commission. It requires some dilligence on our part: please sign the attendance sheet every day!
- We are also financed by YouReCa and by ENEN2+: please complete their surveys at the end!
- Be engaged: ask questions, during the session, during the panel discussions, at coffee/tea breaks, in the lab, …
- Please keep your phone on vibrate/silent.
- Exchange, make contact, discover.
- Above all, have fun!!

# The local organising committee







27 EU

PRISMAP

Medical Radionuclides

# ENJOY THE SCHOOL!

WWW.PRISMAP.EU

WWW.TWITTER.COM/MEDRADIONUCLIDE

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