ITM's Integrated Approach to Securing and Scaling Medical Radioisotopes for use in Targeted Therapies

12th ICI
16 February 2026

Dr. Michael Siegl

itm
PASSION FOR PRECISION

I have the following potential Conflict(s) of Interest to report:

Dr. Michael Siegl is a full-time employee of ITM Pharma Solutions GmbH

About ITM

Excellence in radiopharmaceutical development, production and global supply

We are:

A privately owned radiopharmaceutical biotech company headquartered at the Research Campus in Garching/Munich, Germany

An established company with a proven history as a radioisotope manufacturer and supplier and an emerging leader as a radiopharmaceutical company with a strong precision oncology drug development program and two phase III clinical trials

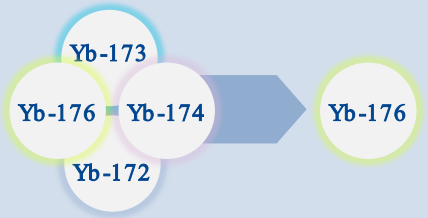
Passionate about providing our customers with state-of-the-art products and services designed to improve patient outcomes

Experts in drug development, GMP manufacturing, commercialization and global supply logistics for both diagnostic and therapeutic radioisotopes and radiopharmaceuticals

ITM's n.c.a. Lu-177 product – Pillars for Success

Raw Material

- ✓ Secured long-term enriched Yb-176 supply
- ✓ Developed a robust and reliable process for Yb-176 recycling



Security of raw material is crucial for scalable, sustainable and stable production of n.c.a. Lu-177

Production Sites

Established infrastructure to meet the needs of our customers

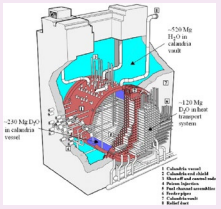
- Ideally located in one of Europe's leading biotech regions, next to the research neutron source, surrounded by top universities and close to Munich Airport
- GMP laboratories for manufacturing of a new generation of radioisotopes and radiopharmaceuticals
- Two production facilities with 900 m² and 7000 m²
- Clean rooms and dedicated hot cells for GMP radiolabeling up to class A
- In-house control area and sophisticated radiation protection system
- Dedicated team of experts with leading track records in radioisotope sourcing, processing and radiolabeling

Irradiation Network

2008 2012 2016 2020 2024

Exclusive Partnership with Bruce Power and Isogen

Robust Irradiation Capacity

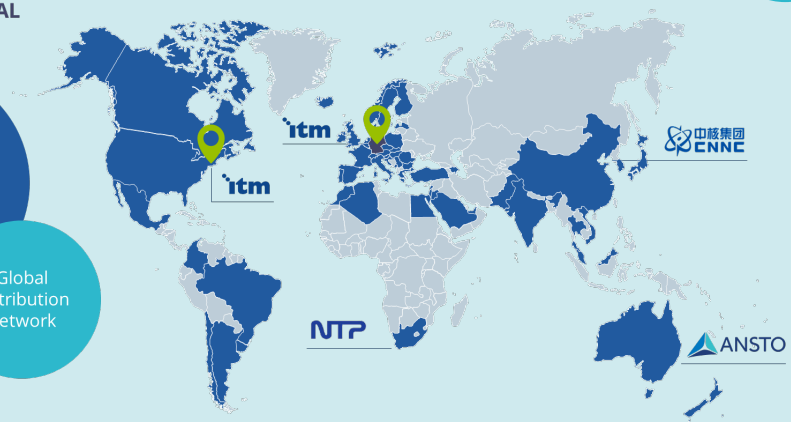


Sales & Logistics

GLOBAL COMMERCIAL PRESENCE

Sales in more than 60 countries and over 600 clinics worldwide

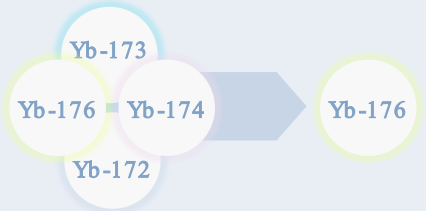
Global distribution network



ITM's n.c.a. Lu-177 product – Pillars for Success

Raw Material

- ✓ Secured long-term enriched Yb-176 supply
- ✓ Developed a robust and reliable process for Yb-176 recycling



Production Sites

Established infrastructure to meet the needs of our customers

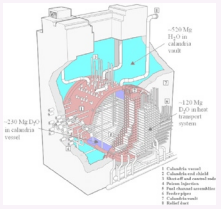
- Ideally located in one of Europe's leading biotech regions, next to the research neutron source, surrounded by top universities and close to Munich Airport
- GMP laboratories for manufacturing of a new generation of radioisotopes and radiopharmaceuticals
- Two production facilities with 900 m² and 7000 m²

How can this be translated to Actinium-225?

2008 2012 2016 2020 2024

Exclusive Partnership with Bruce Power and Isogen

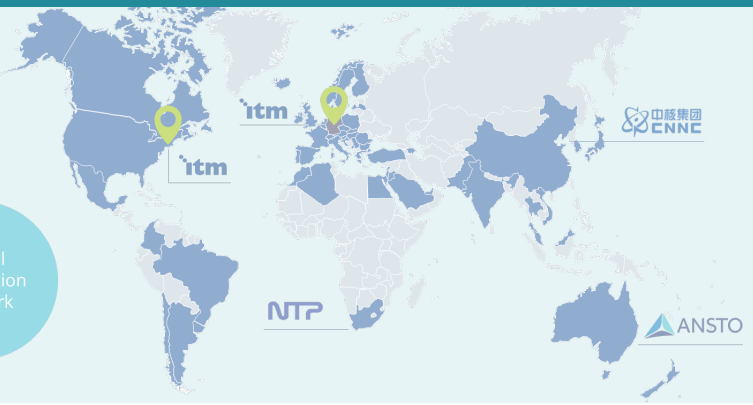
Robust Irradiation Capacity



PRESENCE

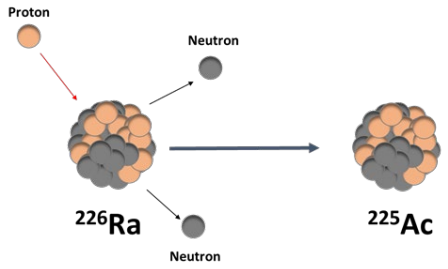
Sales in more than 60 countries and over 600 clinics worldwide

Global distribution network



^{225}Ac Production Routes

$^{226}Ra(p, 2n)^{225}Ac$

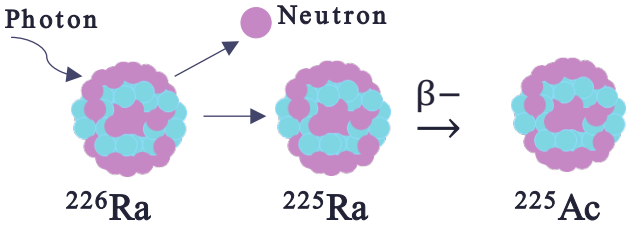


Medium-energy proton irradiation:

15 – 17 MeV range+

+ Reaction threshold ≈ 9 MeV

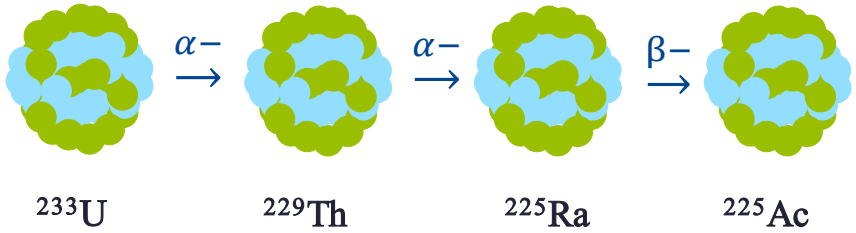
$^{226}Ra(y, n)^{225}Ra \xrightarrow{\beta-} {}^{225}Ac$



High-energy gamma irradiation:

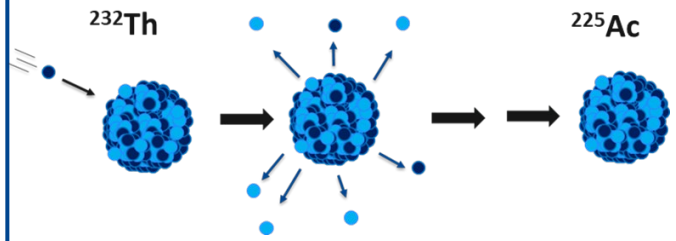
10 – 15 MeV range*

^{229}Th Generator



Relies on Decay Process

$^{232}Th(p, x) \rightarrow {}^{225}Ac$



High-energy proton irradiation (Spallation):

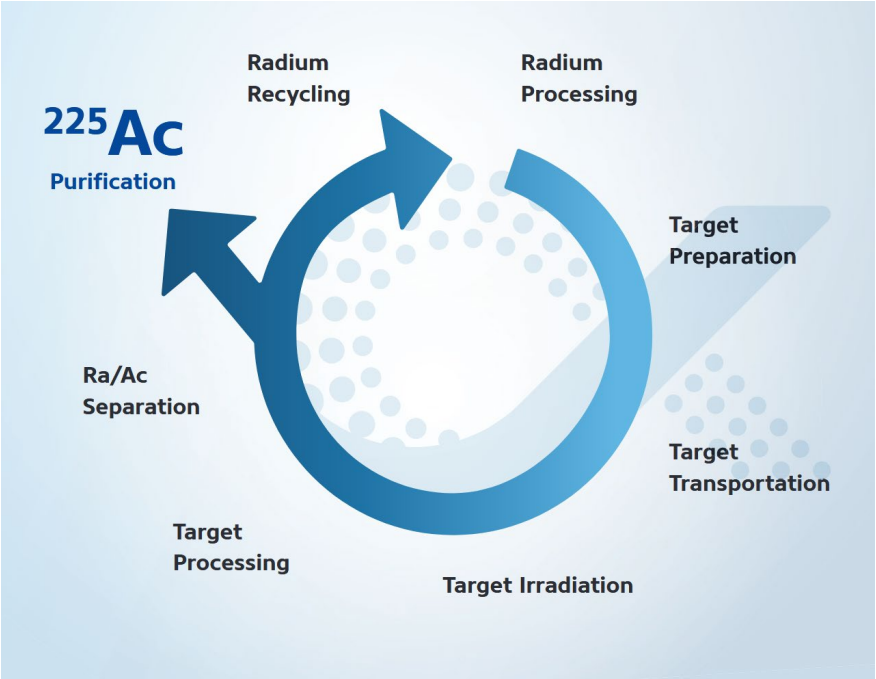
>80 – ~440 MeV#

Reaction threshold ≈ 80 MeV

Other production routes are technically possible but less feasible, and therefore not displayed.

$^{226}Ra(p, 2n)^{225}Ac$: Overview

Closed-Loop Production



- Actinium Pharmaceuticals & TU Munich (2002-2008)
- Proof of principle for routine closed-loop production achieved
- Opportunity for further improvements

Published Production Data

Demonstrated large cross-section (~700 mbarns) using **established technology** (cyclotrons)

Small ^{226}Ra-targets achieve **large ^{225}Ac activities**

- 30.1 mg ^{226}Ra → 480 MBq ^{225}Ac (Apostolidis 2005)
- 100 mg ^{226}Ra → >2 GBq. ^{225}Ac (Harfensteller 2008)

Favourable (p, xn) ratio produces **high purity ^{225}Ac**

- >99% Radionuclidic purity (Nagatsu 2021)

- ✓ **Established Technology**
- ✓ **Large Activities**
- ✓ **High Purity**
- ✓ **Reproducible Process**

Horn et al., *Appl. Radiat. Isot.* 2024; Apostolidis et al., *Appl. Radiat. Isot.* 2005; Harfensteller et al., *WTTC12* 2008; Nagatsu et al., *EJNMMI* 2021

Actineer®: Joint Venture for the future of ^{225}Ac

Cyclotron

^{226}Ra target irradiation

Canadian Nuclear Laboratories | Laboratoires Nucléaires Canadiens

^{226}Ra supply, target production, irradiated target processing & recycling

itm PASSION FOR PRECISION

- ^{225}Ac Production
- Sales & Marketing
- Distribution

Future intended use:

Clinical trials

Therapy

Research

Facilities, Ra-226 stockpiles, equipment, expertise & experience already in place for Ac-225 production at ITM & CNL.

Applying Pillars for Success to ^{225}Ac

Raw Material

- ✓ Actineer has access to large quantities of ^{226}Ra
- ✓ E2E Process was developed to specifically retain ^{226}Ra

Sustainable process with future supply secured

Production Sites

Established infrastructure to meet the needs of our customers

^{226}Ra target manufacturing, processing and recycling in place at CNL

^{225}Ac production site with experienced personnel and existing infrastructure

itm PASSION FOR PRECISION

Irradiation Network

- ✓ Cyclotrons are a well-established technology
- ✓ Actineer has access to existing infrastructure

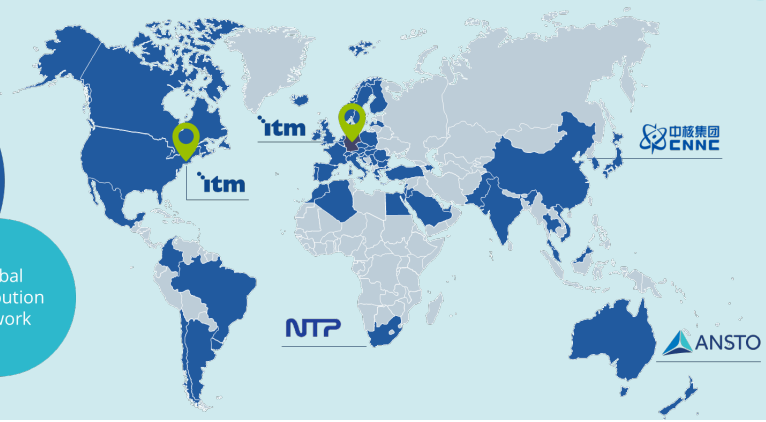
Robust irradiation capacity with expansion potential

Sales & Logistics

GLOBAL COMMERCIAL PRESENCE

Sales in more than 60 countries and over 600 clinics worldwide

Global distribution network



ITM Pharma Solutions GmbH
Lichtenbergstrasse 1
85748 Garching / Munich

Email:
info@itm-radiopharma.com
www.itm-radiopharma.com

The information in this presentation also reflects prevailing conditions, to the best of our knowledge, as of this date, all of which are accordingly subject to change. In preparing this presentation, we have relied upon and assumed, without independent verification, the accuracy and completeness of all information from public sources or which was otherwise reviewed by us. No representation nor warranty is given as to the accuracy or completeness of such information contained in this presentation.

itm
PASSION FOR PRECISION