

ISOTOPE



68

Ga

Gallium



Gallium-68

Advancing PET Imaging
and Theranostics



Feature of the Month

Gallium-68

Gallium-68 (Ga-68) is a short-lived medical radioisotope used in **Positron Emission Tomography (PET)** imaging, which is used widely in theranostic trials.



Beta-Decay

A positron-emitting radionuclide that decays into stable zinc-68, enabling rapid imaging with reduced radiation exposure.



Clinical

One of the most widely used diagnostic isotopes in theranostic clinical trials



Half-life

Approximately 68 minutes

»»» DID YOU KNOW?

Ga-68 is one of the earliest of the positron-emitting radionuclides to have been applied to clinical medicine, dating back to the early 1960s, long before fluorodeoxyglucose (FDG).



PET IMAGING

Gallium-68-dotatate PET-computed tomography scans of the patient:
Source: DOI:10.1634/theoncologist.2020-0029

Gallium-68

HOW IS GA-68 PRODUCED?

Ga-68 can be produced by both **generators and cyclotrons**.

- ✓ Dependable and convenient on-site production.
- ✓ Flexibility allows for production in both small (using generators) and large (using cyclotrons) quantities.
- ✓ Both technologies will play a critical, complementary role in accelerating the availability of Ga-68.

CLINICAL APPLICATIONS

Ga-68 is currently being studied and used across a broad range of indications and diseases, including:



Head and neck
cancers



Kidney cancer



Skin cancers



NETs



Brain
tumours



Colorectal
cancer



Pancreatic
cancer

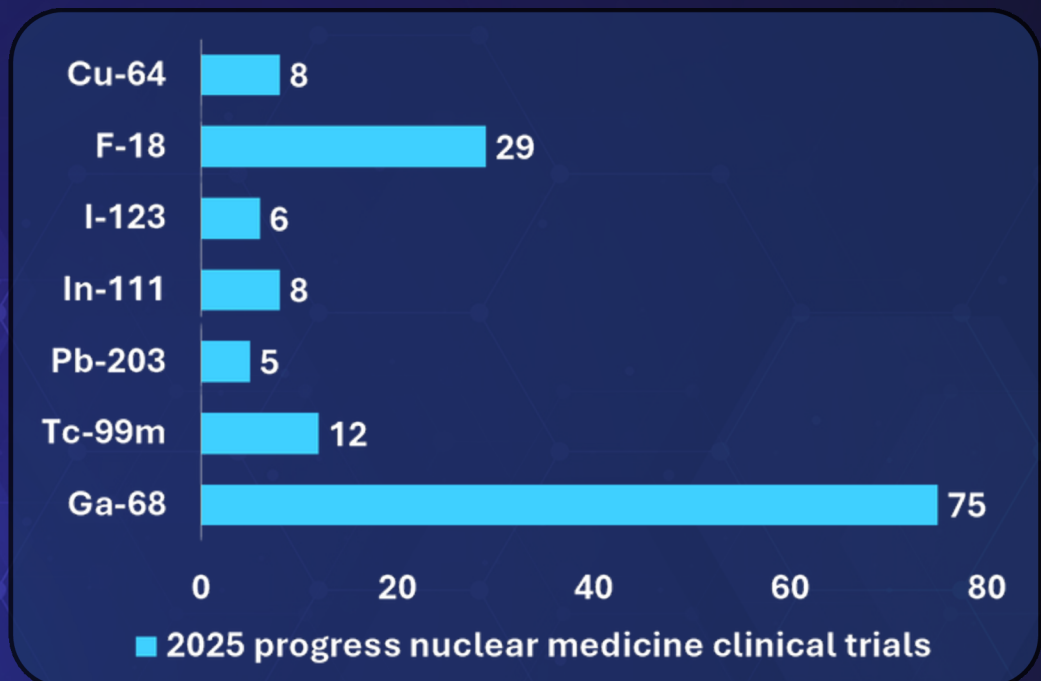


Esophageal
cancer



Prostate
cancer

Diagnostic isotopes used in current theranostic trials



SOURCE: Cardinal Health Data on File. Clinicaltrials.gov dissected:
2025 progress in nuclear medicine clinical trials (October 2025)

DID YOU KNOW

Health Canada approved the use of Illuccix® (Ga-68 PSMA) in selecting patients for PSMA-targeted radionuclide therapy



Gallium-68



ARTMS | A Telix Company provides the QUANTM® Irradiation System, a turnkey cyclotron-based solid target platform that allows hospitals, radiopharmacies, and production sites to generate Ga-68 and other isotopes locally.



Telix Pharmaceuticals produces Illuccix® (Ga-68-PSMA), a leading diagnostic radiopharmaceutical used for prostate cancer imaging in Canada. Telix has a second Ga-68-PSMA agent approved in the U.S. and is investigating multiple complementary PSMA-targeting therapeutics in late-stage trials using a theranostic approach.



The **Sylvia Fedoruk Canadian Centre for Nuclear Innovation** operates the Saskatchewan Cyclotron Facility and handles a wide range of isotopes including Ga-68 for research.



Isologic Innovative Radiopharmaceuticals ensures a reliable national supply of Ga-68 radiodiagnostics through the production of patient-ready Illuccix™ unit doses in Quebec and Ontario and the distribution of Illuccix™ cold kits across Canada, in partnership with Telix Pharmaceuticals. Isologic also partners with IRE ELIT to distribute the Galli Eo® Ga-68 generator, enabling hospitals beyond the reach of its production facilities to reliably produce Ga-68 for clinical applications.



Canadian Nuclear
Laboratories

Laboratoires Nucléaires
Canadiens

Canadian Nuclear Laboratories provides CRO services to support radiopharmaceutical development and preclinical testing, with expertise in the safe handling and application of a wide range of medical isotopes, including Ga-68.



isoSolutions is a leader in global distribution, marketing, and sales of nuclear medicine products. isoSolutions holds a Drug Master File for the iThemba Ge-68/Ga-68 generator with Health Canada. Ga-68 generators are readily available to nuclear medicine facilities and radiopharmaceutical providers.



TRIUMF is Canada's particle accelerator centre and a global leader in multidisciplinary research. Its current isotope portfolio includes Ga-68.



WWiKY Biosciences specializes in the research, preclinical, and clinical evaluation of radiotheranostic products targeting hypoxic tumors, and is advancing a pipeline of theranostic agents labeled with Ga-68.

References

Banerjee SR, Pomper MG. Clinical applications of Gallium-68. Appl Radiat Isot. 2013 Jun;76:2-13. doi: 10.1016/j.apradiso.2013.01.039. Epub 2013 Feb 20. PMID: 23522791; PMCID: PMC3664132.

Cardinal Health. Ga-68

Cardinal Health. Ga-68 is key - How thought leaders are unlocking advances in PET imaging and theranostics

Expanding Role for Gallium-68 PET Imaging in Oncology

Isologic. IRE Elit and Isologic announce the approval of the Gallium-68 generator, Galli Eo®, as a drug in Canada

Mojun Zhu, Mohamad Bassam Sonbol, Thorvardur Halfdanarson, Timothy Hobday, Daniel Ahn, Wen Wee Ma, Tanios Bekaii-Saab, Homologous Recombination Repair Defect May Predict Treatment Response to Peptide Receptor Radionuclide Therapy for Neuroendocrine Tumors,

RadiaCode: Ga-68

Radiolabeled bombesin derivatives for preclinical oncological imaging.

Sunway Cancer Centre. Gallium-68 Dotatate Scan

Telix. Health Canada Approves Label Expansion for Telix's Illuccix® to Include Patient Selection for PSMA-Targeted Therapy

