

**The Hospital de Clínicas of the University of Campinas will produce radiopharmaceuticals not yet available in Brazil for the diagnosis and treatment of cancer**

The Hospital de Clínicas of the University of Campinas (HC-UNICAMP) inaugurated, on Monday, June 6, 2024, the Radiopharmacy Laboratory of the Division of Nuclear Medicine. With this inauguration, HC-UNICAMP will begin labelling of several radiopharmaceuticals not yet available in Brazil for medical applications in combining diagnosis and treatment of cancer using radiopharmaceuticals, called Theranostics.

The Theranostics radiopharmaceuticals that will be produced at HC-UNICAMP hospital include PSMA-gallium68 (diagnosis) and PSMA-lutetium177 (therapy) of prostate cancer and other tumors; DOTA-gallium68 (diagnosis) and DOTA-lutetium177 (therapy) for neuroendocrine neoplasms. In addition diagnostics radiopharmaceuticals such as FES for breast cancer, TAU for advanced dementia, fluoride for bone metastasis, among many others, will be labelled.

"One of the main problems in nuclear medicine in Brazil is access to new tracers widely used in developed countries. With this project, patients will have access to the above-mentioned radiopharmaceuticals for diagnosis and therapy," explained Dr. Barbara Juarez Amorim, coordinator of the Division of Nuclear Medicine of HC-UNICAMP.

The laboratory renovation and equipment were purchased with resources from the International Atomic Energy Agency ([IAEA](#)), one of the arms of the United Nations (UN). Two biological safety cabinets were installed in the space, three pass-throughs for safe material passage between environments, a glove box for handling radioactive iodine, and a synthesis

module for radiopharmaceutical production. The room is completely shielded and also contains equipment for endotoxin quality control and containers for radioactive waste. The Radiopharmacy laboratory occupies 20 square meters within the nuclear medicine area on the hospital's second floor. The renovation of the area was also supported in part by The CancerThera research, a project [CEPID-FAPESP](#), with an investment of R\$ 150,000.

### **Training and Education Center**

The inauguration of the Radiopharmacy is part of implementing the National Center for Education and Training in Nuclear Medicine Radiopharmacy (NNM-RTC), a partnership between UNICAMP and IAEA. The total investment in the project is approximately R\$ 2.7 million, with a duration of four years. NNM-RTC's principal researcher is Elba Etchebehere, MDPHd, and the assistant researcher is Allan de Oliveira Santos MDPHd, both associate professors and nuclear medicine physicians of the Division of Nuclear Medicine of HC-UNICAMP.

Etchebehere emphasizes that NNM-RTC aims to improve disease management in the Brazilian population by promoting the routine and large-scale use of radiopharmaceuticals for diagnosis and therapies. The project also includes professional training activities, such as missions with specialists, scientific visits, fellowship programs, and the implementation of a residency in Radiopharmacy, in partnership with UNICAMP's Faculty of Medical Sciences, along with the development of new research lines in partnership with CancerThera (CEPID-FAPESP). "There is no model for a National Radiopharmacy Training Center and residency in radiopharmacy in Brazil and Latin America. This project will hopefully open other doors with

the IAEA/UN, and UNICAMP will be a pioneer in implementing the residency in radiopharmacy," said Elba.

UNICAMP's hematologist Cármino de Souza, executive director of CancerThera (CEPID-FAPESP), stated that several projects and research collaborations with Unicamp and other Brazilian and foreign institutions are closely related to the production of these new radiopharmaceuticals. "HC-UNICAMP must be a cutting-edge and reference hospital in education, assistance, and research. Therefore, a modern, well-equipped, and well-established nuclear medicine service will be a model of the future nuclear medicine infrastructures," highlighted Cármino.

### **Expansion**

The HC-Unicamp's superintendent, Professor Elaine Cristina Ataíde, congratulated the team during the inauguration of the Radiopharmacy Teaching and Training Center and emphasized the enthusiasm of the nuclear medicine team throughout the implementation process and its future developments. "We want HC-UNICAMP to be a national and international reference in nuclear medicine, in the use of high technology and scientific innovation for cancer treatment, generating a disruptive movement in the entire healthcare field," concluded Elaine.

For the second semester of this year, the expansion of the Radiopharmacy is planned with creating therapeutic rooms for patients and acquiring state-of-the-art equipment for planning cancer treatment therapies. By 2025, the start of the residency in Radiopharmacy and the inauguration of the entire new nuclear medicine area are planned.