



DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Government Owned Invention Available for License: Quantitative Particle Identification (QPID) Digital Autoradiography System

AGENCY: National Institutes of Health, HHS.

ACTION: Notice.

SUMMARY: The National Cancer Institute (NCI) seeks research co-development partners and/or licensees for a QPID digital autoradiography system with particle identification capabilities.

FOR FURTHER INFORMATION CONTACT: Inquiries related to this license opportunity should be directed to: Eric Cheng, Ph.D., Technology Transfer Manager, NCI, Technology Transfer Center, Email: eric.cheng2@nih.gov or Phone: 240-276-5978.

SUPPLEMENTARY INFORMATION: Autoradiography is a photographic process that exposes a medium, sensitive to radiation, to a sample emitting radiation. The current state of the art involves exposing a thin slice of tissue to an ionization-sensitive film for several hours or days and then scanning the film into an autoradiography image. This image is created using the sum of the ionizations from all the decays that occurred during the time of exposure on the ionization-sensitive medium. Imaging quality of these samples can be improved by collecting information from each individual decay to enhance the autoradiographic measurement.

Researchers at NCI developed a QPID digital autoradiography system to measure the energy deposition from charged particles for each individual radioactive decay. The QPID leverages the ionizing radiation detection features of the Timepix3 detector to generate autoradiograph images in units of dose per unit time and area. The high readout speed of the Timepix3 gives the

detector the capability to measure separate decay ionizations. It also segregates the image into one generated only by alpha and the other only by beta particles. A gamma detector was interfaced with the Timepix3 – allowing tagging charged particle ionization events in coincidence with a gamma emission during the isotope decay. This allows for a method to distinguish between alpha and positron emitting radioisotopes when imaged concurrently in the same pathology sample. This is the most unique feature of the QPID which will aid the development of new theranostic treatments in which two similar ligands are used.

“This Notice is in accordance with 37 C.F.R. § 404.4 Authority to grant licenses.”

NIH Reference Number: E-201-2023.

Related Technologies: N/A.

Product Type: Device.

Therapeutic Area(s): Oncology | Radiology

Development Stage: Prototype.

Publications:

- Adler SS, et al. A Quantitative Particle Identification (QPID) spectral autoradiography system. (PMID40374923).

Patens: PCT Stage, filed May 29 2025.

Potential Commercial Applications:

- Improved radiotherapy dosing for cancer treatment.
- Improved radiotherapy guidance for cancer treatment.
- Improve accuracy of biopsy procedures through real-time tracer measurement and detection.
- Measuring dual radioligand pathology samples.

Competitive Advantages:

- QPID can measure charge particle activity for individual decays (alpha, beta, and gamma).
- QPID measures absolute time of decay relative to the start of data acquisition.
- QPID more accurately measures radioactive dose in a tissue sample.

Collaboration Opportunity: Researchers at the NCI seek licensing and/or co-development research collaborations for developing the QPID system for improved autoradiography imaging.

Dated: August 7, 2026.

Richard U. Rodriguez,

Associate Director,

Technology Transfer Center,

National Cancer Institute.

[FR Doc. 2026-16439 Filed: 8/11/2026 8:45 am; Publication Date: 8/12/2026]