



ARGONNE RESEARCHERS FIRST TO UNLOCK RADIOISOTOPE THAT OFFERS ENHANCED CANCER TREATMENT

THE OPPORTUNITY

Nuclear medicine uses radiation to provide diagnostic information about the functioning of a person’s specific organs, or to treat them. Radiotherapy can be used to treat some medical conditions, especially cancer, using radiation to weaken or destroy particular targeted cells.

Over 40 million nuclear medicine procedures are performed each year, and demand for radioisotopes is increasing at up to 5% annually.

Theranostic/theragnostic radioisotopes represent a highly attractive alternative to using purely therapeutic isotopes for cancer treatment. Having both diagnostic and therapeutic emissions provides multiple critical advantages, including:

- Real-time monitoring of treatment
- Lower dose to the patient
- Fewer treatments

THE PIVOTAL DISCOVERY

The U.S. Department of Energy’s (DOE) Argonne National Laboratory has developed and patented a process for producing Copper-67, a radioisotope that has garnered considerable attention in the medical community because it has emissions suitable for both diagnostic imaging and targeted cancer therapy.

According to researchers and clinicians, Cu-67 has great potential in a class of new drugs for the treatment of neuroendocrine tumors (NETs), prostate cancer, non-Hodgkin’s lymphoma, and other cancers.

THE IMPACT

- Cu-67 had been used successfully in a number of targeted radioisotope therapy clinical trials, but until Argonne began production, it had not been available in sufficient quantity and purity for consideration in mainstream pharmaceutical products.
- Argonne regularly produces batches of Cu-67 for distribution by the DOE Isotope Program to researchers and hospitals.
- Argonne’s production of Cu-67 has increased availability to researchers and hospitals, thus helping to develop new therapies and ultimately save lives.

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