MEDICAL ISOTOPES FROM LIGHT

Canadian Isotope Innovations (CII)

The Company

CII began as the Medical Isotopes Project (MIP) at the Canadian Light Source, the first of its kind in the world. The project was funded by the Natural Resources Canada Isotope Technology Acceleration Program (ITAP) and the Government of Saskatchewan. In November 2014, the CLS MIP facility proudly made its first shipment of medical isotopes produced from the dedicated linear accelerator. CII, the first company spin-off from the CLS, aims to produce safe, pure medical isotopes in a direct and reliable manner. Established in 2015, CII operates out of its headquarters and production facility located in Saskatoon.

The Technique

CII has developed a world-class solution to a shortage of medical isotopes that is threatening over 18 million diagnostic procedures each year in North America. Unlike the traditional production method, CII’s LINAC-based method uses a dedicated linear accelerator to produce radioisotopes and does not produce radioactive waste and does not use enriched uranium. Technetium 99m (Tc-99m) is prepared by blasting atoms of Mo-100 with high energy X-rays from a LINAC. This process removes a neutron from Mo-100 to create the Mo-99 isotope. Mo-99 decays into Tc-99m, which radio-pharmacists use to prepare tracers.

The Product

CII currently only produces Tc-99m, the most common radioisotope used in diagnostic procedures. It is used in 80 per cent of diagnostic tests. Nearly 10 million procedures using Tc-99m are performed each year in the United States and 1.2 million are performed in Canada. Radioisotopes play a key role in medical imaging and other forms of medical treatment to provide information about the functioning of specific organs within the human body. Radioisotopes allow physicians to diagnose a variety of ailments, including issues with thyroid, bones, heart and liver. Over 35,000 hospitals worldwide use them daily. 90 per cent of all the isotopes are used for diagnosis. The radioisotope market is a nearly $5 billion dollar industry that grows by up to 10 per cent each year.

Leading the Way

- World’s first commercial LINAC Mo-99/Tc-99m production platform
- World-class team of experts
- No long-lasting nuclear waste products
- Produce more environmentally friendly isotopes at a cost equal to or below other methods
- Will supply 16 per cent of North America’s Tc-99m by 2019
- CII’s medical isotopes are just as pure and effective as conventional reactor radioisotopes

Medical isotopes save lives. The industry needs innovation to address a critical shortage.

CLS and CII experts have created an innovative medical isotope production platform that produces cleaner, safer, higher quality medical isotopes from both raw and recycled source material.