

MEDICIS-Promed Final Conference



Contribution ID: 52

Type: **Invited**

Isotope Harvesting at FRIB

Thursday, 2 May 2019 14:00 (30 minutes)

Much like at ISOLDE, the unused primary beam at the Facility for Rare Isotope Beams (FRIB) will retain a majority of its isotope-producing capability even after passing through the main target. In the spirit of MEDICIS, we are planning to make use of that unused capacity to access valuable radioisotopes for applications such as theranostics. This secondary isotope production will occur mainly in a water-filled beamdump, and the induced radioisotopes will be “harvested” chemically via the beamdump’s water and gas cooling streams. Owing to the relative isotopic impurity of harvested elements, generator schemes will be used to achieve high specific activity and high radionuclidic purity. Preliminary testing of harvesting techniques are underway at the National Superconducting Cyclotron Laboratory (NSCL), where the theranostic ^{47}Sc has been isolated cleanly from its parent ^{47}Ca , which was produced during ^{48}Ca bombardment of a low-power prototype beamdump. The results are promising so far, but the complexity is sure to increase as FRIB is commissioned and ramps up to full power over the coming years.

Primary author: Prof. SEVERIN, Gregory (Facility for Rare Isotope Beams, Michigan State University, East Lansing, MI, USA)

Presenter: Prof. SEVERIN, Gregory (Facility for Rare Isotope Beams, Michigan State University, East Lansing, MI, USA)

Session Classification: Methods for production of novel radioisotopes for theranostics

Track Classification: Methods for production of novel radioisotopes theranostics