

## The role of IAEA in the development of radiopharmaceutical sciences with focus on alpha emitters

The Radioisotope Products and Radiation Technology (RPRT) Section of IAEA has been implementing several activities focusing on the production and quality control of alpha emitter radioisotopes and radiopharmaceuticals as well as capacity building in the field, through Technical Meetings, Workshops, Publications and Conference Supports and the IAEA-Technical Cooperation projects.

As interest to targeted therapy grows, the demand of alpha emitting radioisotope and radiopharmaceuticals continues to raise. As a result, several Member States worldwide are seeking to develop/adapt technologies for the preparation of radiopharmaceuticals labelled with various alpha-emitters. Currently Bi-213 has shown more clinical applications, thanks to its generator availability at hospital radiopharmacy. On the other hand, successful results of recent worldwide clinical trials of Ac-225 radiopharmaceuticals opened a new area for radiopharmaceutical sciences. Harmonisation and coordination of large scale production of alpha emitters with desired quality and adequate safety for human application is an important activity that IAEA has initiated. Several important events took place recently including; “The workshop on the supply of actinium-225” held at IAEA, Vienna in October 2018; “Regional Workshop on Preparation and Clinical Utilization of Radiolabelled Therapeutic Peptides” held in Poland June 2018 [1]; an IAEA publication covering quality control procedures for alpha emitter radiopharmaceuticals [2]; and the support and activities related to Technical Cooperation projects at national and regional levels aiming the production and/or application of alpha emitter radiopharmaceuticals worldwide [3].

### References:

- [1] <https://www.iaea.org/newscenter/news/new-technique-to-fight-prostate-cancer-iaea-organizes-first-of-a-kind-training-for-radiopharmacists>
- [2] Quality Control in the Production of Radiopharmaceuticals: IAEA-TECDOC-1856; (ISBN:978-92-0-107918-3);(<https://www-pub.iaea.org/books/IAEABooks/13422/Quality-Control-in-the-Production-of-Radiopharmaceuticals>)
- [3] Asia-Pacific Regional Training course on “Preparation and clinical utilization of radiolabelled therapeutic peptides (under RAS/6/082), Singapore, May 2017.

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