

# The Action Plan for Promotion of Production and Utilization of Medical Radioisotopes (Outline)

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## Background

### Expectations for Radioisotope Therapy

- Increased focus on *“theranostics”* (therapy + diagnosis)

### Movements and Problems in Japan

- *Restart of research reactors* that can produce large amounts of radioisotopes (JRR-3, “Joyo”) On the other hand, insufficient number of
  - *Hospital beds* for radioisotope therapy
  - *Human resources* who promote production and utilization of radioisotopes

### International Situation

- *Vast investment* for radioisotope production and R&D
- Forming network of research reactors and accelerators
- Accelerated *competition for acquisition* of radioisotopes and their raw materials

## Developing the Action Plan that aims to provide domestic radioisotopes to patients

The Action Plan contributes to

- Improvement of people’s welfare by enhancing the medical system through cutting-edge nuclear science and technology
- Ensuring economic security in terms of medical services

## Goals to be Achieved during next decade

- ① Establishment of a Stable Radioisotope Diagnostic System through *partial domestic production of Mo-99/Tc-99m*
- ② Implementation of *Radioisotope Treatment Using Domestic Radioisotopes*
- ③ *Dissemination of Radioisotope Treatment* in Medical Setting
- ④ Making Radioisotope-Related Fields, centered on Medicine, as a *“Strength” of Japan*

## Contents of the Action Plan

### (1) Promoting Initiatives for Domestic Production and Stable Supply of “Important Radioisotopes”

- Stable supply of *Mo-99/Tc-99m* using JRR-3 and accelerators (Manufacturing approximately *30% of domestic demand* by the end of FY2027 as far as possible, and supply to domestic)
- Strengthening R&D for mass production of *Ac-225* using “Joyo” and accelerators (Production demonstration by FY2026 with “Joyo”)
- Strengthening efforts to commercialize *At-211* (Indicating usefulness as a pharmaceutical product by FY2028)

### (2) Establishment of systems and structure to promote utilization of radioisotopes in medical setting

- Establishment of hospital rooms for radioisotope treatment (Average number of months to wait for radioisotope treatment: *3.8m (2018) -> 2m (2030)* )
- Preparation for commercialization of new radiopharmaceuticals (Th-227, Ga-68)

### (3) Promoting R&D Contributing to Domestic Production of Radioisotopes

- Technical development support for production by research reactors and accelerators
- Promotion of initiatives by the Fukushima International Research and Education Organization
- Establishment of systems of non-clinical studies of radiopharmaceuticals

### (4) Strengthening Research Infrastructures, Human Resources, and Networks for Production and Utilization of Radioisotopes

- Strengthening Human Resources in the Field of R&D and Medical Setting
- Strengthening the Supply Chain in line with Domestic Production
- Study of Mechanisms for Waste Treatment and Disposal