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Science for policy

The Joint Reseach Centre (JRC) provides independent, evidence-based knowledge and science, supporting EU policies to positively impact society

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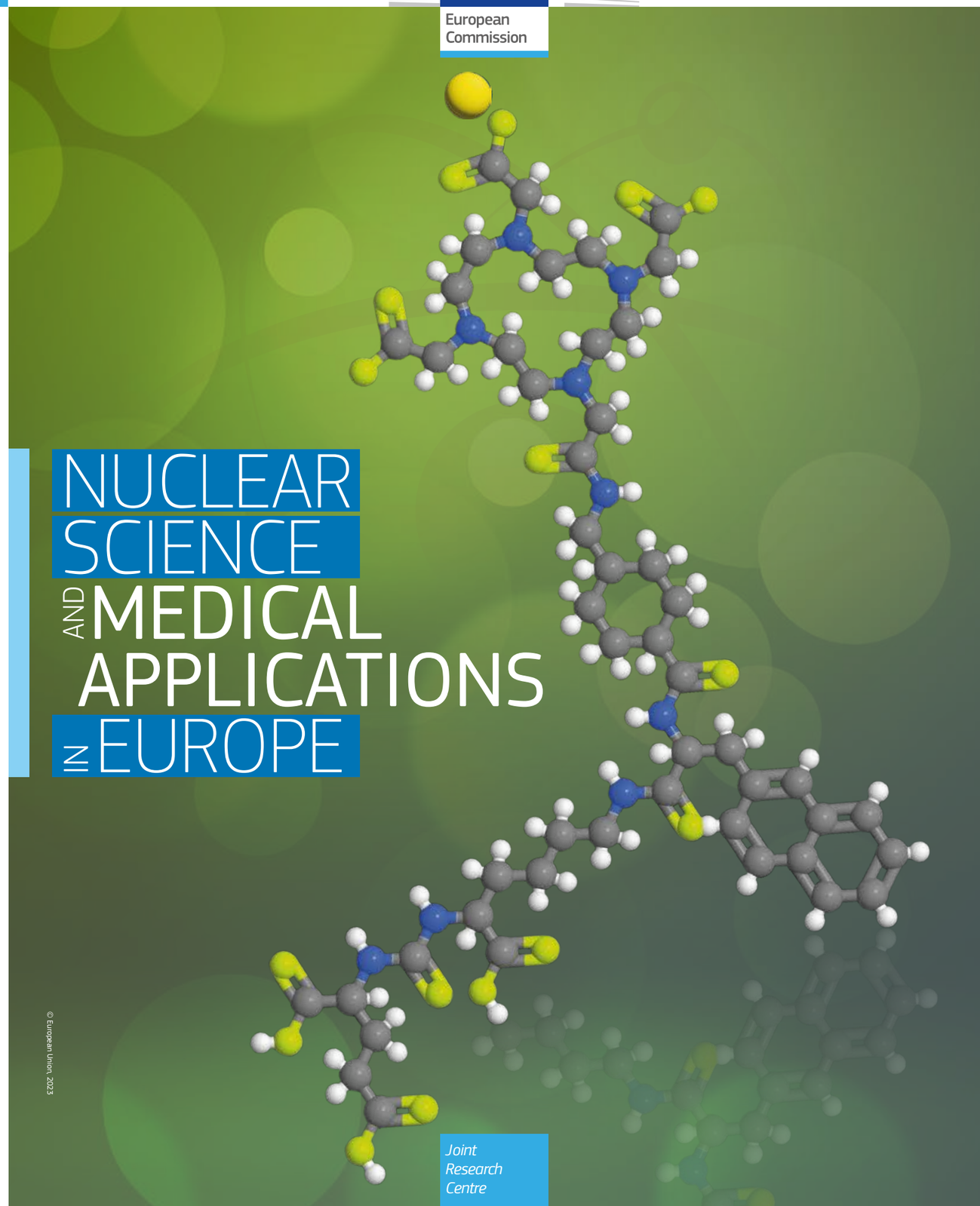

NUCLEAR SCIENCE AND MEDICAL APPLICATIONS IN EUROPE

Joint Research Centre

Nuclear medicine is a discipline that uses radioactive substances, called radiopharmaceuticals, to help diagnose and treat cancer and other serious diseases.

"This field of research is constantly advancing and offering promising results in treating an increasing number of cancer entities. Improved outcomes include prolonged survival and better quality of life. In order to apply these treatments and to reach out to more patients, the European health systems must be strengthened."

OUR SHARED MISSION

Make available innovative treatments based on nuclear science to all European patients

Maintain the EU leadership in R&D for radionuclide applications in health

F-18

Prevent shortages of the radionuclides needed to perform these procedures

Gaps in the dialogue between different actors

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The need for nuclear infrastructures and source materials for a robust supply chain

Research gaps in efficient and sustainable methods of production

Diminishing nuclear competencies in critical areas

Patients can benefit from nuclear medicine research.

European patients can benefit from the EU research programmes, which enable ***innovative technologies in cancer care.***

In particular, the technology developed at the Joint Research Centre is a promising ***novel approach to cancer therapy.*** We support hospitals and cancer centres in building the capability to offer these treatments to patients, including training in safely handling alpha emitters.

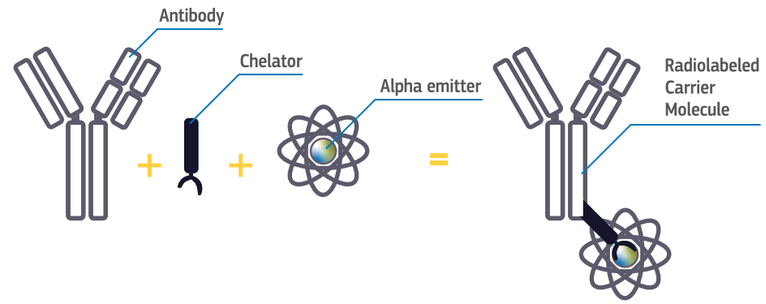
OUR COMMON CHALLENGES

We can overcome the challenges by working together.

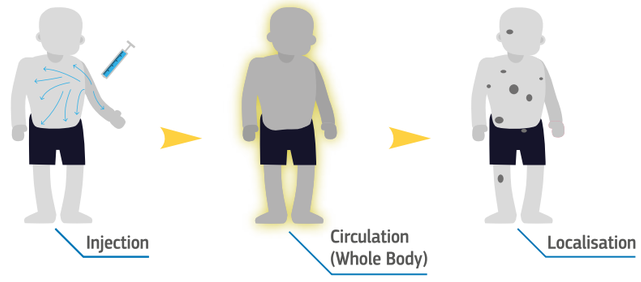
We contribute to ***avoiding critical shortages of radionuclides*** thanks to a collaboration with the EU Observatory on the Supply of Medical Radionuclides in coordination with the industry.

Thanks to the Euratom Research and Training programme actions, we assist ***in training and research on the safe use and reliable supply of medical radionuclides.***

THE JOINT RESEARCH CENTRE IS A PIONEER IN NUCLEAR MEDICINE RESEARCH



TARGETED THERAPY



The Joint Research Centre is a pioneer in the research and development of alpha emitters in oncology, supporting the development of therapies that target specific tumour cells and address the micro-metastases of various cancer types.

OUR CURRENT RESEARCH FOCUSES ON THE THERAPY OF:

prostate cancer,
brain tumours,
neuroendocrine tumours,
and bladder cancer.

More than 1,000 cancer patients worldwide have benefitted from those treatments.

These novel treatments, having ***reduced side effects,*** have significantly improved the life quality of cancer patients, extended their life span and allowed, to some extent, a cure for cancer.

More than 700 patients with metastatic prostate cancer have been successfully treated thanks to this cutting-edge research since 2014.

The Joint Research Centre, in collaboration with the University Hospital Heidelberg, Germany, achieved in 2014 a fundamental breakthrough in the treatment of metastatic prostate cancer through the joint development of an actinium-225 labelled PSMA (prostate-specific membrane antigen) targeting agent, Ac-225-PSMA617.

ONLY TOGETHER CAN WE BECOME STRONGER TO HELP EUROPEAN PATIENTS.

RESEARCH INSTITUTES, HOSPITALS, INDUSTRY, POLICYMAKERS AND OTHER ACTORS ALL HAVE A STAKE IN THIS.

OUR EFFORTS WILL PLAY A CRITICAL ROLE IN SHAPING THE FUTURE OF MEDICAL APPLICATIONS OF NUCLEAR SCIENCE IN THE EU.