EUROPEAN UNION

EU MISSIONS

CANCER

July 2023

European Research Executive Agency contributing to the Mission

IMPROVE THE LIVES OF MORE THAN 3 MILLION PEOPLE BY 2030 THROUGH BETTER PREVENTION, CURE AND QUALITY OF LIFE

EU Missions are a new way to bring concrete solutions to some of our greatest challenges. A novelty of the Horizon Europe research and innovation programme, five EU Missions were launched in 2021.

EU Mission on Cancer aims to improve the lives of more than three million people by 2030 through prevention and cures, and for those affected by cancer, to live longer with a better quality of life.

Making sure that research and innovation underpins Europe's Beating Cancer Plan, the Mission addresses four key objectives:

1. Achieving a better understanding of cancer and its risk factors
2. Preventing what is preventable
3. Optimising diagnostics and treatments
4. Improving cancer patients' quality of life

Missions are rooted in research and innovation. This helps to create effective measures, implement strategies, and build knowledge bases. The European Research Executive Agency (REA) is responsible for implementing a substantial element of Horizon Europe; allowing it to support EU-funded research projects, coordinate European innovation, develop researchers' careers, and deliver on EU policy objectives.

REA-managed projects in different domains have supported the objectives of all five Missions. Since 2014, REA has managed 2,478 projects relevant to the five Missions under the Horizon 2020 and Horizon Europe programmes, with a total EU contribution of €5.7 billion. Some projects contribute to more than one Mission.

REA SUPPORTING THE MISSION'S OBJECTIVES

- REA manages a high number of EU-funded projects in the cancer research field. Many projects that support the careers of researchers in the Marie Skłodowska-Curie Actions (MSCA) deal with cancer research, but an important contribution also comes from cutting-edge research infrastructures and reinforced cooperation with partners from around the world.
- Multinational projects managed in REA contribute towards effective cancer prevention strategies, improve early detection methods, enhance access to quality treatment and advance research into personalised and targeted therapies.
- Projects embrace many facets of research: they push the boundaries of human knowledge, increase researchers' skills, and foster scientific cooperation and coordination.

744
projects

€516 million
EU contribution

REA-MANAGED PROJECTS FIGHTING CANCER

Since 2014, REA has managed 744 projects relevant to the Cancer Mission under the Horizon 2020 and Horizon Europe programmes, with a total EU contribution of €516 million.

6 projects
Research and innovation

31 projects
Coordination and support

707 projects
Skilled researchers

PROJECT EXAMPLES

- **The life cycle of extracellular vesicles in prostate cancer: from biogenesis and homing, to functional relevance** (proEVLifeCycle)

Universities and biotech companies cooperate in the battle against prostate cancer by understanding the biology, biomarker potential and function of extracellular vesicles. Researchers are trained to acquire the skills to become leaders and drivers of innovation in cancer treatment.

- **Mechanobiology of METAstatic and DORMant cancer cells in bone marrow lesions** (META-DORM)

Survival of cancer patients drops dramatically when the tumour metastases to distant sites such as the bone. This project has shed light on a novel mechanism controlling cancer metastasis in bone, and a potential therapeutic strategy.

- **Optimizing delivery and effectiveness of chemotherapy in breast cancer patients using thermotherapy under image-guidance** (THERMOGUIDE)

Experts from radiotherapy, medical oncology, surgery, pathology and radiology established a multidisciplinary line of research with the aim of pioneering thermotherapy for intact breast tumours as a novel treatment solution.

- **Blood test for clinical therapy guidance of non-small cell lung cancer patients** (LungCARD)

The project developed an efficient analysing tool to help doctors asess pharmacogenetic characteristics of lung cancer tumour cells in blood samples. The technology guides decision-making for the most suitable treatment for individual patients (personalised medicine).

- **Hemoglobin based Protein Nanocarriers for Tumour Oxygenation and a more effective Photodynamic Therapy** (OXIGENATED)

To enhance the effectiveness of photodynamic therapy, the researchers have developed drug delivery nano-carriers to bring oxygen to the tumour site.

- **Advanced hybrid theranostic nanoplatforms for an active drug delivery in cancer treatment** (NANO4TARMED)

In an interdisciplinary scientific cluster: chemists, biologists and physicists bring their extensive expertise together to deal with the fundamental issue of nanotechnology-driven anticancer drug delivery selectively targeting diseased tissue.

EU programmes funding these projects

- Horizon 2020 Marie Skłodowska-Curie Actions
- Horizon 2020 'Twinning of research institutions'

Publications Office of the European Union

Luxembourg: Publications Office of the European Union, 2023

PDF ISBN 978-92-95080-91-1 doi:10.2848/07222 JW-03-23-329-EN-N