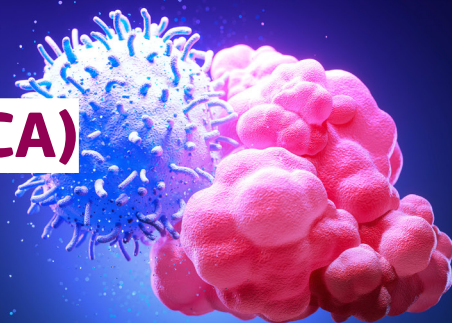


Cancer Research in the Marie Skłodowska-Curie Actions (MSCA)



September 2026

About MSCA

With a budget of EUR 6.6 billion for the period 2021-27, the Marie Skłodowska-Curie Actions (MSCA) is a research and training programme that supports the career, skills development, and mobility of researchers at all stages of their careers and from across the world. The programme funds bottom-up research in all fields based on scientific excellence and competitive funding.

5 The MSCA have main actions

Doctoral Networks

implement doctoral programmes (including joint doctorates and industrial doctorates) **by international partnerships** of organisations from different sectors. They train highly-skilled doctoral candidates, stimulate their creativity, enhance their innovation capacities and boost their employability in the long-term.

Postdoctoral Fellowships

support researchers' careers and foster excellence in research and innovation. Researchers holding a PhD can carry out their research activities, acquire new skills and develop their careers abroad, whilst developing competences in non-academic sectors and working within interdisciplinary teams.

Staff Exchanges

offer researchers and innovators short term international and inter-sectoral exchanges through sustainable, collaborative projects in Europe and beyond. These promote the transfer of both knowledge and skills, while also increasing organisation's capacities for research and innovation.

MSCA and Citizens

brings research and researchers closer to schoolchildren, families and the wider public at large through actions such as the European Researchers' Night - the annual research communication and promotion event taking place at the end of September across EU Member States and Horizon Europe Associated Countries.

COFUND

co-finance regional, national and international doctoral and postdoctoral programmes for researchers' training and career development. COFUND spreads MSCA's best practices by setting high standards and excellent working conditions, through international, interdisciplinary and inter-sectoral mobility.



Cancer research in MSCA

Under Horizon 2020 and Horizon Europe*, **more than 1,200 MSCA projects have conducted cancer research-related activities, representing a total investment of €770 million.** These projects address a wide range of areas across the cancer continuum, including cancer biology, prevention, early detection and screening, diagnosis, treatment, data, care, survivorship, equity and childhood cancer. Cancer research is inherently **interdisciplinary and international**, requiring highly skilled researchers working across disciplines, sectors and borders, closely aligning with the MSCA focus on excellence, mobility, training and collaboration.

MSCA-funded cancer research strongly contributes to the objectives of the **EU Mission on Cancer and Europe's Beating Cancer Plan**, by supporting bottom-up research from understanding and preventing cancer to improving diagnosis, treatment and quality of life. Through the training and mobility of researchers, MSCA also strengthens Europe's cancer research capacity and facilitates the **exchange of knowledge between research, clinical practice and industry**, contributing to more connected and resilient cancer research and innovation ecosystems.

Key Figures:



+1,200

cancer research-related projects covering the full spectrum of cancer research, involving more than **4,500 researchers**



~450 projects
on understanding cancer

(cancer biology, genetics, disease mechanisms, tumour evolution, metastasis and treatment resistance)



110 projects
on prevention and early detection

(risk factors, screening, surveillance and early-detection approaches)



+600 projects
on diagnosis and treatment

(diagnostics, biomarkers, imaging, personalised medicine, innovative therapies and clinical research)



14 projects
on quality of life

(survivorship, rehabilitation, psychosocial and palliative care, patient empowerment and support)



13 cross-cutting projects

(data, infrastructures, research capacity, patient engagement, equity and health-system implementation)



€ 770 million

total investment in cancer research-related MSCA projects

Cross-cutting themes

MSCA cancer projects also contribute to a range of cross-cutting themes:



Personalised medicine & complex cancers

663



Digital, AI & data

295



Prevention, implementation & sustainability

102



Patient engagement, equity & inclusion

48



Population & life-course

38



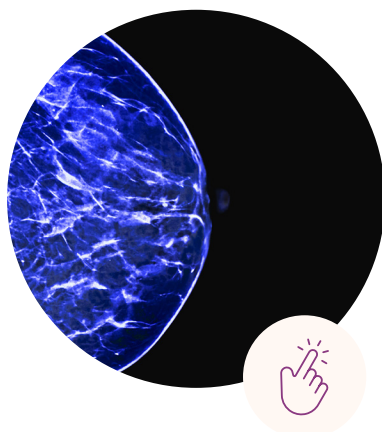
Governance, ethics & open science

29

Projects may contribute to more than one cross-cutting theme.

Success Stories

Below are some examples of success stories from **MSCA projects on cancer research**.



AI for more personalised breast cancer care

BosomShield - A comprehensive computer-aided system for breast cancer classification and prognosis of relapse

MSCA Doctoral Networks, Horizon Europe

BosomShield developed a **computer-aided diagnosis system that combines radiological and pathological imaging with artificial intelligence** to improve breast cancer diagnosis and prognosis. The project analysed mammograms, MRI and other medical images alongside clinical information to classify cancer subtypes and assess the risk of distant metastasis and relapse.

The project developed AI methods for **tumour detection, segmentation and molecular subtype classification**, achieving high accuracy in analysing radiological images. It also developed approaches for predicting relapse risk and incorporated explainable and privacy-preserving AI methods, helping lay the foundations **for a clinically deployable system supporting more personalised breast cancer care**.

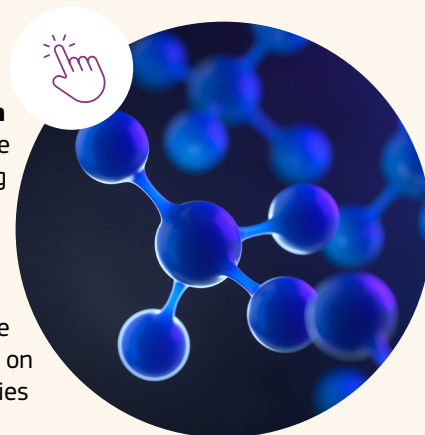
Personalised ovarian cancer treatment with digital twin technology

ITHACA - Digital Twin Technology to Predict Individual Response to Pharmacological Treatments in Ovarian Cancer

MSCA Individual Fellowship, Horizon 2020

ITHACA developed **ALISON, a digital twin simulator for high-grade serous ovarian cancer**, which recreates the tissue environment of the abdominal cavity, the primary site of metastasis. The model incorporates the behaviour of different cell types and changing concentrations of molecules such as oxygen and glucose to simulate how individual tumours evolve and respond to different drug treatments.

The project used **clinical data to calibrate patient-specific virtual cancer cell populations**, providing a potential tool to predict treatment responses and support more personalised treatment selection. ALISON successfully reproduced experimental findings on tumour progression and heterogeneity, while its freely available code creates opportunities for further research beyond ovarian cancer.



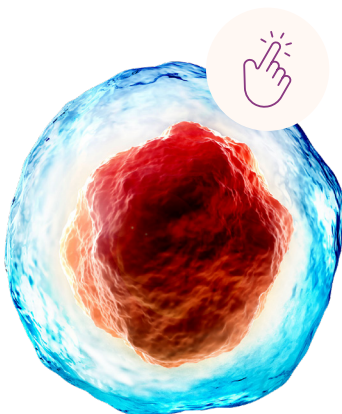
Targeting cancer through the control of cell division

SpinSAC - hSpindly, a new regulatory protein of the SAC mechanism and its implication in tumour therapy

MSCA Individual Fellowship, Horizon 2020

The project investigated **hSpindly**, a protein involved in the spindle-assembly checkpoint (SAC), a safety mechanism that controls cell division and ensures chromosomes are correctly separated. Errors in this process can contribute to **genomic instability and cancer**.

The project studied how hSpindly is regulated during cell division and how it interacts with other proteins involved in the checkpoint. Using **microscopy, biochemical methods and molecular biology techniques**, the project explores how changes in hSpindly affect cell division and the response of cancer cells to chemotherapy. The findings could help identify **new biomarkers and therapeutic targets** for cancers, particularly those that develop resistance to treatments targeting cell division.



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