

Project 101182530 — PurHumanDrome

Disrupting purine de novo biosynthesis to fight cancer - from molecules to cells to in vivo studies

Dofinansowanie w ramach konkursu: **EUROPEAN RESEARCH EXECUTIVE AGENCY (REA) REA.A – Marie Skłodowska-Curie Actions & Support to Experts A.3 – MSCA Staff Exchanges**

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According to the WHO, in 2022, there were an estimated 20 million new cancer cases and 9.7 million deaths. The proposed project fits perfectly into the Europe's Beating Cancer Plan, in particular the point "Diagnosis and treatment and quality of life of cancer patients". This project combines the expertise of scientists and academic centres from five different countries in three continents who are applying their knowledge at the frontiers of biology, chemistry, bioinformatics, biophysics and medicine to find a specific inhibitor for the ATIC enzyme involved in de novo purine biosynthesis. We have developed a number of new peptide-like compounds (and more compounds will be uncovered by bioinformatics tools) and will evaluate their efficacy in inhibiting the dimerisation of the enzyme ATIC monomers.

The studies will also be conducted in cancer cell lines and in *Drosophila* flies. The outcomes can not only improve the health of society, but also provide new insights into metabolic pathways in cancer. The project will involve young and experienced scientists from EU countries, the USA and Australia. Scientists who have previously worked on the interactions of molecules in vitro will learn how to work with animal models and how to conduct in silico studies. Those who have previously used structural spectroscopy techniques in their work will learn physico-chemical methods, e.g. isothermal titration microcalorimetry (ITC) and microscopic techniques. In addition, European scientists will have the opportunity to improve their ability to communicate and present their work results in English, to enter into new collaborations and to form their own international teams.

Up-to-date information about the project will be published on the websites of all consortium partners involved in this project. We also plan to organise at least one live workshop. Every effort will be made to ensure gender balance at all levels of staff involved in the project.