



RCSI to lead €6 million international study to improve treatment for colorectal cancer patients

COLOSSUS was the highest ranked application from more than 200 European projects submitted under a Horizon 2020 Personalized Medicine Call

Wednesday, 31 January 2018: RCSI (Royal College of Surgeons in Ireland) is leading an international team of scientists on a major research study “COLOSSUS” which aims to provide new and more effective ways to classify and treat patients with colorectal cancer. The project will focus on colorectal cancer that has spread from the colon to other parts of the body, known as metastatic colorectal cancer (mCRC).

The project will focus on a genetically defined form of colorectal cancer which is incurable once patients develop resistance to existing therapies. This particular form of colorectal cancer is called microsatellite stable RAS mutant (MSS RAS mt) disease. The ultimate aim of this new project is to better classify subtypes of this condition and deliver new personalised treatments and improved patient outcomes specifically for this patient sub-group.

The team has secured approximately €6 million in competitive non-exchequer funding for the “COLOSSUS” project which is supported by the European Commission's Horizon 2020 programme. The project will run for 5 years and formally commenced this month, with the project kick-off meeting taking place at RCSI in Dublin today.

COLOSSUS was the number one ranked application from more than 200 European projects which were submitted to the Horizon 2020 Personalized Medicine Call Topic #PM-02-2017.

The project is led by Professor Annette Byrne, Associate Professor, RCSI Dept of Physiology and Medical Physics and RCSI Centre for Systems Medicine. ‘Currently, there are limited treatment options for patients with MSS RAS mt metastatic colorectal cancer when they develop resistance to existing therapies. COLOSSUS will identify new ways to classify patients with this form of metastatic colorectal cancer which will enable our research team to identify new treatment strategies in this difficult-to-treat patient population,’ Professor Byrne commented.

Colorectal cancer is the third most common cancer in Europe with an estimated 420,000 cases and 150,000 related deaths (2012). Metastatic colorectal cancer (mCRC) is a complex disease with high prevalence, substantial human cost and significant economic impact, both in Europe and

globally. Of total colorectal cancer cases, it is thought that approximately 50-55 % involve RAS mutations, the form of mCRC addressed in the project.

The COLOSSUS consortium will study patient samples and apply advanced multi-omic computational modelling approaches to identify new MSS RAS mt specific subtypes. This strategy will predict patient response and enable the design of more targeted and personalised treatments. Newly described MSS RAS mt classifiers will be validated as novel patient stratification tools within the COLOSSUS trial, a multicentre clinical study for advanced MSS RAS mt mCRC patients which will be conducted across Spain, Germany and Ireland.

COLOSSUS involves 14 partners from eight countries and brings together a multi-disciplinary team with expertise in cancer immunology, systems biology, computational modelling, bioinformatics, 'omics analysis, clinical oncology/pathology, pre-clinical research, medical imaging, clinical trials, health economics and patient engagement.

Professor Annette Byrne (RCSI), Professor Jochen Prehn (RCSI) and Dr Rodrigo Dienstmann (Vall D'Hebron Institute of Oncology, Spain) are the Scientific Leads for the project. Other researchers from RCSI include Professor Kathleen Bennett (Division of Population Health Sciences) and Dr Darran O'Connor (Molecular and Cellular Therapeutics).

The full project team comprises researchers from RCSI; Vall D'Hebron Institute of Oncology, Spain; University College Dublin, Ireland; Institute Of Cancer Research - Royal Cancer Hospital, UK; VIB, Belgium; Ruprecht-Karls-Universitaet Heidelberg, Germany; Universita Degli Studi Di Torino, Italy; Institut National De La Sante Et De La Recherche Medicale, France; Cancer Trials Ireland; Optimata Ltd, Israel; Genexplain Gmbh, Germany; Haliodx, France; Epigenomics AG, Germany; and Pintail Ltd, Ireland.

The COLOSSUS Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 754923.

RCSI is ranked among the top 250 (top 2%) of universities worldwide in the Times Higher Education World University Rankings (2018) and its research is ranked first in Ireland for citations. It is an international not-for-profit health sciences institution, with its headquarters in Dublin, focused on education and research to drive improvements in human health worldwide. RCSI is a signatory of the Athena SWAN Charter.

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