STREAM Report Summary
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Periodic Reporting for period 2 - STREAM (Strategies towards Excellence in Immuno-Oncology)

Reporting period: 2017-04-01 to 2018-12-31

Summary of the context and overall objectives of the project

According to American Cancer Society, at this very moment cancer is killing more people in the developing world than HIV/AIDS, tuberculosis, and malaria combined. Importantly, 70 percent of all cancer deaths occur in low- and middle-income countries, such as Poland. It is an absolute must to raise cancer awareness and increase the anti-cancer research excellence in these regions. The STREAM project addressed networking gaps and research quality deficiencies between the Medical University of Warsaw (MUW, Coordinator), Poland, and internationally-leading Research Institutions. STREAM project aimed to establish international, long-term, strategic partnerships between Department of Immunology at MUW and four leading-in-the-field Organizations across Europe. The crucial goal of this project was to significantly enhance the research capacity and excellence of MUW in the area of Immuno-Oncology, one of the most vigorous research zones in cancer biology and treatment. STREAM project aimed at transferring the knowledge and best practices from the European Partnering Organizations which will greatly fast-track the development of a full research and innovation potential of Medical University of Warsaw within the area of Immuno-Oncology.

Work performed from the beginning of the project to the end of the period covered by the report and main results achieved so far

The MUW’s researchers gained scientific expertise and know-how knowledge in a broad variety of novel techniques, access to state-of-the-art equipment, facilities and IT infrastructure at the first class European Partnering Institutions. Most publications, patents and grant applications obtained by researchers from the Department of Immunology, MUW, were based on know-how acquired by the employees during the STREAM project implementation.

We have organized the international summer-school and two workshops focused on the update of knowledge and state-of-the-art methodologies used in Immuno-Oncology field. These vents were organized on a grand scale, far beyond the initial scope envisaged in the plan. The number of participants was considerably higher than the project scope description estimated. All the participants had the chance to discuss important issues during coffee and lunch breaks. These informal meetings and discussions became the platform for the exchange of knowledge, experience sharing and networking and served to support the cooperation of MUW with partners of the consortium, increase MUW’s scientific activity and to start new cooperation studies, both within MUW and with external laboratories. As a result, several new joint projects have been initiated. Every event improved the Europe-wide visibility of MUW and STREAM project by promotional activities undertaken during workshops. Another goal of STREAM has been to increase the knowledge sharing, improve networking and enhance the international visibility of Medical University of Warsaw through attendance at international conferences and training workshops. The intention has been to expose the MUW researchers to the attractiveness of the state-of-art European research. All of these
goals have been successfully achieved.
The research results obtained during STREAM project implementation have been published by the Coordinator in numerous prestigious journals. In addition to 9 research articles published in the 1st reporting period, in the 2nd reporting period (April 2017 – December 2018) the Coordinator published 29 research articles in peer-reviewed journals with high impact factors (highly cited publications), including three research articles in journals with Impact Factor above 10 (such as Nat Commun., PLOS Med. and Blood) as well as eight publications in research journals with Impact Factor above 6 (such as Haematologica, Oncogene, Redox Biol., 2 x Cancer Immunol Res., J Med Chem., Eur J Cancer and J Control Release). Among them are also five joint publications with the STREAM partnering institutions (articles listed above).
Additionally, the dissemination of research results by the Coordinator was also achieved by publication of 15 conference abstracts in Conference Proceedings and in prestigious journals, such as Cancer Research or Haematologica, five defended PhD thesis dissertations and 2 books.
Progress beyond the state of the art, expected results until the end of the project and potential impacts (including the socio-economic impact and the wider societal implications of the project so far)

Progress beyond the state of the art and expected potential impact (including the socio-economic impact and the wider societal implications of the project so far)

On top of the activities described in the project proposal, we have organized two mini-symposia on advances in immuno-oncology that accompanied the second Steering Group Meeting in Trieste and the third Steering Group Meeting in Oslo.
The second STREAM Steering Group Meeting organized in the International Centre for Genetic Engineering and Biotechnology (Trieste, Italy) on Nov 28th, 2016, included “Mini-Syposium on Advances in Immuno-Oncology”. The main goal of the mini-symposium was to familiarize local students and young researchers with novel approaches in the immuno-oncology area, taking advantage of the presence in Trieste of renowned speakers, Members of the STREAM Consortium. The event was extensively promoted via internet and social media, which resulted in all seats taken in the lecture hall and latecomers sitting on the steps of the seminar room. The total number of attendees ranged approximately between 65 to 70 persons. The Mini-Symposium was opened by Prof. Dimitar Efremov, who briefly introduced the speakers and presented the scope of the STREAM project. Then followed presentations by Prof. Jakub, Dr. Dinis Calado, Prof. Karl-Johan Malmberg (“Harnessing Natural Killer Cells in Cancer Immunotherapy”) and Andreas V. Hadjinicolaou.
The third STREAM Steering Group Meeting organized in Oslo University on January 18-19, 2018, included a mini-symposium on Advances in Immuno-Oncology. The total number of attendees amounted approximately to 50 persons. The Mini-Symposium was hosted by Prof. Malmberg, who briefly introduced the speakers and presented the scope of the STREAM project. Then followed presentations by Prof. Jakub Golab, Dr. Nicholas Crump, Dr. Dinis Calado, and Prof. Dimitar Efremov. After each presentation, short Q&A session was held. The audience actively participated in discussion.
We have also created a Knowledge Base - a STREAM website page that includes popular science texts related to immuno-oncology. Knowledge Base (http://www.stream.wum.edu.pl/en/knowledge-base) is regularly updated by members of the STREAM Consortium and is aimed at popularizing the research carried out by our researchers. It includes popular science texts on the role of tumor microenvironment in cancer immunotherapy, NK Cells applications in immuno-oncology, Chimeric antigen receptors (CARs) used in cancer immunotherapy, etc. Next to basic information on immuno-oncology Knowledge Base also provides links to scientific journals, webpages and institutions involved in research and promotion of immuno-oncology. The section includes many articles and useful links. The website is accessed by medical students from medical, pharmaceutical, life science and veterinary divisions of numerous universities, journalists, and the general public interested in research related to immuno-oncology.

Related information