Defining the functions of novel integral membrane regulator, CMTM family in B cell development and acute lymphoblastic leukemia

Fact Sheet

Project Information

LEUKEMIA SIGNALLING

Grant agreement ID: 626749

Project closed

Start date
1 June 2014

End date
30 November 2016

Funded under
Specific programme "People" implementing the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007 to 2013)

Total cost
€ 299 558,40

EU contribution
€ 299 558,40

Coordinated by
UNIVERSITY OF NEWCASTLE UPON TYNE
United Kingdom

Objective

Despite the vast improvements in survival, acute lymphoblastic leukaemia (ALL)

remains one of the major causes of death in children. The current combination chemotherapy causes acute and long-term toxicity. Hence, there is a compelling need to understand the development of ALL and identify key players that could be used in targeted therapy. The B cell receptor (BCR) and its precursor, pre-BCR, control the regulation of B cell differentiation and therefore aberrant pre-BCR and BCR functions results in B cell leukemia. The aim of my project is to identify new membrane associated drug targets for BCR-ALL therapy through investigating the functions of recently discovered Chemokine factor like Marvel like Trans Membrane proteins (CMTM) that interacts with the BCR and the intracellular adaptor, SLP-65, in B cell developmental process. To achieve this, I will employ multidisciplinary approaches and focus on the first B cell developmental checkpoint, the pre-BCR stage. The main objectives of the project are (i) to discover and characterize the CMTM mediated macro molecular assemblage using systems biology approach (ii) to identify the CMTM mediated downstream signaling network emanating from the pre BCR through cell biology and next generation sequencing methodologies and (iii) to determine the structures of pre BCR membrane/cytosolic multi protein CMTM mediated complexes using NMR or X-ray crystallography. Thus, the proposed project will discover the role of new membrane regulators in pre B cell development and pre BCR-ALL. I propose to set this previously not existing B cell membrane regulator research theme at Newcastle University, U.K. moving from my previous position at the George Washington University, USA. This program will open new avenues for B cell lineage ALL treatment and expand the scientific excellence of European cancer drug discovery research initiatives.

Fields of science (EuroSciVoc)

medical and health sciences > basic medicine > pharmacology and pharmacy > **drug discovery**

natural sciences > earth and related environmental sciences > geology > mineralogy > **crystallography**

natural sciences > biological sciences > biochemistry > biomolecules > **proteins**

natural sciences > biological sciences > **cell biology**

medical and health sciences > clinical medicine > oncology > **leukemia**

Programme(s)

FP7-PEOPLE - Specific programme "People" implementing the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007 to 2013)

Topic(s)

FP7-PEOPLE-2013-IIF - Marie Curie Action: "International Incoming Fellowships"

Call for proposal

FP7-PEOPLE-2013-IIF
See other projects for this call

Funding Scheme

MC-IIF - International Incoming Fellowships (IIF)

Coordinator

UNIVERSITY OF NEWCASTLE UPON TYNE

EU contribution

€ 299 558,40

Total cost

No data

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Region

North East (England) > Northumberland and Tyne and Wear > Tyneside

Activity type

Higher or Secondary Education Establishments

Links

Contact the organisation Website
Participation in EU R&I programmes
HORIZON collaboration network

Last update: 27 March 2017

Permalink: https://cordis.europa.eu/project/id/626749