Understanding gamma delta T cells in colon cancer metastasis

Fact Sheet

Project Information

GDCOLCA

Grant agreement ID: 800112

Project website

DOI
10.3030/800112

Project closed

EC signature date
16 April 2018

Start date
1 June 2018

End date
31 May 2020

Funded under
EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions

Total cost
€ 195 454,80

EU contribution
€ 195 454,80

Coordinated by
BEATSON INSTITUTE FOR CANCER RESEARCH LBG
United Kingdom

Objective

Cancer is the leading cause of death in the world. Immunotherapy is having a major impact in counteracting these cancer-related deaths, since the activity of anti-tumour immune cells can be enhanced to kill cancer. Unfortunately, immunotherapy does not work for every patient, so we must understand how other immune cells participate in cancer progression to design new immunotherapies that may benefit a greater number of patients. One particular type of immune cell, called gamma/delta T cells, was recently shown by my Host to promote breast cancer metastasis via IL-17, an important pro-tumour cytokine. However, the significance of gamma/delta T cells and IL-17 in other cancer metastasis settings remains unclear. In this proposal, I will

address this point using a newly developed sophisticated colorectal cancer metastasis model. This novel mouse model shows 100 percent penetration of metastasis, of which 80 percent is to the liver, similar to human colorectal metastasis. Using this metastasis model, I will: 1. Clarify characteristics of gamma/delta T cells in colorectal cancer metastasis, 2. Assess if depletion of gamma/delta T cells by a neutralizing antibody as well as crossing the model with gamma/delta T cell-deficient mice would reduce the occurrence of metastasis, and 3. Examine the involvement of BTNL1, which is a specific activator for anti-tumorigenic IFN-producing gamma/delta T cells in the intestine. The role of BTNL1 in any cancer setting and the importance of IL-17-producing gamma/delta T cells in colon cancer metastasis is largely unexplored. Addressing our goal to understand the role of these gamma/delta T cells in colon cancer metastasis, I will newly acquire expertise and technical skills in both immunology and cancer biology as well as have experience in excellent collaboration with several laboratories. This proposal will identify additional targets for immunotherapy that may help patients with metastatic colon cancer.

Fields of science (EuroSciVoc)

medical and health sciences > clinical medicine > oncology > **breast cancer**

medical and health sciences > clinical medicine > oncology > **colorectal cancer**

medical and health sciences > basic medicine > immunology > **immunotherapy**

Programme(s)

H2020-EU.1.3. - EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions MAIN PROGRAMME

H2020-EU.1.3.2. - Nurturing excellence by means of cross-border and cross-sector mobility

Topic(s)

MSCA-IF-2017 - Individual Fellowships

Call for proposal

H2020-MSCA-IF-2017

See other projects for this call

Funding Scheme

MSCA-IF-EF-ST - Standard EF

Coordinator

BEATSON INSTITUTE FOR CANCER RESEARCH LBG

Net EU contribution

€ 195 454,80

Total cost

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Region

Scotland > West Central Scotland > East Dunbartonshire

Activity type

Research Organisations

Links

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

Last update: 17 August 2022

Permalink: https://cordis.europa.eu/project/id/800112