Characterizing Microbe-specific Immune Responses in the pathogenesis of Autoimmunity

Fact Sheet

Project Information

MIRA

Grant agreement ID: 746628

Project website

DOI
10.3030/746628

Project closed

EC signature date
22 February 2017

Start date
1 September 2017

End date
31 August 2019

Funded under
EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions

Total cost
€ 173 857,20

EU contribution
€ 173 857,20

Coordinated by
KAROLINSKA INSTITUTET
Sweden

Objective

Dysregulation in the balance of CD4+ T helper cell populations can severely alter susceptibility to a number of chronic inflammatory diseases, including inflammatory bowel disease (IBD). The incidence of IBD is dramatically increasing in Europe and worldwide and its therapy represents an important unmet medical need, since a significant proportion of patients fail to respond to currently available immunotherapies. Therefore, a better characterization of the immunological events

underlying each form of IBD is of foremost importance. Increasing evidence points to the pivotal role of a dysregulated mucosal immune response to the intestinal microbiota in the pathogenesis of IBD. However, little is known about the mechanisms contributing to the generation of commensal-specific adaptive immune responses, and whether their differential localization can shape severity and anatomical extent of the disease. Indeed, the intestines comprise anatomically distinct regions that are exposed to different luminal antigens and this diversity eventually determines a regionalization of intestinal immune functions and microbiota-specific T cell responses. The aim of this proposal is to deeply characterize microbiota-specific T cell responses generated under different inflammatory conditions, in terms of differentiation, plasticity, heterogeneity, function and homing potential. To this aim, the proposed work will combine the use of CBir1 TCR transgenic mice, whose T cells recognize a microbial antigen that is immunodominant in IBD patients, and cutting-edge techniques such as single-cell RNA sequencing.
By modelling the microbiota-specific immune response in vivo in the context of gut inflammation, I will characterize the function and homing properties of microbiota-specific T cells at the population and single-cell level, aiming at identifying new therapeutic targets for the treatment of localized forms of gut inflammation.

Fields of science (EuroSciVoc)

natural sciences > biological sciences > microbiology > **bacteriology**

medical and health sciences > health sciences > **inflammatory diseases**

medical and health sciences > clinical medicine > gastroenterology > **inflammatory bowel disease**

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

medical and health sciences > basic medicine > physiology > **homeostasis**

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-2016 - Individual Fellowships

Call for proposal

H2020-MSCA-IF-2016

See other projects for this call

Funding Scheme

MSCA-IF-EF-ST - Standard EF

Coordinator

KAROLINSKA INSTITUTET

Net EU contribution

€ 173 857,20

Total cost

€ 173 857,20

Address

Nobels Vag 5
17177 Stockholm
Sweden

Region

Östra Sverige > Stockholm > Stockholms län

Activity type

Higher or Secondary Education Establishments

Links

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

Last update: 29 August 2022

Permalink: https://cordis.europa.eu/project/id/746628