Mauro GAYA, PhD

Group leader: B Cell Immunity to Infection

Background

Mauro Gaya received his BSc degree in Molecular and Cellular Biology from the University of Buenos Aires in 2011 (Buenos Aires, Argentina). During his undergraduate studies, he worked at the Leloir Institute Foundation under the supervision of Dr. Silvia Moreno, investigating the role of dietary polyphenols on adipocyte differentiation.

Dr. Gaya obtained his PhD from the University College London in 2015 (London, UK). He performed his PhD work at the London Research Institute in the laboratory of Dr. Facundo Batista. While there, he uncovered a role for lymph node resident macrophages in the induction of B cell responses upon infection.

Dr. Gaya performed a joint postdoctoral stage in between the Francis Crick institute (London, UK) and the Ragon Institute of MGH, MIT and Harvard (Cambridge, Massachusetts, USA). His postdoctoral work led to seminal discoveries in the area of germinal centre biology.

Mauro Gaya was recruited to the CIML (Marseille, France) in 2018 to establish a research group focused on the analysis of B cell responses during pathogenic situations.

Main achievements

- Elucidation of the role of Natural Killer T cells in the early seeding of germinal centre B cells during viral infection.
- Demonstration that the disrupted organization of lymph node-resident macrophages induced by a primary infection temporarily shuts down immune responses to subsequent pathogens.

Selected publications

- Protein Kinase C-β Dictates B Cell Fate by Regulating Mitochondrial Remodeling, Metabolic Reprogramming, and Heme Biosynthesis. Tsui C, Martinez-Martin N, Gaya M, Maldonado P, Llorian M, Legrave NM, Rossi M, MacRae JI, Cameron AJ, Parker PJ, Leitges M, Bruckbauer A, Batista FD. **Immunity**, 2018, 48(6):1144-1159.e5, PMID: 29884460
- Initiation of Antiviral B Cell Immunity Relies on Innate Signals from Spatially Positioned NKT Cells. Gaya M, Barral P, Burbage M, Aggarwal S, Montaner B, Warren Navia A, Aid M, Tsui C, Maldonado P, Nair U, Ghneim K, Fallon PG, Sekaly RP, Barouch DH, Shalek AK, Bruckbauer A, Strid J, Batista FD. **Cell**, 2018 , 172(3):517-533.e20, PMID: 29249358
- A switch from canonical to noncanonical autophagy shapes B cell responses. Martinez-Martin N, Maldonado P, Gasparrini F, Frederico B, Aggarwal S, Gaya M, Tsui C, Burbage M, Keppler SJ, Montaner B, Jefferies HB, Nair U, Zhao YG, Domart MC, Collinson L, Bruckbauer A, Tooze SA, Batista FD. **Science**, 2017, 355(6325):641-647, PMID: 28183981

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- Host response. Inflammation-induced disruption of SCS macrophages impairs B cell responses to secondary infection. Gaya M, Castello A, Montaner B, Rogers N, Reis e Sousa C, Bruckbauer A, Batista FD. Science, 2015, 347(6222):667-72, PMID: 25657250
- Nck-mediated recruitment of BCAP to the BCR regulates the PI(3)K-Akt pathway in B cells. Castello A, Gaya M, Tucholski J, Oellerich T, Lu KH, Tafuri A, Pawson T, Wienands J, Engelke M, Batista FD. Nat Immunol., 2013, 14(9):966-75. , PMID: 23913047