



TRAIN Academy

TRAIN – Key Note Lecture

Targeting *Mycobacterium tuberculosis* through the inhibition of the essential PIM biosynthetic pathway

Wednesday, 27 November 2019 | 16:30

TWINCORE | Seminar Room 0.030

Prof. Dr. Marcelo Guerin

Head of the Structural Glycobiology Lab, CIC bioGUNE, Spain

Phosphatidylinositol mannosides...

...(PIMs) are considered the structural basis of the lipoglycans lipomannan and lipoarabinomannan, important molecules implicated in host-pathogen interactions in the course of tuberculosis and leprosy. We present structural and mechanistic data for two enzymes essential for the synthesis of PIM, the glycosyltransferase PimA [1] and the acyltransferase PatA [2,3], that were both found to be critical for *M. tuberculosis* growth in vitro and in vivo. Our experimental data highlight the importance of the PIMs biosynthetic pathway for *M. tuberculosis*, providing exciting possibilities for inhibitor design and drug discovery programs.

[1] Giganti et al., Nat. Chem. Biol. 11, 16-18 (2015). Highlighted in the News and Views Section: Brodhun, F., and Tittmann, K. Nat. Chem. Biol. 11, 102-103 (2015).

[2] Albesa-Jove, D., et al., Nat. Commun. 7, 10906 (2016).

[3] Tersa, M., et al., ACS Chem. Biol. 13(1):131-140 (2018).

Marcelo Guerin...

...became interested in glycobiology as a doctoral student at the Leloir Institute in Buenos Aires, Argentina (1991-2002). After finishing his PhD, he moved to the Structural Biochemistry Unit at the Institute Pasteur (2003-2007). With the aim to combine his interests in structural biology and mycobacteria, he transferred to the Mycobacteria Research Laboratories at Colorado State University (2008-2009). In 2009, he was awarded an Ikerbasque Research Professor position as the Head of the Structural Glycobiology Lab at CIC bioGUNE (Spain).

Hosts: Prof. Dr. Rita Gerardy-Schahn (MHH) and Dr. Timm Fiebig (MHH)