

08

Dec 2021

Wednesday

**LECTURE\***

University of Luxembourg  
CAMPUS BELVAL  
Maison du Savoir  
AUDITOIRE 3.500  
2, avenue de l'Université  
L-4365 Esch-sur-Alzette

**11.00 - 12.15 pm**

\*Please register by sending a mail to  
[florence.henry@lih.lu](mailto:florence.henry@lih.lu)

# Suppressing the fire: immunomodulatory metabolites in macrophages

**ABSTRACT**

With the discovery of itaconate and its biochemical synthesis pathway in mammalian macrophages, a new research field in immunometabolism has been established. Besides its antimicrobial role, itaconate inhibits mitochondrial SDH/Complex II and is thus involved in the modulation of macrophage metabolism. Moreover, several groups demonstrated an anti-inflammatory activity of itaconate and demonstrated that itaconate suppressed IL-6 and IL-12 expression and secretion. Potential mechanisms for this immunomodulatory function were proposed for the itaconate esters dimethylitaconate and 4-octylitaconate either via activation of Atf3 or inhibition of KEAP1, respectively.

During my presentation, I will present new results from our lab that indicate that itaconate is not the only immunomodulatory metabolite synthesized by mammalian macrophages. In addition, I will present new data that demonstrates that the anti-inflammatory activity of underivatized itaconate is independent of Nrf2 and Atf3.

**SPEAKER****Dr Karsten HILLER**

W3 Professor of Biochemistry and Bioinformatics, TU Braunschweig,  
Director of Department for Bioinformatics and Biochemistry,  
TU Braunschweig, Deputy Director of Braunschweig Integrated Centre  
of Systems Biology (BRICS)

**HOSTS:**

Department of Infection and Immunity (LIH)  
University of Luxembourg

**RESPONSIBLE SCIENTISTS:**

Gunnar Dittmar / ([gunnar.dittmar@lih.lu](mailto:gunnar.dittmar@lih.lu))  
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