

28 MAR
2024

Thursday
LECTURE

MEET & EAT *
Light lunch provided

11.00am - 12.00pm

12.30pm - 2pm



Drug-microbiome interactions and their consequences on the host

ABSTRACT

The functionality of the gut microbiome is closely linked to a number of environmental factors that influence the microbiome composition. Among these factors, drugs are the most important contributors to inter-individual differences in gut microbiome signatures. Importantly, not only antibiotics, but also non-antibiotic drugs affect the gut microbiome composition. However, it is still unclear whether these drug-microbiome interactions influence the therapeutic efficacy of the drug or lead to individual side effects.

Based on our finding that enteropathogens are more resistant to non-antibiotic drugs than commensal gut microbes, we hypothesised that non-antibiotics alter the microbiome in ways that create opportunities for enteropathogens to thrive. Consequently, the consumption of non-antibiotic drugs could support the colonisation of bacterial pathogens. By combining advanced high-throughput cultivation methods for anaerobic gut bacteria with gnotobiotic and conventional animal models, we have identified drugs from different therapeutic classes that effectively promote colonisation with pathogenic *Gammaproteobacteria*. Particularly in immunocompromised hosts, such a drug-induced increase in pathogen load implies an increased risk of infection.

In the long term, a comprehensive understanding of the interactions between drugs and the gut microbiome promises to improve the efficacy of current therapies and guide the development of new drugs with reduced side effects.



SPEAKER

Prof. Dr Lisa Maier

Tenured Professor, University of Tuebingen, Germany

HOST:

Department of Infection and Immunity (LIH)

RESPONSIBLE SCIENTIST:

Mahesh Desai / (mahesh.desai@lih.lu)

* Please note that registration is mandatory by sending an email to carole.weis@lih.lu or michelle.roderes@lih.lu

Locations:

Lecture:
House of BioHealth
Conference Room
(ground floor 0)
29, rue Henri Koch,
L-4354 Esch-sur-Alzette

Meet & eat:
House of BioHealth
Salle Françoise Barré Sinoussi
Registration mandatory