

## Seminar in Microbiology

Monday, January 23, 2017

Salle de séminaire E07.3347.a, CMU

**11:30 – 12:30**

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## Gut bacterial infection and immunity studied in defined gnotobiotic mouse models

“Good” and “bad” gut bacteria – the notion of how much both influence human health has marked a new era of Microbiology.

The intestine gives home to trillions of friendly bacteria and battles disease-causing bacteria. The intestinal immune system reacts to all species that inhabit us. Millions of years of co-evolution formed it to become a learning bio-containment system that allows the disease-free coexistence with the broadest possible diversity of microbes. Our human-microbial health depends on it.

Our beneficial bacterial “partners” and disease-causing pathogens require entirely different treatments. We would like to better understand which bacterial features and behaviors tell the immune system what to do.

<http://www.hafelmeier.ch/home.html>

Studer et al., 2016, Functional Intestinal Bile Acid 7 $\alpha$ -Dehydroxylation by *Clostridium scindens* Associated with Protection from *Clostridium difficile* Infection in a Gnotobiotic Mouse Model. *Front Cell Infect Microbiol.* 6:191.

Cuenca et al., 2016. D-Alanine-Controlled Transient Intestinal Mono-Colonization with Non-Laboratory-Adapted Commensal *E. coli* Strain HS. *PLoS One.* 11:e0151872.

Chevalier et al., 2015. Gut Microbiota Orchestrates Energy Homeostasis during Cold. *Cell.* 163(6):1360-74.

Suárez-Zamorano N et al., 2015. Microbiota depletion promotes browning of white adipose tissue and reduces obesity. *Nat Med.* 21:1497-501.

Balmer et al., 2014. Microbiota-derived compounds drive steady-state granulopoiesis via MyD88/TICAM signaling. *J Immunol.* 193:5273-83.