

LECTURE

Dr. Kerim Eroglu

06.08.2026

 LIH Edison - Kariko room
1 A-B Rue Thomas Edison,
L-1445 Strassen 11:00 - 12:00

Understanding the roles of carotenoids in mediating host-microbe interactions within the mammalian gut

Carotenoids are naturally occurring red, orange, and yellow pigments found mainly in plants. They may function as vitamin A precursors, have important antioxidant, immunological or can mediate metabolic functions. Absorption of carotenoids takes place in the small intestine, but the overall absorption efficiency from whole foods is low (~5-20%) at the level of small intestine and the remaining unabsorbed carotenoids move into the colon. Here, carotenoids can be further released and metabolized within the large intestine. The overall objective of Dr. Eroglu's research program is to determine the impact of carotenoids on the mammalian gut microbiota. The central hypothesis is that carotenoids escaping the absorption in the small intestine can be transformed by the gut microbiota in the colon, and these undigested carotenoids are available to the gut epithelium and protect against obesity-associated gut dysfunction. In this talk, Dr. Eroglu will present diet-induced changes in the gut microbiota resulting from a carotenoid-rich diet, utilizing marker gene sequencing and shotgun metagenomics. By utilizing a novel and comprehensive approach, his group will characterize microbial communities and the mechanisms by which carotenoid metabolism may influence host inflammation and decrease risks of obesity. He also will go through how their "function-first" genomics approach will be leveraged to identify carotenoid-modifying microbes in the human gut microbiota. This innovative, hypothesis-driven, multi-omics framework addresses a critical gap in understanding the interactions between carotenoids, the gut microbiome, and metabolic health. By integrating carotenoid biology with microbial metabolism, his work establishes a novel and comprehensive approach to host-microbe interactions and precision medicine.

**SPEAKER:****Dr. Kerim Eroglu**Nutrigenomics Researcher
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Torsten Bohn

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