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Department of Medicine
Channing Division of Network Medicine

Channing Microbiome Seminar

August 10 (Friday), 2018, 11am @ 5th-floor conference room



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Technion Integrated Cancer Center

Mining the gut microbiota for immunomodulatory organisms

Abstract: Emerging evidence demonstrates the pivotal role of gut microbes in shaping our immune system. Studies have shown a handful of immunomodulatory activities of a few individual bacteria and several consortia. In our study, we systematically characterized the host-modulatory role of over 50 human gut bacteria from diverse phyla, representing the gut bacteria diversity. We find many immunomodulatory gut microbes, and interesting transcriptional responses. Surprisingly, these effects were not encoded in microbial phylogenetic background. In addition, by introducing a click-chemistry metabolic labeling method, we enabled fluorescent labeling of the gut bacteria and real-time visualization in live mice. These studies can provide basis for future studies on both the mechanisms of gut microbe-host interactions and the molecules at play.

Bio: Naama Geva-Zatorsky is an Assistant Professor at the Technion, Faculty of Medicine, Technion Integrated Cancer Center. She is studying the interactions between gut microbes and the host immune system in health and disease. She has recently characterized the host response to a variety of human gut microbes and studied their effects in disease states. In order to study their mechanistic interactions with the host at real-time, she has applied a metabolic labeling approach to enable fluorescent labeling of live anaerobic gut microbes. In parallel, she is studying microbial genetic mechanisms that allow gut microbes to thrive the dynamic gut ecosystem. Geva-Zatorsky received her B.Sc. from Tel Aviv University, double-major Chemistry and Biology, summa cum laude, her M.Sc. and Ph.D., from the Weizmann Institute, studying systems-biology with Prof. Uri Alon, completed with honors, and her postdoctoral studies at Harvard Medical School, studying gut microbiota-host interactions with Prof. Dennis Kasper. Geva-Zatorsky is a recipient of the Alon and Horev fellowships at the Technion, the national and international UNESCO-L'Oreal award, the Human Frontiers fellowship, the EMBO fellowship, the John F. Kennedy Prize, the Teva Prize and the Barenholz prize, for academic excellence.

Hosted by Yang-Yu Liu