COLLEGE OF PHARMACY
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Pharmaceutical Sciences Seminar

Wednesday, February 24, 2021
4:00-5:00 pm
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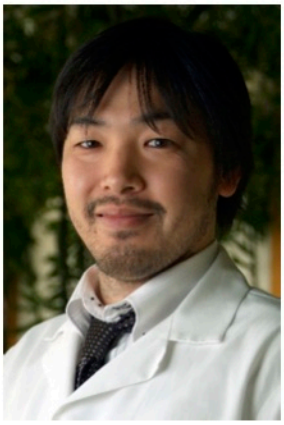
"The Gut Microbiota in Health and Disease"

Presented by:



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Abstract: The mammalian gastrointestinal tract is colonized by trillions of microorganisms, referred to as the gut microbiota, that have co-evolved with the host in a symbiotic relationship. The gut microbiota is vital for the host, as it plays a major role in nutrient metabolism, development of the immune system, and protection against colonization by exogenous infectious microorganisms. On the other hand, when the mutualistic relationship between the host and microbiota is disrupted, the gut microbiota can cause or contribute to various diseases, such as inflammatory bowel disease (IBD). In patients with IBD, the composition of the gut microbiota is perturbed (gut dysbiosis) with the expansion of potentially pathogenic members of commensal bacteria, namely pathobionts. However, the identity of disease-causing pathobionts and the mechanisms by which pathobionts thrive in the gut of IBD patients remain largely unknown. In this talk, I will introduce our recent research on the role of pathobionts in the pathogenesis of IBD. We have identified various pathobionts uniquely enriched in IBD patients. Those pathobionts have evolved strategies to better adapt to the disease environment. Consequently, pathobionts gain a growth advantage over harmless commensal bacteria and thrive in the disease microenvironment. Hence, targeting pathobiont-specific adaptation mechanisms can be the target for the selective inhibition of the growth of pathobionts without influencing the growth of beneficial commensal bacteria. In addition to the pathogenic role of gut microbiota in gastrointestinal disease, I will also talk about the power of the gut microbiome as drugs and drug adjuvants.

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