



# GENOME: THE GIS SPEAKER SERIES

**Toward the development of defined microbial therapeutics**  
**19 October (Wednesday) · 10am (SGT, GMT+8)**



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Via Zoom:  
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Trillions of microorganisms transit through and reside in the mammalian gastrointestinal tract each day, collectively producing thousands of small molecules and metabolites with local and systemic effects on host physiology. Identifying effector microorganisms that causally affect host phenotype and deciphering the underlying mechanisms have become foci of microbiome research and have begun to enable the development of microbiota-based therapeutics. Two complementary, reductionist approaches have commonly been used: the first starts with a specific phenotype (such as immune cell induction) and narrows down the microbiota to identify responsible effector bacteria, while the second starts with bacteria-derived molecules and metabolites and seeks to understand their effects on the human physiology. Together, these strategies provide the basis for the rational design of microbiota-targeted therapeutics to ameliorate specific diseases and conditions.

Kenya Honda is a Professor of Department of Microbiology and Immunology, Keio University School of Medicine, Tokyo, Japan and the Team leader of Laboratory for Gut Homeostasis, RIKEN Center for Integrative Medical Sciences (IMS), Yokohama, Japan. He received his M.D. from Kobe University School of Medicine and his Ph.D. from Kyoto University School of Medicine in Japan. His lab has been aiming to elucidate the relationship between specific members of the microbiota and immune cell subset using gnotobiotic animal models with the emphasis of human diseases. He received the NISTEP Award in 2013, the Gottfried Wagener Prize in 2014, Baelz award in 2016. He is a Scientific Co-founder of Vedanta Biosciences and a Scientific Advisory Board Member of Science Translational Medicine.