

BDR SEMINAR via Zoom

Nobuo Sasaki

Keio University School of Medicine

Tuesday, September 29, 2020

13:00-14:00

Meeting URL will be announced on the event day by e-mail.

※This seminar is open only to BDR members.

Developing the organoid culture system for applied researches in adult tissue stem cells

Summary

Organoid is three-dimensional in vitro culture systems derived from self-organizing ES/iPS cells or adult tissue stem cells that mimic some of the structural and functional characteristics of an organ. This organoid technology has emerged as an invaluable tool to study stem cell biology, organogenesis, human pathologies including cancer and infection diseases over approximately the last decade. In fact, I have demonstrated that organoids can be used to identify niche for colonic stem cells, but also to understand intra-tumor heterogeneity in human colorectal cancer genetically and functionally at single-cell resolution. To open up possibilities of the organoid technology, I have also challenged the gut microbiology with human intestinal organoids to investigate the mechanism of direct interaction between host cells and anaerobic microbes. In this seminar, I will present recent our studies and discuss further potencies how we use organoids to drive state-of-the-art research with the aim to develop innovatively applications for organoid technology combined with a fascinating tool such as CRISPR/Cas9 based genome editing in human biology.



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