

# ASHBi SEMINAR

## Generation and comparative analysis of primate iPSC cells

Lecturer: **Dr Mari Ohnuki**

Post-Doc

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Date

**Friday, 17 December 2021**

Time

**17:00 – 18:00**

Venue

**Zoom Online Meeting\***

\*Register via the right QR code



### Abstract

Comparing the molecular and cellular properties among primates is crucial to better understand human evolution and biology. However, it is difficult or ethically impossible to collect matched tissues from many primates including human, especially during development. Induced pluripotent stem cells (iPSCs) from primates allow experimental access to various cell types and differentiation stages and thus allow to compare cellular differentiation programs in humans and their closest relatives. Here we generated primate iPSCs and maintained them under the same feeder-free culture conditions. We first validated the Sendai virus-vector based reprogramming method and applied that to primate fibroblasts and urinary cells obtained in a non-invasive manner. Transcriptomic analysis revealed that the urine-derived primate iPSCs are well comparable to the human iPSCs. To study expression conservation throughout a dynamic process we analyzed the human, gorilla and cynomolgus macaque cells during neural differentiation by single-cell RNA sequencing. As constantly upregulated genes in all species we identified 18 core transcription factors. Thus the series of primate iPSCs have a huge potential to better understand human-specific traits as well as conserved regulatory networks.

Organizer : Associate Prof Takuya Yamamoto

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