

BDR SEMINAR (Kobe & online hybrid)

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Professor of Medicine, Institute for Stem Cell Biology

Monday, April 14, 2025

15:00-16:00

1F Auditorium, DB Building C, Kobe / Broadcast online via Zoom
Zoom meeting URL will be announced on the event day by e-mail.

※This seminar is open only to BDR members.

Direct cellular reprogramming in lung cancer and for cell therapy

Summary

Direct reprogramming involves conversion of a cell from one lineage into another without transitioning through a pluripotent state. In the lung, we found that oncogenic KrasG12D expression is sufficient to directly reprogram terminally differentiated alveolar type I (AT1) cells into parent AT2 stem cells. These in vivo induced AT2 cells go on to generate indolent lepidic tumors. I will also demonstrate how direct reprogramming of somatic cells generates embryonic lung progenitors which undergo region-specific differentiation and enhance survival upon transplantation after acute lung injury.

Juul et al., *Nature* 2023

Sikkema et al., *Nature Medicine* 2023

Nabhan et al., *Science* 2018

Desai et al., *Nature* 2014



Host: Mitsuru Morimoto

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