BDR SEMINAR (Kobe & online hybrid)

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Friday, January 10, 2025

11:00-12:00

1F Auditorium, DB Building C, Kobe / Broadcast online via Zoom

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

※Non-BDR members: Please register from the following link.

https://krs2.riken.jp/m/bdrseminarregistration (Registration deadline: January 7)

From metabolites to signaling: glycolytic flux-control of embryo segmentation timing

Summary

How metabolism impacts cell fate decisions during development and disease is a fundamental yet unresolved question. It is increasingly recognized that metabolism plays an important role beyond fueling biological processes, regulating gene expression and signal transduction. However, it remains a key challenge to distinguish a signaling role of metabolism from its canonical bioenergetic and biosynthetic functions. To address this challenge, we are exploring the role of glycolysis in mouse presomitic mesoderm (PSM) development, as it offers an opportunity to study the impact of metabolic perturbations on signaling dynamics in real time and in a quantitative manner. In this seminar, I will present our recent work demonstrating a modular organization of metabolic functions in PSM development. Our key findings include: 1) Unveiling a non-canonical signaling role of glycolytic metabolites that underlies the regulation of the segmentation clock period; 2) Demonstrating that this signaling role can be decoupled from its bioenergetic and biosynthetic roles. At the end of my talk, I will discuss about the potential mechanism and function of glycolytic metabolite signaling in development and beyond.

Host: Masayuki Oginuma

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