BDR SEMINAR (Kobe & online hybrid)

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Monday, December 22, 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.

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

https://krs2.riken.jp/m/bdrseminarregistration (Registration deadline Dec 18)

Functional characterization and therapeutic targeting of gene regulatory elements

Summary

Nucleotide variation in gene regulatory elements is a major determinant of phenotypes. Despite continual progress in the cataloging of these elements, little is known about the code and grammatical rules that govern their function. To this end, we are using massively parallel reporter assays (MPRAs), including capture-C based MPRAs, to simultaneously test the activity of thousands of gene regulatory elements and their target promoter in parallel. Regulatory elements can also serve as therapeutic targets. By targeting regulatory elements via CRISPRa, we show that they can be used to rescue a variety of haploinsufficient diseases (having only one functional allele). In addition, utilizing CRISPRa to engineer adipocytes and adipose organoids to outcompete tumors for nutrients, we show that they can be used as a novel cancer therapy, termed Adipose Manipulation Transplantation (AMT).

RIKEN BDR

RIKEN Center for Biosystems Dynamics Research (BDR)

Host: Ryoichiro Kageyama

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