BDR SEMINAR (Yokohama/Hybrid Online)

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Monday, May 16, 2022

13:30-14:30

2F C210-212, Central Building, Yokohama / 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://krs1.riken.jp/m/bdrseminarregistration

Structural biology of prokaryotic RNA polymerase

Summary

My research interests are centered on understanding the mechanism of gene expression, particularly how the information stored in genomic DNA is transcribed into RNA by DNA-dependent RNA polymerase (RNAP), which is one of the fundamental processes in all organisms. Using structural biology approaches including X-ray crystallography and single-particle cryo-electron microscopy (cryo-EM), my group determined 3D structures of RNAP from bacteriophage, bacteria and archaea for providing unprecedented insights into the structures and functions of RNAPs as well as for understanding evolution in course of adaptation in their growth environments.

Since 2015, my group has utilized cryo-EM to investigate structures of RNAPs for visualizing elusive intermediates and/or from limited samples where X-ray crystallography could not be addressed. I will introduce our recent cryo-EM studies of: 1) the mechanism of global transcription regulation by DksA/ppGpp, 2) RNAP recycle by ATPase RapA and 3) cyanobacterial RNAP.

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