

HKU project funded under the NSFC/RGC Collaborative Research Scheme

Mechanistic Study of the Parental Histone Recycling at Replication Forks

Project Coordinator (Hong Kong):

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Project Summary:

Replication of the eukaryote genome must be coupled to the faithful replication of the epigenome encoded in the post-translational modified histones for progeny cells to carry on. Despite years of efforts, the replication-coupled mechanisms that regulate nucleosome disassembly and subsequent histone recycling remain poorly understood, especially at a molecular level.

This NSFC/RGC collaborative research project aims to take advantage of the fruitful partnership between Beijing and Hong Kong to investigate the roles of FACT (facilitates chromatin transcription) in regulating parental histone recycling. The research team will exploit cutting-edge approaches to capture snapshots of FACT in the act of shuffling histone transfer at replication forks. The specific roles of various factors involved in this process will be further characterized in yeast cells accordingly. The outcomes of the proposed research are expected to deliver extensive insights into chromatin replication, providing a structural framework for understanding and combating associated human diseases.

港大「合作研究重點項目計劃」項目

親代組蛋白在複製叉回收的機制研究

項目統籌（香港）:

理學院生物科學學院助理教授翟元梁教授

項目簡介:

染色質以核小體為基本單元，是基因組和表觀基因組的共同載體。真核生物 DNA 複製與表觀基因組的複製高度偶聯。雖然經過多年的研究，複製偶聯的親本組蛋白回收的分子機制仍不清楚。本課題綜合運用多學科方法，對複製偶聯的親本組蛋白回收的分子機制進行結構和功能研究。研究成果將對表觀遺傳及相關疾病機制和治療有重要價值。