分子細胞生物学研究所セミナー

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演題 **Sequencing-based approach to understand chromosome condensation during cell cycle.**

日時 ４月 12 日（火）15：00　～　16：30

場所 東京大学分子細胞生物学研究所
生命科学総合研究所 B 棟　３階　301 会議室
主催 東京大学分子細胞生物学研究所
ゲノム情報解析研究分野（連絡先：20756）

Chromosome condensation is one of the indispensable processes during cell cycle for a faithful inheritance of genetic information to the progenies. The genetic information is stored as DNA and kept in the nucleus in interphase. To pack centimetre-long DNA within micrometre-sized nucleus, DNA forms chromatin fibre, in which DNA wraps around histones and forms nucleosomes as a unit. Chromatin fibres are further compacted in mitosis to form mitotic chromosomes, which iscalled chromosome condensation. Since compromised chromosome condensation leads lagging chromosome, which is a hallmark of chromosome segregation error, chromosome condensation has to be properly regulated. Although the factors involved in chromosome condensation such as Condensin complex have been identified, how chromatin fibres are organised in mitotic chromosomes and how condensation factors contribute the formation of mitotic chromosomes are remained largely unknown.

Recent advance of sequencing technology allows us to apply chromosome conformation capture-based techniques for determination of spatial organisation of chromatin fibres. We apply one of the chromosome conformation capture-based methods, Hi-C, to determine the change in 3D structure of chromatin fibres during the cell cycle. I like to show our recent findings and to discuss the organisation of chromatin fibres in mitotic chromosomes and in the nucleus.