分子細胞生物学研究所セミナー

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- 演題 Life without the tether a meiotic synthetic lethality screen for spp1 Δ
- 日時 3月7日 (月) 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)

During meiosis, developmentally programmed DSBs initiate recombination to physically link homologous chromosomes to allow reductional segregation. The conserved DSB machinery has been shown to mostly localize to DNA regions remote from DSB hotspots. To explain the cleavage reaction, a model has been proposed, in which Spp1, a subunit of the "Set1- or Compass" complex, acts as a "tether", connecting histone marks at DSB hotspots via its PhD finger domain with the DSB machinery, via its Mer2 interaction domain. Such tethering could stabilize a transient interaction between different chromosomal regions to facilitate cleavage by Spo11. Indeed, the DSB landscape is very different in the absence of the "Spp1-tether".

In the light of such a central role of Spp1 it is surprising, that $spp1\Delta$ spores hardly show detectable spore lethality. To uncover potential compensatory mechanisms, we designed a novel meiotic spore viability screen to find mutations synthetically lethal with $spp1\Delta$ in meiosis. This brought us on a journey that revealed insights about Spp1, Sgs1 (Bloom's helicase) and the synapsis (ZMM) pathway.