ID de Contribution: **50** Type: **Non spécifié**

# Evidence that Rrp6/EXOSC10 is involved in condensin-mediated chromosome segregation in fission yeast

RNAs and transcription are emerging as important players in chromosome assembly and dynamics. Although the idea of a rigid and stable RNA scaffold has now been abandoned, several lines of evidence suggest that RNA form a dynamic mesh that controls chromatin structure. Moreover, transcription has been identified as a roadblock for SMC loop extruders such as Condensin, and the activity of RNA binding proteins is essential to maintain chromosome organization and stability in both interphase and mitosis. To explore the links between SMC complexes and RNA metabolism we studied the interactome of Fission yeast Condensin and found that it physically interacts with RNA binding proteins involved in RNA catabolism. Among these RBPs we found that Rrp6, a catalytic subunit of the nuclear RNA-exosome, directly binds Condensin. Controlled degradation of Rrp6 in a condensin-deficient genetic background led to loss of cell viability and to a specific missegregation of the rDNA during anaphase. Remarkably, Hi-C indicates that most of the genome remains efficiently folded in metaphase despite Rrp6 degradation, further suggesting that Rrp6 might collaborate with condensin specifically at rDNA repeats. The role played by Rrp6 and/or the RNA exosome with respect to Condensin-mediated chromosome assembly and segregation will be discussed.

**Auteurs principaux:** LEBRETON, Jérémy (ENS de Lyon, LBMC); GILQUIN, Benoit; VERDEL, André; BERNARD, Pascal

**Orateur:** LEBRETON, Jérémy (ENS de Lyon, LBMC)