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Rearranging kinetochores

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William Wells
Email: wells@biotext.com

Rsc is a member of the SWI/SNF family of chromatin-remodeling complexes in yeast. Unlike the main yeast SWI/SNF complex, Rsc is required for progress through mitosis, and absence of Rsc function alters the chromatin structure of yeast centromeres. This could be explained if Rsc was necessary for the transcription of certain mitotic genes, but in the November 21 Proceedings of the National Academy of Sciences, Xue *et al*. propose that Rsc's effect on centromeres may be direct (*Proc. Natl. Acad. Sci. USA* 2000, **97**:13015-13020). They isolate BAF180, a unique component of the PBAF (Polybromo, BRG1-associated factors) or human Rsc complex. PBAF is localized at kinetochores in prometaphase cells or in the presence of the anti-microtubule drug nocodazole. Thus PBAF/Rsc activity may be needed at kinetochores to create an altered chromatin structure suitable for spindle attachment.

References

1. RSC, an essential, abundant chromatin-remodeling complex.

2. Stimulation of GAL4 derivative binding to nucleosomal DNA by the yeast SWI/SNF complex.

3. A mutation in NPS1/STH1, an essential gene encoding a component of a novel chromatin-remodeling complex RSC, alters the chromatin structure of Saccharomyces cerevisiae centromeres.

4. *Proceedings of the National Academy of Sciences*, [http://www.pnas.org/]