PublisherInfo		
PublisherName	:	BioMed Central
PublisherLocation	:	London
PublisherImprintName	:	BioMed Central

Chromatin at centromeres

ArticleInfo		
ArticleID	:	4223
ArticleDOI	:	10.1186/gb-spotlight-20011012-01
ArticleCitationID	:	spotlight-20011012-01
ArticleSequenceNumber	:	294
ArticleCategory	:	Research news
ArticleFirstPage	:	1
ArticleLastPage	:	2
ArticleHistory	:	RegistrationDate : 2001–10–12 OnlineDate : 2001–10–12
ArticleCopyright	:	BioMed Central Ltd2001
ArticleGrants	:	
ArticleContext	:	130592211

Jonathan B Weitzman
Email: jonathanweitzman@hotmail.com

Chromatin fibers adopt higher-order structures that define chromosomal regions with distinct functional properties. In the October 9 Proceedings of the National Academy of Sciences, Nick Gilbert and James Allan, from the University of Edinburgh in Scotland, UK, describe the use of analytical sucrose gradient sedimentation to examine chromatin fibres released from centromeric heterochromatin (*Proc Natl Acad Sci USA* 2001, **98**:11949-11954). They studied soluble chromatin released from murine NIH3T3 fibroblast cells or human HT1080 cells following digestion with micrococcal nuclease or restriction enzymes. After sedimentation under ionic conditions (80 mM NaCl) they probed the fibres with different repetitive DNA markers. Gilbert and Allan found that the satellite-DNA-containing fibres have a higher sedimentation rate than bulk chromatin fibres, reflecting a more condensed higher-order structure. They propose a model in which centromeric heterochromatin exists as a canonical 30-nm chromatin fibre, whereas bulk fibres display less regular folding. These structural differences are likely to dictate interactions with chromatin-binding proteins and the functional identities of different chromosomal domains.

References

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

2. University of Edinburgh , [http://www.ed.ac.uk]

3. Comparison of the folding of beta-globin and ovalbumin gene containing chromatin isolated from chicken oviduct and erythrocytes.