

POSTER PRESENTATION

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Kinetic control of nucleosome displacement by ISWI/ACF chromatin remodelers

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From *Epigenetics and Chromatin: Interactions and processes*
Boston, MA, USA. 11-13 March 2013

Chromatin structure is dynamically organized by chromatin remodelers, motor protein complexes which move and remove nucleosomes. The regulation of remodeler action has recently been proposed to underlie a kinetic proofreading scheme which combines the recognition of histone-tail states and the ATP-dependent loosening of DNA around nucleosomes. Members of the ISWI-family of remodelers additionally recognize linker length between nucleosomes. Here, we show that the additional proofreading step involving linker length alone is sufficient to promote the formation of regular arrays of nucleosomes. ATP-dependent remodeling by bidirectional motors is shown to reinforce positioning as compared to statistical positioning.

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Published: 18 March 2013

doi:10.1186/1756-8935-6-S1-P7

Cite this article as: Florescu et al.: Kinetic control of nucleosome displacement by ISWI/ACF chromatin remodelers. *Epigenetics & Chromatin* 2013 **6**(Suppl 1):P7.

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