

Asymmetric Unwrapping of Nucleosomes under Tension Directed by DNA Local Flexibility

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Abstract:

Genetic information buried in nucleosome is made accessible for replication, transcription, repair, and remodeling by partial unwrapping of nucleosomes. However, the mechanism for unwrapping of nucleosomes is poorly understood. The authors employed optical tweezers techniques and a single-molecule FRET to detect its local conformational transitions under force. They demonstrated that nucleosomes unwrap asymmetrically and directionally under force governed by the local flexibility of nucleosomal DNA imposed its sequence.

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