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Review Article

The logic of chromatin architecture and remodelling at promoters

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Abstract

The regulation of gene transcription involves a dynamic balance between packaging regulatory sequences into chromatin and allowing transcriptional regulators access to these sequences. Access is restricted by the nucleosomes, but these can be repositioned or ejected by enzymes known as nucleosome remodellers. In addition, the DNA sequence can impart stiffness or curvature to the DNA, thereby affecting the position of nucleosomes on the DNA, influencing particular promoter 'architectures'. Recent genome-wide studies in yeast suggest that constitutive and regulated genes have architectures that differ in terms of nucleosome position, turnover, remodelling requirements and transcriptional noise.

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