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Chromatin remodeling: the kinetic proofreading scenario

The notion « chromatin remodeling » covers all mechanisms related to the displacement of nucleosomes on eukaryotic DNA which are brought about in order to favor or disfavor the acces to genes or regulatory regions. Currently, four families of remodelers are known which are specialized moleculars motors serving either to open up or to close chromatin in particular ways. An important question in the field is to understand how nucleosomes are targeted for these processes. In 2008, we have proposed a « kinetic proofreading scenario » in order to answer this question. During the last year, this concept has been applied by Geeta J Narlikar (University of San Francisco) to explain her experiments on ISWI/ACF remodelers. In my talk I will present the kinetic proofreading scenario in its general form and its realization in different types of remodelers.