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Chromatin remodelling is required to allow transcription factors access to the DNA, but the exact order of events at specific gene promoters remains unclear. At the [yeast HO locus](#) the Swi5p transactivator recruits a chromatin-remodelling complex, followed by recruitment of the histone acetyltransferase (HAT) Gcn5p, prior to the assembly of the pre-initiation complex (PIC). In contrast, during activation of the [human interferon-beta gene](#) promoter an 'enhanceosome' complex recruits the Gcn5p HAT, leading to recruitment of the remodelling complex that drives the completion of PIC assembly. In the March 8 [Science](#), Evi Soutoglou and Iannis Talianidis describe a different course of events that regulate the $\alpha 1$ antitrypsin promoter (*alpha1-AT*) during gut cell differentiation (*Science* 2002, **295**:1901-1904). They used a CaCo-2 enterocyte cell culture model and employed chromatin immunoprecipitation (ChIP) methodology to investigate regulation of the *alpha1-AT* promoter by hepatic transcription factors. They found that the transactivators were bound to the promoter and the PIC assembled prior to the recruitment of HAT and chromatin remodelling activities. Chromatin remodelling led to subsequent initiation of transcription. Future experiments will aim at understanding the mechanisms that orchestrate the different order of events at specific gene promoters.

References

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2. Ordered recruitment of chromatin modifying and general transcription factors to the IFN- β promoter.
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