<Further Development 12_01>

Mechanisms of the MBT by Chromatin Modifications

Some of the events that trigger the mid-blastula transition (MBT) involve chromatin modification. First, certain promoters are demethylated, allowing transcription of these genes. During the late blastula stages, there is a loss of methylation on the promoters of genes that are activated at MBT. This demethylation is not seen on promoters that are not activated at MBT, nor is it observed in the coding regions of MBT-activated genes. The methylation of lysine-4 on histone H3 (forming a trimethylated lysine associated with active transcription) is also seen on the 5′ ends of many genes during MBT. It appears, then, that modification of certain promoters and their associated nucleosomes may play a pivotal role in regulating the timing of gene expression at the mid-blastula transition (Stancheva et al. 2002; Akkers et al. 2009; Hontelez et al. 2015).

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