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染色质隔离子研究进展The Progress in the Study of Chromatin Insulator

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摘要　染色质隔离子是真核生物染色质上的顺式调控元件，它将染色质隔离成不同的转录功能域，使其一侧的基因免受另一侧调控元件的影响。染色质隔离子发挥作用是通过与其相结合的蛋白质来实现，它能阻断增强子和沉默子的作用，并使插入在两个隔离子间的外源基因不受染色体位置效应影响。目前存在多种有关隔离子的作用机理的假说，比较成熟的是loop假说。随着研究的深入，染色质隔离子的应用也将受到更大的重视。Abstract: Chromatin insulators, which define domains of transcriptional autonomy, are cis-acting elements of eukaryotes. They are located at the boundaries of differentially regulated genes and delimit their interactions by establishing independent chromatin structures. They can block chromosomal enhancers or silencers if they are located between promoters and enhancers or silencers, and protect against position effect. Recent studies focus on elucidating the molecular mechanism of insulator functions. Loop Model is the most predominate hypothesis while others are assumed. Study progress in this field shed new light on the regulation of gene expression.

关键词　染色质隔离子　增强子　沉默子　染色质边界元件 Key words　chromatin insulaotr　enhancer　silencer　chromatin boundary element

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