

生物技术·遗传育种

真核生物转录调控的研究进展

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摘要 真核生物基因表达的调控是目前分子生物学研究中重要的前沿领域, 形成了多个热点。真核基因表达调控是一个十分复杂而协调有序的调控过程, 这一过程不仅与基因本身的功能, 也与细胞及机体的功能表现密切相关。而转录水平的调控是基因表达过程中最重要的第一步, 由于蛋白质-蛋白质、蛋白质-DNA之间的相互作用, 以及一些复杂大分子复合物的形成导致真核生物的转录水平的调控是一个多级的复杂过程。近年来, 随着新技术和新方法的出现, 发现了许多与基因转录调控有关的DNA顺式作用元件、核蛋白因子及各种因子在核内形成的多种复合物, 它们的相互作用使转录调节的效率得到了提高, 也使人们更进一步认识了某些生命现象以及细胞行为和疾病的发生机理。本文从顺式作用元件、反式作用因子、转录复合物、激素的调节、协调作用及最新研究siRNA调控6个方面进行了阐述, 同时也对目前转录调控存在的问题和前景做了分析。

关键词 [转录调控](#); [顺式作用元件](#); [反式作用因子](#); [协同作用](#); [siRNA](#)

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Research Progress in Gene Transcription Regulation in Eukaryota

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Abstract

Research on gene expression regulation in Eukaryota is one of the leading molecular research fields. There are several research hot focuses in this field. Gene expression regulation in Eukaryota is a very complicated, programmed regulation which is not only involved in the genes themselves but also cell and/or tissue function. Regulation in transcription level is the key first step of gene expression regulation. Due to the interaction between proteins with proteins, proteins with DNA and the formation of some complicated large compounds in the gene transcription regulation, gene transcription regulation is also a very complex progress with multiple steps. In recent years, as some new techniques emerged, there are many new findings of some cis acting DNA elements, nuclear protein factors, and some compounds with these factors which enhance transcription level. These findings make people further know more life phenomenon, cell conduction and some mechanism related to diseases. This paper reviewed the six research progress aspects related to gene transcription regulation: cis acting elements, trans acting factors, transcriptional compounds, hormone regulation, synergistic effect, siRNA regulation. The issues and potential development and application of research is also discussed in this paper.

Key words [transcription regulation](#) [cis acting elements](#) [trans acting factors](#) [synergistic effect](#) [siRNA](#)

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