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耦联性转录与翻译新进展:真核生物细胞核内的翻译 The New Advance of Coupled Transcription and Translation: Translation within the Nuclei in Eukaryotes

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摘要　原核生物转录与翻译过程是耦联的。通常认为，在真核生物中，初级转录产物经过加工和修饰成的mRNA从细胞核进入细胞质后，翻译才开始，也就是说，转录与翻译过程并不是耦联的。然而，最近Iborra 等人用赖氨酸［3H］以及生物素或BODIPY标记的赖氨酸-tRNA对哺乳动物细胞翻译位点进行定位，发现细胞核内存在耦联性转录与翻译过程，核内翻译产物占细胞总合成蛋白的10%~15%。

Abstract:It is well known that the processes of transcription and translation are coupled in prokaryotes. However, in eukaryotes, shortly after the transcrition of the primary transcript begins, modifications and processing occur. After the mature mRNA moleculars are transported from the nuclei to the cytoplasm, the translations begin. It shows that the processes of transcription and translation are not coupled in eukaryotes. But now Iborra et al localized translation sites with ［3H］ lysine or lysyl-tRNA tagged with biotin or BODIPY in mammalian cells and found that there exited coupled transcription and translation within the nuclei. They estimated that the nuclear translation accounted for about 10% to 15% of protein synthesis in the cell.

关键词　耦联性转录与翻译　细胞核　生物素　BODIPY Key words　coupled transcription and translation　nuclei　biotin　BODIPY

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Abstract

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