Abstract

Gene expression, the process by which information encoded in genes is used to synthesize functional gene products, is fundamental to the functioning of all living organisms. This research article explores the intricate mechanisms underlying gene expression, encompassing transcriptional and translational processes, as well as post-transcriptional and post-translational modiýcations. We delve into the regulation of gene expression, including the roles of transcription factors, epigenetic modiýcations, and non-coding RNAs. Furthermore, we discuss the implications of aberrant gene expression in disease pathogenesis and therapeutic interventions. Finally, we highlight emerging technologies and future directions in the ýeld of gene expression research.

Keywords:

Introduction

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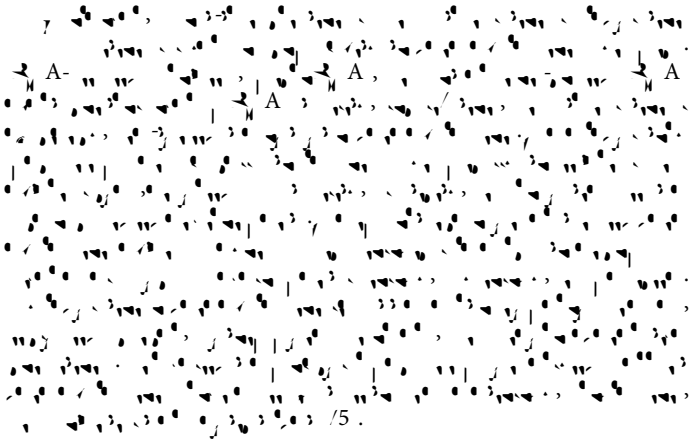

Discussion