

Faulty RNA Processing and its Effect on Various Diseases

Introduction

- - RNA plays a crucial role in gene expression.
- - RNA processing includes splicing, capping, and polyadenylation.
- - Errors in RNA processing lead to defective proteins or gene silencing.
- - Linked to diseases like cancer, neurodegenerative disorders, and genetic syndromes.

What is RNA Processing?

- - Transcription produces pre-mRNA from DNA.
- - Pre-mRNA undergoes modifications before becoming mature mRNA.
- - Key processes:
 - Splicing: Removal of introns.
 - Capping: Protects mRNA from degradation.
 - Polyadenylation: Adds a poly(A) tail for stability.

Consequences of Faulty RNA Processing

- - Incorrect splicing can lead to non-functional or toxic proteins.
- - RNA modifications regulate gene expression; errors lead to misregulation.
- - Contributes to:
 - • Spinal Muscular Atrophy (SMA)
 - • Amyotrophic Lateral Sclerosis (ALS)
 - • Certain types of cancer

Overview of the Presentation

- - Understanding normal RNA processing.
- - Identifying types of faulty RNA processing.
- - Examining diseases linked to RNA errors.
- - Exploring potential therapeutic approaches.

Now, Let's Dive Deeper!