



BIOCHEMISTRY SEMINAR

Connecting the dots: how RNA biology dictates mRNA vaccine efficacy



mRNA has emerged as a revolutionary class of drugs, boasting remarkable attributes such as rapid development, modularity, and a wide range of applications. Beyond its primary structural components—cap structure, 5' untranslated region (5' UTR), protein-encoding open reading frame (ORF), 3' UTR, and the polyadenylated tail poly(A)—mRNA's intricate secondary and tertiary structure plays a crucial role in determining its therapeutic efficacy.

In this seminar, we will delve beyond the conventional view of mRNA's structural elements and explore the complex RNA landscape. Understanding the nuanced relationships between these elements is essential for optimizing gene expression. We will navigate the intricacies of mRNA stability, folding kinetics, ribosomal load, and translational activity, shedding light on how these factors influence its effectiveness in cellular environments.

Furthermore, we will discuss the strategic incorporation of modified nucleotides to enhance on-shelf stability and mitigate immunogenicity. The presentation will encompass molecular methodologies tailored to decipher and manipulate these aspects of RNA biology, offering insights into the challenges associated with large-scale manufacturing. This seminar aims to provide a comprehensive perspective on mRNA vaccines, paving the way for a deeper understanding of their biological properties and their impact on vaccine efficacy.

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PFIZER

MONDAY

April 8, 2024 @4:00

219 BRL

