**From Innovation to Application: Non-Viral Approaches for RNA Delivery**

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The field of RNA therapeutics has witnessed remarkable advancements, with RNA-based drugs offering promising solutions for a range of diseases. However, the delivery of RNA remains a significant challenge, particularly when using non-viral vectors. Lipid nanoparticles (LNPs), polymeric nanoparticles, and lipid-polymer hybrid nanoparticles present several advantages over viral vectors, including reduced immunogenicity, improved safety profiles, and greater cargo size and type flexibility. Despite these benefits, several key bottlenecks hinder their widespread adoption in clinical settings.

This presentation will provide an overview of the state-of-the-art non-viral RNA delivery systems and the innovative approaches being pursued to address these technological bottlenecks. The path forward in harnessing the full therapeutic potential of RNA-based drugs is traced by focusing on translating these strategies from the laboratory to the clinic.