

John G. Wagner Pharmacia & Upjohn
Memorial Lecture Series

Reimagining Cationic Biomaterials for Therapeutic Applications

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Kam W Leong, Ph.D.

Nonviral gene delivery has traditionally relied on cationic biomaterials to deliver nucleic acids for exogenous gene transfer. In contrast, our work explores the unconventional use of cationic biomaterials to remove nucleic acid-associated pathogenic signals, such as PAMPs and DAMPs, for anti-inflammatory therapy. Unexpectedly, we have also found that these cationic nanomaterials possess unique properties that modulate molecular signaling pathways and elicit pro-regenerative tissue responses. This presentation will highlight the mechanistic evidence and implications of this emerging direction in biomaterials research.