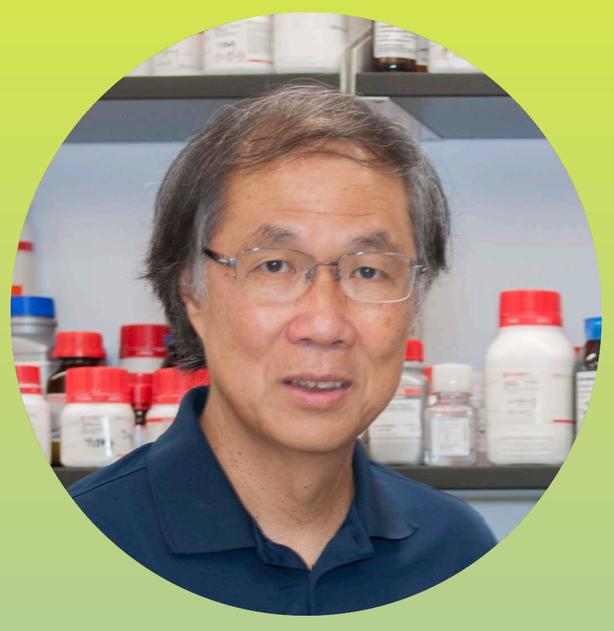
Chinese Academy of Sciences

Key Lab for Biomedical Effects of Nanomaterials and Nanosafety

中科院纳米生物效应与安全性重点实验室

学术报告通知

CAS NS Forum (NO. 361)



演讲者：Prof. Kam W Leong

Samuel Y Sheng Professor

Department of Biomedical Engineering

Columbia University, New York, NY 10032

题　目：Unexpected Applications of Cationic Biomaterials

时　间: 2023年6月2日 (星期五)　上午10:00

地　点: 国家纳米科学中心，新楼第六会议室（三层F310）

主持人：赵宇亮 院士

摘要：

Inflammation plays an important role in responding to danger signals arising from damage to our body and in restoring homeostasis. Controlling the inflammatory response is a major strategy in managing diseases such as cancer, autoimmunity, and wound healing. While conventional drug therapies are the norm in tackling inflammation, biomaterials are increasingly proposed to join the battle. Through drug delivery strategies, biomaterials potentiate the efficacy of anti-inflammatory drugs by improving bioavailability and diminishing side effects. Applied in inhibitory or scavenging strategies, they reduce inflammation by removing the pro-inflammatory factors. For instance, the scavenging approach may be applied to inflammatory diseases such as rheumatoid arthritis, psoriasis, multiple sclerosis and systemic lupus erythematosus, which are increasingly linked to inappropriate and chronic activation of inflammatory cells. A central event in the pathogenesis of these diseases appears to be an aberrant activation of innate immune sensors, most prominently the Pattern Recognition Receptors (PRRs), by nucleic acids that are released from dead and dying cells. In this presentation, I will discuss the application of nucleic acid-binding polymers as a molecular strategy to combat inflammation and as a therapeutic carrier for drug therapy.

简介:

Kam W. Leong is the Samuel Y. Sheng Professor of Biomedical Engineering at Columbia University, where he focuses on three major research directions: 1) Nonviral gene editing *in vivo*; 2) Biomaterials-assisted modulation of inflammation; 3) Human-tissue chips for disease modeling and drug screening. He has published >500 manuscripts with an h-index of 130 and citations ~65,000, and holds more than 60 issued patents. He is the recipient of the Founder's Award of the Society for Biomaterials, Editor-in-Chief of *Biomaterials*, and a member of the National Academy of Inventors, the National Academy of Engineering, and the National Academy of Medicine.

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