



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. 301)



演讲者：毛晓波教授

美国约翰霍普金斯大学医学院

题 目：**Pathological Alpha-Synuclein and Tau Spreading Mechanism via Receptor and the Pathogenesis Factor in Synucleinopathies**

时 间：2018年7月1日(星期日), 下午13:30

地 点：国家纳米科学中心 南楼四层会议室

邀请人：国家纳米科学中心 聂广军 研究员

主要研究领域(Research Summary):

Generally, my research has been on forefront of discovery exploring resolving amyloid structures and α -synuclein transmission mechanism. We have applied scanning tunneling microscopy (STM) to study the core-structures of amyloid peptides and distinguish amino acid sequence. Amyloid are a series of misfolded proteins resulting in severe degenerative diseases, which are hard to crystalized for structural analysis. We have provided novel strategies to observe amyloid structures. Furthermore, we have the great interesting, and have studied the interaction between nanoparticles and amyloid peptides in air pollution and neurodegeneration fields.

My major research interest is on the transmission mechanism of prion-like protein α -synuclein. I uncovered LAG3 as a α -synuclein transmission receptor and this identification provides a new target for developing therapies designed to slow the progression of Parkinson's disease (PD) and related α -synucleinopathies. We are currently under the investigation on the screening LAG3 inhibitors and LAG3 co-receptors in mouse and in human iPSC-derived dopaminergic and cortical neurons *in vitro* and *in vivo*.

My laboratory employs advanced technologies in high throughput screening on inhibitors and receptors; human stem cell culture, including generation and differentiation; nanotechnology, including nano-characterization and nanomaterials. The ultimate goal of the research is to understand the pathogenesis of neurodegenerative diseases from the environmental factors, and cell and molecular biological pathways, in order to identify new targets for therapeutic development.

个人简介:

美国约翰霍普金斯大学医学院，神经病学学院和细胞工程学院任终生制(tenure-track)独立的助理教授(2017年)，拥有独立实验室实验室主要以生物化学，分子生物学和细胞生物学为主来研究帕金森综合征，阿尔兹海默式症等神经退行性疾病发生，发展及其信号转导通路研究，特别关注传染性蛋白，包括病态 α -synuclein(α -syn)和tau蛋白的传染机制研究，建立了受体和抑制剂筛选平台，细胞和动物的蛋白传染模型，从而为神经退行性疾病的治疗和缓解提供了全新的特异性靶点和治疗方案。

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