Targeting NMDA subtype glutamate in brain diseases

NMDA subtype glutamate receptors play critical roles in the refinement of neural connections during development and learning and memory functions in the adult. Their excessive activation is also believed to have critical contributions to neuronal death under pathological/neurodegenerative conditions, while hypofunction is proposed to underlie the oncogenesis of certain psychiatric diseases. In this talk, I will discuss our recent efforts in enhancing NMDAR function for treating psychiatric diseases (such as schizophrenia) and inhibiting their activation in treating neurodegenerative diseases (such as Alzheimer’s). For the former approach, we have screened large number of compounds and identified a few series of positive allosteric modulators (PAMs), and I will discuss their mode of action (such as GluN2A selectivity) and unique and interesting properties. For the latter, I will discuss our evaluation of GluN2B-selective antagonists in Alzheimer’s disease model mice and their therapeutic potentials. I will also briefly discuss the pros and cons of targeting NMDARs in treating brain diseases.

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Biography
Qiang Zhou has completed his BS at Tsinghua University and MS at University of Pittsburgh. He has received his PhD in Neurobiology at State University of New York Stony Brook. He was a Post-doctoral Fellow in UC San Francisco and UC Berkeley. He is an Assistant Professor of Neurology at Mount Sinai School of Medicine, and a Scientist at Genentech. Currently, he is a Professor at School of Chemical Biology and Biotechnology at Peking University Shenzhen Graduate School. His major focus is the biological basis of brain disease mechanism and drug discovery at the preclinical stage.

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