ABSTRACT OF THE TALK

Autism is a spectrum disorder defined with marked qualitative differences in social communication and social interaction, and with restricted or repetitive patterns of behaviors. Investigation into the genetics of individuals with autism suggests that deficit in synaptic function might be a common factor for the etiology of autism. Evidence from imaging and postmortem tissues also indicates that the balance of excitation and inhibition is disrupted in autism. GABAergic inhibitory transmission plays a key role in the regulation of excitation and inhibition balance, thus, understanding the change of inhibitory transmission in autism will provide an important insight for future clinical applications. To achieve this aim, we performed autism-relevant behavioral assessment in several mouse models with deletion of autism-associated genes. We then examined the alteration of inhibitory neural circuitry during postnatal development and addressed the consequences of changed inhibition on neural activity and gain control. Furthermore, potential intervention for autism in mouse models was tested based on our discovery in synaptic mechanisms.

BIOGRAPHY

Shiyong Huang is an Investigator of the Program in Neuroscience at the Hussman Institute for Autism. He is also holding an adjunct position as an assistant professor in the Department of Pharmacology at the University of Maryland School of Medicine. Dr. Huang received his Bachelor’s degree in Biochemistry from Wuhan University, PhD in Neurobiology from Shanghai Institutes for biological sciences, Chinese Academy of Sciences. After that, he received his postdoctoral training at the Johns Hopkins University. Currently his research focuses on studying alteration of neural circuitry in autism mouse models, employing techniques including electrophysiology, two-photon imaging and behavioral assessments. His work has been published in leading journals, such as Neuron and Journal of Neuroscience.