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## Zinc/ lipid metabolism-associated autophagy signaling involves in the process of epileptogenesis following developmental seizures

Long-term adverse effects caused by seizures during developmental period include regenerative abberant mossy fiber sprouting in the hippocampus, which is positively correlated with neurological dysfunction. Our research initially revealed that metabolic pathways may participate in the formation of abnormal sprouting through the following aspects: First, the abnormal zinc (Zn) metabolism signaling, especially zinc transporters. Second, lipid metabolism-related autophagy signaling. We found that intraperitoneal injection of autophagy inhibitors (3-MA, CBI, E-64d) immediately after seizures inhibited the long-term adverse consequences. Application of metabolic regulation methods, such as ketogenic diet, leptin, and melatonin, inhibited the sprouting and neurobehavioral injury. Taken together, our preliminary results suggests that zinc / lipid metabolism-associated autophagy signaling may participate in the pathophysiological process of epileptogenesis, which might be a new target for repair of neuronal plasma membrane damage following developmental seizures.

### Biography

Hong Ni works in the Children's Hospital of Soochow University (China) as Pediatric Neurologist with main interest in Pediatric neurological rehabilitation, cerebral palsy and epilepsy since 1995. He is Professor and Director of Brain Science Department of Pediatric Clinical Research Institute of Soochow University. He has published more than 60 journal articles mainly with developmental neuroscience. He is now a member of the Chinese society of microcirculation council.

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