

14th World Pediatrics & Neonatal Healthcare Conference

September 11-12, 2017 Los Angeles, CA, USA

<http://pediatrics.cmesociety.com>



Li-Xiao Xu

Children's Hospital of Soochow University, China

Autophagy-regulated AMPAR subunit up-regulation in *in vitro* oxygen glucose deprivation/reoxygenation-induced hippocampal injury

Autophagy has been implicated to mediate experimental cerebral ischemia/reperfusion-induced neuronal death; the underlying molecular mechanisms, though, are poorly understood. In this study, we investigated the role of autophagy in regulating the expression of AMPAR subunits (GluR1, GluR2, and GluR3) in oxygen glucose deprivation/reperfusion (OGD/R)-mediated injury of hippocampal neurons. Our results showed that, OGD/R-induced hippocampal neuron injury was accompanied by accumulation of autophagosomes and autolysosomes in cytoplasm alongside a dramatic increase in expression of autophagy-related genes, LC3 and Beclin 1 and increased intracellular Ca²⁺ levels. Pre-treatment with autophagy inhibitor 3-methyladenine (3-MA) significantly reduced this effect. Moreover, the OGD/R-induced up-regulation of mRNA and protein expressions of GluR1, GluR2 and GluR3 were also effectively reversed in cells pretreated with 3-MA. Our findings indicate that OGD/R induced the expression of GluRs by activating autophagy in *in vitro* cultured hippocampal neurons, which could be effectively reversed by the administration of 3-MA.

Biography

Li-Xiao Xu is working as an Assistant Professor of Clinical Research Institute of Soochow University. She got her Doctorate degree in Biochemistry and Molecular Biology at Sun Yat-Sen University in 2012. Since 2012, she has been working in Children's Hospital of Soochow University and focused on the research of brain damage, studies on the mechanisms of autophagy in hypoxia-ischemia-induced brain damage. Currently, she has hosted a National Natural Science Foundation-Youth Foundation (No.81502157), and obtained awards from Jiangsu Provincial Medical Youth Talent (No. QNRC2016758) and applied for Foundational Research of Medical and Health Care of Suzhou City (No.SYS201646). She also has been published many papers.

xulixiao2013@hotmail.com

Notes: