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Shenzhi Jiannao prescription protect glutamate-induced damage PC12 cells via clathrin-mediated endocytosis of NMDA receptors

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Objective: To investigate the effects of Shenzhi Jiannao prescription on glutamate-induced damage PC12 cells and its Clathrin-Mediated Endocytosis (CME) of NMDA receptors.

Method: Glutamate-induced damage PC12 cells were used to establish models. CCK-8 assay methods and IncuCyte imaging platform were used to detect PC12 cells activity and cytotoxicity. Apoptosis, cell cycle and CFSE were observed by flow cytometry analysis. Immunofluorescence, Western blot and RT-PCR were used to detect the expression of Clathrin, NMDAR1 and Rab5b protein and mRNA expression.

Results: Shenzhi Jiannao prescription could improve PC12 cells activity, cell cycle and reduce apoptosis and cytotoxicity. The expression of clathrin, Rab5b and cytoplasmic NMDAR1 were increased, while the expression of membrane NMDAR1 was decreased.

Conclusion: Shenzhi Jiannao prescription has certain protective effects on damage of PC12 cells induced by glutamate. It can effectively promote cell proliferation, inhibit cell cycle block, improve the CME process and reduce the toxicity of excitatory amino acids.

Biography

Danfeng Tian is currently pursuing her PhD from Beijing University of Chinese Medicine, China. She has published 8 papers in core journals of China.

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