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Poster Presentation

Effect of Fasudil on Acrylamide-Induced Cytotoxicity in PC12 Cells Through Evaluation of ROS and MTT Test

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Abstract

Introduction: Acrylamide (ACR) known as a neurotoxic agent in human and animals. Previous studies have been shown; fasudil improves neurological deficit and neuronal damage. In this study, the effect of fasudil, potent Rho-kinase inhibitor, on ACR-induced cytotoxicity was evaluated using PC12 cells as a suitable in vitro model. **Materials and Methods:** PC12 cells were exposed to different concentrations of fasudil50 ,25 ,5,10) and 100 µM) for 24 h. Then, ACR 6 mM was added. After 24 h exposure with ACR, cell viability was determined using MTT test. For evaluation reactive oxygen species production, 2, 7-dichlorofluorescein diacetate (DCFH-DA) method was used. In addition the levels of Bax and Bcl-2 proteins were evaluated using western blot analysis. **Results:** ACR Exposure increased ROS production and Bax/Bcl-2 ratio while decreased cell viability. Pretreatment with fasudil50) µM) for 24 h inhibited ROS production (*** p< 0.001) and increased viability (*** p< 0.001). Also, fasudil could decrease Bax/Bcl-2 ratio but was not significantly. **Conclusion:** The oxidative stress and apoptosis pathway play important roles in ACR toxicity on PC12 cells. Fasudil exhibited protective effects on ACR toxicity through inhibition of oxidative stress and apoptosis pathway.

Keywords: Fasudil, Acrylamide, Apoptosis, Oxidative stress

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