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Poster Presentation

Safranal Attenuates Quinolinate-Induced Oxidative OLN-93 Cells Death

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Abstract

Introduction: Quinolinic acid (QA) is a product of tryptophan degradation and its pathologic accumulation has been found to induce neuroinflammatory and demyelinating diseases such as multiple sclerosis via excessive free radicals generation. Recent studies showed Safranal which is the main component of essential oil of saffron, has several pharmacological effects such as antioxidant, anti-inflammatory and neuroprotective properties. The aim of this study was evaluation of the protective effect of Safranal on oxidative OLN-93 cells death induced by QA. **Materials and Methods:** Cells were pretreated with Safranal (1-800 µM) for 2 h and then were subjected to QA (8 mM) for 24 h in which the same treatments were applied. Cell viability and the parameters of redox status including the levels of intracellular reactive oxygen species (ROS), and lipid peroxidation were measured using 2-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium (MTT), 2,7-dicholorofluorecin diacetate (DCF-DA) and thiobarbituric acid assays, respectively. **Results:** safranal at concentration ranges of 1-800 µM had no toxic effect on cell viability ($p>0.05$). Treatment with Safranal significantly increased cell viability following QA insult at concentrations 1-800 µM ($p<0.001$). Cytoprotective potential of Safranal also ameliorated ROS accumulation and lipid peroxidation induced by QA. **Conclusion:** These data suggest that Safranal exhibits oligoprotection potential by means of alleviating oxidative stress parameters.

Keywords: Quinolinic acid, Safranal, OLN۹۳- cells, Gliotoxicity

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