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Poster Presentation

Proliferation of Neural Stem Cells Promotes in Presence of Feijoa Methanolic Extract in the Oxidative Stress Condition

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Abstract

Introduction: Now days, several studies have indicated the central nervous system has capacity for endogenous repair. But, the proliferation of endogenous neural stem cells (NSCs) is insufficient for treatment of neurodegenerative diseases. So, it sound that stimulation of endogenous NSC proliferation is essential for neuroregeneration. The Acca sellowiana (Feijoa) extract as herbal extract is used as antioxidant agent in antient medicine. Its fruits are rich in vitamin C, polyphenols, terpenes, tannins, steroidal saponins, flavonoids hydrocarbons, minerals, iodine and both methyl and ethyl benzoate. The aim of this study was to examine the self-proliferation and antioxidant properties of Feijoa extract on neonatal rat hippocampus-derived neural stem cells (NSCs). **Materials and Methods:** The NSCs were isolated and cultured. The expression of neural-specific marker, nestin was examined by immunocytochemistry. At first, the cells were in presence of hydrogen peroxide with 50µm concentration in order to oxidative stress induction in vitro and toxicity percentage of hydrogen peroxide was examined. Then, NSCs were exposed to various concentrations (25, 50, 100 and 200 µg/ml) of Acca sellowiana extract for 24 hrs. Thereafter, cell proliferation rate was assessed using MTT colorimetry assay. **Results:** NSCs expressed neural marker (Nestin). Proliferation rate of NSCs was increased in treated groups in comparison with control group. In addition, the results demonstrated that 100µg/ml concentration was the best group for self-proliferation of NSCs. ($P<0.05$). **Conclusion:** These finding shows that the methanolic extract of Acca sellowiana is an antioxidant compound and can promote self-proliferation and survival of NCSs in vitro, suggesting its potential benefits on neuroregeneration.

Keywords: Neural stem cells, Acca sellowiana, Proliferation rate, Extract

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