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Poster Presentation

Effect of Injured Brain Extract on Proliferation of Neural Stem/Progenitor Cells Cultured in a 3-dimensional Scaffold

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Abstract

Neuroinflammation occurring after traumatic brain injury (TBI) is a complex phenomenon comprising distinct cellular and molecular events involving the injured cerebral tissue. Mechanical injury to adult rat brain elucidated the accumulation in the affected area of trophic activity. In the tissue adjacent to the injury, trophic titers began to rise after the lesion. This study aimed to determine the effect of injured brain extract on proliferation of neonatal rat neural stem/progenitor cells (NS/PCs). NS/PCs were isolated from olfactory bulb of neonatal rat then cultured as neurospheres. After second passage, cells were seeded in PuraMatrix scaffold by injection method and incubated with intact or injured brain extracts. The proliferation assay was carried out by MTS assay 10 days later. For preparation of the injured brain extract, we used a rat brain injury model and collected the extract 48 hrs after injury. The experimental results showed that NS/PCs derived olfactory bulb have a good potential to proliferate. MTS assay demonstrated that NP/SCs proliferation rate was increased in injured brain extract. Injured brain extract could be benefit for NP/SCs proliferation.

Keywords: Brain Extract, Proliferation, Scaffold.

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