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Poster Presentation

Reactive Glial Cells for Brain Injury

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Absstract

A common pathological process that occurred after brain injury is gliosis. Gliosis involves the activation of glial cells to proliferate and become hypertrophic to occupy the injured brain areas. In order to form a defense system against the invasion of micro-organisms and cytotoxins into surrounding tissue, glial cells including astrocytes and microglia undergo reactive response to injury. Neuroinhibitory factors were secreted by reactive glial cells, this mechanism leads to prevent neuronal growth, eventually forming glial scar inside the brain. It have been reported that reactive glial cells showed after stroke, spinal cord injury, glioma, and neurodegenerative disorders such as Alzheimer's disease. Induced pluripotent stem cells is a reprogramming adult cells into pluripotent stem cells has emerged a new promise for potential stem cell therapy. Many studies showed that mouse or human fibroblasts can be differentiated into neurons or oligodendroglial cells. It has also been demonstrated that astroglial cells can be transdifferentiated into neurons or reprogrammed into neuroblast cells. It has been reported that after brain injury, reactive glial cells including astrocyte cells can be reprogrammed into functional neurons in the adult mouse cortex. Regard to this background, direct reprogramming of reactive glial cells into functional neurons In vivo could provide an alternative approach for repair of injured brain.

Keywords: Brain Injury, Gliosis, Astroglial Cells.

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