



Title: Application Prospect of Neural Stem Cells in the Treatment of Spinal Cord Injury

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Abstract:

Central nervous system (CNS) injury can lead to a large number of changes in cell function, including neural stem cell (NSC) migration ability. Spinal cord injury (SCI) is a common neurodegenerative disease caused by CNS injury, and one of the main causes of disability in modern society.

At present, the treatment of SCI, surgical decompression and methyl prednisolone treatment, can only block the secondary, does not make SCI patients with nerve functional recovery, even though studies have reported damage to the spinal cord is the proliferation, migration and differentiation of endogenous NSC, but very limited, only a handful of stem cells can differentiate into neurons with nerve functions. Therefore, how to promote the regeneration of nerve cells after SCI is of great significance to patients.

As a natural and potent biological agent, NSC can regulate and promote the recovery of several key functions in CNS after acute or chronic tissue injury. The key to cell therapy is the proper migration and homing of NSC, which is a critical process required for stem cell recruitment to a target site. How does NSC locate and migrate over such long distances and complex regions in SCI patients' brains? SDF-1 α /CXCR4 axis is one of the many factors that affect NSC migration, but its molecular mechanism remains unclear.

STING inhibitors is SCI promising therapy, in the nervous system damage nerve protective effect, therefore, this study verified whether joint STING inhibitors and NSC treatment of SCI has coordinated the role of neural functional recovery, need to STING inhibitors as more research on the mechanism of nerve protective agent, to clarify based on TDP-43/BDNF cell targets through SDF-1 α /CXCR4 axis promote the potential mechanism of NSC migration.