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## Poster Presentation

# Therapeutic Effect of Transplanting Neural Stem Cells Derived Bone Marrow Stromal Cells Using Bioactive Substance TNT, for Enhance Recovery from Spinal Cord Injury

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***Abstract***

Bone marrow mesenchymal stem cells can differentiate into neurons and astrocytes after transplantation in the spinal cord injury of rats. Although bone marrow mesenchymal stem cells are known to protect against spinal cord injury through anti-apoptotic effects, but generation of neural stem cells with large number and safety protocols unclear. In the present study, described the differentiation of bone marrow stromal cells (BMSC) into a neural stem cell-like under the influence of a factor inducing non-toxic bioactive substance TNT.In the present study, bone marrow mesenchymal stem cells were cultured and proliferated, then induced with bioactive substance TNT. That these cells differentiate as a neurosphere-like structures and neural stem cells. These cells approved by immunocytochemistry and RT-PCR technique. These cells transplanted into rats with spinal cord injury. Immunohistochemistry and immunofluorescence with subsequent quantification revealed that the expression of the axonal regeneration marker and the neuronal marker, microtubule-associated protein 2, significantly increased in rats with bone marrow mesenchymal stem cell transplantation compared with those in rats with spinal cord injury. Our results suggest that bone marrow mesenchymal stem cell transplantation promotes neurite growth and regeneration and prevents autophagy. These responses may likely be mechanisms underlying the protective effect of bone marrow mesenchymal stem cells against spinal cord injury. Transplanting BMSCs can enhance the protein expression of neural growth factor in the rats which undergo injury to their spinal cord. It can be significantly improved the rehabilitation of the motor function. The improvement is associated with the transplantation of BMSCs which are beneficial for regeneration and repair of the rat's spinal cord injury.

***Keywords:*** BMSC, Spinal Cord Injury, Transplantation, Neural Stem Cells**.**

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