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Usage of plasmid vector carrying vegf and fgf2 genes after spinal cord injury in rats

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Abstract

Using rat model of spinal cord contusion injury at TVIII, we compared the effectiveness of immediate single transplantation of human mononuclear umbilical cord blood cells transfected with pBud-VEGF-FGF2 plasmid and immediate direct injection of the same plasmid into the lesion area. The results suggest that the delivery of therapeutic genes vegf and fgf2 in cells is more effective than direct injection of plasmid DNA with the same genes (judging from the number of myelinated fibers). Better tissue preservation and motor function recovery in experiments with direct injection of plasmid pBud-VEGF-FGF2 suggest that direct gene therapy seems to be an effective additional procedure to the method of gene delivery with transfected stem and progenitor cells. © 2013 Springer Science+Business Media New York.

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Keywords

plasmid, spinal cord injury, transfection, umbilical cord blood cells