

Electroacupuncture for Neuropathic Pain

The purpose of a study of Wang et al. from the Department of Pulmonary Medicine, Tumor Center, Department of Radiology Department of Neurosurgery of The First Hospital of Jilin University, Changchun, was to examine the beneficial effects of [electroacupuncture](#) (EA) on [neuropathic pain](#) evoked by [spinal cord injury](#) (SCI) and determine the underlying molecular mechanisms of these effects. SCI was induced in rats. [Behavioral](#) tests were performed to examine pain responses induced by mechanical and thermal stimulation. [Western blot analysis](#) was used to measure the protein expression of phosphorylated [mammalian target of rapamycin](#) (p-mTOR), mTOR-mediated phosphorylated ribosomal protein S6 kinase beta-1 (p-S6K1), and phosphorylated eukaryotic translation initiation factor 4E-binding protein 1 (p-4E-BP1) in the superficial dorsal horn of the spinal cord.

They showed that SCI increased the expression of p-mTOR, p-S6K1, and p-4E-BP1. The EA intervention attenuated the upregulation of mTOR signaling and alleviated mechanical and thermal pain responses in SCI rats. Blocking spinal mTOR by intrathecal injection of rapamycin also inhibited mechanical and thermal pain. In addition, blocking spinal phosphorylated phosphatidylinositol 3-kinase (p-PI3K) pathway attenuated p-mTOR pathways and mechanical and thermal hyperalgesia in SCI rats. EA also decreased the enhanced p-PI3K in the superficial dorsal horn of SCI rats. In conclusion, findings revealed specific [signaling pathways](#) that lead to neuropathic pain in response to SCI, including activation of PI3K-mTOR signaling. Further, results link the beneficial role of EA in alleviating SCI-induced neuropathic pain to its effect on these molecular mechanisms ¹⁾.

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Wang Y, Zhao Y, Ma X, Li J, Hou J, Lv X. Beneficial Effects of Electroacupuncture on Neuropathic Pain Evoked by Spinal Cord Injury and Involvement of PI3K-mTOR Mechanisms. Biol Res Nurs. 2018 Oct 17;1099800418804896. doi: 10.1177/1099800418804896. [Epub ahead of print] PubMed PMID: 30328377.

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