INVolVEMENT OF NEuRONAL nITRIC OXIDE SYNTHASE IN A RAT MODEL OF NEuROPATHIC PAIN

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INTRODUCTION
Neuropathic pain is a long-lasting, debilitating type of pain, often described as a burning sensation. It is associated with pain in the lumbar spinal cord and can be characterized by the presence of spontaneous pain or hyperalgesia. Hyperalgesia refers to an increased response to a painful stimulus, while allodynia is a pain response to an innocuous stimulus. Density value is used to describe spontaneous pain intensity.

METHODS
MOSCONI AND KRUGER MODEL
The Mosconi and Kruger model is a method used to study neuropathic pain. It involves implanting a cuff around the sciatic nerve, which leads to a reduction in the threshold of pain perception. Cuff implantation is performed on the sciatic nerve in rats, and the withdrawal threshold is measured before and after the cuff is removed.

CONCLUSIONS
The effectiveness of this selective nNOS inhibitor in attenuating tactile hypersensitivity indicates that nNOS activity may be involved in the development of neuropathic pain. A long-lasting and stable tactile hypersensitivity develops when a sciatic nerve cuff is implanted.

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REFERENCES

Western blot analysis of nNOS in lumbar spinal cord

When the cuff is removed 1 day after implantation, the withdrawal thresholds remain low for at least 16 days after the cuff is removed. When the cuff is removed after 4 days, there is an amelioration, but not a complete reversal of the hypersensitivity. Western blot analysis showed that there is an upregulation of nNOS 1 day and 4 days following peripheral nerve injury. These changes are reversed when the cuff is removed 1 day after implantation.

Collectively, these results suggest that nNOS may be involved in early stage changes that lead to the persistence of hypersensitivity in this model of neuropathic pain.