

# Modulatory effect of mesenchymal stem cells on lacosamide in paclitaxel-induced neuropathic pain in rats

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## Introduction

Peripheral neuropathy is a common adverse effect observed during the use of paclitaxel (PTX) as chemotherapy.

Lacosamide (LCM) has been shown to be effective experimentally for inflammatory and diabetic neuropathic pains, as well as in a small-scale controlled clinical trials in patients with neuropathic pain.

Mesenchymal stem cells (MSCs) have been beneficial in various animal models of neurodegenerative disorders, such as Parkinson's disease, multiple sclerosis, and stroke.

## Purpose

The present investigation was directed to estimate the possible neuroprotective effect of lacosamide (LCM) in PTX-induced peripheral neuropathy and the modulatory role of bone marrow-derived mesenchymal stem cells (BM-MSCs) on this treatment.

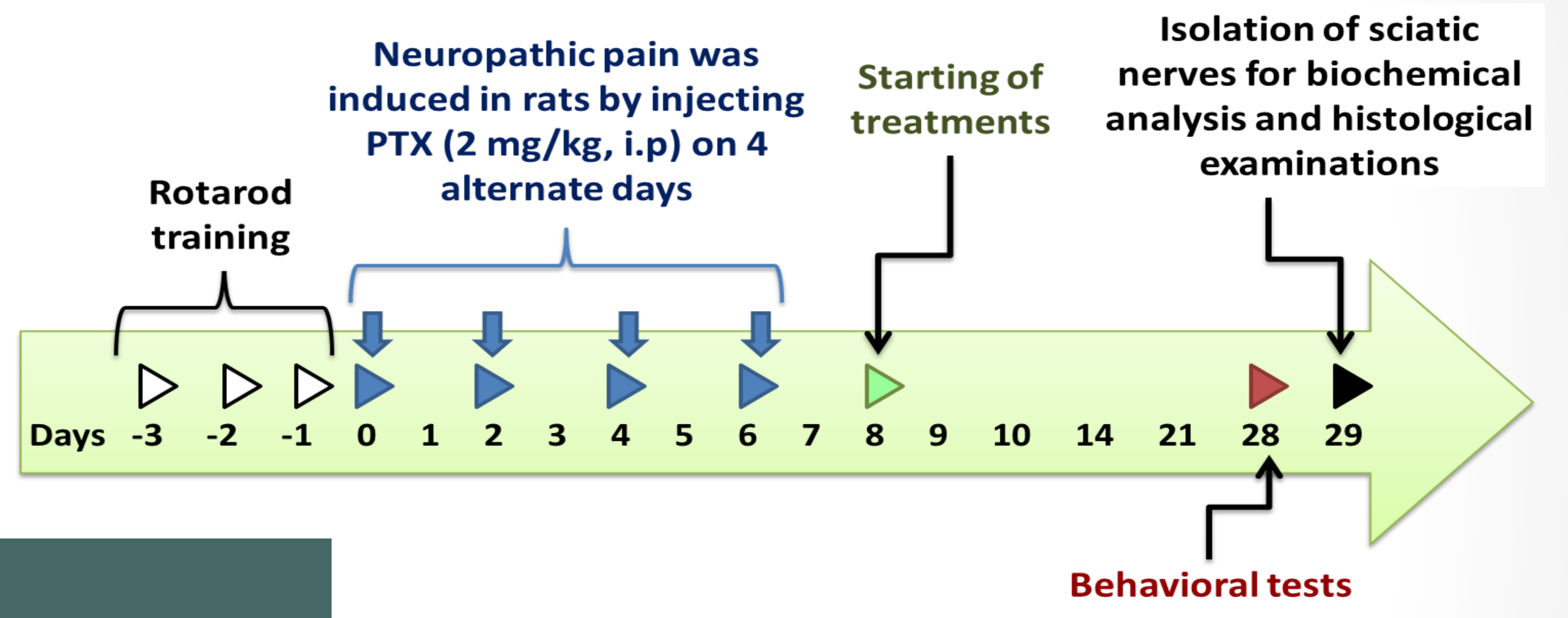
## Methodology



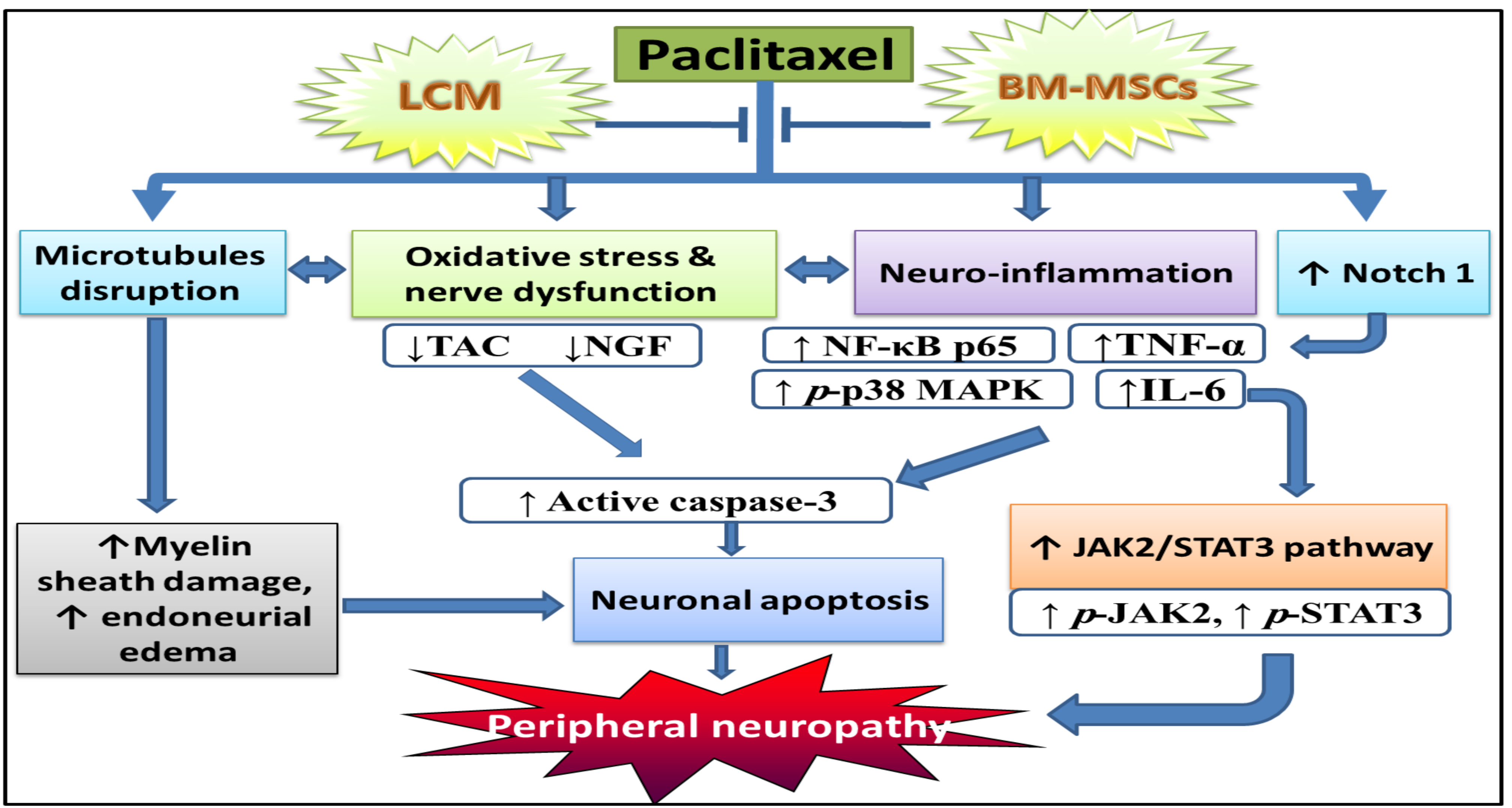
Animals  
Adult male rats

- Normal Control group, gp 1
- PTX group (2 mg/kg, i.p), gp 2
- LCM (30 mg/kg/day, p.o), gp 3
- BM-MSCs a single i.v. injection with 10<sup>6</sup>, gp 4
- LCM + BM-MSCs, gp 5

The following scheme summarizes the time schedule for treatment and behavioral tests



## Results



## Conclusion

The present study highlights a significant role for BM-MSCs in enhancing the treatment potential of LCM when used as therapy in the management of peripheral neuropathy