

# Interleukin-1 $\beta$ increases spinal cord wind-up activity in normal but not in monoarthritic rats

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Cytokines produced by spinal cord glia after peripheral inflammation, infection or trauma have a relevant role in the maintenance of pain states. The effect of intrathecally administered interleukin-1 $\beta$  (IL-1 $\beta$ ) on spinal cord nociceptive transmission was studied in normal and monoarthritic rats by assessing wind-up activity in a C-fiber-mediated reflex paradigm evoked by repetitive (1 Hz) electric stimulation. Low i.t. doses of IL-1 $\beta$  (0.03, 0.12, 0.5 and 2.0 ng) dose-dependently enhanced wind-up activity in normal rats, while higher doses (8.0 ng) only produced a marginal insignificant effect. IL-1 $\beta$  administration to monoarthritic rats did not significantly change wind-up scores at any dose. Adaptive changes developed in the spinal cord during chronic pain may underlie the ineffectiveness of exogenous IL-1 $\beta$  to up-regulate nociceptive transmission. © 2003 Elsevier Science Ireland Ltd. All rights reserved.