

# Lesion of the bulbospinal noradrenergic pathways blocks desipramine-induced inhibition of the C-fiber evoked nociceptive reflex in rats

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Desipramine-induced inhibition of spinal cord nociceptive transmission was studied in rats with or without lesion of the bulbospinal noradrenergic system by recording the C-fiber evoked nociceptive reflex from a hind limb. Bulbospinal noradrenergic projections were lesioned by injecting intrathecally 20  $\mu$ g of 6-hydroxydopamine 2 weeks before the electrophysiological experiments. Results show that desipramine (5, 10 and 20 mg/kg intraperitoneally) produced dose-dependent inhibition of the C reflex response duration in rats having intact noradrenergic bulbospinal systems. The inhibitory effect of desipramine was reduced or even abolished in rats pre-treated with 6-hydroxydopamine. In addition, [ $^3$ H]-noradrenaline uptake was significantly lower in spinal cord slices arising from 6-hydroxydopamine lesioned animals, as compared to that from intact rats. These observations support the notion that the antinociceptive activity of antidepressants with noradrenergic selectivity depends on a normal