

# Glutamate and kainate effects on the noradrenergic neurons innervating the rat vas deferens

Lara, H.

Bastos-Ramos, W.

The effects of glutamate on the noradrenergic innervation of the rat vas deferens have been investigated. Administration of a single dose of kainate (50 µg) to the peripheral noradrenergic ganglia innervating the vas deferens induced a time-dependent decrease of norepinephrine in the organ; after 10 days the norepinephrine concentration had fallen to 35% of control values. This effect was accompanied by a 70% decrease in the potassium-induced release of recently incorporated <sup>3</sup>H-norepinephrine. Concomitantly, post-synaptic hypersensitivity to both norepinephrine and dopamine appeared. The finding that adrenergic ganglia possess high-affinity glutamate binding sites suggests that the effect of kainate may be ascribed to glutamate receptors present on the perikarya of the noradrenergic neurons. It is concluded that noradrenergic neurons of the vas deferens are under glutamatergic control and that this might be important in the motor control of the organ. Copyright © 1988 Alan R. Liss, Inc.