Locus coeruleus stimulation modulates olfactory bulb evoked potentials

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Field-evoked potentials from the main olfactory bulb in response to stimulation of the olfactory nerve and lateral olfactory tract were measured without and with conditioning stimulation of the locus coeruleus noradrenergic system. The locus coeruleus conditioning stimulus suppressed or inhibited the late components of the olfactory bulb potential evoked by orthodromic olfactory nerve stimulation; this inhibitory effect was suppressed by the microinjection of the alpha-adrenergic blocker prazosin into the olfactory bulb. Results indicate that noradrenergic fibers projecting from the locus coeruleus exert modulatory influences on neuronal networks underlying orthodromic evoked responses in the main olfactory bulb. © 1987.