

Effects of pyrocatechol on neuromuscular transmission

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Abstract

Effects of pyrocatechol on neuromuscular transmission were studied both in the frog pectoral-cutaneous muscle and in the mouse phrenic-diaphragmatic preparation by means of extracellular microelectrode recording of synaptic signals. Pyrocatechol applied in a concentration of 0.05 mM increased the frequency of miniature end-plate currents (MEPC) and the amplitude of end-plate current (EPC) by increasing its quantum content. Pyrocatechol also increased the duration of presynaptic response. When voltage-dependent potassium channels had been blocked, pyrocatechol affected neither the EPC quantum content nor the duration of presynaptic response. It is suggested that the pyrocatechol-induced enhancement of transmitter release results from modulatory effects of pyrocatechol on voltage-dependent potassium current in the membrane of a nerve terminal. © 1995 Plenum Publishing Corporation.

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