Imidazole-induced contractility of vascular smooth muscle cells in the presence of U-73122, ODQ, indomethacin and 7-nitroindazole

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Abstract

The aim of the study was to assess the impact of modulating factors on vascular smooth muscle cells reactivity. Vascular resistance was induced by the administration of increasing concentrations of imidazole.

The experiments were performed on isolated and perfused tail artery of Wistar rats (weight 250 g – 350 g). Rats were been narcotized by urethane (intraperitoneal injection) at a dose of 120 mg/kg, stunned and then sacrificed by cervical dislocation. In the following investigation classical pharmacometric methods were used. Relationships between concentration-response curves (CRCs) for imidazole observed in the presence of ODQ [(1H-(1,2,4)oxadiazolo-[4,3-a]quinoxalin-1-one)], 7-nitroindazole and indomethacin were analyzed.

Imidazole-induced contractility of vascular smooth muscle cells was independent from alpha-adrenergic receptors and PLC activity. Reactivity of VSMCs induced by imidazole, was significantly changed in the presence of ODQ and 7-nitroindazole.

Key words: imidazole, rat, tail artery, EC50, ODQ, indomethacin, U-73122

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