

## EFFECT OF ERYTHROMYCIN ON CONTRACTILE RESPONSE OF UTERINE SMOOTH MUSCLE STRIPS IN NON-PREGNANT RATS

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*Effect of erythromycin on contractile response of uterine smooth muscle strips in non-pregnant rats.* H. LIU, T. ZHU, Y. MA, S. QU. *Pol. J. Pharmacol.*, 2003, 55, 57–62.

**Objective.** Erythromycin stimulates stomach smooth muscle contraction *via* action on motilin receptors, but the effects of erythromycin on non-pregnant uterine smooth muscle are unknown. The purpose of this study was to assess the effect of erythromycin on non-pregnant uterine smooth muscle and to examine the possible mechanism of its action.

**Study Design.** Uterine smooth muscle strips from rats were suspended in organ baths containing Krebs solution, and then isometric tension was measured. The response to erythromycin and the effect of hexamethonium, indomethacin, phentolamine, diphenhydramine, atropine, metoclopramide and verapamil on erythromycin-induced contraction were also assessed.

**Results.** The present study showed for the first time that erythromycin dose-dependently increased contractile frequency, and at a dose of  $1.55 \times 10^{-3}$  mol/l it also increased contractile tension in non-pregnant uterine smooth muscle strips in rats. These actions were not affected by pretreatment with hexamethonium, indomethacin, phentolamine, atropine and metoclopramide, but histamine H1 receptor blocker diphenhydramine and calcium channel blocker verapamil inhibited both responses induced by erythromycin.

**Conclusion.** Our results suggest that erythromycin could increase contractile frequency and tension of non-pregnant uterine smooth muscle *via* histamine H1 receptor and calcium channel.

**Key words:** erythromycin, non-pregnant uterine smooth muscle, diphenhydramine, verapamil, histamine H1 receptor, calcium channel, rat

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