

P1L-P16-1 Ghrelin stimulates gastric motility of the anesthetized guinea-pig

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Although ghrelin and its receptor are known to be expressed in the guinea-pig gastrointestinal (GI) tract, effects of ghrelin on GI motility have not been examined yet. We examined the gastric motility-stimulating action of ghrelin in guinea-pigs. The effect of ghrelin on [³H]-efflux from isolated gastric strips preloaded with [³H]-choline was also investigated to determine peripheral actions. Intravenous injection of ghrelin (0.3-30 μ g/kg) stimulated gastric motility, and its dose-response curve was bell-shaped. On the other hand, des-acly ghrelin was ineffective at same doses. The stimulating action of ghrelin was markedly decreased by hexamethonium and D-Lys³-GHRP-6. Atropine only partially decreased the stimulating action of ghrelin (40%). In the capsaicin-pretreated guinea-pig, the stimulating action of ghrelin was almost abolished. In an in vitro study, ghrelin significantly decreased electrical stimulation-induced [³H]-efflux and L-NAME reduced the inhibition by ghrelin. In conclusion, ghrelin stimulates gastric motility in the guinea-pig through activation of vago-vagal reflex pathways including efferent non-cholinergic neurons. Peripheral ghrelin receptor on enteric NO nerves might affect the ghrelin-induced gastroprokinetic action by releasing NO.