

# **Effect of L-Glutamic Acid on Acid Secretion and Mucosal Blood Flow in the Rat Stomach**

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摘要

## **Abstract**

The effect of intravenous administration of L-glutamic acid (L-Glu) on gastric acid secretion and gastric mucosal blood flow (GMBF) in anesthetized rats were investigated. Infusion with synthetic L-Glu alone had no effect on spontaneous acid secretion. However, L-Glu reduced histamine- (2 mg/kg/hr) or oxotremorine- (1 microg/kg/hr) stimulated acid secretion, whereas L-Glu had no effect on acid secretion induced by pentagastrin (8 microg/kg/hr). Furthermore, this inhibitory effect of L-Glu on histamine- or oxotremorine-stimulated acid secretion was blocked by 6,7-dinitroquinoxaline-2,3-dione (DNQX), a non-NMDA receptor antagonist. The effect of L-Glu on gastric mucosal microcirculation in the anesthetized rats was evaluated by using Laser Doppler Flowmetry (LDF). The results showed that L-Glu did not significantly reduce both mucosal and serosal blood flow in stomach. No significant modulatory effect on histamine- or oxotremorine-stimulated increase in GMBF was noted after infusion with L-Glu. It is concluded that L-glutamic acid is capable of the modulating of gastric acid secretion via ionotropic non-NMDA receptors, but do not affect on GMBF. However, L-glutamic acid showed no effect on acid secretion by itself