

## Effects of exogenous nitric oxide on antral circular muscle motility of the rat stomach *in vitro*

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### Abstract

**AIM:** Experiments were performed to determine whether exogenous nitric oxide mimics the non adrenergic, non cholinergic inhibitory effect in antral circular muscle of the rat stomach.

**METHODS:** Rats were anesthetized with urethane by injection intraperitoneally. The stomach was removed and the long axis was cut parallel to the circular muscle fibers. Muscle strips were prepared from the circular muscle layer of the antrum. One end of the strip was fixed to the floor of the chamber containing Tyrode solution maintained at 37 °C. The other end was attached to an isotonic

force transducer to record the motility of the strips. Nitric oxide was prepared by chemical reaction between 30%-35% nitric acid and cuprum. The nitric oxide was directly bubbled into the chamber for stimulation.

**RESULTS:** (1) Nitric oxide could also inhibit acetylcholine induced contraction of the antral circular muscle. (2) Inhibition induced by nitric oxide was not affected by atropine (1 μm/L), phentolamine (1 μm/L) and propranolol (4.2 μm/L).

**CONCLUSION:** The results suggest exogenous nitric oxide mimics the effect of non adrenergic, non cholinergic inhibitory input and nitric oxide may act as a non adrenergic, non cholinergic inhibitory neurotransmitter in the rat antrum.

**Key words:** Exogenous nitric oxide; Antral circular muscle motility; *In vitro*

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