BioPharm Journal ONLINE 9:3 (2005)
copyright McMaster University Honours Biology & Pharmacology Co-op Programme

The mechanism of action of epigallocatechin gallate on gastrointestinal motility

Raymond Poon, Sam Lauricella, Renata Noronha & Christine Paredes
Honours Biology & Pharmacology Programme, McMaster University, Hamilton

1. Epigallocatechin gallate (EGCG) administration may modulate the activity of the mouse ileum. The present study tested the hypothesis that EGCG exposure causes contraction in the mouse ileum through the inhibition of nitric oxide (NO) synthesis or through stimulation of the cholinergic nervous system.
2. Muscle strips from segments of the ileum were mounted in organ baths containing physiological salt solution and exposed to electrical field stimulation.
3. Release of endogenous factors norepinephrine and prostaglandins was inhibited by guanethidine (1 µM) and indomethacin (1 µM), respectively. NO-induced relaxations were inhibited by N(omega)-nitro-L-arginine (10 µM).
4. EGCG (0.5 µM) in the presence of atropine (1 µM) significantly reduced the frequency and the amplitude of contractions.
5. The addition of green tea caused a significant reduction in frequency and amplitude of contraction.
6. EGCG has been reported to inhibit NO synthase. However, the present results suggest that EGCG causes relaxation in the mouse ileum possibly through stimulating NO production.