Mangiferin, isolated from *Mangifera indica*, accelerates gastrointestinal transit in mice involving cholinergic mechanism

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**Introduction:** Mangiferin is isolated from medicinal plant *Mangifera indica* L. (Anacardiaceae) that exhibits several pharmacological properties. This study analyzed the effects of mangiferin on gastrointestinal transit (GIT) in normal and constipated mice.

**Experimental Part:** Charcoal was used to measure GIT in male Swiss mice. Animals in groups (n=8) were treated with vehicle (2% Tween 80 in saline, 10 mL/kg, p.o.), mangiferin (3, 10, 30, 100 mg/kg, p.o.) or tegaserod (1 mg/kg, i.p.) 30 min before the charcoal meal to study their effects on normal transit. Mangiferin (30 mg/kg) was tested on delayed GIT induced by pharmacological agonists (morphine, clonidine, capsaicin) or antagonists (ondansetron, verapamil, and atropine). The extent of charcoal propulsion in the small intestine was measured and expressed in %.

**Results / Discussion:** Mangiferin (30 and 100 mg/kg) and tegaserod significantly (p<0.001) accelerated the GIT (88.63±2.88; 92.90±1.42% and 80.66±4.71% respectively) compared with vehicle-treated group (62.95±2.43%). Co-administered mangiferin (30 mg/kg) totally reversed the inhibitory effect of opioid agonist morphine, ondansetron and capsaicin on GIT but only partially the GIT delay induced by clonidine and verapamil. However, co-administered atropine completely blocked the stimulant effect of mangiferin on GIT suggesting the involvement of muscarinic acetylcholine receptor activation. Results are expressed as the mean±sem. ANOVA and Student Newman–Keul test. The Institutional Ethics Committee approved the experimental protocol (nº31/11)

**Conclusion:** Our findings provide evidence for a prokinetic action of mangiferin via a cholinergic physiological mechanism.

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