



## Comparative physiology characters of isolated gut segments from 3 different species

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### Abstract

**AIM:** To observe and compare the motility and propulsive behavior of isolated duodenum, jejunum, ileum and colon segments (15 cm) with intact BVS and ENS from cat, closed colony guinea pig and Sparague Dawley rat were measured using "System for detect analysing fluid propulsion of isolated intestinal segment".

**RESULTS:** (1) Among 3 intestinal segments of rat, the basal lumen pressures of duodenum ( $1196 \pm 343$  Pa) was higher than that of terminal ileum ( $961 \pm 49$  Pa), and that of colon ( $883 \pm 147$  Pa) was the lowest. (2) Propulsive activities of duodenum and jejunum segments from cat, rat and guinea pig were inactive. Propulsive

complexes of ileum segments from 3 animals were obvious and regular. And baggy wall movement and Propulsive complexes of colons were powerful. (3) As to the frequency of the propulsive complex of terminal ileum, the order from the highest to the propulsive complex of terminal ileum, the order from the high to the low was rat, guinea pig and cat. But in colon the order was guinea pig, rat and cat. (4) The output pressures of propulsive complexes of guinea pig jejunum and ileum were higher than those of rat. The output pressure of aboral propulsive complex of guinea pig colon was significantly higher than that of rat.

**CONCLUSION:** Intestinal toxicity and lumen pressure of rat were aborally gradient from the highest to lowest. The wall movement and propulsive behavior of these 3 animals were characteristically different, which suited to functional needs of the blood digestion, absorption, transfer of food remnants, formation of feces and defecation for animals with different feeding habits.

**Key words:** Comparative physiology characters; Isolated gut segments

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