ABSTRACT
The distinction between tonic and phasic activity occurring in the isolated colon corresponds to the localized versus propagated colonic activity recorded in the conscious dog. The myogenic activity of the circular muscular layer, unaltered by atropine and adrenergic antagonists in vitro, seems equivalent to the localized spike burst (LSB) activity enhanced by prostaglandin synthetase inhibitors in vivo. The phasic activity of the longitudinal muscular layer, coupled to that of the circular layer via myenteric cholinergic neurones, is similar to the propagated spike bursts (PSB) either isolated or in series (MSB) under the control of a permanent inhibitory sympathetic innervation.

The ubiquitous secretory effects of prostanoids and the prostaglandin-mediated motor effects of several peptides indicate a possible interspecific therapeutic value of anti-inflammatory drugs in several cases of motor or secretory disturbances of the colon.

INTRODUCTION
In carnivores, the colon is a simple tube with a proximal segment where digesta are similar in consistency to the ileum and the antiperistaltic motor activity (that is,
retrograde versus antegrade propagated spike bursts (PSB) is predominant. In the middle segment, the contents become firm enough to be solid due to movements of the circular muscle layer, also identified as localized spike bursts (LSB). The contents are moved aborally by PSB in series termed herein migrating spike bursts (MSB) and these are only inhibited by stimulation of the lumbar colonic (sympathetic) nerves. The canine colonic electrical activity consists of two components: one from the longitudinal muscle layer occurring as periods of 13-35 oscillations, and the other arising from the circular muscle layer as an omnipresent myogenic slow-wave activity unaltered by atropine or adrenergic antagonists. Superimposed spikes are associated with contractions which are enhanced by indomethacin (IDM); this suggests inhibition of the circular muscle layer via the release of prostanoids and by tetrodotoxin (TTX), indicating a permissive effect against a permanent neural inhibitory input, and a facilitation of the cholinergic prepotential activity at the longitudinal muscle layer.

The patterns of contractions of the "simple" colon involve:

1. In vivo sphincteric relaxation by non-adrenergic inhibitory nerves in response to rectal distension, its absence leading to a diagnosis of aganglionosis;
2. Colocolonic reflexes consisting at the ganglionic level of sympathetic inhibition at one end of the colon in response to mechanoreceptor excitation at the other end;
3. The colonic response to eating.

This response in dogs is more pronounced on the proximal colon, including the ileocolonic junction (ICJ), than on the distal colon, is in part mimicked by neurotensin and is decreased after prostaglandin synthetase inhibitor pretreatment.

In fact, species variability in colonic structure and