Motilin

Motilin is a 22 amino acid peptide secreted by endocrinocytes in the mucosa of the proximal small intestine. Based on amino acid sequence, motilin is unrelated to other hormones.

Motilin participates in controlling the pattern of smooth muscle contractions in the upper gastrointestinal tract. There are two basic states of motility of the stomach and small intestine: the fed state, when foodstuffs are present, and the inter-digestive state between meals. Motilin is secreted into the circulation during the fasting state at intervals of roughly 100 minutes. These bursts of motilin secretion are temporally related to the onset of "housekeeping contractions", which sweep the stomach and small intestine clear of undigested material (also called the migrating motor complex).

Control of motilin secretion is largely unknown, although some studies suggest that an alkaline pH in the duodenum stimulates its release.

An interesting aspect of the motilin story is that erythromycin and related antibiotics act as non-peptide motilin agonists, and are sometimes used for their ability to stimulate gastrointestinal motility. Administration of a low dose of erythromycin will induce a migrating motor complex, which provides additional support for the conclusion that motilin secretion triggers this pattern of GI motility, rather than results from it.