

Product Specification Sheet

Human Motilin

Cat. MOTL51-P	Human Motilin (full length, 22 aa)	SIZE: 1 mg
Cat. MOTL52-P	Human Motilin (full length, 22 aa)	SIZE: 100 ug

Transport of nutrients through the digestive system is highly dependent on gastrointestinal (GI) motility. GI motility disorders include gastroesophageal reflux disease, gastroparesis (diabetic and post surgical), irritable bowel syndrome, and constipation. **Motilin**, a 22-amino acid peptide hormone that is secreted by enterochromaffin cells of the small intestine, influences gastric motility by inducing interdigestive (phase III) antrum and duodenal contractions. Most recently, an orphan GPCR related to growth hormone secretagogues receptor (GHS-R) has been isolated and characterized from human stomach as the **motilin receptor (MLR or GPR38; 52% identity with GHS-R)**. The structurally unrelated macrolide antibiotic erythromycin is known to have Motilin-like side effects, including vomiting, nausea, diarrhea, and abdominal muscular discomfort. MLR is expressed in enteric neurons of the human duodenum and colon. Interestingly, the macrolide antibiotic erythromycin also binds to MLR, providing a molecular basis for its effects on the human GI tract.

Motilin gene (human chromosome 6p21.2) consists of 5 exons spanning approximately 9 kb of genomic DNA. Exon 1 encodes the 5-prime untranslated portion of the motilin mRNA. Exons 2 and 3 encode the signal peptide and the 22-amino acid motilin peptide. The 22-aa mature motilin peptide is highly conserved across species. The motilin prohormone consists of 115 amino acids and includes a 25-residue N-terminal signal peptide followed by the 22-amino-acid motilin sequence and a long, 68-residue Motilin-related C-terminal peptide. Proteolytic processing of promotilin to motilin occurs at a very unusual and rare "Lys-Lys" sequence. High-affinity binding sites for motilin have been detected in the GI tract of humans and other species and in the central nervous system of rabbits.

Source of Antigen and Antibodies

Human Motilin 22-aa full length sequence (FVP I FT YGE LQR MQE KER NKG Q-amide 22 aa, designated **MOTL51-P or MOTL52-P peptide**) was chemically synthesized and purified >95% by hplc. Human motilin peptide is **2698.00 Daltons**.

Form & Storage

Purified peptide (1mg size) is provided in powder. It should be dissolved in appropriate buffer prior to its usage. The 100-ug motilin peptide is dissolved in water, aliquoted, and supplied as lyophilized powder. NO preservative or other additives are added.

All peptides should be stored frozen at -20°C or below in suitable aliquots. Avoid repeated freeze and thaw.

Recommended Usage

ELISA (1:100K; using 50-100 ng control peptide/well).

Biological activity of motilin is not established. It can be used in ELISA, dot blot, or western as a positive control for anti-motilin or to block antibody activity.

General References: (1) Yano H et al (1989) FEBS Lett, 249, 248; Seino Y et al (1987) FEBS Lett. 223, 74; Daikh DI et al (1989) DNA 8, 615; Dean D et al (1989) Gastroenterol. 96, 695; Feighner SD et al (1999) Science 284; 2184; McKee KK et al (1997) Genomics 46, 426.

*This product is for in vitro research use only.

Some New Antibodies from ADI...

- Ghrelin, Neuromedin U, NMUR1/2, Neurotensin & NTR1-3 receptors, Motilin and Motilin receptors

Western Blot recycling kit (Use the same blot to probe with multiple antibodies) **recycle blot in 5-10 min.**

Study distribution of proteins in **pre-made protein blots of brain, kidney, GI-tract, and major tissues**

MOTL51-52

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