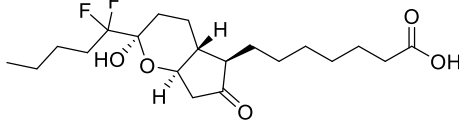


Product data sheet



MedKoo Cat#: 319935 Name: Lubiprostone CAS#: 333963-40-9 (hemiketal) Chemical Formula: C ₂₀ H ₃₂ F ₂ O ₅ Exact Mass: 390.2218 Molecular Weight: 390.4678	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:

Lubiprostone, also known as RU-0211, is a medication used in the management of chronic idiopathic constipation, predominantly irritable bowel syndrome-associated constipation in women and opioid-induced constipation. It was initially approved by the U.S. Food and Drug Administration (FDA) in 2006. Lubiprostone is a bicyclic fatty acid derived from prostaglandin E1 that acts by specifically activating ClC-2 chloride channels on the apical aspect of gastrointestinal epithelial cells, producing a chloride-rich fluid secretion. These secretions soften the stool, increase motility, and promote spontaneous bowel movements (SBM).

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
N/A	N/A	N/A

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.56 mL	12.81 mL	25.61 mL
5 mM	0.51 mL	2.56 mL	5.12 mL
10 mM	0.26 mL	1.28 mL	2.56 mL
50 mM	0.05 mL	0.26 mL	0.51 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Nishii N, Oshima T, Li M, Eda H, Nakamura K, Tamura A, Ogawa T, Yamasaki T, Kondo T, Kono T, Tozawa K, Tomita T, Fukui H, Miwa H. Lubiprostone Induces Claudin-1 and Protects Intestinal Barrier Function. *Pharmacology*. 2020;105(1-2):102-108. doi: 10.1159/000503054. Epub 2019 Sep 19. PMID: 31536982.

In vivo study

1. Akita H, Yoshie S, Ishida T, Takeishi Y, Hazama A. Negative chronotropic and inotropic effects of lubiprostone on iPS cell-derived cardiomyocytes via activation of CFTR. *BMC Complement Med Ther*. 2020 Apr 19;20(1):118. doi: 10.1186/s12906-020-02923-6. PMID: 32306956; PMCID: PMC7169008.

2. Krüger L, Pridgen TA, Taylor ER, Garman KS, Blikslager AT. Lubiprostone protects esophageal mucosa from acid injury in porcine esophagus. *Am J Physiol Gastrointest Liver Physiol*. 2020 Apr 1;318(4):G613-G623. doi: 10.1152/ajpgi.00086.2019. Epub 2020 Feb 18. PMID: 32068440; PMCID: PMC7191458.

7. Bioactivity

Biological target:

Product data sheet



N/A

In vitro activity

Lubiprostone significantly improved the IFN γ -induced decrease in TEER and increase in FITC-dextran permeability. However, IL-6, IL-1 β , or aspirin-induced changes were not modified by lubiprostone. Lubiprostone increased the expression of claudin-1, and this increase may be related to the effect of lubiprostone on intestinal epithelial barrier function.

Reference: Pharmacology. 2020;105(1-2):102-108. <https://www.karger.com/Article/FullText/503054>

In vivo activity

To assess this question, lubiprostone was applied to both the mucosal (10 μ M) and adventitial (10 μ M) side of the porcine esophagus before application of acid. Placement of lubiprostone on control tissues had no significant effect on TER over the course of the experiment (data not shown), whereas pretreatment of both the adventitial and mucosal sides of the tissue with lubiprostone was associated with attenuation of the drop in TER observed after 90 min of acid exposure (Fig. 3A). Furthermore, 90 min after acid was flushed from the bathing reservoir, there was evidence of a recovery response in lubiprostone-pretreated tissues as demonstrated by increased TER in lubiprostone-pretreated tissues versus control (Fig. 3A, n = 5, P < 0.05).

Reference: Am J Physiol Gastrointest Liver Physiol. 2020 Apr 1; 318(4): G613–G623.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7191458/>

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.