

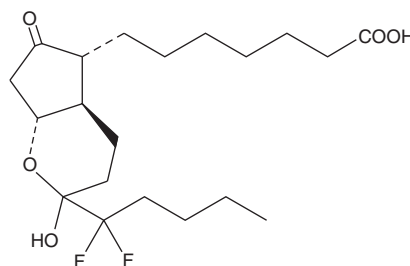
# PRODUCT INFORMATION



## Lubiprostone

Item No. 10010487

**CAS Registry No.:** 136790-76-6  
**Formal Name:** 16,16-difluoro-11 $\alpha$ -hydroxy-9,15-dioxo-prostan-1-oic acid  
**Synonyms:** RU-0211, SPI-0211  
**MF:** C<sub>20</sub>H<sub>32</sub>F<sub>2</sub>O<sub>5</sub>  
**FW:** 390.5  
**Purity:**  $\geq$ 95%  
**Supplied as:** A solution in methyl acetate  
**Storage:** -20°C  
**Stability:**  $\geq$ 1 year



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Lubiprostone is supplied as a solution in methyl acetate. To change the solvent, simply evaporate the lubiprostone under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as ethanol, DMSO, and dimethyl formamide (DMF) purged with an inert gas can be used. The solubility of lubiprostone in ethanol and DMF is approximately 10 mg/ml and approximately 5 mg/ml in DMSO.

Lubiprostone is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the ethanolic solution of lubiprostone should be diluted with the aqueous buffer of choice. Lubiprostone has a solubility of approximately 0.5 mg/ml in a 1:1 solution of ethanol:PBS (pH 7.2) using this method.

### Description

Lubiprostone is an activator of chloride channel protein 2 (ClC-2) and a bicyclic derivative of prostaglandin E<sub>1</sub> (PGE<sub>1</sub>; Item No. 13010).<sup>1</sup> It induces chloride currents in HEK293 cells expressing recombinant human ClC-2 (EC<sub>50</sub> = ~17 nM), but not CFTR, chloride channels.<sup>2</sup> Lubiprostone (1  $\mu$ M) induces short-circuit currents, a marker of transepithelial chloride transport, in T84 intestinal cells. Lubiprostone (48  $\mu$ g/animal, p.o.) increases postprandial antral contractions and decreases postprandial small bowel transit time in dogs.<sup>3</sup> Formulations containing lubiprostone have been used in the treatment of irritable bowel syndrome with constipation.

### References

1. Lacy, B.E. and Levy, L.C. Lubiprostone: A chloride channel activator. *J. Clin. Gastroenterol.* **41**(4), 345-351 (2007).
2. Cuppoletti, J., Malinowska, D.H., Tewari, K.P., et al. SPI-0211 activates T84 cell chloride transport and recombinant human ClC-2 chloride currents. *Am. J. Physiol. Cell Physiol.* **287**, C1173-C1183 (2004).
3. Song, J., Yin, J., Xu, X., et al. Prokinetic effects of large-dose lubiprostone on gastrointestinal transit in dogs and its mechanisms. *Am. J. Transl. Res.* **7**(3), 513-521 (2015).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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