

# PRODUCT INFORMATION



## Misoprostol-d<sub>5</sub>

Item No. 10216

**Formal Name:** methyl 7-((1R,2R,3R)-3-hydroxy-2-((E)-4-hydroxy-4-(methyl-d<sub>3</sub>)oct-1-en-1-yl)-5,5-d<sub>2</sub>)-5-oxocyclopentyl)heptanoate

**MF:** C<sub>22</sub>H<sub>33</sub>D<sub>5</sub>O<sub>5</sub>

**FW:** 387.6

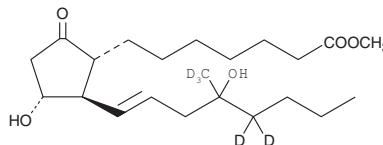
**Chemical Purity:** ≥98% (Misoprostol)

**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>5</sub>); ≤1% d<sub>0</sub>

**Supplied as:** A 1 mg/ml solution in methyl acetate

**Storage:** -20°C

**Stability:** ≥4 years



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

### Laboratory Procedures

Misoprostol-d<sub>5</sub> is intended for use as an internal standard for the quantification of misoprostol (Item No. 13820) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Misoprostol-d<sub>5</sub> is supplied as a solution in methyl acetate. To change the solvent, simply evaporate the methyl acetate 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 misoprostol-d<sub>5</sub> in these solvents is approximately 50 mg/ml in ethanol and DMSO and 100 mg/ml in DMF.

### Description

Misoprostol is an analog of prostaglandin E<sub>1</sub> (PGE<sub>1</sub>; Item No. 13010) and an agonist of the PGE<sub>2</sub> receptor subtypes EP<sub>2</sub> and EP<sub>3</sub>.<sup>1-3</sup> It binds to EP<sub>1</sub>, EP<sub>2</sub>, EP<sub>3-III</sub>, and EP<sub>4</sub> receptors (K<sub>i</sub>s = 35.675, 10.249, 0.319, 5.499 μM, respectively) and is selective for EP receptors over DP, FP, IP, and TP receptors (K<sub>i</sub>s = >100 μM for all).<sup>1</sup> Misoprostol inhibits electrically induced twitch contraction in isolated guinea pig ileum circular muscle and vas deferens (EC<sub>50</sub>s = 102.92 and 4.3 nM, respectively), which endogenously express high levels of EP<sub>2</sub> and EP<sub>3</sub> receptors, respectively.<sup>3-4</sup> It inhibits FMLP-induced superoxide anion generation in human neutrophils (EC<sub>50</sub> = 0.35 μM).<sup>2</sup> Misoprostol inhibits ethanol-induced gastric lesion formation in rats (ED<sub>50</sub> = 0.31 μg/kg).<sup>5</sup> Formulations containing misoprostol have been used in the prevention of NSAID-induced gastric ulcers.

### References

1. Abramovitz, M., Adam, M., Boie, Y., et al. The utilization of recombinant prostanoid receptors to determine the affinities and selectivities of prostaglandins and related analogs. *Biochim. Biophys. Acta* **1483**(2), 285-293 (2000).
2. Talpain, E., Armstrong, R.A., Coleman, R.A., et al. Characterization of the PGE receptor subtype mediating inhibition of superoxide production in human neutrophils. *Br. J. Pharmacol.* **114**(7), 1459-1465 (1995).
3. Savage, M.A., Moumami, C., Karabatsos, P.J., et al. SC-46275: A potent and highly selective agonist at the EP<sub>3</sub> receptor. *Prostaglandins Leukot. Essent. Fatty Acids* **49**(6), 939-943 (1993).
4. Nials, A.T., Coleman, R.A., Hartley, D., et al. AH13205 - a novel selective prostanoid EP<sub>2</sub> agonist. *Br. J. Pharmacol.* **102**, 24P (1991).
5. Bunce, K.T., Clayton, N.M., Coleman, R.A., et al. GR63799X - a novel prostanoid with selectivity for EP<sub>3</sub> receptors. *Adv. Prostaglandin Thromboxane Leukot. Res.* **21**(A), 379-382 (1990).

#### 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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