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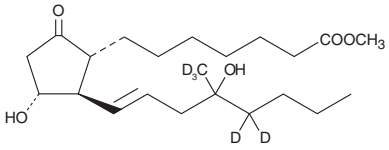
PRODUCT INFORMATION

Misoprostol-d_5

Item No. 10216

Formal Name: methyl 7-((1R,2R,3R)-3-hydroxy-2-((E)-4-hydroxy-4-(methyl-d_3)oct-1-en-1-yl-5,5-d_2)-5-oxocyclopentyl)heptanoate
MF: $C_{22}H_{33}D_5O_5$
FW: 387.6
Chemical Purity: ≥98% (Misoprostol)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_5); ≤1% d_0
Supplied as: A solution in methyl acetate
Storage: -20°C
Stability: ≥1 year



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

Laboratory Procedures

Misoprostol-d_5 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_5 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_5 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_1 (PGE_1; Item No. 13010) and an agonist of the PGE_2 receptor subtypes EP_2 and EP_3.[1-3] It binds to EP_1, EP_2, $EP_{3\text{-III}}$, and EP_4 receptors (K_is = 35.675, 10.249, 0.319, 5.499 µM, respectively) and is selective for EP receptors over DP, FP, IP, and TP receptors (K_is = >100 µM for all).[1] Misoprostol inhibits electrically induced twitch contraction in isolated guinea pig ileum circular muscle and vas deferens (EC_{50}s = 102.92 and 4.3 nM, respectively), which endogenously express high levels of EP_2 and EP_3 receptors, respectively.[3-4] It inhibits FMLP-induced superoxide anion generation in human neutrophils (EC_{50} = 0.35 µM).[2] Misoprostol inhibits ethanol-induced gastric lesion formation in rats (ED_{50} = 0.31 µg/kg).[5] Formulations containing misoprostol have been used in the prevention of NSAID-induced gastric ulcers.

References

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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., Moummi, C., Karabatsos, P.J., *et al.* SC-46275: A potent and highly selective agonist at the EP3 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_2 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_3 receptors. *Adv. Prostaglandin Thromboxane Leukot. Res.* **21(A)**, 379-382 (1990).

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