

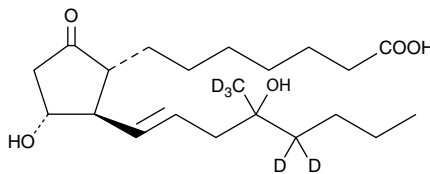
Product Information



Misoprostol (free acid)-d₅

Item No. 10010333

Formal Name:	9-oxo-11 α ,16-dihydroxy-16-(methyl-d ₃)-prost-13E-en-1-oic-17,17-d ₂ acid
MF:	C ₂₁ H ₃₁ D ₅ O ₅
FW:	373.5
Chemical Purity:	≥98% Misoprostol (free acid)
Deuterium Incorporation:	≥99% deuterated forms (d ₁ -d ₅); ≤1% d ₀
Stability:	≥1 year at -20°C
Supplied as:	A solution in methyl acetate



Laboratory Procedures

Misoprostol (free acid)-d₅ contains five deuterium atoms at the 16 methyl, 17, and 17' positions. It is intended for use as an internal standard for the quantification of misoprostol by GC- or LC-mass spectrometry (MS). For long term storage, we suggest that misoprostol (free acid)-d₅ be stored as supplied at -20°C. It will be stable for at least one year.

Misoprostol (free acid)-d₅ 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 (free acid)-d₅ in these solvents is >100 mg/ml in DMF and >50 mg/ml in DMSO and ethanol.

Misoprostol (free acid)-d₅ is used as an internal standard for the quantification of the free acid form of misoprostol by stable isotope dilution 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 is a PGE₁ analog with agonist activity mediated by EP₂, EP₃, and EP₄ receptors.¹⁻⁴ It has been shown to inhibit the formation of gastric lesions in rats (ED₅₀ = 0.31 µg/kg),² inhibit superoxide generation in human neutrophils (EC₅₀ = 0.35 µM),² and relax fetal rabbit ductus arteriosus (EC₅₀ = 0.36 nM)⁴ in a concentration dependent manner. Misoprostol is commonly used in clinical medicine for the prevention of peptic ulcer disease. It has also been used in conjunction with RU-486 for the oral induction of first trimester abortion. Misoprostol contains a C-1 methyl ester and is readily absorbed and rapidly hydrolyzed in humans to the active free acid.¹

References

1. Walt, R.P. Misoprostol for the treatment of peptic ulcer and anti-inflammatory-drug-induced gastroduodenal ulceration. *N. Engl. J. Med.* **327**, 1575-1580 (1992).
2. 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**, 379-382 (1990).
3. 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**, 1459-1465 (1995).
4. Smith, G.C.S., Coleman, R.A., and McGrath, J.C. Characterization of dilator prostanoid receptors in the fetal rabbit ductus arteriosus. *J. Pharmacol. Exp. Ther.* **271**, 390-396 (1994).

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