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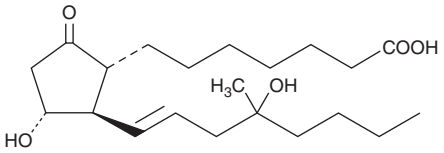
PRODUCT INFORMATION

Misoprostol (free acid)

Item No. 13821

CAS Registry No.: 112137-89-0
Formal Name: 9-oxo-11α,16-dihydroxy-16-methyl-prost-13E-en-1-oic acid
MF: $C_{21}H_{36}O_5$
FW: 368.5
Purity: ≥97%
Stability: ≥1 year at -20°C
Supplied as: A solution in methyl acetate



Laboratory Procedures

For long term storage, we suggest that misoprostol (free acid) be stored as supplied at -20°C. It should be stable for at least one year.

Misoprostol (free acid) 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 DMSO, ethanol, and dimethyl formamide purged with an inert gas can be used. The solubility of misoprostol (free acid) in these solvents is approximately 50 mg/ml. Misoprostol (free acid) is stable for at least six months in these solvents if stored at -20°C.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. If an organic solvent-free solution of misoprostol (free acid) is needed, it can be prepared by evaporating the methyl acetate and directly dissolving the neat oil in aqueous buffers. The solubility of misoprostol (free acid) in PBS (pH 7.2) is approximately 1.6 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Misoprostol is a prostaglandin E_1 (Item No. 13010) analog with agonist activity mediated by EP_2, EP_3, and EP_4 receptors.[1-4] It has been shown to inhibit the formation of gastric lesions in rats (ED_{50} = 0.31 µg/kg),inhibit superoxide generation in human neutrophils (EC_{50} = 0.35 µM),and relax fetal rabbit ductus arteriosus (EC_{50} = 0.36 nM)in a concentration dependent manner.[1-3] Misoprostol is commonly used in clinical medicine for the prevention of peptic ulcer disease. It has also been used in conjunction with mifepristone (RU-486; Item No. 10006317) for the oral induction of first trimester abortion. Misoprostol is readily absorbed and rapidly hydrolyzed in humans to the active free acid.[4]

References

1. Bunce, K.T., Clayton, N.M., Coleman, R.A., *et al.* GR63799X - a novel prostanoid with selectivity for EP_3 receptors. *Adv. Prostaglandin Thromboxane Leukotriene Res.* **21**, 379-382 (1990).
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**, 1459-1465 (1995).
3. 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).
4. Walt, R.P. Misoprostol for the treatment of peptic ulcer and antiinflammatory-drug-induced gastroduodenal ulceration. *N. Engl. J. Med.* **327**, 1575-1580 (1992).

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