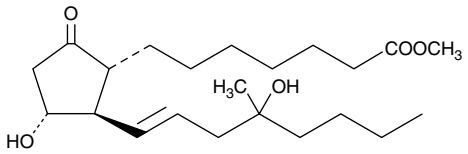
Product Information

Misoprostol

Item No. 13820

CAS Registry No.: 59122-46-2
Formal Name: 9-oxo-11α,16-dihydroxy-16-methyl-prost-13E-en-1-oic acid, methyl ester
Synonyms: Cytotec; SC 29333
MF: $C_{22}H_{38}O_5$
FW: 382.5
Purity: ≥98%
Stability: ≥1 year at -20°C
Supplied as: A solution in methyl acetate



Laboratory Procedures

For long term storage, we suggest that Misoprostol be stored as supplied at -20°C. It should be stable for at least one year. Misoprostol exists as a mixture of four diastereomers.

Misoprostol 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 purged with an inert gas can be used. The solubility of misoprostol in these solvents is approximately 50 mg/ml.

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 is needed, it can be prepared by evaporating the methyl acetate and directly dissolving the neat oil in aqueous buffers. Organic solvent-free aqueous solutions of misoprostol can be prepared by directly dissolving the crystalline compound in aqueous buffers. The solubility of misoprostol in PBS (pH 7.2) is approximately 1.6 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Misoprostol is a prostaglandin E_1 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),[2] inhibit superoxide generation in human neutrophils (EC_{50} = 0.35 µM),[3] and relax fetal rabbit ductus arteriosus (EC_{50} = 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 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 antiinflammatory-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 Leukotriene 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).

WARNING

Abortifacient. Pregnant females should avoid any contact with this compound. Exposure can lead to premature labor, uterine contraction, cramping, diarrhea, and premature delivery of the conceptus. Read the complete MSDS before handling or using misoprostol.

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