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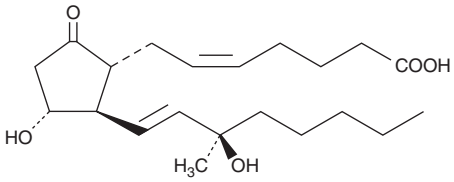
PRODUCT INFORMATION

15(R)-15-methyl Prostaglandin E_2

Item No. 14725

CAS Registry No.: 55028-70-1
Formal Name: 9-oxo-11α,15R-dihydroxy-15-methyl-prosta-5Z,13E-dien-1-oic acid
Synonyms: Arbaprostil, 15(R)-15-methyl PGE_2
MF: $C_{21}H_{34}O_5$
FW: 366.5
Purity: ≥98%
Stability: ≥1 year at -20°C
Supplied as: A crystalline solid



Laboratory Procedures

For long term storage, we suggest that 15(R)-15-methyl prostaglandin E_2 (15(R)-15-methyl PGE_2) be stored as supplied at -20°C. It should be stable for at least one year.

15(R)-15-methyl PGE_2 is supplied as a crystalline solid. A stock solution may be made by dissolving the 15(R)-15-methyl PGE_2 in an organic solvent. 15(R)-15-methyl PGE_2 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of 15(R)-15-methyl PGE_2 in these solvents is approximately 100 mg/ml. 15(R)-15-methyl PGE_2 will be 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. Organic solvent-free aqueous solutions of 15(R)-15-methyl PGE_2 can be prepared by directly dissolving the crystalline compound in aqueous buffers. The solubility of 15(R)-15-methyl PGE_2 in PBS (pH 7.2) is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

15(R)-15-methyl PGE_2 is a prodrug for the potent PGE_2 (Item No. 14010) analog 15(S)-15-methyl PGE_2 (Item No. 14730).[1] Acid-catalyzed epimerization in the stomach produces the 15(S)-hydroxy compound which is biologically active.[2] Oral administration of 15(R)-15-methyl PGE_2 to dogs or rats at 10-300 µg/kg results in a dose-dependent inhibition of gastric acid secretion and an increase in the rate of duodenal bicarbonate secretion.[3,4]

References

1. Yankee, E.W., Axen, U., and Bundy, G.L. Total synthesis of 15-methylprostaglandins. *J. Am. Chem. Soc.* **96**, 5865-5876 (1974).
2. Takanashi, H., Kawabe, Y., and Akima, M. Acid-promoted epimerization of arbaprostil, 15(R)-15-methylprostaglandin E_2, elicits gastric antisecretory activities in rats. *Jpn. J. Pharmacol.* **57**, 559-564 (1991).
3. Takanashi, H. and Itoh, Z. Gastric antisecretory activity of 15(R)-15-methylprostaglandin E_2, arbaprostil, in dogs. *Jpn. J. Pharmacol.* **57**, 447-451 (1991).
4. Li, J., Nagata, T., Yoshida, M., *et al.* Effect of 15(R)-15-methyl PGE_2 (arbaprostil) on duodenal bicarbonate secretion in rat. *Gastroenerol. Jpn.* **24**, 8-11 (1989).

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