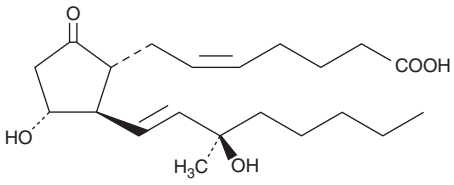
PRODUCT INFORMATION

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%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

15(R)-15-methyl Prostaglandin E_2 (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 the solvent of choice, which should be purged with an inert gas. 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.

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 solid 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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