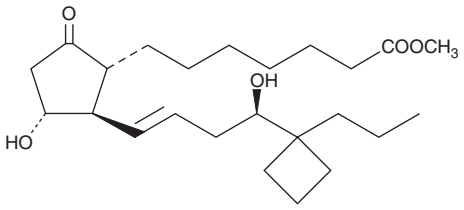
PRODUCT INFORMATION

(R)-Butaprost

Item No. 13745

CAS Registry No.: 69648-38-0
Formal Name: (1R,2R,3R)-3-hydroxy-2-[(1E,4R)-4-hydroxy-4-(1-propylcyclobutyl)-1-buten-1-yl]-5-oxo-cyclopentaneheptanoic acid, methyl ester
Synonyms: (±)-15-deoxy-16R-hydroxy-17-cyclobutyl PGE_1 methyl ester, 15-deoxy-16R-hydroxy-17-cyclobutyl PGE_1 methyl ester, TR 4978
MF: $C_{24}H_{40}O_5$
FW: 408.6
Purity: ≥98%
Supplied as: A solution in methyl acetate
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

(R)-Butaprost 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 (R)-butaprost in these solvents is approximately 50, 30, and 25 mg/ml, respectively.

(R)-Butaprost is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the methyl acetate solution of (R)-butaprost should be diluted with the aqueous buffer of choice. The solubility of (R)-butaprost in PBS (pH 7.2) is approximately 0.15 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Butaprost is a structural analog of prostaglandin E_2 (PGE_2) with good selectivity for the EP_2 receptor subtype. Butaprost has frequently been used to pharmacologically define the EP receptor expression profile of various human and animal tissues and cells.[1,2] Serious confusion as to the structure of butaprost was generated by Gardiner in 1986, when he reported that the epimer of butaprost showing this selective activity was the C-16 (R)-epimer (See Note).[3] Butaprost binds with about 1/10 the affinity of PGE_2 to the recombinant murine EP_2 receptor, and does not bind appreciably to any of the other murine EP receptors or DP, FP, IP, or TP receptors.[4] The pharmacology of (R)-butaprost has not been carefully studied, but it is generally considered to be the less active epimer.[5] *NOTE: In the Gardiner paper in the 1986 British Journal of Pharmacology, butaprost appears on page 46 where it is given the name TR 4979. The structure as drawn is incorrect, in that the author was using and referring to the more active C-16 epimer, which is actually 16(S). The structure on page 46 shows the structure as 16(R). It was not until the late 1990's that careful studies both in the US and Japan correctly identified the actual configuration of C-16 in the compound called butaprost is 16(S).*[3]

References

1. Lawrence, R.A. and Jones, R.L. *Br. J. Pharmacol.* **105(4)**, 817-824 (1992).
2. Talpain, E., Armstrong, R.A., Coleman, R.A., *et al. Br. J. Pharmacol.* **114(7)**, 1459-1465 (1995).
3. Gardiner, P.J. *Br. J. Pharmacol.* **87(1)**, 45-56 (1986).
4. Kiriyama, M., Ushikubi, F., Kobayashi, T., *et al. Br. J. Pharmacol.* **122(2)**, 217-224 (1997).
5. Regan, J.W., Bailey, T.J., Pepperl, D.J., *et al. Mol. Pharmacol.* **46(2)**, 213-220 (1994).

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