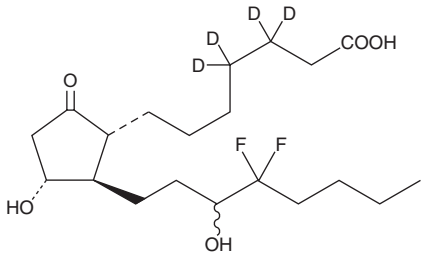
PRODUCT INFORMATION

13,14-dihydro-15(R,S)-hydroxy-16,16-difluoro Prostaglandin E_1-d_4

Item No. 9000406

Formal Name: 9-oxo-11α,15R,S-dihydroxy-16,16-difluoro-prostan-1-oic-3,3,4,4-d_4 acid
Synonym: 15-hydroxy Lubiprostone
MF: $C_{20}H_{30}D_4F_2O_5$
FW: 396.5
Chemical Purity: ≥98% (13,14-dihydro-15(R,S)-hydroxy-16,16-difluoro Prostaglandin E_1)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_4); ≤1% d_0
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

13,14-dihydro-15(R,S)-hydroxy-16,16-difluoro Prostaglandin E_1-d_4 is intended for use as an internal standard for the quantification of 13,14-dihydro-15(R,S)-hydroxy-16,16-difluoro prostaglandin E_1 by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

13,14-dihydro-15(R,S)-hydroxy-16,16-difluoro Prostaglandin E_1-d_4 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 (DMF) purged with an inert gas can be used. The solubility of 3,14-dihydro-15(R,S)-hydroxy-16,16-difluoro Prostaglandin E_1-d_4 in ethanol and DMF is approximately 10 mg/ml and approximately 5 mg/ml in DMSO.

Description

PGE_1 is produced by the metabolism of dihomo-γ-linolenic acid (DGLA) by the cyclooxygenase pathway. PGE_1 inhibits platelet aggregation (IC_{50} = 40 nM) and increases vasodilation.[1,2] 13,14-dihydro-16,16-difluoro PGE_1 is a biologically active metabolite of PGE_1, inhibiting platelet aggregation with comparable potency to the parent compound.[2,3] The addition of two electron-withdrawing fluorine atoms, which should stabilize the molecule against hydrolytic cleavage, may be expected to delay degradation *in vivo*.[4] 13,14-dihydro-15(R,S)-hydroxy-16,16-difluoro PGE_1-3,3',4,4'-d_4) contains four deuterium atoms at the 3, 3', 4, and 4' positions. It is intended for use as an internal standard for the quantification of 13,14-dihydro-15(R,S)-hydroxy-16,16-difluoro Prostaglandin E_1 by GC- or LC-mass spectrometry (MS).

References

1. Kobzar, G., Mardla, V., Järving, I., *et al. Proc. Estonian Acad. Sci. Chem.* **40(N3)**, 179-180 (1991).
2. Westwick, *J. Br. J. Pharmacol.* **58(2)**, 297P-298P (1976).
3. Peskar, B.A., Cawello, W., Rogatti, W., *et al. J. Physiol. Pharmacol.* **42(3)**, 327-331 (1991).
4. Hatano, Y., Kohli, J.D., Goldberg, L.I., *et al. Proc. Natl. Acad. Sci. USA* **77(11)**, 6846-6850 (1980).

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