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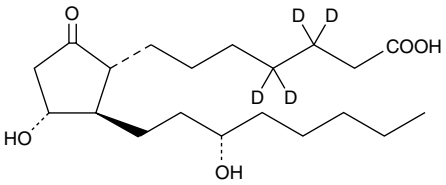
Product Information

13,14-dihydro Prostaglandin E_1-d_4

Item No. 9000281

Formal Name: 9-oxo-11α,15S-dihydroxy-prostan-1-oic-3,3,4,4-d_4 acid
Synonyms: 13,14-dh PGE_1-d_4, Prostaglandin E_0-d_4
MF: $C_{20}H_{36}D_4O_5$
FW: 360.5
Chemical Purity: ≥98%
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_4); ≤1% d_0
Stability: ≥1 year at -20°C
Supplied as: A solution in methyl acetate



Laboratory Procedures

13,14-dihydro Prostaglandin E_1-d_4 (13,14-dh PGE_1-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-dh PGE_1 by GC- or LC-mass spectrometry (MS). For long term storage, we suggest that 13,14-dh PGE_1-d_4 be stored as supplied at -20°C. It will be stable for at least one year.

13,14-dh PGE_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 purged with an inert gas can be used. The solubility of 13,14-dh PGE_1-d_4 in these solvents is approximately 50 mg/ml.

13,14-dh PGE_1-d_4 is used as an internal standard for the quantification 13,14-dh PGE_1-d_4 by stable isotope dilution 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-dh PGE_1 is an inhibitor of ADP-induced platelet aggregation in human platelet-rich plasma and washed platelets with IC_{50} values of 31 and 21 nM, respectively.[1] 13,14-dh PGE_1 is a slightly more potent inhibitor of ADP-induced human platelet aggregation than PGE_1 which has an IC_{50} of 40 nM.[2] Also, 13,14-dh PGE_1 activates adenylate cyclase in NCB-20 hybrid cells with a K_{act} of 668 nM.[3]

References

1. Kobzar, G., Mardla, V., Järving, I., *et al.* Comparison of the inhibitory effect of E-prostaglandins in human and rabbit platelet-rich plasma and washed platelets. *Comp. Biochem. Physiol.* **106(2)**, 489-494 (1993).
2. Kobzar, G., Mardla, V., Järving, I., *et al.* Antiaggregating potency of E-type prostaglandins in human and rabbit platelets. *Proc. Estonian Acad. Sci. Chem.* **40**, 179-180 (1991).
3. Blair, I.A., Hensby, C.N., and MacDermot, J. Prostacyclin-dependent activation of adenylate cyclase in a neuronal somatic cell hybrid: Prostanoid structure-activity relationships. *Br. J. Pharmacol.* **69**, 519-525 (1980).

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