

PRODUCT INFORMATION

13,14-dihydro-16,16-difluoro Prostaglandin E₁

Item No. 9000405

CAS Registry No.: 475992-30-4

Formal Name: 9-oxo-11 α ,15S-dihydroxy-16,16-difluoro-prostan-1-oic acid

Synonym: 15-hydroxy Lubiprostone

MF: C₂₀H₃₄F₂O₅

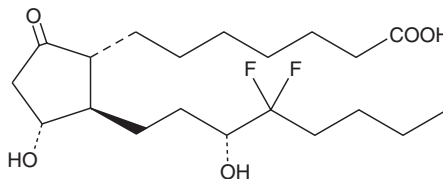
FW: 392.5

Chemical Purity: $\geq 98\%$

Supplied as: A 1 mg/ml solution in methyl acetate

Storage: -20°C

Stability: ≥ 4 years



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

Laboratory Procedures

13,14-dihydro-16,16-difluoro Prostaglandin E₁ (PGE₁) 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 13,14-dihydro-16,16-difluoro PGE₁ in ethanol and DMF is approximately 10 mg/ml and approximately 5 mg/ml in DMSO.

13,14-dihydro-16,16-difluoro PGE₁ is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the ethanolic solution of 13,14-dihydro-16,16-difluoro PGE₁ should be diluted with the aqueous buffer of choice. 13,14-dihydro-16,16-difluoro PGE₁ has a solubility of approximately 0.5 mg/ml in a 1:1 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

PGE₁ is produced by the metabolism of dihomo- γ -linolenic acid (DGLA) by the cyclooxygenase pathway. PGE₁ inhibits platelet aggregation (IC₅₀ = 40 nM) and increases vasodilation.^{1,2} 13,14-dihydro-16,16-difluoro PGE₁ is an analog of PGE₁. 13,14-dihydro PGE₁ is a biologically active metabolite of PGE₁, 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

References

1. Kobzar, G., Mardla, V., Järving, I., *et al.* Anti-aggregating potency of E-type prostaglandins in human and rabbit platelets. *Proc. Estonian Acad. Sci. Chem.* **40**, 179-180 (1991).
2. Westwick, J. The effect of pulmonary metabolites of prostaglandins E₁, E₂ and F_{2 α} on ADP-induced aggregation of human and rabbit platelets. *Br. J. Pharmacol.* **58**, 297P-298P (1976).
3. Peskar, B.A., Cawello, W., Rogatti, W., *et al.* On the metabolism of prostaglandin E₁ administered intravenously to human volunteers. *J. Physiol. Pharmacol.* **42**, 327-331 (1991).
4. Hatano, Y., Kohli, J.D., Goldberg, L.I., *et al.* Vascular relaxing activity and stability studies of 10,10-difluoro-13,14-dehydroprostacyclin. *Proc. Natl. Acad. Sci. USA* **77**(11), 6846-6850 (1980).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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