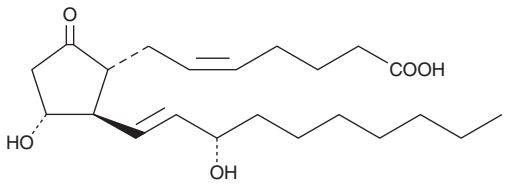
PRODUCT INFORMATION

20-ethyl Prostaglandin E_2

Item No. 14940

CAS Registry No.: 37492-24-3
Formal Name: (5Z)-7-[(1R,2R,3R)-3-hydroxy-2-[(1E,3S)-3-hydroxy-1-decen-1-yl]-5-oxocyclopentyl]-5-heptenoic acid
Synonym: 20-ethyl PGE_2
MF: $C_{22}H_{36}O_5$
FW: 380.5
Purity: ≥97%
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

20-ethyl Prostaglandin E_2 (20-ethyl PGE_2) 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 20-ethyl PGE_2 in ethanol and DMSO is approximately 20 mg/ml and approximately 30 mg/ml in DMF.

20-ethyl PGE_2 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the methyl acetate solution of 20-ethyl PGE_2 should be diluted with the aqueous buffer of choice. The solubility of 20-ethyl PGE_2 in PBS (pH 7.2) is approximately 0.125 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

20-ethyl PGE_2 is an analog of PGE_2 in which the ω-chain has been extended by the addition of two methylene carbon atoms. The only well studied prostaglandin analog with this structural feature is unoprostone, an F-series prostaglandin that is clinically approved as a glaucoma medication.[1] Unoprostone also contains lower side chain modifications (13,14-dihydro-15-keto) which severely limit its affinity for FP receptors, contributing to its lack of potency as a medication. 20-ethyl PGE_2 retains the natural 15(S) allylic hydroxyl in the lower side chain, which may improve its potency relative to unoprostone. However, ligand binding assays of this analog with respect to EP or other prostanoid receptors have not been published. E-type prostaglandins have been widely reported to have inflammatory, cytoprotective, and a variety of other effects.[2-4]

References

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2. Matsumoto, H., Naraba, H., Murakami, M., *et al.* Concordant induction of prostaglandin E_2 synthase with cyclooxygenase-2 leads to preferred production of prostaglandin E_2 over thromboxane and prostaglandin D_2 in lipopolysaccharide-stimulated rat peritoneal macrophages. *Biochem. Biophys. Res. Commun.* **230(1)**, 110-114 (1997).
3. Karim, S.M.M., Carter, D.C., Bhana, D., *et al.* Effect of orally administered prostaglandin E_2 and its 15-methyl analogues on gastric secretion. *Br. Med. J.* **1(5846)**, 143-146 (1973).
4. Jackson, G.M., Sharp, H.T., and Varner, M.W. Cervical ripening before induction of labor: A randomized trial of prostaglandin E_2 gel versus low-dose oxytocin. *Am. J. Obstet. Gynecol.* **171(4)**, 1092-1096 (1994).

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