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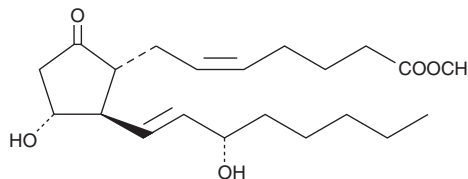
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PRODUCT INFORMATION



Prostaglandin E₂ methyl ester Item No. 14011

CAS Registry No.: 31753-17-0
Formal Name: 9-oxo-11 α ,15S-dihydroxy-prosta-5Z,13E-dien-1-oic acid, methyl ester
Synonyms: PGE₂ methyl ester, Dinoprostone methyl ester
MF: C₂₁H₃₄O₅
FW: 366.5
Purity: \geq 98%
Stability: \geq 1 year at -20°C
Supplied as: A solution in methyl ester



Laboratory Procedures

For long term storage, we suggest that prostaglandin E₂ methyl ester (PGE₂ methyl ester) be stored as supplied at -20°C. It should be stable for at least one year.

PGE₂ methyl ester 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 DMSO, dimethyl formamide, or ethanol can be used. To prevent oxidation of PGE₂ methyl ester, the solvent should be purged with an inert gas. The solubility of PGE₂ methyl ester in these solvents is approximately 25 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. If an organic solvent-free aqueous solution of PGE₂ methyl ester is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in basic buffers. PGE₂ methyl ester is sparingly soluble in neutral buffers. The solubility of PGE₂ in PBS, pH 7.2, is approximately 150 μ g/ml. We do not recommend storing the aqueous solution for more than one day.

PG methyl esters have enhanced lipid solubility compared to their parent compounds. The additional advantage of being hydrolyzed to the free acid upon *in vivo* administration make the methyl esters useful prodrugs. In general, methyl esters show greatly decreased agonist activity *in vitro* compared to the free acids.

Description

PGE₂ methyl ester is an analog of PGE₂ (Item No. 14010) with enhanced lipid solubility. PGE₂ is one of the primary cyclooxygenase products of arachidonic acid (Item No. 90010) and one of the most widely investigated PGs. Its activity influences inflammation, fertility and parturition, gastric mucosal integrity, and immune modulation.¹⁻⁴ The effects of PGE₂ are transduced by at least four distinct receptors designated EP₁, EP₂, EP₃, and EP₄.⁵ Affinity constants (K_d) values of PGE₂ for these receptors range from 1-10 nM depending on the receptor subtype and tissue.⁵

References

1. Willis, A.L. and Cornelsen, M. *Prostaglandins* **3**, 353-357 (1973).
2. Jackson, G.M., Sharp, H.T., and Varner, M.W. *Am. J. Obstet. Gynecol.* **171**, 1092-1096 (1994).
3. Robert, A., Schultz, J.R., Nezamis, J.E., et al. *Gastroenterology* **70**, 359-370 (1976).
4. Arvind, P., Papavassiliou, E.D., Tsioulas, G.J., et al. *Biochemistry* **34**, 5604-5609 (1995).
5. Coleman, R.A., Smith, W.L., and Narumiya, S. *Pharmacol. Rev.* **46**, 205-229 (1994).

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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