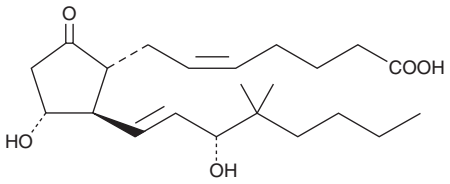
PRODUCT INFORMATION

16,16-dimethyl Prostaglandin E_2

Item No. 14750

CAS Registry No.: 39746-25-3
Formal Name: 9-oxo-11α,15R-dihydroxy-16,16-dimethyl-prosta-5Z,13E-dien-1-oic acid
Synonym: 16,16-dimethyl PGE_2
MF: $C_{22}H_{36}O_5$
FW: 380.5
Purity: ≥95%
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

16,16-dimethyl 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 DMSO, ethanol, and dimethyl formamide purged with an inert gas can be used. The solubility of 16,16-dimethyl PGE_2 in these solvents is approximately 100 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 solution of 16,16-dimethyl PGE_2 is needed, it can be prepared by evaporating the methyl acetate and directly dissolving the neat oil in aqueous buffers. The solubility of 16,16-dimethyl PGE_2 in PBS (pH 7.2) is approximately 5 mg/ml. Store aqueous solutions of 16,16-dimethyl PGE_2 on ice and use within 12 hours of preparation.

Description

16,16-dimethyl PGE_2 is a competitive inhibitor of 15-hydroxy PG dehydrogenase (PGDH) but is not a substrate for the enzyme.[1] Because of its resistance to metabolism by PGDH, 16,16-dimethyl PGE_2 has a prolonged half-life *in vivo*. 16,16-dimethyl PGE_2 acts as an agonist on most EP receptor subtypes, and has been used experimentally to induce cervical ripening, uterine contraction, and prevent ulceration of the gastric mucosa in rats and dogs.[2,3] The K_d for activation of isolated EP_2 receptors is about 1 nM.[3] 16,16-dimethyl PGE_2 can be used to preserve the self-renewal properties while preventing the differentiation of hematopoietic stem cells during expansion in culture.[4,5]

References

1. Ohno, H., Morikawa, Y., and Hirata, F. *J. Biochem.* **84**, 1485-1494 (1978).
2. Robert, A., Schultz, J.R., Nezamis, J.E., *et al. Gastroenterology* **70**, 359-370 (1976).
3. Coleman, R.A., Smith, W.L., and Narumiya, S. *Pharmacol. Rev.* **46**, 205-229 (1994).
4. Hagedorn, E.J., Durand, E.M., Fast, E.M., *et al. Exp. Cell Res.* (2014).
5. Genovese, P., Schiroli, G., Escobar, G., *et al. Nature* **510(7504)**, 235-240 (2014).

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