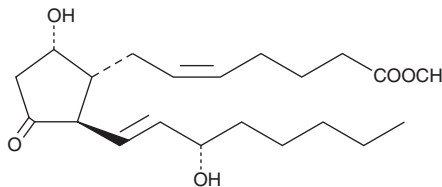


PRODUCT INFORMATION



Prostaglandin D₂ methyl ester Item No. 10008385

CAS Registry No.: 49852-81-5
Formal Name: 9 α ,15S-dihydroxy-11-oxo-prosta-5Z,13E-dien-1-oic acid, methyl ester
Synonym: PGD₂ methyl ester
MF: C₂₁H₃₄O₅
FW: 366.5
Purity: \geq 97%
Supplied as: A solution in methyl acetate
Storage: -20°C
Stability: \geq 2 years



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

Laboratory Procedures

Prostaglandin D₂ (PGD₂) 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 ethanol, DMSO, and dimethyl formamide purged with an inert gas can be used. The solubility of PGD₂ methyl ester in these solvents is approximately 50 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 PGD₂ methyl ester is needed, it can be prepared by evaporating the methyl acetate and directly dissolving the neat oil in aqueous buffers. The solubility of PGD₂ methyl ester in PBS, pH 7.2, is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

PGD₂ is the major eicosanoid product of mast cells and is produced in large quantities by hematopoietic PGD synthase during allergic and asthmatic anaphylaxis.¹ It causes vasodilation, flushing, hypotension, and is an inhibitor of platelet aggregation.^{1,2} PGD₂ is also produced in the brain via a soluble, secreted PGD-synthase also known as β -trace.^{3,4} In the brain, PGD₂ produces normal physiological sleep and lowering of body temperature.^{3,4} PGD₂ methyl ester is a more lipid-soluble, cell-permeable prodrug form of PGD₂.⁵ It binds to the human and mouse PGD₂ receptors (DP₁ and CRTH2/DP₂) with 5-10 fold lower affinity than PGD₂.⁶

References

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3. Hayaishi, O. Sleep-wake regulation by prostaglandins D₂ and E₂. *J. Biol. Chem.* **263**, 14593-14596 (1988).
4. Onoe, H., Ueno, R., Fujita, I., *et al.* Prostaglandin D₂, a cerebral sleep-inducing substance in monkeys. *Proc. Natl. Acad. Sci. USA* **85**, 4082-4086 (1988).
5. Suzuki, F., Hayashi, H., Ito, S., *et al.* Methyl ester of prostaglandin D₂ as a delivery system of prostaglandin D₂ into brain. *Biochem. Biophys. Acta* **917**, 224-230 (1987).
6. Hirai, H., Abe, H., Tanaka, K., *et al.* Gene structure and functional properties of mouse CRTH2, a prostaglandin D₂ receptor. *Biochem. Biophys. Res. Commun.* **307**, 797-802 (2003).

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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