

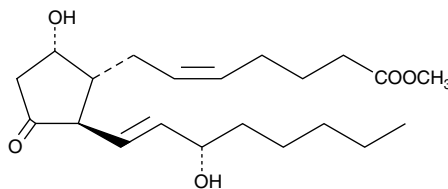
Product Information



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%
Stability: \geq 1 year at -20°C
Supplied as: A solution in methyl acetate



Laboratory Procedures

For long term storage, we suggest that prostaglandin D₂ methyl ester (PGD₂ methyl ester) be stored as supplied at -20°C. It should be stable for at least one year.

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.

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

1. Roberts, L.J., II and Sweetman, B.J. Metabolic fate of endogenously synthesized prostaglandin D₂ in a human female with mastocytosis. *Prostaglandins* **30**, 383-400 (1985).
2. Giles, H. and Leff, P. The biology and pharmacology of PGD₂. *Prostaglandins* **35**, 277-300 (1988).
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).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/10008385

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent *via* email to your institution.

WARRANTY AND LIMITATION OF REMEDY

Cayman Chemical Company makes **no warranty or guarantee** of any kind, whether written or oral, expressed or implied, including without limitation, any warranty of fitness for a particular purpose, suitability and merchantability, which extends beyond the description of the chemicals hereof. Cayman **warrants only** to the original customer that the material will **meet our specifications at the time of delivery.**

Cayman will carry out its delivery obligations with due care and skill. Thus, in no event will Cayman have **any obligation or liability**, whether in tort (including negligence) or in contract, for any direct, indirect, incidental or consequential damages, even if Cayman is informed about their possible existence.

This limitation of liability does not apply in the case of intentional acts or negligence of Cayman, its directors or its employees.

Buyer's **exclusive remedy** and Cayman's sole liability hereunder shall be limited to a **refund** of the purchase price, or at Cayman's option, the **replacement**, at no cost to Buyer, of all material that does not meet our specifications.

Said refund or replacement is conditioned on Buyer giving written notice to Cayman within thirty (30) days after arrival of the material at its destination. Failure of Buyer to give said notice within thirty (30) days shall constitute a waiver by Buyer of all claims hereunder with respect to said material.

For further details, please refer to our **Warranty and Limitation of Remedy** located on our website and in our catalog.

Copyright Cayman Chemical Company, 03/05/2012

Cayman Chemical

Mailing address

1180 E. Ellsworth Road
Ann Arbor, MI
48108 USA

Phone

(800) 364-9897
(734) 971-3335

Fax

(734) 971-3640

E-Mail

custserv@caymanchem.com

Web

www.caymanchem.com