

Product Information



Prostaglandin D₂-d₉

Item No. 10010123

Formal Name: 9 α ,15S-dihydroxy-11-oxo-prosta-5Z,13E-dien-1-oic-17,17,18,18,19,19,20,20-d₉ acid

Synonyms: PGD₂-d₉

MF: C₂₀H₂₃D₉O₅

FW: 361.5

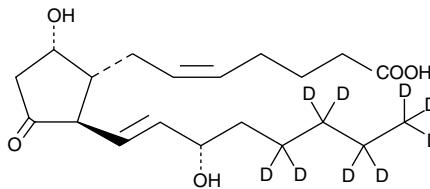
Chemical Purity: $\geq 95\%$

Deuterium

Incorporation: $\geq 99\%$ deuterated forms (d₁-d₉); $\leq 1\%$ d₀

Stability: ≥ 1 year at -20°C

Supplied as: A solution in methyl acetate



Laboratory Procedures

Prostaglandin D₂-d₉ (PGD₂-d₉) contains nine deuterium atoms at the 17, 17', 18, 18', 19, 19', 20, 20, and 20 positions. It is intended for use as an internal standard for the quantification of PGD₂ by GC- or LC-mass spectrometry (MS). For long term storage, we suggest that PGD₂-d₉ be stored as supplied at -20°C. It will be stable for at least two years.

PGD₂-d₉ 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-d₉ in these solvents is approximately 75, 50, and 100 mg/ml, respectively.

PGD₂-d₉ is used as an internal standard for the quantification of PGD₂ by stable isotope dilution MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

PGD₂ is the major eicosanoid product of mast cells and is released in large quantities during allergic and asthmatic anaphylaxis.¹ Mastocytosis patients produce excessive amounts of PGD₂, which causes vasodilation, flushing, hypotension, and syncopal episodes.¹ PGD₂ is also produced in the brain *via* an alternative pathway involving a soluble, secreted PGD₂-synthase also known as β -trace.^{2,3} In the brain, PGD₂ produces normal physiological sleep and lowering of body temperature.^{2,3} Further pharmacological actions include inhibition of platelet aggregation and relaxation of vascular smooth muscle.⁴ PGD₂ inhibits human ovarian tumor cell proliferation with an IC₅₀ value of 6.8 μ M.⁵

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. Hayaishi, O. Sleep-wake regulation by prostaglandins D₂ and E₂. *J. Biol. Chem.* **263**, 14593-14596 (1988).
3. 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).
4. Giles, H. and Leff, P. The biology and pharmacology of PGD₂. *Prostaglandins* **35**, 277-300 (1988).
5. Kikuchi, Y., Kita, T., Hirata, J., *et al.* Preclinical studies of antitumor prostaglandins by using human ovarian cancer cells. *Cancer. Metast. Rev.* **13**, 309-315 (1994).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/10010123

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, 05/23/2012

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