

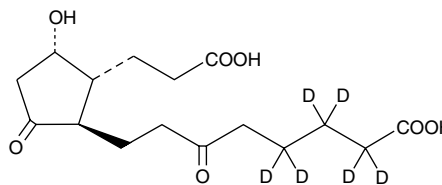
Product Information



tetranor-PGDM-d₆

Item No. 10009039

CAS Registry No.: 1314905-92-4
Formal Name: 9 α -hydroxy-11,15-dioxo-2,3,4,5-tetranor-prostan-17,17,18,18,19,19-d₆-1,20-dioic acid
Synonym: tetranor-Prostaglandin D Metabolite-d₆
MF: C₁₆H₁₈O₇D₆
FW: 334.4
Chemical Purity: \geq 90%
Deuterium Incorporation: \geq 99% deuterated forms (d₁-d₆); \leq 1% d₀
Stability: \geq 6 months at -80°C
Supplied as: A solution in methyl acetate



Laboratory Procedures

tetranor-PGDM-d₆ contains six deuterium atoms at the 17, 17', 18, 18', 19 and 19' positions. It is intended for use as an internal standard for the quantification of tetranor-PGDM by GC- or LC-mass spectrometry (MS). For long term storage, we suggest that tetranor-PGDM-d₆ be stored as supplied at -80°C. It will be stable for at least six months.

tetranor-PGDM-d₆ 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 and dimethyl formamide purged with an inert gas can be used. The solubility of tetranor-PGDM-d₆ in these solvents is approximately 50 mg/ml.

tetranor-PGDM-d₆ is used as an internal standard for the quantification of tetranor-PGDM 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).

Prostaglandin D₂ (PGD₂) is synthesized by hematopoietic-type PGD-synthase (H-PGDS) in mast cells and is released in large quantities during allergic and asthmatic anaphylaxis.¹ PGD₂ is also produced in the brain by lipocalin PGD-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 tetranor-PGDM is a major metabolite of PGD₂ that is detectable in human and murine urine.⁵ The levels of tetranor-PGDM and 2,3-dinor-11 β -PGF_{2 α} , a related PGD₂ metabolite, in human urine were found to be 1.5 \pm 0.3 and 0.6 \pm 0.6 ng/mg creatinine, respectively. tetranor-PGDM was detected in mouse urine at a level of 8.1 \pm 1.3 ng/mg creatinine.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. Song, W.-L., Wang, M., Ricciotti, E., *et al.* Tetranor PGDM, an abundant urinary metabolite reflects biosynthesis of prostaglandin D₂ in mice and humans. *J. Biol. Chem.* **283**(2), 1179-1188 (2008).

Related Products

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

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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