

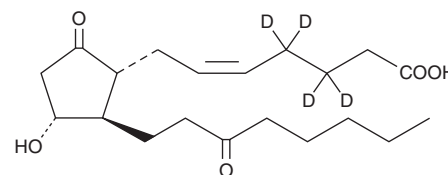
PRODUCT INFORMATION



13,14-dihydro-15-keto Prostaglandin E₂-d₄

Item No. 10010606

Formal Name: 9,15-dioxo-11a-hydroxy-prost-5Z-en-1-oic-3,3,4,4-d₄ acid
Synonym: 13,14-dh-15-keto PGE₂-d₄, 13,14-dihydro-oxo-PGE₂-d₄, PGEM-d₄
MF: C₂₀H₂₈D₄O₅
FW: 356.5
Chemical Purity: ≥98%
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₄); ≤1% d₀
Supplied as: A solution in methyl acetate
Storage: -20°C
Stability: ≥1 year



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

Laboratory Procedures

13,14-dihydro-15-keto Prostaglandin E₂-d₄ (13,14-dh-15-keto PGE₂-d₄) contains four deuterium atoms at the 3, 3', 4, and 4' positions. It is intended for use as an internal standard for the quantification of 13,14-dh-15-keto PGE₂ (Item No. 14650) by GC- or LC-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).

13,14-dh-15-keto PGE₂-d₄ is supplied as a solution in methyl acetate. To change the solvent, simply evaporate the 13,14-dh-15-keto PGE₂-d₄ 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 13,14-dh-15-keto PGE₂-d₄ in these solvents is approximately 50 mg/ml.

Description

13,14-dihydro-15-keto Prostaglandin E₂-d₄ (13,14-dihydro-15-keto PGE₂-d₄) is intended for use as an internal standard for the quantification of 13,14-dihydro-15-keto PGE₂ (Item No. 14650) by GC- or LC-MS. 13,14-dihydro-15-keto PGE₂ is a metabolite of PGE₂ (Item No. 14010) and the primary PGE₂ metabolite in plasma.^{1,2} It is formed from PGE₂ via a 15-keto PGE₂ intermediate by 15-oxo-PG Δ¹³ reductase.² Unlike PGE₂, 13,14-dihydro-15-keto PGE₂ does not bind effectively to the PGE₂ receptors EP₂ and EP₄ expressed in CHO cells (K_s = 12 and 57 μM, respectively) or induce adenylate cyclase activity in the same cells (EC₅₀s = >18 and >38 μM, respectively). Levels of 13,14-dihydro-15-keto PGE₂ are increased in the plasma of women in the third trimester of pregnancy and in women during and immediately after labor and delivery.³ Levels of 13,14-dihydro-15-keto PGE₂ levels are decreased in tumor tissue compared to adjacent non-cancerous tissue isolated from patients with non-small cell lung cancer (NSCLC).⁴

References

1. Hamberg, M. and Samuelsson, B. On the metabolism of prostaglandins E₁ and E₂ in man. *J. Biol. Chem.* **246**, 6713-6721 (1971).
2. Nishigaki, N., Negishi, M., Ichikawa, A., et al. Two Gs-coupled prostaglandin E receptor subtypes, EP₂ and EP₄, differ in desensitization and sensitivity to the metabolic inactivation of the agonist. *Mol. Pharmacol.* **50**(4), 1031-1037 (1996).
3. Husslein, P. and Sinzinger, H. Concentration of 13,14-dihydro-15-keto-prostaglandin E₂ in the maternal peripheral plasma during labour of spontaneous onset. *Br. J. Obstet. Gynaecol.* **91**(3), 228-231 (1984).
4. Hughes, D., Otani, T., Yang, P., et al. NAD⁺-dependent 15-hydroxyprostaglandin dehydrogenase regulates levels of bioactive lipids in non-small cell lung cancer. *Cancer Prev. Res. (Phila)* **1**(4), 241-249 (2008).

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.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 12/06/2021

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM