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Zuschläge

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PRODUCT INFORMATION



15-keto Prostaglandin E₂-d₉ Item No. 19350

Formal Name: (Z)-7-((1R,2R,3R)-3-hydroxy-5-oxo-2-((E)-3-oxooct-1-en-1-yl-5,5,6,6,7,7,8,8,8-d₉)cyclopentyl)hept-5-enoic acid

Synonym: 15-keto PGE₂-d₉, 15-oxo PGE₂-d₉

MF: C₂₀H₂₁D₉O₅

FW: 359.5

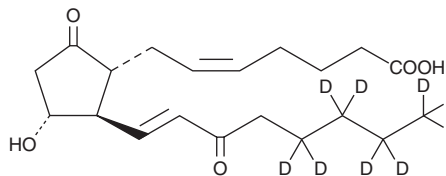
Chemical Purity: ≥98% (15-keto PGE₂)

Deuterium Incorporation: ≥99% deuterated forms (d₁-d₉); ≤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

15-keto Prostaglandin E₂-d₉ (15-keto PGE₂-d₉) is intended for use as an internal standard for the quantification of 15-keto PGE₂ (Item No. 14720) 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).

15-keto PGE₂-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 15-keto PGE₂-d₉ in these solvents is approximately 50 mg/ml.

Description

15-keto Prostaglandin E₂-d₉ (15-keto PGE₂-d₉) is intended for use as an internal standard for the quantification of 15-keto PGE₂ (Item No. 14720) by GC- or LC-MS. 15-keto PGE₂ is a metabolite of PGE₂ (Item No. 14010) formed by 15-hydroxy prostaglandin dehydrogenase (15-PGDH).¹ Unlike PGE₂, 15-keto PGE₂ does not bind effectively to the PGE₂ receptors EP₂ and EP₄ expressed in CHO cells (K_s = 2.6 and 15 μM, respectively) or induce adenylate cyclase activity in the same cells (EC₅₀s = 1.8 and >33 μM, respectively). However, it does bind to EP₂ and EP₄ in HEK cells expressing these receptors (IC₅₀s = 0.117 and 2.82 μM, respectively), as well as induces cAMP formation (EC₅₀s = 0.137 and 0.426 μM, respectively) and the transcriptional activity of β-catenin/TCF in the same cells.² 15-keto PGE₂ inhibits CD3-CD28-MHC-I-induced proliferation of isolated human CD4⁺ T cells in a concentration-dependent manner.³ It also reduces mortality in a mouse model of LPS-induced sepsis when administered at a dose of 15 mg/kg.⁴

References

1. Nishigaki, N., Negishi, M., and Ichikawa, A. *Mol. Pharmacol.* **50**(4), 1031-1037 (1996).
2. Endo, S., Suganami, A., Fukushima, K., et al. *J. Biol. Chem.* **295**(38), 13338-13352 (2020).
3. Schmidleithner, L., Thabet, Y., Schönfeld, E., et al. *Immunity* **50**(5), 1232-1248 (2019).
4. Chen, I.-J., Hee, S.-W., Liao, C.-H., et al. *Free Radic. Biol. Med.* **115**, 113-126 (2018).

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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