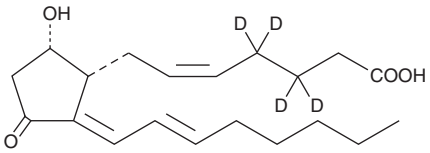
PRODUCT INFORMATION

15-deoxy-$\Delta^{12,14}$-Prostaglandin D_2-d_4

Item No. 19343

CAS Registry No.: 2750534-91-7
Formal Name: *rac*-(Z)-7-((1R,5S,E)-5-hydroxy-2-((E)-oct-2-en-1-ylidene)-3-oxocyclopentyl)hept-5-enoic-3,3,4,4-d_4 acid
Synonym: 15-deoxy-$\Delta^{12,14}$-PGD_2-d_4
MF: $C_{20}H_{26}D_4O_4$
FW: 338.5
Chemical Purity: ≥98% (15-deoxy-$\Delta^{12,14}$-Prostaglandin D_2)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_4); ≤1% d_0
Supplied as: A solution in methyl acetate
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

15-deoxy-$\Delta^{12,14}$-Prostaglandin D_2-d_4 (15-deoxy-$\Delta^{12,14}$-PGD_2-d_4) is intended for use as an internal standard for the quantification of 15-deoxy-$\Delta^{12,14}$-PGD_2 (Item No. 12700) 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-deoxy-$\Delta^{12,14}$-PGD_2-d_4 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-deoxy-$\Delta^{12,14}$-PGD_2-d_4 in these solvents is approximately 20 mg/ml.

Description

5-deoxy-$\Delta^{12,14}$-PGD_2 is a metabolite of PGD_2 (Item No. 12010).[1] It is an agonist of PGD_2 receptor 2 (DP_2) that binds DP_2 (K_i = 50 nM for the mouse receptor expressed in HEK293 cell membranes) and induces activation of eosinophils (EC_{50} = 8 nM).[2,3] It also stimulates the recruitment of steroid receptor coactivator-1 (SRC-1) to peroxisome proliferator-activated receptor γ (PPARγ) and induces PPARγ-mediated transcription in a reporter assay when used at a concentration of 5 µM.[1] 15-deoxy-$\Delta^{12,14}$-PGD_2 is cytotoxic to L1210 murine leukemia cells (IC_{50} = 0.3 µg/ml).[4] It inhibits ADP-induced platelet aggregation (IC_{50} = 320 ng/ml) less potently than PGD_2.[5]

References

1. Söderström, M., Wigren, J., Surapureddi, S., *et al.* Novel prostaglandin D_2-derived activators of peroxisome proliferator-activated receptor-γ are formed in macrophage cell cultures. *Biochim. Biophys. Acta* **1631(1)**, 35-41 (2003).
2. Hata, A.N., Zent, R., Breyer, M.D., *et al.* Expression and molecular pharmacology of the mouse CRTH2 receptor. *J. Pharmacol. Exp. Ther.* **306(2)**, 463-470 (2003).
3. Monneret, G., Li, H., Vasilescu, J., *et al.* 15-Deoxy-$\Delta^{12,14}$-prostaglandins D_2 and J_2 are potent activators of human eosinophils. *J. Immunol.* **168(7)**, 3563-3569 (2002).
4. Forman, B.M., Tontonoz, P., Chen, J., *et al.* 15-Deoxy-$\Delta^{12,14}$-prostaglandin J_2 is a ligand for the adipocyte determination factor PPARγ. *Cell* **83(5)**, 803-812 (1995).
5. Bundy, G.L., Morton, D.R., Peterson, D.C., *et al.* Synthesis and platelet aggregation inhibiting activity of prostaglandin D analogues. *J. Med. Chem.* **26(6)**, 790-799 (1983).

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