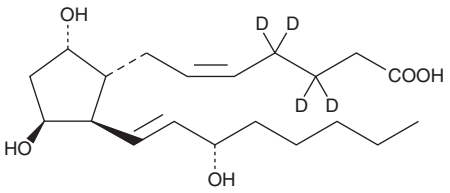
PRODUCT INFORMATION

11β-Prostaglandin $F_{2\alpha}$-d_4

Item No. 10008989

CAS Registry No.:	1240398-18-8
Formal Name:	9α,11β,15S-trihydroxy-prosta-5Z,13E-dien-1-oic-3,3,4,4,-d_4 acid
Synonyms:	9α,11β-$PGF_{2\alpha}$-d_4, 11β-$PGF_{2\alpha}$-d_4, 11-*epi* $PGF_{2\alpha}$-d_4
MF:	$C_{20}H_{30}D_4O_5$
FW:	358.5
Chemical Purity:	≥98% 11β-Prostaglandin $F_{2\alpha}$
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_4); ≤1% d_0
Supplied as:	A solution in ethanol
Storage:	-20°C
Stability:	≥1 year



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

Laboratory Procedures

11β-Prostaglandin $F_{2\alpha}$-d_4 (11β-$PGF_{2\alpha}$-d_4) is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol 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 11β-$PGF_{2\alpha}$-d_4 in is these solvents is approximately 100 mg/ml.

11β-$PGF_{2\alpha}$-d_4 is used as an internal standard for the quantification of 11β-$PGF_{2\alpha}$ 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).

Description

11β-$PGF_{2\alpha}$ is the primary metabolite of PGD_2 (Item No. 12010).[1] It is formed from PGD_2 *via* the NADPH-dependent aldo-keto reductase PGF synthase (PGFS; Item No. 10007940) in the liver or lung.[2] 11β-$PGF_{2\alpha}$ induces contraction of isolated cat iris sphincter, which endogenously expresses high levels of $PGF_{2\alpha}$ (FP) receptors, with an EC_{50} value of 0.045 µM.[1] It also induces contraction of isolated human bronchial smooth muscle when used at concentrations ranging from 0.1 to 30 µM.[3] 11β-$PGF_{2\alpha}$ (0.1 and 1 µM) induces phosphorylation of ERK and CREB, as well as increases the viability of MCF-7 breast cancer cells stably expressing the FP receptor when used at concentrations of 0.1 and 1 µM.[4]

References

1. Giles, H., Bolofo, M.L., Lydford, S.J., *et al.* A comparative study of the prostanoid receptor profile of 9α 11 β-prostaglandin F_2 and prostaglandin D_2. *Br. J. Pharmacol.* **104(2)**, 541-549 (1991).
2. Watanabe, K. Prostaglandin F synthase. *Prostaglandins Other Lipid Mediat.* **68-69**, 401-407 (2002).
3. Coleman, R.A. and Sheldrick, R.L.G. Prostanoid-induced contraction of human bronchial smooth muscle is mediated by TP-receptors. *Br. J. Pharmacol.* **96(3)**, 688-692 (1989).
4. Yoda, T., Kikuchi, K., Miki, Y., *et al.* 11β-Prostaglandin F2α, a bioactive metabolite catalyzed by AKR1C3, stimulates prostaglandin F receptor and induces slug expression in breast cancer. *Mol. Cell. Endocrinol.* **413**, 236-247 (2015).

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