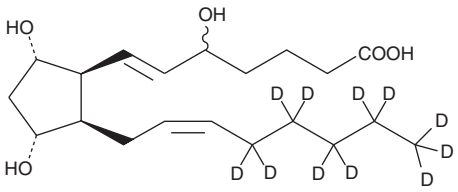
PRODUCT INFORMATION

(±)5-iPF$_{2\alpha}$-VI-d$_{11}$

Item No. 10006654

CAS Registry No.: 936565-17-2
Formal Name: **(±)**5,9α,11α-trihydroxy-(8β)-prosta-6E,14Z-dien-1-oic-16,16,17,17,18,18,19,19,20,20,20-d$_{11}$ acid
MF: $C_{20}H_{23}D_{11}O_5$
FW: 365.6
Chemical Purity: ≥90% ((±)5-iPF$_{2\alpha}$-VI)
Deuterium Incorporation: ≥99% deuterated forms (d$_1$-d$_{11}$); ≤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

(±)5-iPF$_{2\alpha}$-VI-d$_{11}$ contains 11 deuterium atoms at the 16, 16', 17, 17', 18, 18', 19, 19', 20, 20, and 20 positions. (±)5-iPF$_{2\alpha}$-VI-d$_{11}$ is intended for use as an internal standard for quantification of (±)5-iPF$_{2\alpha}$-VI (Item No. 16300) by GC- or LC-mass spectrometry (MS).

(±)5-iPF$_{2\alpha}$-VI-d$_{11}$ 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 (±)5-iPF$_{2\alpha}$-VI-d$_{11}$ in these solvents is approximately 50 mg/ml.

(±)5-iPF$_{2\alpha}$-VI-d$_{11}$ is used as an internal standard for the quantification of (±)5-iPF$_{2\alpha}$-VI by stable isotope dilution MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the weight indicated on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard (±)5-iPF$_{2\alpha}$-VI by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Description

Isoprostanes are prostaglandin (PG)-like products of free-radical induced lipid peroxidation.[1] Although the isoprostanes derived from arachidonic acid are the best characterized, many other polyunsaturated fatty acids can form isoprostanes.[2] iPF$_{2\alpha}$-VI is one of dozens of possible stereo- and regioisomeric isoprostanes which can be formed from arachidonic acid. To date, the most extensively studied of these is 8-isoprostane (8-*epi*-PGF$_{2\alpha}$; iPF$_{2\alpha}$-III).[3,4] However, 8-isoprostane is a minor isoprostane constituent when compared to some of the other isomers which form in natural conditions of oxidative stress,[5] including iPF$_{2\alpha}$-VI of the type-VI isoprostanes. This class has been shown to be one of the major isoprostane products, in contrast to 8-isoprostane. In addition to being produced in greater abundance than 8-isoprostane, type VI isoprostanes form internal lactones which facilitate their extraction and purification from biological samples.[5-8]

References

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