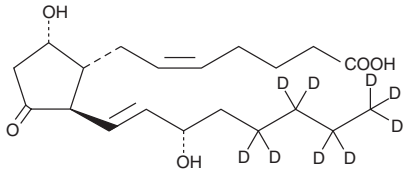
PRODUCT INFORMATION

Prostaglandin D_2-d_9

Item No. 10010123

CAS Registry No.:	2254642-52-7
Formal Name:	5-[(2,2-difluoro-1,3-benzodioxol-5-yl) methylene]-2,4-thiazolidinedione
Synonym:	PGD2-d_9
MF:	$C_{20}H_{23}D_9O_5$
FW:	361.5
Chemical Purity:	≥95%
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_9); ≤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

Prostaglandin D_2-d_9 (PGD_2-d_9) is used as an internal standard for the quantification of PGD_2 (Item No. 12010) 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).

PGD_2-d_9 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 PGD_2-d_9 in is these solvents is approximately 75, 50, and 100 mg/ml, respectively.

Description

PGD_2 is the major eicosanoid product of mast cells and is released in large quantities during allergic and asthmatic anaphylaxis.[1] Mastocytosis patients produce excessive amounts of PGD_2, which causes vasodilation, flushing, hypotension, and syncopal episodes.[1] PGD_2 is also produced in the brain *via* an alternative pathway involving a soluble, secreted PGD-synthase also known as b-trace.[2,3] In the brain, PGD_2 produces normal physiological sleep and lowering of body temperature.[2,3] Further pharmacological actions include inhibition of platelet aggregation and relaxation of vascular smooth muscle.[4] PGD_2 inhibits human ovarian tumor cell proliferation with an IC_{50} value of 6.8 µM.[5]

References

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2. Hayaishi, O. Sleep-wake regulation by prostaglandins D_2 and E_2. *J. Biol. Chem.* **263**, 14593-14596 (1988).
3. Onoe, H., Ueno, R., Fujita, I., *et al.* Prostaglandin D_2, a cerebral sleep-inducing substance in monkeys. *Proc. Natl. Acad. Sci. USA* **85**, 4082-4086 (1988).
4. Giles, H. and Leff, P. The biology and pharmacology of PGD_2. *Prostaglandins* **35**, 277-300 (1988).
5. Kikuchi, Y., Kita, T., Hirata, J., *et al.* Preclinical studies of antitumor prostaglandins by using human ovarian cancer cells. *Cancer. Metast. Rev.* **13**, 309-315 (1994).

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