

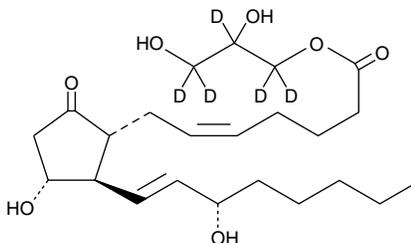
Product Information



Prostaglandin E₂-1-glycerol ester-d₅

Item No. 10004197

Formal Name:	9-oxo-11 α ,15S-dihydroxy-prosta-5Z,13E-dien-1-oic acid,1-glycerol ester-d ₅
Synonym:	PGE ₂ -1-glycerol ester-d ₅
MF:	C ₂₃ H ₃₃ D ₅ O ₇
FW:	431.6
Chemical Purity:	≥98% PGE ₂ -1-glycerol ester
Deuterium Incorporation:	≥99% deuterated forms (d ₁ -d ₅); ≤1% d ₀
Stability:	≥1 year at -20°C
Supplied as:	A solution in acetonitrile



Laboratory Procedures

Prostaglandin E₂-1-glycerol ester-d₅ (PGE₂-1-glycerol ester-d₅) contains five deuterium atoms. It is intended for use as an internal standard for the quantification of PGE₂-1-glycerol ester by GC- or LC-mass spectrometry (MS). For long term storage, we suggest that PGE₂-1-glycerol ester-d₅ be stored as supplied at -20°C. It should be stable for at least one year.

PGE₂-1-glycerol ester-d₅ is supplied as a solution in acetonitrile. To change the solvent, simply evaporate the acetonitrile 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 PGE₂-1-glycerol ester-d₅ in these solvents is approximately 10 mg/ml.

PGE₂-1-glycerol ester-d₅ is used as an internal standard for the quantification of PGE₂-1-glycerol ester 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).

2-Arachidonoyl glycerol (2-AG) has been isolated from porcine brain, and has been characterized as the natural endocannabinoid ligand for the central cannabinoid receptor.^{1,2} Incubation of 2-AG with cyclooxygenase-2 and specific PGH₂ isomerases in cell cultures and isolated enzyme preparations results in PG glycerol ester formation.³ The biosynthesis of PGH, PGD, PGE, PGF, and thromboxane A-2-glycerol ester compounds have all been documented. The 2-glycerol ester moiety equilibrates rapidly (within minutes) with the more stable 1-glycerol ester, producing a 10:90 2:1-glycerol ester mixture in typical aqueous media. While the stability and metabolism of these PG products has been investigated, little is known about their intrinsic biological activity.⁴

References

1. Sugiura, T., Kodaka, T., Kondo, S., *et al.* 2-Arachidonoylglycerol, a putative endogenous cannabinoid receptor ligand, induces rapid, transient elevation of intracellular free Ca²⁺ in neuroblastoma X glioma hybrid NG108-15 cells. *Biochem. Biophys. Res. Commun.* **229**, 58-64 (1996).
2. Sugiura, T., Kodaka, T., Kondo, S., *et al.* Is the cannabinoid CB₁ receptor a 2-arachidonoylglycerol receptor? Structural requirements for triggering a Ca²⁺ transient in NG108-15 cells. *J. Biochem.* **122**, 890-895 (1997).
3. Kozak, K.R., Crews, B.C., Morrow, J.D., *et al.* Metabolism of the endocannabinoids, 2-arachidonoylglycerol and anandamide, into prostaglandin, thromboxane, and prostacyclin glycerol esters and ethanolamides. *J. Biol. Chem.* **277**(47), 44877-44885 (2002).
4. Kozak, K.R., Crews, B.C., Ray, J.L., *et al.* Metabolism of prostaglandin glycerol esters and prostaglandin ethanolamides *in vitro* and *in vivo*. *J. Biol. Chem.* **276**(40), 36993-36998 (2001).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/10004197

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY. NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

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