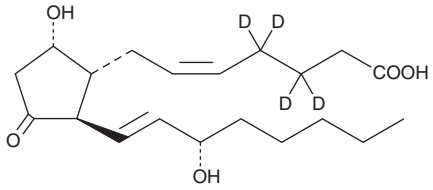
PRODUCT INFORMATION

Prostaglandin A_2-d_4

Item No. 310210

CAS Registry No.:	201608-18-6
Formal Name:	9-oxo-15S-hydroxy-prosta-5Z,10,13E-trien-1-oic-3,3,4,4-d_4 acid
Synonyms:	Medullin-d_4, PGA_2-d_4
MF:	$C_{20}H_{26}D_4O_4$
FW:	338.5
Chemical Purity:	≥98%
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_4); ≤1% d_0
Stability:	≥1 year at -20˚C
Supplied as:	A solution in methyl acetate
UV/Vis.:	λ_{max}: 216 nm ε: 11,000



Laboratory Procedures

Prostaglandin A_2-d_4 (PGA_2-d_4) contains four deuterium atoms at the 3, 3', 4, and 4' positions. It is intended for use as an internal standard for the quantification of PGA_2 by GC- or LC-mass spectrometry (MS). For long term storage, we suggest that PGA_2-d_4 be stored as supplied at -20˚C. It should be stable for at least one year.

PGA_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 PGA_2-d_4 in these solvents is approximately 50 mg/ml.

PGA_2-d_4 is used as an internal standard for the quantification of PGA_2 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 PGA_2 by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Description

PGA_2 is a naturally occurring prostaglandin in gorgonian corals where it may function in self defense. It is generally not present in mammals. PGA_2 has low biological potency in most bioassays, but it does show some anti-viral/anti-tumor activity.[1] At a 25 µM concentration, PGA_2 blocks the cell cycle progression of NIH 3T3 cells at the G_1 and G_2/M phase.[2] It has also been shown to act as a vasodilator with natriuretic properties.[3]

References

1. Fukushima, M., Kato, T., Narumiya, S., *et al.* Prostaglandin A and J: Antitumor and antiviral prostaglandins. *Adv. Prostaglandin Thromboxane Leukotriene Res.* **19**, 415-418 (1989).
2. Hitomi, M., Shu, J., Strom, D., *et al.* Prostaglandin A_2 blocks the activation of G_1 phase cyclin-dependent kinase without altering mitogen-activated protein kinase stimulation. *J. Biol. Chem.* **271**, 9376-9383 (1996).
3. Frolich, J.C., Sweetman, B.J., Carr, K., *et al.* Assessment of the levels of PGA_2 in human plasma by gas chromatography-mass spectrometry. *Prostaglandins* **10**, 185-195 (1975).

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