

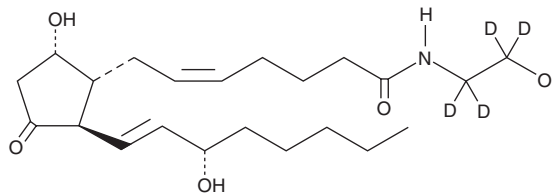
# PRODUCT INFORMATION



## Prostaglandin D<sub>2</sub> Ethanolamide-d<sub>4</sub>

Item No. 9001413

**Formal Name:** N-(2-hydroxyethyl)-11-oxo-9 $\alpha$ ,15S-dihydroxy-prosta-5Z,13E-dien-1-amide-d<sub>4</sub>  
**Synonyms:** PGD<sub>2</sub>-EA-d<sub>4</sub>, Prostanamide D<sub>2</sub>-d<sub>4</sub>  
**MF:** C<sub>22</sub>H<sub>33</sub>D<sub>4</sub>NO<sub>5</sub>  
**FW:** 399.6  
**Chemical Purity:** ≥95% (PGD<sub>2</sub>-EA)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>4</sub>); ≤1% d<sub>0</sub>  
**Supplied as:** A solution in ethanol  
**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<sub>2</sub> ethanolamide-d<sub>4</sub> (PGD<sub>2</sub>-EA-d<sub>4</sub>) is intended for use as an internal standard for the quantification of PGD<sub>2</sub>-EA 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<sub>2</sub>-EA-d<sub>4</sub> 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 ethanol, DMSO, and dimethyl formamide (DMF) purged with an inert gas can be used. The solubility of PGD<sub>2</sub>-EA-d<sub>4</sub> in ethanol is approximately 12.5 mg/ml and approximately 8.3 mg/ml in DMSO and DMF.

### Description

PGD<sub>2</sub>-EA is a bioactive lipid produced by the sequential metabolism of anandamide (arachidonoyl ethanolamide) by cyclooxygenase (COX) enzymes, in particular by COX-2, and PGD synthase.<sup>1-3</sup> The biosynthesis of PGD<sub>2</sub>-EA from anandamide can also be increased when anandamide metabolism is diminished by deletion of fatty acid amide hydrolase.<sup>4</sup> PGD<sub>2</sub>-EA is inactive against recombinant prostanoid receptors, including the D prostanoid receptor.<sup>5</sup> It increases the frequency of miniature inhibitory postsynaptic currents in primary cultured hippocampal neurons, an effect which is the opposite of that induced by anandamide.<sup>3</sup> PGD<sub>2</sub>-EA also induces apoptosis in colorectal carcinoma cell lines.<sup>2</sup>

### References

1. Kozak, K.R., Crews, B.C., Morrow, J.D., *et al.* Metabolism of the endocannabinoids, 2-arachidonylglycerol and anandamide, into prostaglandin, thromboxane, and prostacyclin glycerol esters and ethanolamides. *J. Biol. Chem.* **277**(47), 44877-44885 (2002).
2. Patsos, H.A., Hicks, D.J., Dobson, R.R.H., *et al.* The endogenous cannabinoid, anandamide, induces cell death in colorectal carcinoma cells: A possible role for cyclooxygenase 2. *Gut* **54**(12), 1741-1750 (2005).
3. Sang, N., Zhang, J., and Chen, C. PGE<sub>2</sub> glycerol ester, a COX-2 oxidative metabolite of 2-arachidonoyl glycerol, modulates inhibitory synaptic transmission in mouse hippocampal neurons. *J. Physiol.* **572**, 735-745 (2006).
4. Weber, A., Ni, J., Ling, K.-H.J., *et al.* Formation of prostamides from anandamide in FAAH knockout mice analyzed by HPLC with tandem mass spectrometry. *J. Lipid Res.* **45**, 757-763 (2004).
5. Matias, I., Chen, J., De Petrocellis, L., *et al.* Prostaglandin ethanolamides (prostamides): *In vitro* pharmacology and metabolism. *J. Pharmacol. Exp. Ther.* **309**(2), 745-757 (2004).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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