

# Product Information



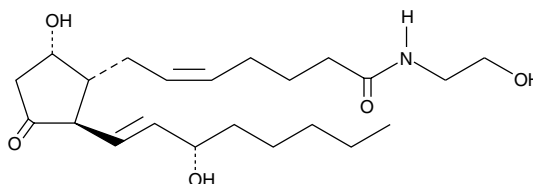
## Prostaglandin D<sub>2</sub> Ethanolamide Lipid Maps MS Standard

Item No. 10007203

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**CAS Registry No.:** 398138-28-8  
**Formal Name:** N-(2-hydroxyethyl)-11-oxo-9 $\alpha$ ,15S-dihydroxy-prosta-5Z,13E-dien-1-amide  
**Synonyms:** PGD<sub>2</sub>-EA, Prostamide D<sub>2</sub>  
**MF:** C<sub>22</sub>H<sub>37</sub>NO<sub>5</sub>  
**FW:** 395.5  
**Purity:**  $\geq$ 96%  
**Stability:**  $\geq$ 1 year at -20°C  
**Supplied as:** A solution in ethanol



### Laboratory Procedures

For long term storage, we suggest that prostaglandin D<sub>2</sub> ethanolamide (PGD<sub>2</sub>-EA) be stored as supplied at -20°. It should be stable for at least one year.

PGD<sub>2</sub>-EA is supplied as a solution in ethanol. To change the solvent, simply evaporate the PGD<sub>2</sub>-EA 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<sub>2</sub>-EA in these solvents is approximately 8 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. If an organic solvent-free solution of PGD<sub>2</sub>-EA is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of PGD<sub>2</sub>-EA in PBS (pH 7.2) is approximately 2.5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

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).

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