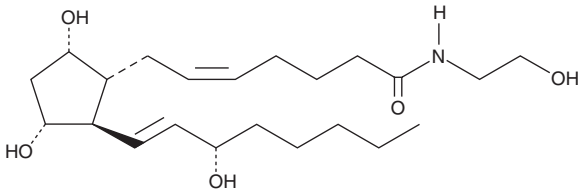
PRODUCT INFORMATION

Prostaglandin $F_{2\alpha}$ Ethanolamide

Item No. 16013

CAS Registry No.: 353787-70-9
Formal Name: 9α,11α,15S-trihydroxy-N-(2-hydroxyethyl)-prosta-5Z,13E-dien-1-amide
Synonyms: Dinoprost Ethanolamide, $PGF_{2\alpha}$-EA
MF: $C_{22}H_{39}NO_5$
FW: 397.5
Purity: ≥98%
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 $F_{2\alpha}$ ethanolamide ($PGF_{2\alpha}$-EA) 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. $PGF_{2\alpha}$-EA is soluble in the organic solvent DMSO at a concentration of approximately 10 mg/ml. $PGF_{2\alpha}$-EA is also miscible in dimethyl formamide.

$PGF_{2\alpha}$-EA is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the ethanolic solution of $PGF_{2\alpha}$-EA should be diluted with the aqueous buffer of choice. The solubility of $PGF_{2\alpha}$-EA in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

$PGF_{2\alpha}$-EA is produced by COX-2 metabolism of the endogenous cannabinoid, arachidonoyl ethanolamide (AEA), found in brain, liver, and other mammalian tissues.[1] AEA can be metabolized directly by the sequential action of COX-2 and specific PG synthases to produce ethanolamide congeners of the classical PGs.[2,3] $PGF_{2\alpha}$-EA has also been reported to be biosynthesized by this mechanism when AEA was infused into the lung and liver of living mice. $PGF_{2\alpha}$-EA is a potent dilator (EC_{50} = 58 nM) of the cat iris sphincter, which is a model system for testing potential intraocular hypotensive agents.[4]

References

1. Bachur, N.R., Masek, K., Melmon, K.L., *et al.* Fatty acid amides of ethanolamine in mammalian tissues. *J. Biol. Chem.* **240**, 1019-1024 (1965).
2. Yu, M., Ives, D., and Ramesha, C.S. Synthesis of prostaglandin E_2 ethanolamide from anandamide by cyclooxygenase-2. *J. Biol. Chem.* **272(34)**, 21181-21186 (1997).
3. Kozak, K.R., Crews, B.C., Morrow, J.D., *et al.* Metabolism of the endocannabinoids, 2-arachidonylgycerol and anandamide, into prostaglandin, thromboxane, and prostacyclin glycerol esters and ethanolamides. *J. Biol. Chem.* **277(47)**, 44877-44885 (2002).
4. Woodward, D.F., Tang-Liu, D.D.S., Madhu, C., *et al.* Prostaglandin $F_{2\alpha}$ ($PGF_{2\alpha}$) 1-ethanolamide: A pharmacologically unique local hormone biosynthesized from anandamide. *11th International conference on advances in prostaglandin and leukotriene research: Basic science and new clinical applications*. *Springer* (2000).

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