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Product Information



Latanoprost ethyl amide

Item No. 16822

| CAS Registry No.: Formal Name: | 607351-44-0 N-ethyl-9α,11α,15R-trihydroxy-17-phenyl- | H |
|-----------------------------------|---------------------------------------------------------|------------|
| | 18,19,20-trinor-prost-5Z-en-1-amide | ОН |
| Synonym: | Lat-NEt | |
| MF: | $C_{25}H_{39}NO_4$ | |
| FW: | 417.6 | |
| Purity: | ≥98% | |
| Stability: | ≥1 year at -20°C | |
| Supplied as: | A solution in methyl acetate | |

Laboratory Procedures

For long term storage, we suggest that latanoprost ethyl amide (Lat-NEt) be stored as supplied at -20°C. It should be stable for at least one year.

Lat-NEt 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 Lat-NEt in these solvents is approximately 30 mg/ml. Lat-NEt is stable for at least six months in these solvents if stored at -20°C.

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 Lat-NEt is needed, it can be prepared by evaporating the methyl acetate and directly dissolving the neat oil in aqueous buffers. The solubility of Lat-NEt in PBS (pH 7.2) is approximately 200 µg/ml. We do not recommend storing the aqueous solution for more than one day.

Lat-NEt is a latanoprost analog in which the C-1 carboxyl group has been modified to an N-ethyl amide. Prostaglandin esters have been shown to have ocular hypotensive activity.¹ Prostaglandin N-ethyl amides were recently introduced as alternative prostaglandin ocular hypotensive prodrugs.²

Although it has been claimed that prostaglandin (PG) ethyl amides are not converted to the free acids *in vivo*², studies in our laboratories have shown that human and bovine corneal tissue converts the N-ethyl amides of various PGs to the free acids with a conversion rate of about 2.5 μ g/g corneal tissue/hr.³ Lat-NEt would be expected to show the typical intraocular effects of latanoprost free acid, but with the much slower hydrolysis pharmacokinetics of the PG N-amides.

References

- 1. Bito, L.Z. Comparison of the ocular hypotensive efficacy of eicosanoids and related compounds. *Exp. Eye Res.* 38, 181-184 (1984).
- Woodward, D.F., Krauss, A.H.-P., Chen, J., et al. The pharmacology of Bimatoprost (LumiganTM). Survey of Ophthalmology 45, S337-S345 (2001).
- 3. Maxey, K.M., Johnson, J., Camras, C.B., et al. The hydrolysis of bimatoprost in corneal tissue generates a potent prostanoid FP receptor agonist, *Survey of Ophthalmology* **47**(4), 34-40 (2002).

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