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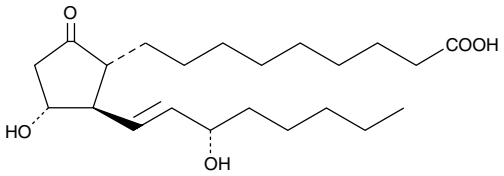
Product Information

1a,1b-dihomo Prostaglandin E_1

Item No. 13050

CAS Registry No.: 23452-98-4
Formal Name: 9-oxo-11α,15S-dihydroxy-1a,1b-dihomo-prost-13E-en-1-oic acid
Synonym: 1a,1b-dihomo PGE_1
MF: $C_{22}H_{38}O_5$
FW: 382.5
Purity: ≥98%
Stability: ≥1 year at -20°C
Supplied as: A solution in methyl acetate



Laboratory Procedures

For long term storage, we suggest that 1a,1b-dihomo PGE_1 be stored as supplied at -20°C. It will be stable for at least one year.

1a,1b-dihomo PGE_1 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 DMSO, ethanol, and dimethyl formamide purged with an inert gas can be used. The solubility of 1a,1b-dihomo PGE_1 in these solvents is approximately 50, 50, and 100 mg/ml, respectively.

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 1a,1b-dihomo PGE_1 is needed, it can be prepared by evaporating the methyl acetate and directly dissolving the neat oil in aqueous buffers. The solubility of 1a,1b-dihomo PGE_1 in PBS (pH 7.2) is approximately 1.6 mg/ml. We do not recommend storing the aqueous solution for more than one day.

PGE_1 is not a major naturally occuring PG, but is widely administered clinically for several indications including peripheral occlusive vascular disease, erectile dysfunction, and in neonatal cardiology.[1,2] COX metabolism of the unusual fatty acid 10,13,16-docosatrienoic acid yields 1a,1b-dihomo PGE_1. This rare metabolite has been recovered from incubations of whole sheep seminal vesicles, but has not been reported in humans.[3] In ex vivo preparations of rat aorta and rat PRP, 1a,1b-dihomo PGE_1 was found to be much less active than PGE_1 itself.[4]

References

1. Virag, R., Shoukry, K., Floresco, J., *et al.* Intracavernous self-injection of vasoactive drugs in the treatment of impotence: 8-Year experience with 615 cases. *J. Urol.* **145,** 287-293 (1991).
2. Hoshi, K. Approved indications of lipo-PGE_1 in Japan. *Advanced Drug Delivery Reviews* **20,** 171-176 (1996).
3. Samel, N. and Maxey, K.M. Personal Communication.
4. Kloeze, J. Relationship between chemical structure and platelet-aggregation activity of prostaglandins. *Biochim. Biophys. Acta* **187,** 285-292 (1969).

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