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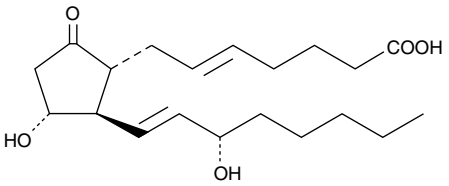
Product Information

5-*trans* Prostaglandin E_2

Item No. 14210

CAS Registry No: 36150-00-2
Formal Name: 9-oxo-11α,15S-dihydroxy-prosta-5E,13E-dien-1-oic acid
Synonyms: *trans*-Dinoprostone, 5,6-*trans* PGE_2
MF: $C_{20}H_{32}O_5$
FW: 352.5
Purity: ≥ 98%
Stability: ≥ 2 years at -20°C
Supplied as: A crystalline solid



Laboratory Procedures

For long term storage, we suggest that 5-*trans* PGE_2 be stored as supplied at -20°C. It should be stable for at least two years.

5-*trans* PGE_2 is supplied as a crystalline solid. A stock solution may be made by dissolving the 5-*trans* PGE_2 in an organic solvent purged with an inert gas. 5-*trans* PGE_2 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of 5-*trans* PGE_2 in these solvents is approximately 100 mg/ml. 5-trans PGE_2 will be 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. Organic solvent-free aqueous solutions of 5-*trans* PGE_2 can be prepared by directly dissolving the crystalline compound in aqueous buffers. The solubility of 5-*trans* PGE_2 in PBS (pH 7.2) is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

5-*trans* PGE_2 occurs naturally in some gorgonian corals and is a common impurity in commercial lots of PGE_1.[1] It is 18 times more potent than PGE_2 in activating adenylate cyclase in NCB-20 cell homogenates.[2] 5-*trans* PGE_2 accelerates fibrinolysis by enhancing plasminogen activation mediated by tissue-type plasminogen activator.[3] It also inhibits platelet aggregation in human PRP with an IC_{50} of 180 nM.[4]

References

1. Bundy, G.L., Schneider, W.P., Lincoln, F.H., *et al.* Isolation of a new naturally occurring prostaglandin, 5-*trans*-PGA_2. Synthesis of 5-*trans*-PGE_2 and 5-*trans*-$PGF_{2\alpha}$. *J. Am. Chem. Soc.* **94**, 2124 (1972).
2. Hensby, C.N. and MacDermot, J. Structure-activity relationships of prostanoids that activate adenylate cyclase of neuronal hybrid cells. *Biochem. Soc. Trans.* **7**, 1302-1304 (1979).
3. Shimokawa, M., Urano, T., and Kinoshita, T. *trans*-5-Prostaglandin E_2 stimulates plasminogen activation by tissue-type plasminogen activator. *Biochim. Biophys. Acta* **1137**, 317-320 (1992).
4. Kobzar, G., Mardla, V., Järving, I., *et al.* Comparison of the inhibitory effect of E-prostaglandins in human and rabbit platelet-rich plasma and washed platelets. *Comp. Biochem. Physiol.* **106C**, 489-494 (1993).

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