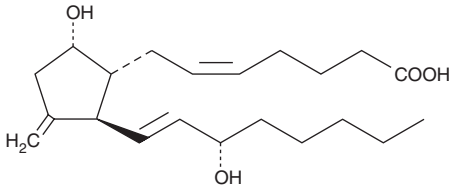
PRODUCT INFORMATION

11-deoxy-11-methylene Prostaglandin D_2

Item No. 12410

CAS Registry No.: 100648-29-1
Formal Name: 9α,15S-dihydroxy-11-methylene-prosta-5Z,13E-dien-1-oic acid
Synonym: 11-deoxy-11-methylene PGD_2
MF: $C_{21}H_{34}O_4$
FW: 350.5
Purity: ≥98%
Stability: ≥1 year at -20˚C
Supplied as: A solution methyl acetate



Laboratory Procedures

For long term storage, we suggest that 11-deoxy-11-methylene prostaglandin D_2 (11-deoxy-11-methylene PGD_2) be stored as supplied at -20°C. It should be stable for at least one year.

11-deoxy-11-methylene PGD_2 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 11-deoxy-11-methylene PGD_2 in these solvents is approximately 100 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 11-deoxy-11-methylene PGD_2 is needed, it can be prepared by evaporating the methyl acetate and directly dissolving the neat oil in aqueous buffers. The solubility of 11-deoxy-11-methylene PGD_2 in PBS (pH 7.2) is approximately 3.75 mg/ml. We do not recommend storing the aqueous solution for more than one day.

PGD_2 (Item No. 12010) is one of the five primary enzymatic PGs derived directly from PGH_2 (Item No. 17020). PGD_2 is produced abundantly in the CSF by the lipocalin-type PGD synthase, and in the periphery by myeloid cells including mast cells and basophils by a second, leukocyte-type PGD synthase.[1] PGD_2 is chemically unstable, and its use and analysis is complicated by its short *in vivo* half-life.

Description

11-deoxy-11-methylene PGD_2 is a novel, chemically stable, isosteric analog of PGD_2 wherein the 11-keto group is replaced by an exocyclic methylene. In the PGE series, the analogous modification leads to a stable, somewhat less potent agonist which embodies the same uterine stimulant and cervical ripening activities as the parent prostaglandin.[2] However, 11-deoxy-11-methylene PGD_2 has been reported by one group to be essentially without agonist activity on human platelets, a DP_1 receptor assay.[3] The CRTH2-receptor actions of 11-deoxy-11-methylene PGD_2 are not yet reported.

References

1. Urade, Y. and Hayaishi, O. Prostaglandin D synthase: structure and function. *Vitamins and Hormones* **58,** 89-120 (2000).
2. Borten, M., DiLeo, L.A., and Friedman, E.A. Low-dose prostaglandin E_2 analogue for cervical dilations prior to pregnancy termination. *Am. J. Obstet. Gynecol.* **150,** 561-565 (1984).
3. Torisawa, Y., Yamaguchi, T., Sakata, S., *et al.* Synthesis of 11-deoxo-11-methylene-prostaglandin D_2 and its derivatives. *Chem. Pharm. Bull.* **33(10),** 4625-4628 (1985).

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