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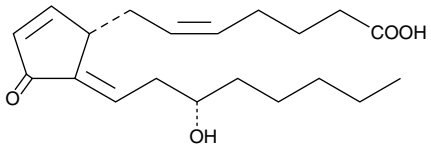
Product Information

Δ^{12}-Prostaglandin J_2

Item No. 18550

CAS Registry No.: 87893-54-7
Formal Name: 11-oxo-15S-hydroxy-prosta-5Z,9,12E-trien-1-oic acid
Synonym: Δ^{12}-PGJ_2
MF: $C_{20}H_{30}O_4$
FW: 334.5
Purity: ≥95%
Stability: ≥1 year at -80°C
Supplied as: A solution in methyl acetate
UV/Vis: λ_{max}: 244 nm ε: 17,000



Laboratory Procedures

For long term storage, we suggest that Δ^{12}-prostaglandin J_2 (Δ^{12}-PGJ_2) be stored as supplied at -80°C. It should be stable for at least one year.

Δ^{12}-PGJ_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 DMSO, dimethyl formamide, or acetonitrile purged with an inert gas or nitrogen can be used. The solubility of Δ^{12}-PGJ_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. The solubility of Δ^{12}-PGJ_2 in phosphate buffered saline (pH 7.2) is approximately 2.7 mg/ml. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Avoid adding Δ^{12}-PGJ_2 to acidic buffers as acid treatment will convert the Δ^{12}-PGJ_2 to the 15-deoxy compound. Also, avoid basic solutions (pH>7.4), since base treatment will cause the Δ^{12}-PGJ_2 to isomerize. Store aqueous solutions of Δ^{12}-PGJ_2 on ice and use within 12 hours. Although aqueous solutions of Δ^{12}-PGJ_2 may be stable for more than 12 hours, we recommend using a fresh preparation each day.

Δ^{12}-PGJ_2 is a decomposition product of PGD_2 in aqueous media in the presence of albumin.[1] It has antitumor and antiviral activity, inhibiting growth of cultured L1210 cells at with an IC_{50} value of 0.7 µg/ml.[2] Δ^{12}-PGJ_2 is present in normal human urine with a 24 hour excretion rate of 50-150 ng.[3] It is also a moderately potent PPARγ ligand.[4]

References

1. Fitzpatrick, F.A. and Wynalda, M.A. Albumin-catalyzed metabolism of prostaglandin D_2. Identification of products formed *in vitro*. *J. Biol. Chem.* **258**, 11713-11718 (1983).
2. Kato, T., Fukushima, M., Kurozumi, S., *et al.* Antitumor activity of Δ^7-prostaglandin A_1 and Δ^{12}-prostaglandin J_2 *in vitro* and *in vivo*. *Cancer Res.* **46**, 3538-3542 (1986).
3. Hirata, Y., Hayashi, H., Ito, S., *et al.* Occurrence of 9-deoxy-Δ^9,Δ^{12}-13,14-dihydroprostaglandin D_2 in human urine. *J. Biol. Chem.* **263**, 16619-16625 (1988).
4. Forman, B.M., Tontonoz, P., Chen, J., *et al.* 15-Deoxy-$\Delta^{12,14}$-prostaglandin J_2 is a ligand for the adipocyte determination factor PPARγ *Cell* **83**, 803-812 (1995).

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