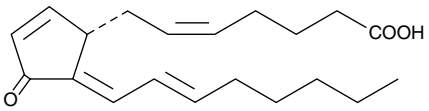
Product Information

15-deoxy-$\Delta^{12,14}$-Prostaglandin J_2

Item No. 18570

CAS Registry No.: 87893-55-8
Formal Name: 11-oxo-prosta-5Z,9,12E,14E-tetraen-1-oic acid
MF: $C_{20}H_{28}O_3$
FW: 316.4
Purity: ≥95%
Stability: ≥1 year at -20°C
Supplied as: A solution in methyl acetate
UV/Vis.: λ_{max}: 229, 306 nm ε: 12,000 (at 306 nm)



Laboratory Procedures

For long term storage, we suggest that 15-deoxy-$\Delta^{12,14}$-PGJ_2 be stored as supplied at -20°C. It will be stable for at least one year.

15-deoxy-$\Delta^{12,14}$-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 ethanol, DMSO, or dimethyl formamide purged with an inert gas can be used. The solubility of 15-deoxy-$\Delta^{12,14}$-PGJ_2 in these solvents is approximately 20 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 aqueous solution of 15-deoxy-$\Delta^{12,14}$-PGJ_2 is needed, it can be prepared by evaporating the methyl acetate and directly dissolving the neat oil in aqueous buffers. The solubility of 15-deoxy-$\Delta^{12,14}$-PGJ_2 in PBS (pH 7.2) is approximately 2.7 mg/ml. Avoid adding 15-deoxy-$\Delta^{12,14}$-PGJ_2 to basic solutions (pH > 7.4), since base treatment may polymerize the 15-deoxy-$\Delta^{12,14}$-PGJ_2. Store aqueous solutions of 15-deoxy-$\Delta^{12,14}$-PGJ_2 on ice and use within 12 hours of preparation. Although the aqueous solutions of 15-deoxy-$\Delta^{12,14}$-PGJ_2 may be stable for more than 12 hours, we strongly recommend using a fresh preparation each day.

15-deoxy-$\Delta^{12,14}$-PGJ_2 is formed from PGD_2 by the elimination of two molecules of water. It binds selectively to PPARγ with an EC_{50} of 2 µM in a murine chimera system.[1,2] 15-deoxy-$\Delta^{12,14}$-PGJ_2 is more potent than PGD_2, Δ^{12}-PGJ_2, and PGJ_2 in stimulating lipogenesis in C3H10T1/2 cells. The EC_{50} for induction of adipocyte differentiation in cultured fibroblasts is 7 µM.[1]

References

1. Maxey, K.M., Hessler, E., MacDonald, J., *et al.* The nature and composition of 15-deoxy-$\Delta^{12,14}$-PGJ_2. *Prostaglandins and Other Lipid Mediators* **62**, 15-21 (2000).
2. 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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