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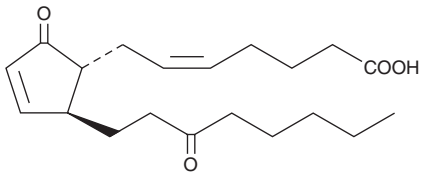
PRODUCT INFORMATION

13,14-dihydro-15-keto Prostaglandin A_2

Item No. 10260

CAS Registry No.: 74872-89-2
Formal Name: 9,15-dioxo-prosta-5Z,10-dien-1-oic acid
Synonym: 13,14-dihydro-15-keto PGA_2
MF: $C_{20}H_{30}O_4$
FW: 334.5
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A solution in methyl acetate
UV/Vis.: λ_{max}: 216 nm ε: 11,300



Laboratory Procedures

13,14-dihydro-15-keto Prostaglandin A_2 (13,14-dihydro-15-keto PGA_2) is a byproduct of PGE_2 metabolism.[1] For long term storage, we suggest that 13,14-dihydro-15-keto PGA_2 be stored as supplied at -20°C. It should be stable for at least two years.

13,14-dihydro-15-keto PGA_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 ethanol purged with an inert gas can be used. The solubility of 13,14-dihydro-15-keto PGA_2 in these solvents is approximately 50 mg/ml. 13,14-dihydro-15-keto PGA_2 is 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 solutions of 13,14-dihydro-15-keto PGA_2 can be prepared by evaporating the methyl acetate and directly dissolving the neat oil in aqueous buffers. The solubility of 13,14-dihydro-15-keto PGA_2 in PBS (pH 7.2) is approximately 2.4 mg/ml. Avoid adding 13,14-dihydro-15-keto PGA_2 to basic solutions (pH > 7.4) as base treatment will convert 13,14-dihydro-15-keto PGA_2 into 13,14-dihydro-15-keto PGB_2 and bicyclo PGE_2. The presence of albumin increases the rate of decomposition and binds a portion of the metabolites.[1] We do not recommend storing the aqueous solution for more than one day.

Description

PGE_2 is metabolized rapidly to 13,14-dihydro-15-keto PGE_2, which is present in the plasma of humans and other mammals. 13,14-dihydro-15-keto PGA_2 results from the non-enzymatic dehydration of 13,14-dihydro-15-keto PGE_2, a process which is accelerated by the presence of albumin.[1,2] Further decomposition of 13,14-dihydro-15-keto PGA_2 by the intentional addition of base produces bicyclo PGE_2, a stable marker of PGE_2 biosynthesis.[2]

References

1. Granström, E., Hamberg, M., Hansson, G., *et al.* Chemical instability of 15-keto-13,14-dihydro-PGE_2: The reason for low assay reliability. *Prostaglandins* **19,** 933-945 (1980).
2. Fitzpatrick, F.A., Aguirre, R., Pike, J.E., *et al.* The stability of 13,14-dihydro-15 keto-PGE_2. *Prostaglandins* **19**, 917-931 (1980).

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