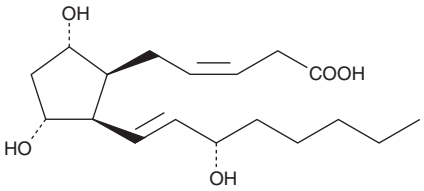
PRODUCT INFORMATION

2,3-dinor-8-*iso* Prostaglandin $F_{2\alpha}$

Item No. 16290

CAS Registry No.: 221664-05-7
Formal Name: (3Z)-5-[(1S,2R,3R,5S)-3,5-dihydroxy-2-[(1E,3S)-3-hydroxy-1-octen-1-yl] cyclopentyl]-3-pentenoic acid
Synonyms: 2,3-dinor-iP$F_{2\alpha}$-III, 2,3-dinor-8-*iso* $PGF_{2\alpha}$
MF: $C_{18}H_{30}O_5$
FW: 326.4
Purity: ≥95%
Supplied as: A solution in methyl acetate
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

2,3-dinor-8-*iso* Prostaglandin $F_{2\alpha}$ (2,3-dinor-8-*iso* $PGF_{2\alpha}$) 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 2,3-dinor-8-*iso* $PGF_{2\alpha}$ 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 2,3-dinor-8-*iso* $PGF_{2\alpha}$ is needed, it can be prepared by evaporating the methyl acetate and directly dissolving the neat oil in aqueous buffers. The solubility of 2,3-dinor-8-*iso* $PGF_{2\alpha}$ in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

8-*iso* Prostaglandin $F_{2\alpha}$ (8-*iso* $PGF_{2\alpha}$; 8-isoprostane) is a prostaglandin-like product of non-specific lipid peroxidation.[1] 2,3-dinor-8-*iso* $PGF_{2\alpha}$ is a metabolite of 8-*iso* $PGF_{2\alpha}$ in humans and rats.[2] In these species, exogenously infused 8-*iso* $PGF_{2\alpha}$ is converted to 2,3-dinor-8-*iso* $PGF_{1\alpha}$ and (2,3-dinor-8-*iso* $PGF_{2\alpha}$.[2,3] Rat hepatocytes further metabolize 8-*iso* $PGF_{2\alpha}$ to another β-oxidation product, 2,3,4,5-tetranor-8-*iso* $PGF_{2\alpha}$.[2] 2,3-dinor-8-*iso* $PGF_{2\alpha}$ is present in normal human urine at concentrations of 200-300 pg/ml.[2] Its concentration is increased in conditions of oxidative injury (for example, smoking), and correlates well with that of the parent isoprostane, 8-*iso* $PGF_{2\alpha}$.[2]

Reference

1. Morrow, J.D., Hill, K.E., Burk, R.F., *et al.* A series of prostaglandin F_2-like compounds are produced *in vivo* in humans by a non-cyclooxygenase, free radical-catalyzed mechanism. *Proc. Natl. Acad. Sci. USA* **87(23)**, 9383-9387 (1990).
2. Chiabrando, C., Valagussa, A., Rivalta, C., *et al.* Identification and measurement of endogenous β-oxidation metabolites of 8-*epi*-prostaglandin F2α. *J. Biol. Chem.* **274(3)**, 1313-1319 (1999).
3. Roberts, L.J., II, Moore, K.P., Zackert, W.E., *et al.* Identification of the major urinary metabolite of the F_2-isoprostane 8-iso-prostaglandin $F_{2\alpha}$ in humans. *J. Biol. Chem.* **271(34)**, 20617-20620 (1996).

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