

PRODUCT INFORMATION



8,12-*iso*-iPF_{2α}-VI-1,5-lactone Item No. 10312

Formal Name: 6-((E)-2-((1R,2S,3R,5S)-3,5-dihydroxy-2-((Z)-oct-2-enyl)cyclopentyl)vinyl)tetrahydro-2H-pyran-2-one

MF: C₂₀H₃₂O₄

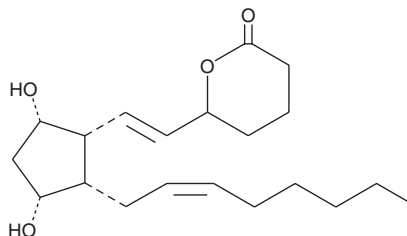
FW: 336.5

Purity: ≥98%

Supplied as: A solution in methyl acetate

Storage: -80°C

Stability: ≥1 year



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

Laboratory Procedures

8,12-*iso*-iPF_{2α}-VI-1,5-lactone 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 8,12-*iso*-iPF_{2α}-VI-1,5-lactone in these solvents is approximately 100 mg/ml.

8,12-*iso*-iPF_{2α}-VI-1,5-lactone is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the methyl acetate solution of 8,12-*iso*-iPF_{2α}-VI-1,5-lactone should be diluted with the aqueous buffer of choice. The solubility of 8,12-*iso*-iPF_{2α}-VI-1,5-lactone in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

F₂ isoprostanes (F₂-iPs) are thought to arise from the free radical-mediated peroxidation of phospholipid-bound arachidonic acid.¹ They are cleaved, presumably by an unidentified phospholipase A₂, and are found in the circulation and the urine. 8,12-*iso*-iPF_{2α}-VI-1,5-lactone is a racemic mixture of the lactone form of the free acid, 8,12-*iso*-iPF_{2α}-VI. Previously called IPF_{2α}-I, the free acid form, iPF_{2α}-VI, is the most abundant F₂-iP regioisomer measured in the urine of rats treated with CCl₄ to induce lipid peroxidation.^{2,3} iPF_{2α}-VI is the only regioisomer that undergoes lactonization, and this occurs slowly *in vivo* or can be driven chemically.⁴ The less polar lactone is readily separated from the free acid forms of iPF_{2α}.⁴ While the level of iPF_{2α}-VI in plasma, urine, and organs is used as a biomarker for oxidative stress, some F₂-iPs also evoke significant biological effects.⁵⁻⁷ It is not known if 8,12-*iso*-iPF_{2α}-VI-1,5-lactone has important physiological effects.

References

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4. Adiyaman, M., Lawson, J.A., Khanapure, S.P., et al. *Anal. Biochem.* **262**(1), 45-56 (1998).
5. Practico, D., Barry, O.P., Lawson, J.A., et al. *Proc. Natl. Acad. Sci. USA* **95**(7), 3449-3454 (1998).
6. Van Eck, M., Hoekstra, M., Hildebrand, R.B., et al. *Arterioscler. Thromb. Vasc. Biol.* **27**(11), 2413-2419 (2007).
7. Doe, C., Bentley, R., Behm, D.J., et al. *J. Pharmacol. Exp. Ther.* **320**(1), 89-98 (2007).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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