

# PRODUCT INFORMATION



## 13,14-dihydro-15-keto Prostaglandin E<sub>2</sub>-d<sub>4</sub>

Item No. 10010606

**Formal Name:** 9,15-dioxo-11a-hydroxy-prost-5Z-en-1-oic-3,3,4,4-d<sub>4</sub> acid

**Synonym:** 13,14-dh-15-keto PGE<sub>2</sub>-d<sub>4</sub>

**MF:** C<sub>20</sub>H<sub>28</sub>D<sub>4</sub>O<sub>5</sub>

**FW:** 356.5

**Chemical Purity:** ≥98%

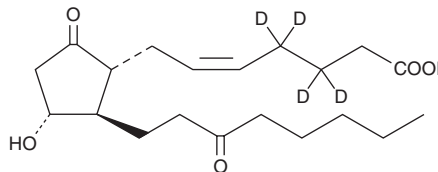
**Deuterium**

**Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>4</sub>); ≤1% d<sub>0</sub>

**Supplied as:** A solution in methyl acetate

**Storage:** -20°C

**Stability:** As supplied, 1 year from the QC date provided on the Certificate of Analysis, when stored properly



### Laboratory Procedures

13,14-dihydro-15-keto Prostaglandin E<sub>2</sub>-d<sub>4</sub> (13,14-dh-15-keto PGE<sub>2</sub>-d<sub>4</sub>) contains four deuterium atoms at the 3, 3', 4, and 4' positions. It is intended for use as an internal standard for the quantification of 13,14-dh-15-keto PGE<sub>2</sub> (Item No. 14650) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

13,14-dh-15-keto PGE<sub>2</sub>-d<sub>4</sub> is supplied as a solution in methyl acetate. To change the solvent, simply evaporate the 13,14-dh-15-keto PGE<sub>2</sub>-d<sub>4</sub> 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 13,14-dh-15-keto PGE<sub>2</sub>-d<sub>4</sub> in these solvents is approximately 50 mg/ml.

### Description

13,14-dh-15-keto PGE<sub>2</sub> is the primary metabolite of PGE<sub>2</sub> (Item No. 14010) in plasma.<sup>1</sup> Endogenous or infused PGE<sub>2</sub> is rapidly metabolized by the enzymes 15-hydroxy PGDH and 15-oxo-PG Δ<sup>13</sup>-reductase to form 13,14-dh-15-keto PGE<sub>2</sub>. 13,14-dh-15-keto PGE<sub>2</sub> accumulates to detectable levels; plasma levels in humans are between 10-100 pg/ml.<sup>2,3</sup> It undergoes further metabolism and chemical decomposition, giving it a relatively short half-life. In dogs, the plasma half-life of 13,14-dh-15-keto PGE<sub>2</sub> is about nine minutes.<sup>3</sup> In humans the metabolite has a similar short half-life, making it a poor choice of analytes for assays designed to measure total PGE<sub>2</sub> biosynthesis.<sup>4,5</sup>

### References

1. Hamberg, M. and Samuelsson, B. *J. Biol. Chem.* **246**, 6713-6721 (1971).
2. Leonhardt, A., Krauss, M., Gieler, U., et al. *Br. J. Dermatol.* **136**, 337-340 (1997).
3. Bothwell, W., Verburg, M., Wynalda, M., et al. *J. Pharmacol. Exp. Ther.* **220**, 229-235 (1982).
4. Granström, E., Hamberg, M., Hansson, G., et al. *Prostaglandins* **19**, 933-945 (1980).
5. Fitzpatrick, F.A., Aguirre, R., Pike, J.E., et al. *Prostaglandins* **19**, 917-931 (1980).

#### 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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