

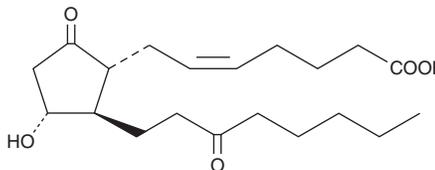
# PRODUCT INFORMATION



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

Item No. 14650

**CAS Registry No.:** 363-23-5  
**Formal Name:** (5Z,11α)-11-hydroxy-9,15-dioxo-prost-5-en-1-oic acid  
**Synonyms:** 13,14-dihydro-15-keto PGE<sub>2</sub>, 13,14-dihydro-oxo-PGE<sub>2</sub>, PGEM  
**MF:** C<sub>20</sub>H<sub>32</sub>O<sub>5</sub>  
**FW:** 352.5  
**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

13,14-dihydro-15-keto Prostaglandin E<sub>2</sub> (13,14-dihydro-15-keto PGE<sub>2</sub>) 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 13,14-dihydro-15-keto PGE<sub>2</sub> 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 13,14-dihydro-15-keto PGE<sub>2</sub> is needed, it 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 PGE<sub>2</sub> in PBS (pH 7.2) is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

13,14-dihydro-15-keto PGE<sub>2</sub> is a metabolite of PGE<sub>2</sub> (Item No. 14010) and the primary PGE<sub>2</sub> metabolite in plasma.<sup>1,2</sup> It is formed from PGE<sub>2</sub> via a 15-keto PGE<sub>2</sub> intermediate by 15-oxo-PG Δ<sup>13</sup> reductase.<sup>2</sup> Unlike PGE<sub>2</sub>, 13,14-dihydro-15-keto PGE<sub>2</sub> does not bind effectively to the PGE<sub>2</sub> receptors EP<sub>2</sub> and EP<sub>4</sub> expressed in CHO cells (K<sub>s</sub> = 12 and 57 μM, respectively) or induce adenylate cyclase activity in the same cells (EC<sub>50</sub>s = >18 and >38 μM, respectively). Levels of 13,14-dihydro-15-keto PGE<sub>2</sub> are increased in the plasma of women in the third trimester of pregnancy and in women during and immediately after labor and delivery.<sup>3</sup> Levels of 13,14-dihydro-15-keto PGE<sub>2</sub> levels are decreased in tumor tissue compared to adjacent non-cancerous tissue isolated from patients with non-small cell lung cancer (NSCLC).<sup>4</sup>

### References

1. Hamberg, M. and Samuelsson, B. On the metabolism of prostaglandins E<sub>1</sub> and E<sub>2</sub> in man. *J. Biol. Chem.* **246**(22), 6713-6721 (1971).
2. Nishigaki, N., Negishi, M., and Ichikawa, A. Two G<sub>s</sub>-coupled prostaglandin E receptor subtypes, EP2 and EP4, differ in desensitization and sensitivity to the metabolic inactivation of the agonist. *Mol. Pharmacol.* **50**(4), 1031-1037 (1996).
3. Husslein, P. and Sinzinger, H. Concentration of 13,14-dihydro-15-keto-prostaglandin E<sub>2</sub> in the maternal peripheral plasma during labour of spontaneous onset. *Br. J. Obstet. Gynaecol.* **91**(3), 228-231 (1984).
4. Hughes, D., Otani, T., Yang, P., et al. NAD<sup>+</sup>-dependent 15-hydroxyprostaglandin dehydrogenase regulates levels of bioactive lipids in non-small cell lung cancer. *Cancer Prev. Res. (Phila)* **1**(4), 241-249 (2008).

#### 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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