

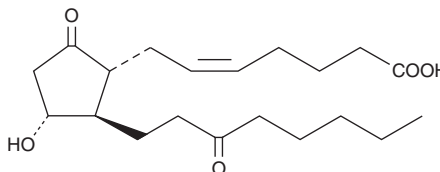
# Product Information



## 13,14-dihydro-15-keto Prostaglandin E<sub>2</sub> Lipid Maps MS Standard Catalog No. 10007214



<b>CAS Registry No.:</b>	363-23-5
<b>Formal Name:</b>	9,15-dioxo-11 $\alpha$ -hydroxy-prost-5Z-en-1-oic acid
<b>Synonym:</b>	13,14-dh-15-keto PGE <sub>2</sub>
<b>MF:</b>	C <sub>20</sub> H <sub>32</sub> O <sub>5</sub>
<b>FW:</b>	352.5
<b>Purity:</b>	≥98%
<b>Stability:</b>	≥2 years at -20°C
<b>Supplied as:</b>	A solution in methyl acetate



### Laboratory Procedures

For long term storage, we suggest that 13,14-dihydro-15-keto prostaglandin E<sub>2</sub> (13,14-dh-15-keto PGE<sub>2</sub>) be stored as supplied at -20°C. It should be stable for at least two years.

13,14-dh-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 DMSO, ethanol, and dimethyl formamide purged with an inert gas can be used. The solubility of 13,14-dh-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-dh-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-dh-15-keto PGE<sub>2</sub> in PBS (pH 7.2) is approximately 5 mg/ml. Avoid adding 13,14-dh-15-keto PGE<sub>2</sub> to basic solutions (pH >7.4), since base treatment will degrade the 13,14-dh-15-keto PGE<sub>2</sub> to the corresponding PGA compound and to bicyclo PGE<sub>2</sub>. This cyclization also occurs at neutral pH in the presence of albumin.<sup>1,2</sup> We do not recommend storing the aqueous solution for more than one day.

13,14-dh-15-keto PGE<sub>2</sub> is the primary metabolite of PGE<sub>2</sub> 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  $\Delta^{13}$ -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 9 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. On the metabolism of prostaglandins E<sub>1</sub> and E<sub>2</sub> in man. *J. Biol. Chem.* **246**, 6713-6721 (1971).
2. Leonhardt, A., Krauss, M., Gieler, U., *et al.* *In vivo* formation of prostaglandin E<sub>1</sub> and prostaglandin E<sub>2</sub> in atopic dermatitis. *Br. J. Dermatol.* **136**, 337-340 (1997).
3. Bothwell, W., Verburg, M., Wynalda, M., *et al.* A radioimmunoassay for the unstable pulmonary metabolites of prostaglandin E<sub>1</sub> and E<sub>2</sub>: an indirect index of their *in vivo* disposition and pharmacokinetics. *J. Pharmacol. Exp. Ther.* **220**, 229-235 (1982).
4. Granström, E., Hamberg, M., Hansson, G., *et al.* Chemical instability of 15-keto-13,14-dihydro-PGE<sub>2</sub>: The reason for low assay reliability. *Prostaglandins* **19**, 933-945 (1980).
5. Fitzpatrick, F.A., Aguirre, R., Pike, J.E., *et al.* The stability of 13,14-dihydro-15 keto-PGE<sub>2</sub>. *Prostaglandins* **19**, 917-931 (1980).

### Related Products

Prostaglandin Metabolite HPLC Mixture - Cat. No. 10005 • 13,14-dihydro-15-keto-Prostaglandin A<sub>2</sub> - Cat. No. 10260 • Prostaglandin E<sub>2</sub> - Cat. No. 14010 • 13,14-dihydro-15-keto Prostaglandin E<sub>2</sub> - Cat. No. 14650 • 13,14-dihydro-15-keto Prostaglandin E<sub>2</sub>-d<sub>4</sub> - Cat. No. 10010606

**WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**

### MATERIAL SAFETY DATA

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### Cayman Chemical

#### Mailing address

1180 E. Ellsworth Road  
Ann Arbor, MI  
48108 USA

#### Phone

(800) 364-9897  
(734) 971-3335

#### Fax

(734) 971-3640

#### E-Mail

custserv@caymanchem.com

#### Web

www.caymanchem.com