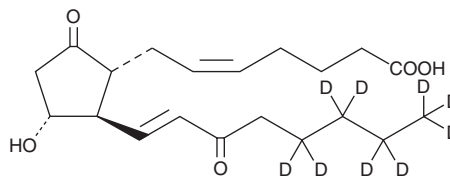


# PRODUCT INFORMATION



## 15-keto Prostaglandin E<sub>2</sub>-d<sub>9</sub> Item No. 19350

**CAS Registry No.:** 2738376-66-2  
**Formal Name:** (Z)-7-((1R,2R,3R)-3-hydroxy-5-oxo-2-((E)-3-oxooct-1-en-1-yl-5,5,6,6,7,7,8,8,8-d<sub>9</sub>)cyclopentyl)hept-5-enoic acid  
**Synonyms:** 15-keto PGE<sub>2</sub>-d<sub>9</sub>, 15-oxo PGE<sub>2</sub>-d<sub>9</sub>  
**MF:** C<sub>20</sub>H<sub>21</sub>D<sub>9</sub>O<sub>5</sub>  
**FW:** 359.5  
**Chemical Purity:** ≥98% (15-keto PGE<sub>2</sub>)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>9</sub>); ≤1% d<sub>0</sub>  
**Supplied as:** A 500 µg/ml 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

15-keto Prostaglandin E<sub>2</sub>-d<sub>9</sub> (15-keto PGE<sub>2</sub>-d<sub>9</sub>) is intended for use as an internal standard for the quantification of 15-keto PGE<sub>2</sub> (Item No. 14720) 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).

15-keto PGE<sub>2</sub>-d<sub>9</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 15-keto PGE<sub>2</sub>-d<sub>9</sub> in these solvents is approximately 50 µg/ml.

### Description

15-keto PGE<sub>2</sub>-d<sub>9</sub> is intended for use as an internal standard for the quantification of 15-keto PGE<sub>2</sub> (Item No. 14720) by GC- or LC-MS. 15-keto PGE<sub>2</sub> is a metabolite of PGE<sub>2</sub> (Item No. 14010) formed by 15-hydroxy prostaglandin dehydrogenase (15-PGDH).<sup>1</sup> Unlike PGE<sub>2</sub>, 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>i</sub>s = 2.6 and 15 µM, respectively) or induce adenylate cyclase activity in the same cells (EC<sub>50</sub>s = 1.8 and >33 µM, respectively). However, it does bind to EP<sub>2</sub> and EP<sub>4</sub> in HEK cells expressing these receptors (IC<sub>50</sub>s = 0.117 and 2.82 µM, respectively), as well as induces cAMP formation (EC<sub>50</sub>s = 0.137 and 0.426 µM, respectively) and the transcriptional activity of β-catenin/TCF in the same cells.<sup>2</sup> 15-keto PGE<sub>2</sub> inhibits CD3-CD28-MHC-I-induced proliferation of isolated human CD4<sup>+</sup> T cells in a concentration-dependent manner.<sup>3</sup> It also reduces mortality in a mouse model of LPS-induced sepsis when administered at a dose of 15 µg/kg.<sup>4</sup>

### References

1. Nishigaki, N., Negishi, M., and Ichikawa, A. *Mol. Pharmacol.* **50**(4), 1031-1037 (1996).
2. Endo, S., Suganami, A., Fukushima, K., et al. *J. Biol. Chem.* **295**(38), 13338-13352 (2020).
3. Schmidleithner, L., Thabet, Y., Schönfeld, E., et al. *Immunity* **50**(5), 1232-1248 (2019).
4. Chen, I.-J., Hee, S.-W., Liao, C.-H., et al. *Free Radic. Biol. Med.* **115**, 113-126 (2018).

#### 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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#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897  
[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM