



# SZABO SCANDIC

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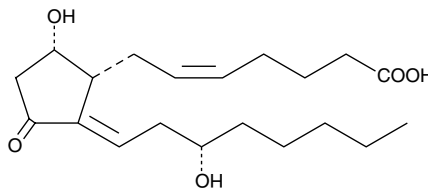
# Product Information



## $\Delta^{12}$ -Prostaglandin D<sub>2</sub>

Item No. 12650

**CAS Registry No.:** 64072-89-5  
**Formal Name:** 9 $\alpha$ ,15S-dihydroxy-11-oxo-prosta-5Z,12E-dien-1-oic acid  
**Synonym:**  $\Delta^{12}$ -PGD<sub>2</sub>  
**MF:** C<sub>20</sub>H<sub>32</sub>O<sub>5</sub>  
**FW:** 352.5  
**Purity:**  $\geq$ 98%  
**Stability:**  $\geq$ 1 year at -80°C  
**Supplied as:** A solution in methyl acetate  
**UV/Vis.:**  $\lambda_{\text{max}}$ : 245 nm



### Laboratory Procedures

For long term storage, we suggest that  $\Delta^{12}$ -prostaglandin D<sub>2</sub> ( $\Delta^{12}$ -PGD<sub>2</sub>) be stored as supplied at -80°C. It should be stable for at least one year.

$\Delta^{12}$ -PGD<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  $\Delta^{12}$ -PGD<sub>2</sub> in these solvents is approximately 30 mg/ml.  $\Delta^{12}$ -PGD<sub>2</sub> is stable for at least six months in these solvents if stored at -20°C.

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  $\Delta^{12}$ -PGD<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  $\Delta^{12}$ -PGD<sub>2</sub> in PBS (pH 7.2) is approximately 2 mg/ml. Store aqueous solutions of  $\Delta^{12}$ -PGD<sub>2</sub> on ice and use within 12 hours of preparation. Although the aqueous solutions of  $\Delta^{12}$ -PGD<sub>2</sub> may be stable for more than 12 hours, we strongly recommend using a fresh preparation each day.

PGD<sub>2</sub> is one of the five primary enzymatic prostaglandins derived directly from PGH<sub>2</sub>. PGD<sub>2</sub> is produced abundantly in the CSF by the lipocalin-type PGD synthase, and in the periphery by myeloid cells including mast cells and basophils by a second, leukocyte-type PGD synthase. PGD<sub>2</sub> is chemically unstable, and its use and analysis is complicated by its short *in vivo* half-life.

$\Delta^{12}$ -PGD<sub>2</sub> is one of the initial chemical decomposition products of PGD<sub>2</sub>.  $\Delta^{12}$ -PGD<sub>2</sub> is an intermediate in the pathway leading to  $\Delta^{12}$ -PGJ<sub>2</sub>, which is a cyclopentenone prostaglandin with antimetabolic and carcinogenic activities.<sup>1,2</sup> The metabolism of  $\Delta^{12}$ -PGD<sub>2</sub> involves addition of thiol nucleophiles, as is the case with the majority of cyclopentenone prostaglandins.<sup>3</sup>

### References

1. Fukushima, M. Prostaglandin J<sub>2</sub> - antitumor and anti-viral activities and the mechanisms involved. *Eicosanoids* **3**, 189-199 (1990).
2. Kato, T., Fukushima, M., Kurozumi, S., *et al.* Antitumor activity of  $\Delta^7$ -prostaglandin A<sub>1</sub> and  $\Delta^{12}$ -prostaglandin J<sub>2</sub> *in vitro* and *in vivo*. *Cancer Res.* **46**, 3538-3542 (1986).
3. Atsmon, J., Sweetman, B.J., Baertschi, S.W., *et al.* Formation of thiol conjugates of 9-deoxy- $\Delta^9$ , $\Delta^{12}$ (E)-prostaglandin D<sub>2</sub> and  $\Delta^{12}$ (E)-prostaglandin D<sub>2</sub>. *Biochemistry* **29**, 3760-3765 (1990).

### Related Products

For a list of related products please visit: [www.caymanchem.com/catalog/12650](http://www.caymanchem.com/catalog/12650)

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

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