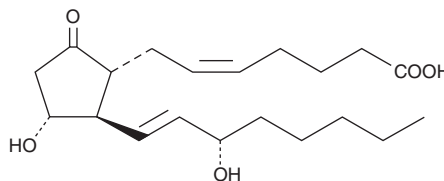


# PRODUCT INFORMATION



## Prostaglandin E<sub>2</sub> Item No. 14010

**CAS Registry No.:** 363-24-6  
**Formal Name:** 9-oxo-11 $\alpha$ ,15S-dihydroxy-prosta-5Z,13E-dien-1-oic acid  
**Synonyms:** Dinoprostone, PGE<sub>2</sub>  
**MF:** C<sub>20</sub>H<sub>32</sub>O<sub>5</sub>  
**FW:** 352.5  
**Purity:**  $\geq$ 98%  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:**  $\geq$ 4 years  
**Item Origin:** Synthetic



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Prostaglandin E<sub>2</sub> (PGE<sub>2</sub>) is supplied as a crystalline solid. A stock solution may be made by dissolving the PGE<sub>2</sub> in the solvent of choice, which should be purged with an inert gas. PGE<sub>2</sub> is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of 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. Organic solvent-free aqueous solutions of PGE<sub>2</sub> can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 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

PGE<sub>2</sub> is one of the primary cyclooxygenase products of arachidonic acid (Item No. 90010) and one of the most widely investigated PGs. Its activity influences inflammation, fertility and parturition, gastric mucosal integrity, and immune modulation.<sup>1-4</sup> The effects of PGE<sub>2</sub> are transduced by at least four distinct receptors designated EP<sub>1</sub>, EP<sub>2</sub>, EP<sub>3</sub>, and EP<sub>4</sub>.<sup>5</sup> Affinity constants (K<sub>d</sub>) of PGE<sub>2</sub> for these receptors range from 1-10 nM depending on the receptor subtype and tissue.

### References

1. Willis, A.L. and Cornelsen, M. Repeated injection of prostaglandin E<sub>2</sub> in rat paws induces chronic swelling and a marked decrease in pain threshold. *Prostaglandins* **3(3)**, 353-357 (1973).
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3. Robert, A., Schultz, J.R., Nezamis, J.E., et al. Gastric antisecretory and antiulcer properties of PGE<sub>2</sub>, 15-methyl PGE<sub>2</sub>, and 16,16-dimethyl PGE<sub>2</sub>. Intravenous, oral and intrajejunal administration. *Gastroenterology* **70(3)**, 359-370 (1976).
4. Arvind, P., Papavassiliou, E.D., Tsioulis, G.J., et al. Prostaglandin E<sub>2</sub> down-regulates the expression of HLA-DR antigen in human colon adenocarcinoma cell lines. *Biochemistry* **34(16)**, 5604-5609 (1995).
5. Coleman, R.A., Smith, W.L., and Narumiya, S. Classification of prostanoid receptors: Properties, distribution, and structure of the receptors and their subtypes. *Pharmacol. Rev.* **46(2)**, 205-229 (1994).

#### 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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