

Small Molecules

16,16-Dimethyl Prostaglandin E2

Prostanoid pathway activator; Inhibits 15-hydroxy PGDH

Catalog # 72372

5 mg



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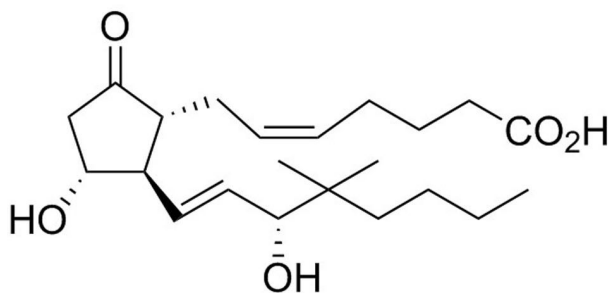
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Product Description

16,16-Dimethyl Prostaglandin E2 (16,16-Dimethyl PGE2), a stabilized derivative of PGE2, is a competitive inhibitor of 15-hydroxy prostaglandin dehydrogenase (15-hydroxy PGDH), but it is not a substrate for the enzyme (North et al.; Ohno et al). Because of its resistance to metabolism by 15-hydroxy PGDH, 16,16-Dimethyl PGE2 has a prolonged half-life in vivo. 16,16-Dimethyl PGE2 acts as an agonist on most prostaglandin E (EP) receptor subtypes (Coleman et al.; Robert et al.). The Kd for activation of isolated EP2 receptors is about 1 nM (Coleman et al.). 16,16-Dimethyl PGE2 is supplied in methyl acetate solution at 10 mg/mL (26 mM).

Molecular Name:	16,16-Dimethyl Prostaglandin E2
Alternative Names:	16,16-dimethyl PGE2
CAS Number:	39746-25-3, 79-20-9
Chemical Formula:	C ₂₂ H ₃₆ O ₅
Molecular Weight:	380.5 g/mol
Purity:	≥ 98%
Chemical Name:	9-oxo-11α,15R-dihydroxy-16,16-dimethyl-prosta-5Z,13E-dien-1-oic acid
Structure:	



Properties

Physical Appearance:	A solution in methyl acetate
Storage:	Product stable at -20°C as supplied. Protect from prolonged exposure to light. Stable as supplied for 12 months from date of receipt.
Solubility:	Not applicable.

Published Applications

MAINTENANCE AND SELF-RENEWAL

- Increased hematopoietic stem and progenitor cell (HSPC) numbers in zebrafish aorta-gonad-mesonephros (AGM) region and mouse bone marrow (North et al.).
- Mediates the effects of WNT on zebrafish HSPC self-renewal (Goessling et al.).

References

- Coleman RA et al. (1994) International Union of Pharmacology classification of prostanoid receptors: properties, distribution, and structure of the receptors and their subtypes. *Pharmacol Rev* 46(2): 205–29.
- Goessling W et al. (2009) Genetic interaction of PGE2 and Wnt signaling regulates developmental specification of stem cells and regeneration. *Cell* 136(6): 1136–47.
- North TE et al. (2007) Prostaglandin E2 regulates vertebrate haematopoietic stem cell homeostasis. *Nature* 447(7147): 1007–11.
- Ohno H et al. (1978) Studies on 15-Hydroxyprostaglandin Dehydrogenase with Various Prostaglandin Analogues. *J Biochem* 84(6): 1485–94.
- Robert A et al. (1976) Gastric antisecretory and antiulcer properties of PGE2, 15-methyl PGE2, and 16, 16-dimethyl PGE2. Intravenous, oral and intrajejunal administration. *Gastroenterology* 70(3): 359–70.

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