

Small Molecules

16,16-Dimethyl Prostaglandin E2

Prostanoid pathway activator; Inhibits 15-hydroxy PGDH

Catalog # 72372

5 mg



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TOLL FREE PHONE 1 800 667 0322 • PHONE +1 604 877 0713

INFO@STEMCELL.COM • TECHSUPPORT@STEMCELL.COM

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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

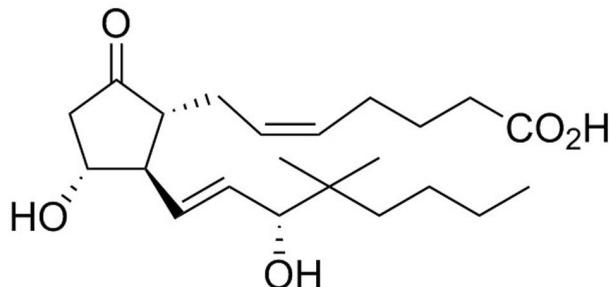
Chemical Formula: C₂₂H₃₆O₅

Molecular Weight: 380.5 g/mol

Purity: ≥ 95%

Chemical Name: 9-oxo-11 α ,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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