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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

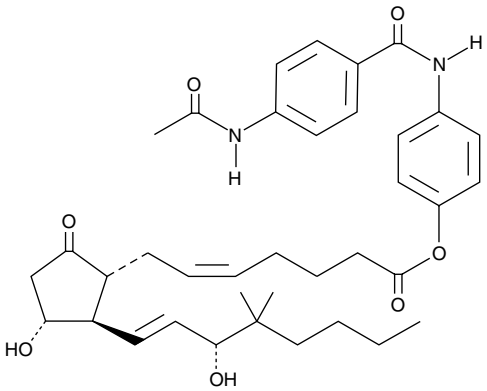
linkedin.com/company/szaboscandic

Product Information

16,16-dimethyl Prostaglandin E_2 *p*-(*p*-acetamidobenzamido) phenyl ester

Item No. 14753

CAS Registry No: 62873-55-6
Formal Name: 9-oxo-11.alpha.,15R-dihydroxy-16,16-dimethyl-prosta-5Z,13E-dien-1-oic acid, 4-(4-acetylaminobenzoylamino) phenyl ester
Synonym: 16,16-dimethyl PGE_2 4-(4-acetamidobenzamido) phenyl ester
MF: $C_{37}H_{48}N_2O_7$
FW: 632.8
Purity: ≥98%
Stability: ≥1 year at -20°C
Supplied as: A crystalline solid
UV/Vis: λ_{max}: 285 nm



Laboratory Procedures

For long term storage, we suggest that 16,16-dimethyl Prostaglandin E_2 *p*-(*p*-acetamidobenzamido) phenyl ester (16,16-dimethyl PGE_2 PPE)be stored as supplied at -20°C. It should be stable for at least one year.

16,16-dimethyl PGE_2 PPE is supplied as a crystalline solid. A stock solution may be made by dissolving the 16,16-dimethyl PGE_2 PPE in an organic solvent purged with an inert gas. 16,16-dimethyl PGE_2 PPE is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of 16,16-dimethyl PGE_2 PPE in ethanol and DMF is approximately 40 mg/ml, and in DMSO it is approximately 20 mg/ml. 16,16-dimethyl PGE_2 PPE will be 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. Organic solvent-free aqueous solutions of 16,16-dimethyl PGE_2 PPE can be prepared by directly dissolving the crystalline compound in aqueous buffers. 16,16-dimethyl PGE_2 PPE is soluble in PBS (pH 7.2) up to 100 µg/ml.

The *p*-(*p*-acetamidobenzamido) phenyl ester is a crystalline derivative of 16,16-dimethyl PGE_2 and a potential prodrug. 16,16-dimethyl PGE_2 is a competitive inhibitor of PG 15-dehydrogenase, but it is not a substrate for the enzyme.[1] Because of its resistance to metabolism by PG 15-dehydrogenase, it has a prolonged half-life *in vivo*. 16,16-dimethyl PGE_2 acts as an agonist on most EP receptor subtypes, and has been used experimentally to induce cervical ripening, uterine contraction, and prevent ulceration of the gastric mucosa in rats and dogs.[2,3] The K_d for activation of isolated EP_2 receptors is about 1 nM.[3]

References

1. Ohno, H., Morikawa, Y., and Hirata, F. Studies on 15-hydroxyprostaglandin dehydrogenase with various prostaglandin analogues. *J. Biochem.* **84**, 1485-1494 (1978).
2. Robert, A., Schultz, J.R., Nezamis, J.E., *et al.* Gastric antisecretory and antiulcer properties of PGE_2, 15-methyl PGE_2, and 16,16-dimethyl PGE_2. Intravenous, oral and intrajejunal administration. *Gastroenterology* **70**, 359-370 (1976).
3. 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**, 205-229 (1994).

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Mailing address
1180 E. Ellsworth Road
Ann Arbor, MI
48108 USA

Phone
(800) 364-9897
(734) 971-3335

Fax
(734) 971-3640

E-Mail
custserv@caymanchem.com

Web
www.caymanchem.com