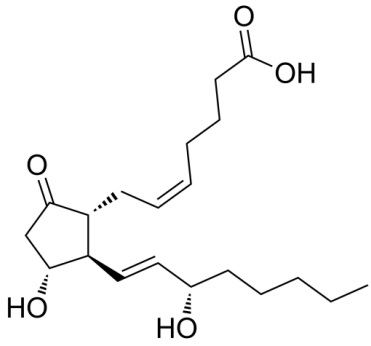
Data Sheet

Product Name:	Prostaglandin E2
Cat. No.:	CS-6932
CAS No.:	363-24-6
Molecular Formula:	$C_{20}H_{32}O_5$
Molecular Weight:	352.47
Target:	Endogenous Metabolite; Organoid; Prostaglandin Receptor
Pathway:	GPCR/G Protein; Metabolic Enzyme/Protease; Stem Cell/Wnt
Solubility:	DMSO : 100 mg/mL (283.71 mM; Need ultrasonic)



BIOLOGICAL ACTIVITY:

Prostaglandin E2 (PGE2) is a hormone-like substance that participate in a wide range of body functions such as the contraction and relaxation of smooth muscle, the dilation and constriction of blood vessels, control of blood pressure, and modulation of inflammation. ***In Vitro:*** PGE2 shows inhibition of IL 2 production in the mixture of irradiated and nonirradiated T lymphocytes. PGE2 (0.1-10 μM) dose-dependently inhibits the production of IL 2. PGE2 acts during the inductive phase of activation of suppressor cells. Preincubation of T lymphocytes with PGE2 induces cells that suppress IL 2 production and PHA proliferation[1]. ***In Vivo:*** Prostaglandin E2 can be used in animal modeling to construct a rat pain model.

PGE2 (0.3 μg/k, i.p.) significantly reduces the number of peritoneab macrophages undergoing phagocytosis of the methacrybate microbeads in rats[2]. PGE2 (0.1 mg/min, i.a.) increases renal blood flow. PGE2 produces a biphasic change in renal vascular resistance, vasodilatation starts at 0.01 mg/min and is maximal at about 3 mg/min, while at the highest dose used (20 mg/min) PGE2 induces renal vasoconstriction[3].

PROTOCOL (Extracted from published papers and Only for reference)

Cell Assay: Prostaglandin E2 is dissolved in ethanol.[1]Lymphocytes in CM (1×10^6 cells/mL) are ditributed in microculture plates (100 μL) in triplicate in the presence of PGE-treated T cells or medium-treated T cells and stimulated with PHA-P at various mitogenic doses. After 72 hr, cultures are pulsed with 1 μCi [^{3}H]thymidine per well (specific activity 5 Ci/mM) for 16 to 18 hr, collected with amicroprecipltator, dried, and counted in a liquid scintillation counter. **Animal Administration:** [2]Male Sprague Dawley rats (200-250 g) are used throughout the study. For 3 consecutive days rats in the experimental groups receive a daily intraperitoneal injection of either PGE2 (0.3 μg/kg body weight (BW)), the prostaglandin inhibitor mecbofenamate (10 mg/kg BW) or the prostaglandin precursor arachidonic acid (0.3 μg/ kg BW). To determine whether or not 0.3 μg/kg BW of a fatty acid produces nonspecific effects, the biologically inactive fatty acid 11, 14, 17-eicosatrienoic acid is also administered to a group of rats. Rats in the control group receive an equivalent volume (2.0 mL/kg BW) of the vehicle. On the third day, 3 mL of a suspension containing 1.2×10^6 fluorescent methacrylate microbeads/mL of PBS are injected intraperitoneally (ip) into each rat. Six hours later all animals are given ip a regular dose of their respective treatment. Peritoneal exudate cells are harvested 19-22 hr later.

References:

[1]. Chouaib S, et al. The mechanisms of inhibition of human IL 2 production. II. PGE2 induction of suppressor T lymphocytes. J Immunol. 1984

Apr;132(4):1851-7.

[2]. Fernandez-Repollet E, et al. In vivo effects of prostaglandin E2 and arachidonic acid on phagocytosis of fluorescent methacrylate microbeads by rat peritoneal macrophages. J Histochem Cytochem. 1982 May;30(5):466-70.

[3]. Haylor J, et al. Renal vasodilator activity of prostaglandin E2 in the rat anaesthetized with pentobarbitone. Br J Pharmacol. 1982 May;76(1):131-7.

CAIndexNames:

Prosta-5,13-dien-1-oic acid, 11,15-dihydroxy-9-oxo-, (5Z,11α,13E,15S)-

SMILES:

CCCCC[C@H](O)/C=C/[C@@H]1[C@H](C(C[C@H]1O)=O)C/C=C\CCCC(O)=O

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