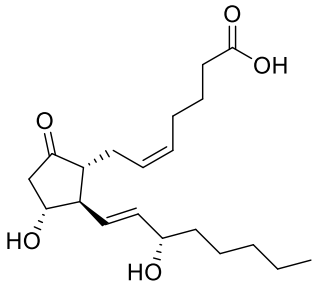
Product data sheet

MedKoo Cat#: 412678 Name: Dinoprostone CAS: 363-24-6 (free acid) Chemical Formula: $C_{20}H_{32}O_5$ Exact Mass: 352.225 Molecular Weight: 352.471	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
Dinoprostone, also known as PGE2, Prostaglandin E_2, is a product of arachidonic acid metabolism that binds to EP1, EP2, EP3, & EP4 receptors with high affinity (Kd = 1-10 nM). Involved in vasodilator actions of kinins.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	68.42	194.11
Ethanol	42.93	121.80
Water	70.0	198.60

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.84 mL	14.19 mL	28.37 mL
5 mM	0.57 mL	2.84 mL	5.67 mL
10 mM	0.28 mL	1.42 mL	2.84 mL
50 mM	0.06 mL	0.28 mL	0.57 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Wang Z, Wei X, Ji C, Yu W, Song C, Wang C. PGE2 inhibits neutrophil phagocytosis through the EP2R-cAMP-PTEN pathway. Immun Inflamm Dis. 2022 Jul;10(7):e662. doi: 10.1002/iid3.662. PMID: 35759236; PMCID: PMC9186335.
2. Zhang GL, Lin ZB. Dinoprostone potentiates cytokines and lipopolysaccharides inducing nitric oxide production in cultured rat hepatocytes. Zhongguo Yao Li Xue Bao. 1999 Mar;20(3):262-6. PMID: 10452104.

In vivo study

1. Jiang W, Jin Y, Zhang S, Ding Y, Huo K, Yang J, Zhao L, Nian B, Zhong TP, Lu W, Zhang H, Cao X, Shah KM, Wang N, Liu M, Luo J. PGE2 activates EP4 in subchondral bone osteoclasts to regulate osteoarthritis. Bone Res. 2022 Mar 9;10(1):27. doi: 10.1038/s41413-022-00201-4. PMID: 35260562; PMCID: PMC8904489.
2. Karaki SI, Tanaka R. Role of PGE2 in colonic motility: PGE2 attenuates spontaneous contractions of circular smooth muscle via EP4 receptors in the rat colon. J Physiol Sci. 2021 Feb 23;71(1):8. doi: 10.1186/s12576-021-00791-4. PMID: 33622238.

7. Bioactivity
Biological target:

Product data sheet

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 activity

Exogenous PGE2 has been reported to prevent phagocytosis of macrophages, and in this study's experimental system, starting with a concentration of 50 ng/ml, PGE2 significantly inhibited the phagocytosis of *E. coli* by HL-60 cells. At 1000 ng/ml, PGE2 reduced the phagocytic percentage of HL-60 cells by about 50% (Figure 1A,B). PGE2 also inhibited the phagocytosis of *E. coli* by freshly isolated neutrophils (Figure 1C,D).

Reference: Immun Inflamm Dis. 2022 Jul;10(7):e662. https://pubmed.ncbi.nlm.nih.gov/35759236/

In vivo activity

Indeed, PGE2-induced phosphorylation of AKT was dampened in cells from the $EP4^{LysM}$ mice but was rescued in the presence of 3-isobutyl-1-methylxanthine (IBMX), which protects against cAMP degradation (Fig. 8e). Furthermore, PGE2-induced migration ($P < 0.05$; Fig. S7a) and differentiation ($P < 0.05$; Fig. S7a) of the WT mice were significantly suppressed following treatment with an AKT inhibitor (GSK2141795).

Reference: Bone Res. 2022 Mar 9;10(1):27. https://pubmed.ncbi.nlm.nih.gov/35260562/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.