Product Information

BW 245C

Catalog Number B9305
Storage Temperature –20 °C

CAS RN 72814-32-5
Synonyms: (R*,S*)-(±)-3-(3-cyclohexyl-3-hydroxypropyl)-2,5-dioxo-4-imidazolidineheptanoic acid

Product Description
Molecular Formula: C_{19}H_{32}N_{2}O_{5}
Molecular Weight: 368.47

Prostanoids, including prostaglandins (PG) such as PGD$_2$, PGE$_2$, PGF$_2$, and PGI$_2$, are endogenous derivatives of arachidonic acid. PGD$_2$, produced in brain, lung, skin, and mast cells, is implicated in the mediation of body temperature, sleep, hormone secretion, ion transport, and pain. PGD$_2$ inhibits platelet aggregation, induces bronchoconstriction and allergic rhinitis, and lowers intraocular pressure. The effects of PGD$_2$ are mediated by specific DP prostanoid receptors, which are coupled via a G$_s$ protein to adenyl cyclase, whose activation results in the production of cAMP.$^{1,2}$

BW 245C is a potent prostanoid receptor agonist, with a true selectivity for a DP prostanoid receptor. In embryonic bovine tracheal cells, BW 245C stimulates cAMP production with a potency of EC$_{50}$ = 59 nM and the rank of potency BW 245C > PGD$_2$ > PGE$_2$ > PGF$_{2a}$ > Iloprost.$^{1,2}$ BW 245C is significantly more efficacious than PGD$_2$ (Emax = 121±3%; P <.001). This effect is fully blocked by the potent and specific DP prostanoid receptor antagonist BW A868C.$^2$

In glycerol-lysed human platelets, PGD$_2$ and BW 245C both activate adenylate cyclase in a biphasic manner. The selective DP prostanoid receptor antagonist BW A868C shifts the first phase of the PGD$_2$ and BW 245C curves, but has no effect on the second phase. These results indicate that PGD$_2$ and BW 245C are capable of activating adenylate cyclase in human platelets through the DP prostanoid receptor and by another mechanism as yet uncharacterized.$^3$

PGD$_2$ is the major prostanoid released by mast cells during an allergic response followed by the accumulation of eosinophils. PGD$_2$ binds with high affinity to two receptors: DP and chemoattractant receptor-homologous molecule expressed on TH2 cells (CRTH2) both of which are detectable on circulating eosinophils. PGD$_2$ induces an increase in chemokinesis and promotes eosinophil degranulation. These effects are induced by the CRTH2-selective agonist DK-PGD$_2$ but not by the DP agonist BW 245C. BW 245C, but not DK-PGD$_2$, can delay the onset of apoptosis in cultured eosinophils, presumably through interaction with the DP prostanoid receptor.$^4$

Precautions and Disclaimer
This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions
BW 245C is soluble in DMSO at 10 mg/mL.

Storage/Stability
Store the product at –20 °C.
References


