

Product Data Sheet

Product Name: Cilostazol

Cat. No.: GC15890

Chemical Properties

Cas. No. 73963-72-1

Chemical Name 6-[4-(1-cyclohexyltetrazol-5-yl)butoxy]-3,4-dihydro-1H-quinolin-2-one

SMILES C1CCC(CC1)N2C(=NN=N2)CCCCOC3=CC4=C(C=C3)NC(=O)CC4

Formula $C_{20}H_{27}N_5O_2$ M.Wt 369.46

Solubility ≥ 15.4 mg/mL in DMSO, ≥ 3.95 mg/mL in EtOH with ultrasonic and warming
Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37°C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

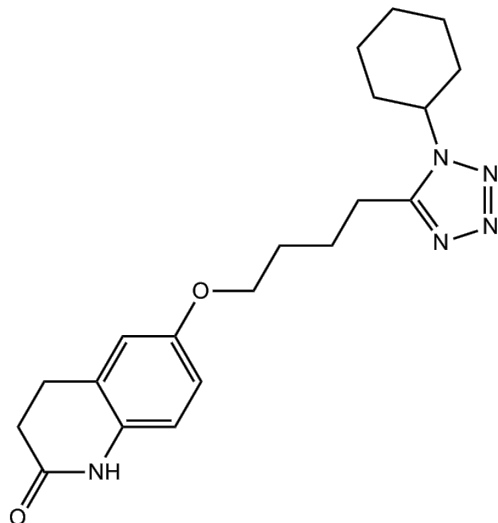
Caution: Product has not been fully validated for medical applications. For research use only.

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Structure



Background

Cilostazol is specific inhibition of cyclic nucleotide phosphodiesterase 3 (PDE3) with IC₅₀ value of 200 nM.[1]

PDE3 is one of phosphodiesterase. PDE3 plays an important role in regulating vascular smooth muscle, heart muscle and platelet aggregation, so, it is clinically significant. The PDE3 family consists of two members including PDE3A and PDE3B. PDE3A is mainly related cardiovascular function and PDE3B is mainly related to lipolysis. The activity of PDE3 is regulated by phosphorylation pathways. PDE 3 is activated via phosphorylation at different phosphorylation sites by protein kinase A and protein kinase B. PDE3 enzymes also are involved in regulation of vascular and cardiac smooth muscle contractility.

Cilostazol prevents platelet aggregation by specifically and selectively inhibiting PDE3 in platelets with IC₅₀ value of 200 nM. Cilostazol also cause intracellular cAMP levels increasing by inhibiting adenosine uptake leading to increased adenosine levels in cells. Cilostazol also inhibits the expression of platelet surface P-selectin, platelet factor 4 (PF4), thromboxane B2 production release. Cilostazol also cause decrease in triglyceride levels and an increase in high-density lipoprotein. [1]

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Cilostazol may have effective function in dementia. Cilostazol has beneficial effects on learning impairment induced by A β 25-35 in mice. Cilostazol attenuated the impairment induced by A β 25-35 at 100 mg/kg.[2]

References:

[1]. Rondina MT, Weyrich AS: Targeting phosphodiesterases in anti-platelet therapy. *Handb Exp Pharmacol* 2012(210):225-238.

[2]. Hiramatsu M, Takiguchi O, Nishiyama A, Mori H: Cilostazol prevents amyloid beta peptide(25-35)-induced memory impairment and oxidative stress in mice. *Br J Pharmacol* 2010, 161(8):1899-1912.

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