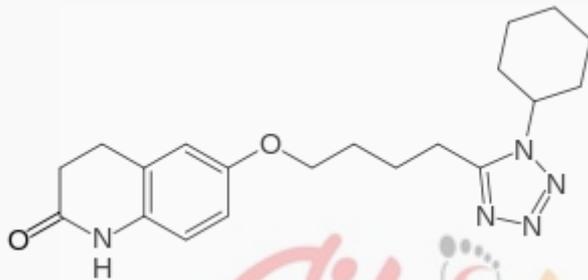


Cilostazol

Cilostazol



Systematic (IUPAC) name

-(1-cyclohexyl-1H-tetrazol-5-yl)butoxy]-
3,4-dihydro-2(1H)-quinolinone

Clinical data

Trade names	Pletal
AHFS/Drugs.com	monograph
MedlinePlus	a601038
Pregnancy category	US: C (Risk not ruled out)
Routes of administration	Oral

Pharmacokinetic data

Protein binding	95–98%
Metabolism	Hepatic (CYP3A4- and CYP2C19-mediated)
Biological half-life	11–13 hours
Excretion	Renal

Identifiers	
CAS Registry Number	73963-72-1 ✓
ATC code	B01AC23
PubChem	CID: 2754
IUPHAR/BPS	7148
DrugBank	DB01166 ✓
ChemSpider	2652 ✓
UNII	N7Z035406B ✓
KEGG	D01896 ✓
ChEBI	CHEBI:31401 ✓
ChEMBL	CHEMBL799 ✓
Chemical data	
Formula	$C_{20}H_{27}N_5O_2$
Molecular mass	369.46 g/mol

Mechanism

Cilostazol is a selective inhibitor of 3-type phosphodiesterase (PDE3) with therapeutic focus on increasing cAMP. An increase in cAMP results in an increase in the active form of protein kinase A (PKA), which is directly related with an inhibition in platelet aggregation. PKA also prevents the activation of an enzyme (myosin light-chain kinase) that is important in the contraction of smooth muscle cells, thereby exerting its vasodilatory effect.

Clinical use

Cilostazol is approved for the treatment of intermittent claudication. The typical dose is 100 mg twice a day. The effects may take as long as 3 months to be evident and has been shown to improve pain-free walking distance by 50%.

Cilostazol is also frequently used off-label, at the same dose, for treatment of intracranial atherosclerosis and secondary stroke prevention [reference Stroke. 2005; 36: 782-786 Published online before print March 3, 2005,

In people with heart failure

Cilostazol, clearly effective for a debilitating condition whose current treatment is often inadequate is a member of a pharmacologic class that is dangerous to people with severe heart failure and unstudied in other people. Cilostazol has been studied in people without heart failure, without evidence of harm, but much more data would be needed to determine no risk exists. Although cilostazol would not be approvable for a trivial condition the Cardio-Renal Advisory Committee and FDA concluded that fully informed patients and physicians should be able to choose to use it to treat intermittent claudication. Patient and physician labeling will describe the basis for concern and the incomplete information available.^[1]

Adverse effects

Possible side effects of cilostazol use include [headache](#) (the most common), [diarrhea](#), abnormal [stools](#), [increased heart rate](#), and [palpitations](#).^[2]

Interactions

Cilostazol is metabolized by [CYP3A4](#) and [CYP2C19](#), two [isoenzymes](#) of the [cytochrome P450](#) system. Drugs that [inhibit](#) CYP3A4, such as [itraconazole](#), [erythromycin](#), [ketoconazole](#), and [diltiazem](#), are known to [interact](#) with cilostazol. The [proton pump inhibitor omeprazole](#), a potent inhibitor of CYP2C19, increases exposure to the active [metabolite](#) of cilostazol.^[2]

A single report has been made of [grapefruit juice](#) possibly increasing the effects of cilostazol;^[3] some drug information sources list this as a possible interaction.^{[4][5][6]} The FDA-approved labeling of cilostazol notes that grapefruit juice (which is a CYP3A4 inhibitor) increases the drug's [maximum concentration](#) by around 50%.

References

Jump up[^] *Center for Drug Evaluation and Research (August 11, 1999). "Approval of Cilostazol". U.S. Food and Drug Administration. Retrieved 2007-04-30.*

1. **Jump up to:**^{a b c} "Cilostazol: Official FDA information, side effects and uses.". *Drugs.com*. February 2008. Retrieved 2008-09-22.
2. **Jump up**[^] Taniguchi K, Ohtani H, Ikemoto T, Miki A, Hori S, Sawada Y (October 2007). "Possible case of potentiation of the antiplatelet effect of cilostazol by grapefruit juice". *J Clin Pharm Ther* **32**(5): 457–9. doi:10.1111/j.1365-2710.2007.00844.x. PMID 17875111.
3. **Jump up**[^] "Cilostazol for peripheral arterial disease". *Yahoo! Health*. Retrieved 2008-09-21.
4. **Jump up**[^] "Cilostazol". *MedicineNet.com*. May 25, 1999. Retrieved 2008-09-22.
5. **Jump up**[^] Cerner-Multum, Inc. (November 29, 2007). "Consumer Drug Information: Cilostazol". *Drugs.com*. Retrieved 2008-09-22.