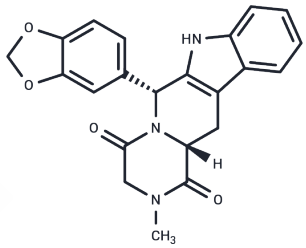
Data Sheet (Cat.No.T1398)

TargetMol

Tadalafil

Chemical Properties



CAS No. : 171596-29-5

Formula: C22H19N3O4

Molecular Weight: 389.40

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Tadalafil (IC-351) is a carboline-based compound with vasodilatory activity that selectively inhibits the cyclic guanosine monophosphate (cGMP)-specific type 5 phosphodiesterase (PDE-5), preventing cGMP degradation in the smooth muscle of the corpus cavernosa and corpus spongiosum of the penis, thereby causing prolonged muscle relaxation, vasodilation, and enhanced penile erection.
Targets(IC50)	Apoptosis,PDE
In vitro	Tadalafil (at doses of 2 or 10 mg/kg) significantly promotes neural function recovery and increases both cerebral vascular density and the percentage of BrdU-positive endothelial cells. In rats undergoing sham surgery, Tadalafil (at a dose of 2 mg/kg) almost completely restored penile tissue oxygenation and countered the increase induced by nerve transection, while substantially enhancing the muscle/fiber ratio in certain penile tissue sections. When administered to the rat brain, Tadalafil selectively elevated cGMP levels rather than cyclic adenosine monophosphate. Furthermore, Tadalafil reduced the number of apoptotic cells in rats and increased the phosphorylation of kinase Akt and extracellular signal-regulated kinases 1/2 (two survival-related kinases).
In vivo	When acting on human hepatocytes, Tadalafil (1 mM) notably increases the expression of CYP3A proteins. Tadalafil can bind to type 5 phosphodiesterase (PDE5) with a dissociation constant (KD) of 2.4 nM, and this binding is stimulated by cyclic guanosine monophosphate (cGMP).

Solubility Information

Solubility	DMSO: 3.9 mg/mL (10.02 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.5681 mL	12.8403 mL	25.6805 mL
5 mM	0.5136 mL	2.5681 mL	5.1361 mL
10 mM	0.2568 mL	1.284 mL	2.5681 mL
50 mM	0.0514 mL	0.2568 mL	0.5136 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Blount MA, et al. Mol Pharmacol, 2004, 66(1), 144-152.
Ring BJ, et al. Clin Pharmacol Ther, 2005, 77(1), 63-75.
Vignozzi L, et al. J Sex Med, 2006, 3(3), 419-431.
Zhang L, et al. Brain Res, 2006, 1118(1), 192-198.
Lysiak JJ, et al. J Urol, 2008, 179(2), 779-785.