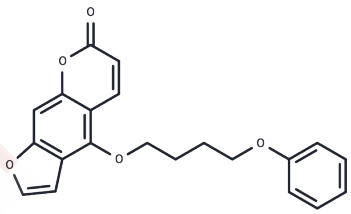
Data Sheet (Cat.No.TQ0179)

TargetMol

PAP-1

Chemical Properties



CAS No. : 870653-45-5

Formula: C21H18O5

Molecular Weight: 350.36

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	PAP-1 (5-(4-Phenoxybutoxy)psoralen) is a selective, orally active Kv1.3 blocker with an EC50 of 2 nM.
Targets(IC50)	Potassium Channel
In vitro	PAP-1 blocks Kv1.3 in a use-dependent manner and acts by preferentially binding to the C-type inactivated state of the channel. PAP-1 exhibits 23-fold selectivity over Kv1.5 (EC50: 45 nM), and further displays 33- to 125-fold selectivity over all other Kv1-family channels [1, 2]. PAP-1 (2-100 nM; 30 minutes) suppresses the proliferation of CCR7-TEM cells (IC50: 10 nM) [1].
In vivo	PAP-1 (0.3-3 mg/kg; i.p.; thrice daily for 48 hours) prevents delayed type hypersensitivity (DTH) in Lewis rats [1].
Cell Research	Cell Line: CCR7-TEM cells (anti-CD3 Ab stimulated). Concentration: 2, 10, 25, 100 nM. Incubation Time: 30 minutes [1]
Animal Research	Animal Model: 9- to 11- week-old female Lewis rats. Dosage: I.P.; three times daily for 48 hours. Administration: 0.3, 1, 3 mg/kg [1]

Solubility Information

Solubility	DMSO: 50 mg/mL (142.71 mM),Sonication is recommended. H2O: Insoluble, (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Corn oil: 5 mg/mL (14.27 mM),Solution. 10% DMSO+90% (20% SBE-β-CD in Saline): < 5 mg/mL (14.27 mM),Lower concentrations may be soluble, but exact solubility limit is unknown. 10% DMSO+90% Saline: 5 mg/mL (14.27 mM),Suspension. 10% DMSO+40% PEG300+5% Tween 80+45% Saline: < 5 mg/mL (14.27 mM),Lower concentrations may be soluble, but exact solubility limit is unknown. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.8542 mL	14.271 mL	28.5421 mL
5 mM	0.5708 mL	2.8542 mL	5.7084 mL
10 mM	0.2854 mL	1.4271 mL	2.8542 mL
50 mM	0.0571 mL	0.2854 mL	0.5708 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

Schmitz A, et al. Design of PAP-1, a selective small molecule Kv1.3 blocker, for the suppression of effector memory T cells in autoimmune diseases. Mol Pharmacol. 2005 Nov;68(5):1254-70.
Chen Y, Zhi Y, Zhong H, et al.Inhibition of Kv1. 3 channel restrains macrophage M2 polarization and ameliorates renal fibrosis via regulating STAT6 phosphorylation.Pharmacological Research.2025: 107623.
Pereira LE, et al. Pharmacokinetics, toxicity, and functional studies of the selective Kv1.3 channel blocker 5-(4-phenoxybutoxy)psoralen in rhesus macaques. Exp Biol Med (Maywood). 2007 Nov;232(10):1338-54.