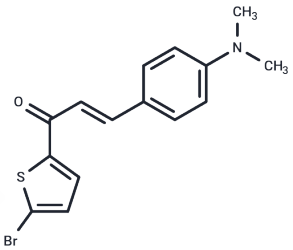
Data Sheet (Cat.No.T3596)

TB5

Chemical Properties



CAS No. : 948841-07-4

Formula: C15H14BrNOS

Molecular Weight: 336.25

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	TB5 is a potent, selective, and reversible inhibitor of hMAO-B.
Targets(IC50)	MAO,Monoamine Oxidase
In vitro	TB5 and TB8 interact competitively with the catalytic sites of hMAO-B and hMAO-A. TB5 shows the highest inhibitory activity and selectivity toward hMAO-B, with Ki and SI values of 0.11±0.01 μM and 13.18, respectively. Inhibition by TB5 (hMAO-B) and TB8 (hMAO-A) is fully reversible after 24 hours of dialysis. Cytotoxicity studies reveal TB5 is non-toxic at 5 and 25 μM, with cell viabilities of 95.75% and 84.59%, respectively [1].
In vivo	Compounds are initially dissolved in DMSO (5 mg/mL), then further diluted with a PBS/EtOH mixture (70:30). To elucidate the critical interactions dictating selectivity and potency, kinetic analyses of TB5 and TB8 are conducted. Lineweaver-Burk plots, a total of five, are created to compare the catalytic rates of MAO-B and MAO-A at various substrate concentrations (0.1-1 μM) in both the absence and presence of TB5 and TB8 at differing concentrations. The initial plot reveals the baseline enzyme activity without inhibitors, while the subsequent four plots show the impact of varying concentrations of TB5 and TB8[1].
Kinase Assay	Compounds are dissolved in DMSO (5 mg/mL) and diluted with PBS/EtOH (70:30).Kinetic analyses are carried out for TB5 and TB8. A set of Lineweaver-Burk plots are constructed in the absence and presence of various concentrations of compounds TB5 and TC8. The set consists of five graphs, each constructed by measuring MAO-B and MAO-A catalytic rates at different substrate concentrations (0.1-1 μM). The first Lineweaver-Burk plot is constructed in the absence of inhibitor, while the remaining four graphs are constructed in the presence of different concentrations of TB5 and TB8[1].
Cell Research	In vitro cytotoxicity of brominated thiophene chalcones and standard MAO inhibitors are tested in human HepG2 hepatic cancer cells at three different concentrations (1, 5 and 25 μM)[1].

Solubility Information

Solubility	DMSO: 55 mg/mL (163.57 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.974 mL	14.8699 mL	29.7398 mL
5 mM	0.5948 mL	2.974 mL	5.948 mL
10 mM	0.2974 mL	1.487 mL	2.974 mL
50 mM	0.0595 mL	0.2974 mL	0.5948 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

Mathew B, et al. Synthesis, Biochemistry, and Computational Studies of Brominated Thienyl Chalcones: A New Class of Reversible MAO-B Inhibitors. ChemMedChem. 2016 Jun 6;11(11):1161-71.