TFB-TBOA

Cat. No.: HY-107521

CAS No.: 480439-73-4

Molecular Formula: $C_{19}H_{17}F_3N_2O_6$

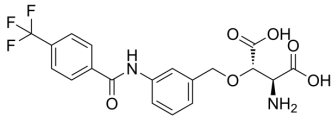
Molecular Weight: 426.34

Target: EAAT

Pathway: Membrane Transporter/Ion Channel

Storage:

Powder	-20°C	3 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (117.28 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.3455 mL	11.7277 mL	23.4555 mL
	5 mM	0.4691 mL	2.3455 mL	4.6911 mL
	10 mM	0.2346 mL	1.1728 mL	2.3455 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 1.25 mg/mL (2.93 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1.25 mg/mL (2.93 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1.25 mg/mL (2.93 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

TFB-TBOA (CF3-Bza-TBOA) is a potent glutamate transporter blocker that potently suppresses the activity of glial transporters. TFB-TBOA shows IC_{50} values of 22, 17, and 300 nM for glutamate transporters EAAT1, EAAT2, and EAAT3 respectively in an uptake assay using cells transiently expressing EAATs[1].

IC_{50} & Target	EAAT1	EAAT2	EAAT3

In Vitro

TFB-TBOA (CF3-Bza-TBOA) inhibits synaptically activated transporter currents (STCs) in astrocytes in the stratum radiatum in rat hippocampal slices in a dose-dependent manner with an IC_{50} of 13 nM, and reduces them to approximately 10% of the

control at 100 nM[2].

TFB-TBOA inhibits the Na^+_i response evoked by 200 μM glutamate in a concentration-dependent manner with IC_{50} value of 43 nM, as measured on the amplitude of the Na^+_i response[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Shimamoto K, et al. Characterization of novel L-threo-beta-benzyloxyaspartate derivatives, potent blockers of the glutamate transporters. Mol Pharmacol. 2004;65(4):1008-1015.

[2]. Tsukada S, et al. Effects of a novel glutamate transporter blocker, (2S, 3S)-3-[3-[4-(trifluoromethyl)benzoylamino]benzyloxy]aspartate (TFB-TBOA), on activities of hippocampal neurons. Neuropharmacology. 2005;48(4):479-491.

[3]. Bozzo L, et al. Inhibitory effects of (2S, 3S)-3-[3-[4-(trifluoromethyl)benzoylamino]benzyloxy]aspartate (TFB-TBOA) on the astrocytic sodium responses to glutamate. Brain Res. 2010;1316:27-34.

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