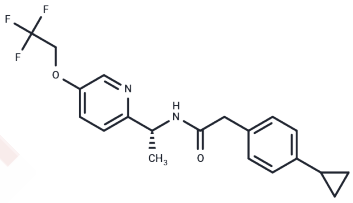
Data Sheet (Cat.No.T8944)

TTA-A2

Chemical Properties



CAS No. :	953778-63-7
Formula:	C20H21F3N2O2
Molecular Weight:	378.39
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	TTA-A2 is a selective T-type calcium channel antagonist as a potent anticonvulsant that the Cav3.1 isoform plays a prominent role in mediating. TTA-A2 is equally potent against the Cav3.1 (a1G) and Cav3.2 (a1H) channels with IC50 values of 89 nM and 92 nM, respectively, at -80 and -100 mV holding potentials. TTA-A2 can be used for the research of a variety of human neurological diseases, including sleep disorders and
Targets(IC50)	Calcium Channel
In vivo	TTA-A2 (oral gavage; 10 mg/kg; once daily; 5 days) shows selective effect on recurrent thalamocortical network activity, it suppresses active wake and promotes slow-wave sleep in wild-type mice but not in mice lacking both Cav3.1 and Cav3.3[1].TTA-A2 (oral gavage;?3 mg/kg;?single dose) produces significant changes in sleep architecture in rats.?A reduction in active wake soon after dosing with a concurrent increase in delta sleep and decrease in REM sleep.?Additionally, these effects persists for up to 4 h post-dose in rats[2].

Solubility Information

Solubility	DMSO: 150 mg/mL (396.42 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Corn Oil: 2 mg/mL (5.29 mM),Sonication is recommended. *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	2.6428 mL	13.2139 mL	26.4278 mL
5 mM	0.5286 mL	2.6428 mL	5.2856 mL
10 mM	0.2643 mL	1.3214 mL	2.6428 mL
50 mM	0.0529 mL	0.2643 mL	0.5286 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

Richard L Kraus, et al.In vitro characterization of T-type calcium channel antagonist TTA-A2 and in vivo effects on arousal in mice. J Pharmacol Exp Ther. 2010 Nov;335(2):409-17.
Thomas S Reger, et al.Pyridyl amides as potent inhibitors of T-type