Bradanicline

Cat. No.: HY-18060

CAS No.: 639489-84-2

Molecular Formula: $C_{22}H_{23}N_3O_2$

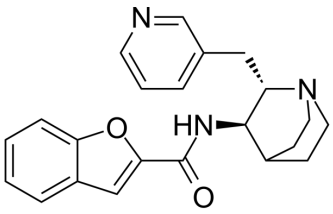
Molecular Weight: 361.44

Target: nAChR

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 25 mg/mL (69.17 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.7667 mL	13.8336 mL	27.6671 mL
	5 mM	0.5533 mL	2.7667 mL	5.5334 mL
	10 mM	0.2767 mL	1.3834 mL	2.7667 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: ≥ 2.5 mg/mL (6.92 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.92 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.92 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Bradanicline is a highly selective α7 nicotinic acetylcholine receptor (nAChR) agonist (humanα7 nAChR: EC_{50}=17 nM; K_i= 1.4 nM). Bradanicline is used for the research of cognitive disorders[1][2].

In Vitro

Bradanicline is more than a thousand-fold separation between the affinities for the α7 and α4β2 receptor subtypes and has no detectable effects on muscle or ganglionic nicotinic receptor subtypes, indicating a marked selectivity for the central nervous system over the peripheral nervous system[1].

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

In Vivo	Bradanicline (0.1-1 mg/kg) shows efficacy in animal models of the positive and negative symptoms and cognitive dysfunction of schizophrenia[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Mazurov AA, et al. Discovery of (2S,3R)-N-[2-(pyridin-3-ylmethyl)-1-azabicyclo[2.2.2]oct-3-yl]benzo[b]furan-2-carboxamide (TC-5619), a selective α7 nicotinic acetylcholine receptor agonist, for the treatment of cognitive disorders. J Med Chem. 2012;55(22):9793-9809.

[2]. Hauser TA, et al. TC-5619: an alpha7 neuronal nicotinic receptor-selective agonist that demonstrates efficacy in animal models of the positive and negative symptoms and cognitive dysfunction of schizophrenia. Biochem Pharmacol. 2009;78(7):803-812.

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