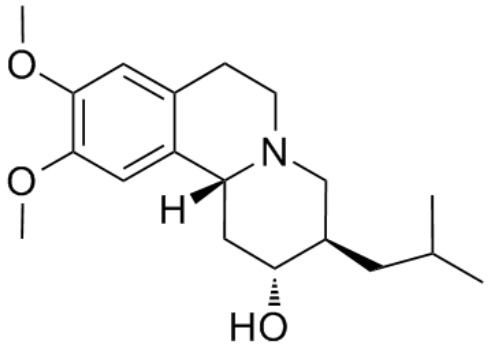
Product Data Sheet

Product Name: NBI-98782
Cat. No.: GC36705

Chemical Properties

Cas. No.	85081-18-1		
SMILES	COC(C=C1CCN2C[C@@H](CC(C)C)[C@@H]3O)=C(C=C1[C@]2(C3)[H])OC		
Formula	$C_{19}H_{29}NO_3$	M.Wt	319.44
Solubility	DMSO: 33.33 mg/mL (104.34 mM)	Storage	Store at -20°C; protect from light
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		

Structure



Protocol

Animal experiment [1]:

Animal models Male C57BL/6 J mice

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Preparation Method	Male C57BL/6 J mice, weighing 20-25g, were group housed (four per cage) in a controlled environment held at 21±2°C and 50±15% relative humidity on a 14/10h light-dark cycle. Food and water were available ad libitum. NBI-98782 and tetrabenazine were dissolved in 30% propylene glycol and 20% polyethylene glycol 400 in 0.25% methyl cellulose (400cps) in water. NBI-98782 was orally administered (10mg/kg/day) for 7 days. Microdialysis was performed on the 8th day.
Dosage form	10mg/kg/day for 7 days; p.o.
Applications	NBI-98782 treatment significantly decreased basal levels of dopamine and serotonin, with a trend to decrease norepinephrine levels in mice.

References:
[1] Huang M, He W, Rajagopal L, et al. Effects of NBI-98782, a selective vesicular monoamine transporter 2 (VMAT2) inhibitor, on neurotransmitter efflux and phencyclidine-induced locomotor activity: Relevance to tardive dyskinesia and antipsychotic action[J]. Pharmacology Biochemistry and Behavior, 2020, 190: 172872.

Background

NBI-98782 is a potent and selective vesicular monoamine transporter 2 (VMAT2) inhibitor with a K_i value of 3nM [1]. NBI-98782 reduces the packaging of monoamines by targeting VMAT2, thereby leading to a decrease in monoamine release and neural transmission[2]. NBI-98782 has been widely used to promote ptosis in rats, stimulate prolactin secretion, and regulate neural functions[3].

In vivo, NBI-98782 treatment via oral administration at a dose of 10mg/kg/day for 7 days significantly decreased basal levels of dopamine and serotonin, and enhanced the release of acetylcholine and GABA levels in mice [4].

References:
[1] Meyer J M. Valbenazine for tardive dyskinesia[J]. Curr Psychiatr, 2017, 16(5): 40-46.

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[2] Terry-Lorenzo R, Albrecht D, Crouch S, et al. Quantifying VMAT2 target occupancy at effective valbenazine doses and comparing to a novel VMAT2 inhibitor: a translational PET study[J]. Neuropsychopharmacology, 2025, 50(7): 1093-1101.
[3] Grigoriadis D E, Smith E, Hoare S R J, et al. Pharmacologic characterization of valbenazine (NBI-98854) and its metabolites[J]. The Journal of Pharmacology and Experimental Therapeutics, 2017, 361(3): 454-461.
[4] Huang M, He W, Rajagopal L, et al. Effects of NBI-98782, a selective vesicular monoamine transporter 2 (VMAT2) inhibitor, on neurotransmitter efflux and phencyclidine-induced locomotor activity: Relevance to tardive dyskinesia and antipsychotic action[J]. Pharmacology Biochemistry and Behavior, 2020, 190: 172872.

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