# PRODUCT INFORMATION

## ABT-089 (hydrochloride)

*Item No. 46880*

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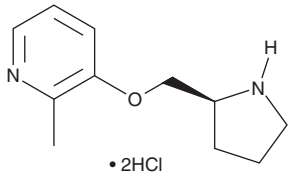
|---|---|
| **CAS Registry No.:** | 161416-61-1 |
| **Formal Name:** | 2-methyl-3-[(2S)-2-pyrrolidinylmethoxy]-pyridine, dihydrochloride |
| **Synonym:** | Pozanicline |
| **MF:** | $C_{11}H_{16}N_2O \bullet 2HCl$ |
| **FW:** | 265.2 |
| **Purity:** | ≥98% |
| **Supplied as:** | A solid |
| **Storage:** | -20°C |
| **Stability:** | ≥4 years |




*Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.*

### Laboratory Procedures

ABT-089 (hydrochloride) is supplied as a solid. Aqueous solutions of ABT-089 (hydrochloride) can be prepared by directly dissolving the solid in aqueous buffers. ABT-089 (hydrochloride) is soluble (≥10 mg/ml) in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

### Description

ABT-089 is an agonist of α6β2 nicotinic acetylcholine receptors (nAChRs) and a partial agonist of α4β2 nAChRs.[1] It induces dopamine release mediated by α6β2 subunit-containing nAChRs in mouse striatal synaptosomes in a biphasic manner ($EC_{50}$s = 0.11 and 28.1 µM) and dopamine release mediated primarily by α4β2 subunit-containing nAChRs in the same synaptosomes ($EC_{50}$ = 6.1 µM). ABT-089 selectively binds to α4β2 nAChRs over α1β1δ1 and α7 nAChRs ($K_i$s = 16, >1,000, and >10,000 nM, respectively).[2] It protects against glutamate-induced excitotoxicity in primary rat cortical cells and differentiated IMR-32 neuroblastoma cells ($EC_{50}$s = 10 and 3 µM, respectively). ABT-089 (0.3 mg/kg) decreases dyskinesias induced by L-DOPA (Item No. 13248) in a squirrel monkey model of Parkinson's disease.[3] It also improves nicotine withdrawal-induced deficits in hippocampal-dependent memory in mice at 0.3 mg/kg.[4]

### References


1. Marks, M.J., Wageman, C.R., Grady, S.R., *et al.* Selectivity of ABT-089 for α4β2* and α6β2* nicotinic acetylcholine receptors in brain. *Biochem. Pharmacol.* **78(7)**, 795-802 (2009).
2. Sullivan, J.P., Donnelly-Roberts, D., Briggs, C.A., *et al.* ABT-089 [2-methyl-3-(2-(S)-pyrrolidinylmethoxy) pyridine]: I. A potent and selective cholinergic channel modulator with neuroprotective properties. *J. Pharmacol. Exp. Ther.* **283(1)**, 235-246 (1997).
3. Zhang, D., Bordia, T., McGregor, M., *et al.* ABT-089 and ABT-894 reduce levodopa-induced dyskinesias in a monkey model of Parkinson's disease. *Mov. Disord.* **29(4)**, 508-517 (2014).
4. Yildirim, E., Connor, D.A., and Gould, T.J. ABT-089, but not ABT-107, ameliorates nicotine withdrawal-induced cognitive deficits in C57BL6/J mice. *Behav. Pharmacol.* **26(30)**, 241-248 (2015).



**WARNING**
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

**SAFETY DATA**
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent *via* email to your institution.

**WARRANTY AND LIMITATION OF REMEDY**
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