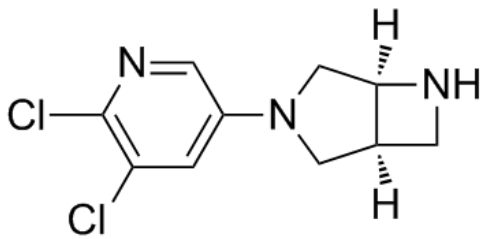
Product Data Sheet

Product Name: Sofiniclin
Cat. No.: GC37662

Chemical Properties

Cas. No.	799279-80-4		
SMILES	ClC1=C(Cl)C=C(N2C[C@]3([H])CN[C@]3([H])C2)C=N1		
Formula	$C_{10}H_{11}Cl_2N_3$	M.Wt	244.12
Solubility	DMSO : 35.71 mg/mL (146.28 mM; ultrasonic and warming and heat to 60°C)	Storage	Store at -20°C
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



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Protocol

Kinase experiment: Receptor studies with ABT-089 and Sofiniclin are done using rat striatal sections. α6β2* nAChR levels are assayed using 125I-α-conotoxinMII (α-CtxMII) (specific activity, 2200 Ci/mmol). α4β2* nAChRs are measured by determining the binding of 125I-epibatidine (specific activity, 2200 Ci/mmol) in the presence of 100 nM α-CtxMII to block α6β2* nAChRs. After assay, sections are exposed to Kodak MR film. To evaluate binding, optical density readings are converted fmol/mg tissue using 125I-standards.

Animal experiment: Monkeys: Once stable dyskinesias develops, the effects of ABT-089 and Sofiniclin are determined on LIDs. For these studies, there are two sets of MPTP-lesioned monkeys, Set A (n = 17) and Set B (n = 16). Set A monkeys have previously been treated with nicotine and/or nAChR drugs, followed by a 10 week ishout period (nAChR drug-primed). Set B monkeys have not received any nAChR drug when ABT-089 treatment is initiated (nAChR drug-naive). Our rationale for the use of these two sets of monkeys is to determine if prior treatment with nAChR drugs altered their ability to decrease LIDs. For both sets, there are 3 experimental groups of monkeys, a vehicle-treated group (n = 6), a nAChR drug-treated group (n = 5 or 6) and a nicotine-treated group (n = 5), as a positive control. The monkeys are assigned to the groups such that there are similar number of males and females, with comparable average LID scores.

References:

[1]. Zhang D, et al. ABT-089 and ABT-894 reduce levodopa-induced dyskinesias in a monkey model of Parkinson's disease. Mov Disord. 2014 Apr;29(4):508-17.
[2]. Zhang D, ET AL. α7 nicotinic receptor agonists reduce levodopa-induced dyskinesias with severe nigrostriatal damage. Mov Disord. 2015 Dec;30(14):1901-11.

Background

Sofiniclin (ABT 894) is an agonist of nicotinic acetylcholine receptor (nAChR), used as a potential

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non-stimulant treatment for attention-deficit/hyperactivity disorder (ADHD).

Sofiniclin is more potent than ABT-089 at both receptor subtypes, with Ki values of 1.9 nM for 125I-α-conotoxinMII binding and of 1.3 nM for 125I-epibatidine binding[1].

Sofiniclin (0.001 to 0.10 mg/kg, p.o.) produces significant reductions in LIDs compared to vehicle monkey[1]. Sofiniclin (0.1 mg/kg) does not decrease LIDs in monkeys with severe nigrostriatal damage[2].

[1]. Zhang D, et al. ABT-089 and ABT-894 reduce levodopa-induced dyskinesias in a monkey model of Parkinson's disease. Mov Disord. 2014 Apr;29(4):508-17. [2]. Zhang D, ET AL. α7 nicotinic receptor agonists reduce levodopa-induced dyskinesias with severe nigrostriatal damage. Mov Disord. 2015 Dec;30(14):1901-11.

Caution: Product has not been fully validated for medical applications. For research use only.
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