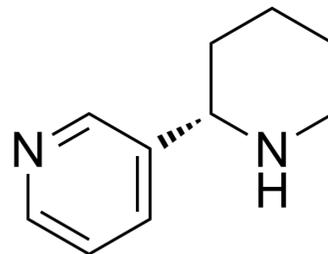


## Anabasine

Cat. No.:	HY-B1532
CAS No.:	494-52-0
Molecular Formula:	C <sub>10</sub> H <sub>14</sub> N <sub>2</sub>
Molecular Weight:	162.23
Target:	nAChR
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



### SOLVENT & SOLUBILITY

In Vitro	DMSO : 100 mg/mL (616.41 mM; Need ultrasonic)																								
	Preparing Stock Solutions	<table border="1"> <thead> <tr> <th>Solvent Concentration</th> <th>Mass</th> <th>1 mg</th> <th>5 mg</th> <th>10 mg</th> </tr> </thead> <tbody> <tr> <td>1 mM</td> <td></td> <td>6.1641 mL</td> <td>30.8204 mL</td> <td>61.6409 mL</td> </tr> <tr> <td>5 mM</td> <td></td> <td>1.2328 mL</td> <td>6.1641 mL</td> <td>12.3282 mL</td> </tr> <tr> <td>10 mM</td> <td></td> <td>0.6164 mL</td> <td>3.0820 mL</td> <td>6.1641 mL</td> </tr> </tbody> </table>	Solvent Concentration	Mass	1 mg	5 mg	10 mg	1 mM		6.1641 mL	30.8204 mL	61.6409 mL	5 mM		1.2328 mL	6.1641 mL	12.3282 mL	10 mM		0.6164 mL	3.0820 mL	6.1641 mL			
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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 (15.41 mM); Clear solution																								
	2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (15.41 mM); Clear solution																								
	3. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (15.41 mM); Clear solution																								

### BIOLOGICAL ACTIVITY

Description	Anabasine ((S)-Anabasine) is an alkaloid that found as a minor component in tobacco (Nicotiana). Anabasine is a botanical pesticide nicotine, acts as a full agonist of nicotinic acetylcholine receptors (nAChRs). Anabasine induces depolarization of TE671 cells endogenously expressing human fetal muscle-type nAChRs (EC <sub>50</sub> =0.7 μM) <sup>[1][2]</sup> .
IC <sub>50</sub> & Target	nicotinic receptor <sup>[1]</sup>
In Vivo	Anabasine significantly reverses the impairment at the 0.2 mg/kg (p<0.05) and 2 mg/kg doses (p<0.025). Anabasine does not have any significant effects on response latency when administered alone. The 0.06 mg/kg Anabasine dose, in fact, significantly (p<0.05) exacerbates the dizocilpine-induced impairment. None of these Anabasine doses affects choice

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accuracy on their own. Individual dose comparisons show that the 0.06 mg/kg Anabasine dose plus dizocilpine (6.7±2.6) causes a significant ( $p<0.05$ ) increase in non-response trials compare with dizocilpine alone (2.1±0.8)<sup>[1]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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## PROTOCOL

### Animal Administration <sup>[1]</sup>

Adult (age range 4 to 16 months) female Sprague-Dawley rats are used in this study. One group of rats (N=12) is trained on the radial arm maze test of working and reference memory and undergo tests of an acute dose-response of Anabasine (0.02, 0.2, 1 and 2 mg/kg). Then, two doses of Anabasine (0.2 and 2 mg/kg) are tested alone or in combination with the glutamate NMDA antagonist dizocilpine (0.05 mg/kg). The saline vehicle is used as vehicle control and dizocilpine alone is used as an impaired control. All conditions are given to each rat in a repeated measures counterbalanced design<sup>[1]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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## REFERENCES

- [1]. Levin ED, et al. Effects of tobacco smoke constituents, anabasine and anatabine, on memory and attention in female rats. *J Psychopharmacol*. 2014 Oct;28(10):915-22.
- [2]. Benedict T Green, et al. Actions of piperidine alkaloid teratogens at fetal nicotinic acetylcholine receptors. *Neurotoxicol Teratol*. May-Jun 2010;32(3):383-90.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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