

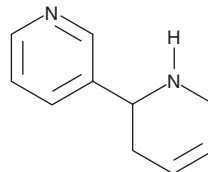
PRODUCT INFORMATION



(R,S)-Anatabine

Item No. 11001

CAS Registry No.: 2743-90-0
Formal Name: 1,2,3,6-tetrahydro-2,3'-bipyridine
MF: C₁₀H₁₂N₂
FW: 160.2
Purity: ≥95%
UV/Vis.: λ_{max}: 261 nm
Supplied as: A solution in ethanol
Storage: -20°C
Stability: ≥1 year



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

Laboratory Procedures

(R,S)-Anatabine is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as DMSO and dimethyl formamide purged with an inert gas can be used. The solubility of (R,S)-anatabine in these solvents is approximately 15 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. If an organic solvent-free solution of (R,S)-anatabine is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of (R,S)-anatabine in PBS, pH 7.2, is approximately 0.3 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

(R,S)-Anatabine is a minor alkaloid produced in plants of the Solanaceae family, including tobacco.¹ The detection of (R,S)-anatabine in urine is used as an indicator of tobacco use, particularly when nicotine-containing products (gum, patches, inhalers, and medications) are also being used.^{2,3} (R,S)-Anatabine increases nicotine self-administration and locomotor activity in rats.⁴ Of note, (R,S)-anatabine diminishes amyloid-β production *in vitro* and *in vivo*. (R,S)-Anatabine reduces (600 μg/ml) the transcription and protein levels of β-secretase, lowering the amount of Aβ (1-40) and Aβ (1-42) in a dose dependent manner in SHSY-5Y cells. (R,S)-Anatabine also dose dependently inhibits NF-κB activation.⁵

References

1. Weeks, W.W. and Bush, L.P. Alkaloid changes in tobacco seeds during germination. *Plant Physiol.* **53**(1), 73-75 (1974).
2. Jacob, P., III, Yu, L., Shulgin, A.T., *et al.* Minor tobacco alkaloids as biomarkers for tobacco use: Comparison of users of cigarettes, smokeless tobacco, cigars, and pipes. *Am. J. Public Health* **89**(5), 731-736 (1999).
3. Murphy, S.E., Link, C.A., Jensen, J., *et al.* A comparison of urinary biomarkers of tobacco and carcinogen exposure in smokers. *Cancer Epidemiol. Biomarkers Prev.* **13**(10), 1617-1623 (2004).
4. Clemens, K.J., Caillé, S., Stinus, L., *et al.* The addition of five minor tobacco alkaloids increases nicotine-induced hyperactivity, sensitization and intravenous self-administration in rats. *Int. J. Neuropsychopharmacol.* **12**(10), 1355-1366 (2009).
5. Paris, D., Beaulieu-Abdelahad, D., Bachmeier, C., *et al.* Anatabine lowers Alzheimer's Aβ production *in vitro* and *in vivo*. *Eur. J. Pharmacol.* **1-8** (2011).

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.

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