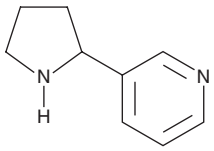
PRODUCT INFORMATION

(±)-Nornicotine

Item No. 20505

CAS Registry No.: 5746-86-1
Formal Name: 3-(2-pyrrolidinyl)-pyridine
Synonyms: DL-Nornicotine, (R,S)-Nornicotine
MF: $C_9H_{12}N_2$
FW: 148.2
Purity: ≥95%
UV/Vis.: λ_{max}: 262 nm
Supplied as: A neat oil
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

(±)-Nornicotine is supplied as a neat oil. A stock solution may be made by dissolving the (±)-nornicotine in the solvent of choice, which should be purged with an inert gas. (±)-Nornicotine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of (±)-nornicotine in ethanol and DMF is approximately 50 mg/ml and approximately 30 mg/ml in DMSO.

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. Organic solvent-free aqueous solutions of (±)-nornicotine can be prepared by directly dissolving the neat oil in aqueous buffers. The solubility of (±)-nornicotine in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

(±)-Nornicotine is an active metabolite of nicotine (Item No. 16535) and a nicotinic acetylcholine receptor (nAChR) agonist.[1] It induces currents in *Xenopus* oocytes expressing human α7 nAChRs or α6 subunit-containing nAChRs (EC_{50}s = 17 and 3.7 µM, respectively). (±)-Nornicotine promotes cell migration and destabilizes cell-cell junctions in EA.hy926 endothelial cells.[2] It is self-administered in rats.[3,4]

References

1. Papke, R.L., Dwoskin, L.P., and Crooks, P.A. The pharmacological activity of nicotine and nornicotine on nAChRs subtypes: Relevance to nicotine dependence and drug discovery. *J. Neurochem.* **101(1)**, 160-167 (2007).
2. Gagat, M., Grzanka, D., Izdebska, M., *et al.* Nornicotine impairs endothelial cell-cell adherens junction complexes in EA.hy926 cell line *via* structural reorganization of F-actin. *Folia Histochem. Cytobiol.* **51(3)**, 179-192 (2013).
3. Bardo, M.T., Green, T.A., Crooks, P.A., *et al.* Nornicotine is self-administered intravenously by rats. *Psychopharmacology (Berl)* **146(3)**, 290-296 (1999).
4. Hoffman, A.C. and Evans, S.E. Abuse potential of non-nicotine tobacco smoke components: Acetaldehyde, nornicotine, cotinine, and anabasine. *Nicotine Tob. Res.* **15(3)**, 622-632 (2013).

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