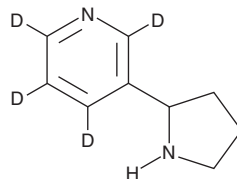


# PRODUCT INFORMATION

## (±)-Nornicotine-d<sub>4</sub>

Item No. 35242

**CAS Registry No.:** 66148-18-3  
**Formal Name:** 5-(2-pyrrolidiny)-pyridine-2,3,4,6-d<sub>4</sub>  
**Synonyms:** DL-Nornicotine-d<sub>4</sub>, (R,S)-Nornicotine-d<sub>4</sub>  
**MF:** C<sub>9</sub>H<sub>8</sub>D<sub>4</sub>N<sub>2</sub>  
**FW:** 152.2  
**Chemical Purity:** ≥95% ((±)-Nornicotine)  
**Deuterium**  
**Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>4</sub>); ≤1% d<sub>0</sub>  
**Supplied as:** A 10 mg/ml solution in methanol  
**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-d<sub>4</sub> is intended for use as an internal standard for the quantification of (±)-nornicotine (Item No. 20505) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

### Description

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

### 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).

#### 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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