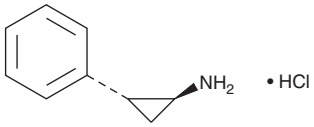
PRODUCT INFORMATION

Tranylcypromine (hydrochloride)

Item No. 10010494

CAS Registry No.: 1986-47-6
Formal Name: (1R,2S)-*rel*-2-phenyl-cyclopropanamine, monohydrochloride
Synonyms: 2-PCPA, *trans*-2-Phenylcyclopropylamine
MF: $C_9H_{11}N \bullet HCl$
FW: 169.7
Purity: ≥98%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

Tranylcypromine (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the tranylcypromine (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Tranylcypromine (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of tranylcypromine (hydrochloride) in these solvents is approximately 5, 2.5, and 3 mg/ml, respectively.

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 tranylcypromine (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of tranylcypromine (hydrochloride) in PBS, pH 7.2, is approximately 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Histones contain unstructured N-terminal residues that are the site of numerous post-translational modifications, involving acetylation, methylation, ubiquitination, and sumoylation to produce a specific gene regulatory outcome.[1] Complementary enzymes catalyze the addition and removal of these modifications as needed. The amine oxidase domain-containing enzyme lysine-specific demethylase 1 (LSD1) is a member of one of two classes of histone demethylases capable of demethylating lysine residues.[1] LSD1 shares similar catalytic sites with monoamine oxidases (MAO) A and B, the inhibition of which are used clinically to treat depression, anxiety, and Parkinson's disease.[2] Tranylcypromine is an irreversible, mechanism-based inhibitor of LSD1 with an IC_{50} value of 20.7 µM and a K_i value of 242.7 µM that effectively inhibits histone demethylation *in vivo*.[3] Although not as selective, tranylcypromine also irreversibly inhibits MAO A and MAO B with IC_{50} values of 2.3 and 0.95 µM and K_i values of 101.9 and 16 µM, respectively.[3]

References

1. Forneris, F., Binda, C., Vanoni, M.A., *et al.* Human histone demethylase LSD1 reads the histone code. *J. Biol. Chem.* **280(50)**, 41360-41365 (2005).
2. Lee, M.G., Wynder, C., Schidt, D.M., *et al.* Histone H3 lysine 4 demethylation is a target of nonselective antidepressive medications. *Chem. Biol.* **13(6)**, 563-567 (2006).
3. Schmidt, D.M.Z. and McCafferty, D.G. *trans*-2-Phenylcyclopropylamine is a mechanism-based inactivator of the histone demethylase LSD1. *Biochemistry* **46**, 4408-4416 (2007).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM