

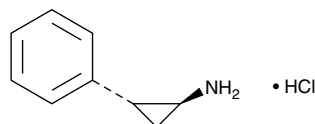
Product Information



2-PCPA (hydrochloride)

Item No. 10010494

Formal Name: (1R,2S)-rel-2-phenyl-cyclopropanamine, monohydrochloride
Synonyms: *trans*-2-Phenylcyclopropylamine, Translucyproamine
MF: C₉H₁₁N • HCl
FW: 169.7
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid



Laboratory Procedures

For long term storage, we suggest that 2-PCPA be stored as supplied at -20°C. It should be stable for at least two years.

2-PCPA is supplied as a crystalline solid. A stock solution may be made by dissolving the 2-PCPA in an organic solvent purged with an inert gas. 2-PCPA is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of 2-PCPA in these solvents is approximately 2.5 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. Organic solvent-free aqueous solutions of 2-PCPA can be prepared by directly dissolving the crystalline compound in aqueous buffers. The solubility of 2-PCPA in PBS, pH 7.2, is approximately 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

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 2-PCPA is an irreversible, mechanism-based inhibitor of LSD1 with an IC₅₀ 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, 2-PCPA also irreversibly inhibits MAO A and MAO B with IC₅₀ 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. *Chemistry & Biology* **13**, 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).

Related Products

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