

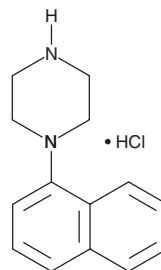
PRODUCT INFORMATION



1-(1-Naphthyl)piperazine (hydrochloride)

Item No. 16150

CAS Registry No.: 104113-71-5
Formal Name: 1-(1-naphthalenyl)-piperazine, monohydrochloride
Synonym: 1-NP
MF: C₁₄H₁₆N₂ • HCl
FW: 248.7
Purity: ≥98%
UV/Vis.: λ_{max}: 216, 302 nm
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

1-(1-Naphthyl)piperazine (1-NP) (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the 1-NP (hydrochloride) in the solvent of choice, which should be purged with an inert gas. 1-NP (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of 1-NP (hydrochloride) in these solvents is approximately 25, 20, and 30 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 1-NP (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 1-NP (hydrochloride) in PBS, pH 7.2, is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

1-NP is a ligand for serotonin (5-hydroxytryptamine, 5-HT) receptors. It acts as an antagonist for 5-HT at 5-HT₁ and 5-HT₂ in rat cortical membranes with IC₅₀ values of 6 and 1 nM, respectively.¹ 1-NP also blocks contraction in the rat fundus induced by either 5-HT or tryptamine (IC₅₀ = 1 nM for both agonists).¹ 1-NP mimics the 5-HT₁ agonist 1-(*m*-trifluoromethylphenyl)piperazine (TFMPP, Item No. 11205) in decreasing 5-HT receptor turnover and increasing serum corticosterone, suggesting that, in the absence of 5-HT, 1-NP may act as an agonist of the 5-HT₁ receptor.² However, in squirrel monkeys, 1-NP acts as a non-selective 5-HT receptor antagonist in altering operant behavior.² 1-NP also binds to the human 5-HT₆ receptor with an affinity comparable to that of 5-HT (K_is = 120 and 100 nM, respectively).³

References

1. Cohen, M.L. and Wittenauer, L.A. Relationship between serotonin and tryptamine receptors in the rat stomach fundus. *J. Pharmacol. Exp. Ther.* **233**(1), 75-79 (1985).
2. McKearney, J.W. Serotonin-antagonist effects of 1-(1-naphthyl)piperazine on operant behavior of squirrel monkeys. *Neuropharmacology* **28**(8), 817-821 (1989).
3. Lee, M., Rangisetty, J.B., Pullagurla, M.R., et al. 1-(1-Naphthyl)piperazine as a novel template for 5-HT₆ serotonin receptor ligands. *Bioorg. Med. Chem. Lett.* **15**(6), 1707-1711 (2005).

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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