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**Product Data Sheet**

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Product Name: 1-(1-Naphthyl) piperazine (hydrochloride)

Cat. No.: GC12587

**Chemical Properties**

Cas. No. 104113-71-5

Chemical Name 1-(1-naphthalenyl)-piperazine, monohydrochloride

SMILES C1(C(N2CCNCC2)=CC=C3)=C3C=CC=C1.ClFormula  $C_{14}H_{16}N_2 \cdot HCl$  M.Wt 248.7Solubility  $\geq 13.7\text{mg/mL}$  in DMSO Storage Store at  $-20^{\circ}\text{C}$ 

General tips For obtaining a higher solubility, please warm the tube at  $37^{\circ}\text{C}$  and shake it in the ultrasonic bath for a while. Stock solution can be stored below  $-20^{\circ}\text{C}$  for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure **Background**

1-(1-Naphthyl) piperazine (1-NP) is a serotonergic ligand which could bind nonselectively with multiple serotonin (5-HT) receptors [1].

The serotonin receptors, also known as 5-HT receptors, belong to a family of G protein-coupled receptors (GPCRs) and ligand-gated ion channels (LGICs) found in the central and peripheral nervous systems. The serotonin receptors have been involved in many biological and neurological processes, such as aggression, anxiety, cognition, learning, memory, and mood [2].

In vitro: 1-NP binds to human 5-HT<sub>6</sub> (h5-HT<sub>6</sub>) serotonin receptors with a  $K_i$  of 120 nM [1]. In rat cortical membranes, 1-NP inhibited the activity of 5-HT<sub>1</sub> and 5-HT<sub>2</sub> with  $IC_{50}$  values of 6 and 1 nM, respectively. 1-NP also blocked contraction in the rat fundus induced by either 5-HT or tryptamine with an  $IC_{50}$  of 1 nM [3].

In vivo: In squirrel monkeys, 1-NP (0.3–1.0 mg/kg) blocked the decrease of responding

**Caution: Product has not been fully validated for medical applications. For research use only.**

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under fixed-interval (FI) schedules of presentation of food caused by DOB (0.01–0.3 mg/kg), an agonist of 5-HT<sub>2</sub>. 1-NP also antagonized the decreases in responding produced by quipazine (0.1–5.6 mg/kg), another agonist with predominant 5-HT<sub>2</sub> actions [4].

### References:

- [1] Lee M, Rangisetty J B, Pullagurla M R, et al. 1-(1-Naphthyl) piperazine as a novel template for 5-HT<sub>2</sub> serotonin receptor ligands[J]. Bioorganic & medicinal chemistry letters, 2005, 15(6): 1707-1711.
- [2] Nichols D E, Nichols C D. Serotonin receptors[J]. Chemical reviews, 2008, 108(5): 1614-1641.
- [3] Cohen M L, Wittenauer L A. Relationship between serotonin and tryptamine receptors in the rat stomach fundus[J]. Journal of Pharmacology and Experimental Therapeutics, 1985, 233(1): 75-79.
- [4] McKearney J W. Serotonin-antagonist effects of 1-(1-naphthyl) piperazine on operant behavior of squirrel monkeys[J]. Neuropharmacology, 1989, 28(8): 817-821.

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