

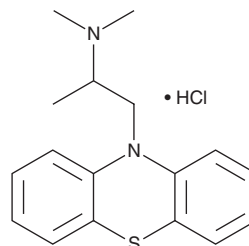
# PRODUCT INFORMATION



## Promethazine (hydrochloride)

Item No. 16478

**CAS Registry No.:** 58-33-3  
**Formal Name:** N,N,α-trimethyl-10H-phenothiazine-10-ethanamine, monohydrochloride  
**Synonym:** NSC 231688  
**MF:** C<sub>17</sub>H<sub>20</sub>N<sub>2</sub>S • HCl  
**FW:** 320.9  
**Purity:** ≥95%  
**UV/Vis.:** λ<sub>max</sub>: 252 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

Promethazine (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the promethazine (hydrochloride) in the solvent of choice, which should be purged with an inert gas.. Promethazine (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of promethazine (hydrochloride) in these solvents is approximately 2, 5, and 10 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 promethazine (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of promethazine (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

Promethazine is a first-generation histamine H<sub>1</sub> receptor antagonist (K<sub>i</sub> = 0.98 nM for the human receptor).<sup>1</sup> It is selective for histamine H<sub>1</sub> over H<sub>3</sub> and H<sub>4</sub> receptors (K<sub>i</sub>s = >100 and 77.6 μM, respectively, for the human receptors). Promethazine also binds muscarinic acetylcholine receptors (mAChRs; K<sub>i</sub> = 22 nM).<sup>2</sup> It inhibits histamine-induced paw edema and acetic acid-induced writhing in mice (ED<sub>50</sub>s = 5.9 and 11.8 mg/kg, respectively).<sup>3</sup> Promethazine (32 mg/kg) decreases the number of motion-induced vomiting episodes in *S. murinus*.<sup>4</sup>

### References

1. Appl, H., Holzammer, T., Dove, S., *et al.* Interactions of recombinant human histamine H<sub>1</sub>, H<sub>2</sub>, H<sub>3</sub>, and H<sub>4</sub> receptors with 34 antidepressants and antipsychotics. *Naunyn-Schmiedeberg's Arch. Pharmacol.* **385**(2), 145-170 (2012).
1. Kubo, N., Shirakawa, S., Kuno, T., *et al.* Antimuscarinic effects of antihistamines: Quantitative evaluation by receptor-binding assay. *Jpn. J. Pharmacol.* **43**(3), 277-282 (1987).
2. Barnett, A., Iorio, L.C., Kreutner, W., *et al.* Evaluation of the CNS properties of SCH 29851, a potential non-sedating antihistamine. *Agents Actions* **43**(3-4), 149-156 (1994).
3. Nakayama, H., Yamakuni, H., Higaki, M., *et al.* Antiemetic activity of FK1052, a 5-HT<sub>3</sub>- and 5-HT<sub>4</sub>-receptor antagonist, in *Suncus murinus* and ferrets. *J. Pharmacol. Sci.* **98**(4), 396-403 (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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