

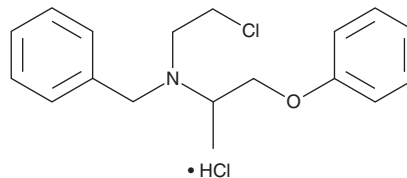
# PRODUCT INFORMATION



## Phenoxybenzamine (hydrochloride)

Item No. 16211

**CAS Registry No.:** 63-92-3  
**Formal Name:** N-(2-chloroethyl)-N-(1-methyl-2-phenoxyethyl)-benzenemethanamine, monohydrochloride  
**Synonym:** NSC 37448  
**MF:** C<sub>18</sub>H<sub>22</sub>ClNO • HCl  
**FW:** 340.3  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 209, 269 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

Phenoxybenzamine (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the phenoxybenzamine (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Phenoxybenzamine (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of phenoxybenzamine (hydrochloride) in ethanol and DMSO is approximately 25 mg/ml and approximately 30 mg/ml in DMF.

Phenoxybenzamine (hydrochloride) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, phenoxybenzamine (hydrochloride) should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Phenoxybenzamine (hydrochloride) has a solubility of approximately 0.3 mg/ml in a 1:2 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Phenoxybenzamine is an antagonist of  $\alpha$ -adrenergic receptors ( $\alpha$ -ARs).<sup>1,2</sup> It inhibits norepinephrine-induced inositol phosphate formation in HEK293 cells expressing  $\alpha_1$ -ARs (EC<sub>50</sub>s = 125.9-316.2 nM), as well as radioligand binding to  $\alpha_{2A}$ -,  $\alpha_{2B}$ -, and  $\alpha_{2C}$ -ARs in CHO cell membranes (K<sub>s</sub> = 60, 10, and 60 nM, respectively). Phenoxybenzamine (0.5-5  $\mu$ M) decreases norepinephrine-, histamine-, and calcium-induced contractions in isolated rabbit aortic strips.<sup>3</sup> It also inhibits proliferation of nine cancer cell lines, including lymphoma, breast, and lung cancer cells, with IC<sub>50</sub> values ranging from 29.5 to 99.8  $\mu$ M.<sup>4</sup> Phenoxybenzamine (3-1,000  $\mu$ g/kg) reduces increases in diastolic blood pressure induced by the  $\alpha$ -AR agonists cirazoline (Item No. 21791), St-587, Sgd 101/75, and B-HT 920 (Item No. 14177) in pithed rats.<sup>5</sup> It also decreases the time to find the platform in the Morris water maze, indicating restored spatial memory, in a rat model of fluid percussion-induced traumatic brain injury (TBI).<sup>6</sup> Formulations containing phenoxybenzamine have been used in the treatment of hypertension and hyperhidrosis associated with pheochromocytomas, an adrenal medullary neuroendocrine tumor.

### References

1. Minneman, K.P., Theroux, T.L., Hollinger, S., *et al.* *Mol. Pharmacol.* **46**(5), 929-936 (1994).
2. Frang, H., Cockcroft, V., Karskela, T., *et al.* *J. Biol. Chem.* **276**(33), 31279-31284 (2001).
3. McPherson, G.A., Krstew, E., and Malta, E. *Clin. Exp. Pharmacol. Physiol.* **12**(5), 455-464 (1985).
4. Inchiosa, M.A., Jr. *PLoS One* **13**(6):e0198514 (2018).
5. Timmermans, P.B., Thoolen, M.J., Mathy, M.J., *et al.* *Naunyn Schmiedebergs Arch. Pharmacol.* **329**(4), 404-413 (1985).
6. Rau, T.F., Kothiwala, A., Rova, A., *et al.* *Int. J. Mol. Sci.* **15**(1), 1402-1417 (2014).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 11/30/2022

#### 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