

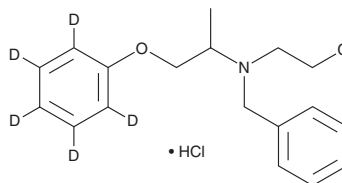
# PRODUCT INFORMATION



## Phenoxybenzamine-d<sub>5</sub> (hydrochloride)

Item No. 29996

**CAS Registry No.:** 1329838-45-0  
**Formal Name:** N-benzyl-N-(2-chloroethyl)-1-(phenoxy-d<sub>5</sub>)propan-2-amine, monohydrochloride  
**MF:** C<sub>18</sub>H<sub>17</sub>ClD<sub>5</sub>NO • HCl  
**FW:** 345.3  
**Chemical Purity:** ≥98% (Phenoxybenzamine)  
**Deuterium Incorporation:** ≥98% deuterated forms (d<sub>1</sub>-d<sub>5</sub>); ≤2% d<sub>0</sub>  
**Supplied as:** A 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-d<sub>5</sub> (hydrochloride) is intended for use as an internal standard for the quantification of phenoxybenzamine (Item No. 16211) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Phenoxybenzamine-d<sub>5</sub> (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the phenoxybenzamine-d<sub>5</sub> (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Phenoxybenzamine-d<sub>5</sub> (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of phenoxybenzamine-d<sub>5</sub> (hydrochloride) in DMF is approximately 30 mg/ml and approximately 25 mg/ml in ethanol and DMSO.

### 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 ( $EC_{50}$ s = 125.9-316.2 nM), as well as radioligand binding to  $\alpha_{2A}$ -,  $\alpha_{2B}$ -, and  $\alpha_{2C}$ -ARs in CHO cell membranes ( $K_i$ s = 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  $IC_{50}$  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.

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