Phenoxybenzamine (hydrochloride)

Item No. 16211

CAS Registry No.: 63-92-3
Formal Name: N-(2-chloroethyl)-N-(1-methyl-2-phenoxyethyl)benzenemethanamine, monohydrochloride
Synonyms: Dibenzyline, NSC 37448
MF: C_{18}H_{22}ClNO • HCl
FW: 340.3
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: \( \lambda_{\text{max}}: 209, 269 \text{ nm} \)

Laboratory Procedures

For long term storage, we suggest that phenoxybenzamine (hydrochloride) be stored as supplied at -20°C. It should be stable for at least two years.

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

Phenoxybenzamine is a noncompetitive, irreversible \( \alpha \)-adrenergic receptor antagonist (IC_{50} = 34.2 nM for \( \alpha_1 \); K_{D} = 0.06, 0.01, and 0.06 μM for \( \alpha_{2A} \), \( \alpha_{2B} \), and \( \alpha_{2C} \), respectively) with antihypertensive activity.\(^1,2\) It forms a covalent bond with the adrenergic receptor, resulting in a slow onset and highly prolonged duration (2-8 days) of the blockade that subsides upon the synthesis of new adrenergic receptors.\(^3\) Due to its ability to selectively block longitudinal but not circular muscle contraction in human vas deferens, phenoxybenzamine has been explored as a form of male contraception to prevent sperm emission.\(^4\) The ability of phenoxybenzamine to block sympathetic signal transduction has also been explored in the context of complex regional pain syndrome.\(^5\)

References


Related Products

For a list of related products please visit: www.caymanchem.com/catalog/16211

SAFETY DATA
This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Safety Data Sheet, which has been sent with your order.

WARRANTY AND LIMITATION OF REMEDY
Cayman Chemical Company makes no warranty or guarantee of any kind, whether written or oral, expressed or implied, including without limitation, any warranty of fitness for a particular purpose, suitability and merchantability, which extends beyond the description of the chemicals hereof. Cayman warrants only to the original customer that the material will meet our specifications at the time of delivery. Cayman will carry out its delivery obligations with due care and skill. Thus, in no event will Cayman have any obligation or liability, whether in tort (including negligence) or in contract, for any direct, indirect, incidental or consequential damages, even if Cayman is informed about their possible existence. This limitation of liability does not apply in the case of intentional acts or negligence of Cayman, its directors or its employees. Buyer's exclusive remedy and Cayman's sole liability hereunder shall be limited to a refund of the purchase price, or at Cayman's option, the replacement, at no cost to Buyer, of all material that does not meet our specifications. Said refund or replacement is conditioned on Buyer giving written notice to Cayman within thirty (30) days after arrival of the material at its destination. Failure of Buyer to give said notice within thirty (30) days shall constitute a waiver by Buyer of all claims hereunder with respect to said material. For further details, please refer to our Warranty and Limitation of Remedy located on our website and in our catalog.

Copyright Cayman Chemical Company, 08/04/2014