Loperamide (hydrochloride)
Item No. 14875

CAS Registry No.: 34552-83-5
Formal Name: 4-(4-chlorophenyl)-4-hydroxy-N,N-dimethyl-α,α-diphenyl-1-piperidinebutanamido, monohydrochloride

Synonyms: Imodium, NSC 696356, PJ 185, R 18553
MF: C25H23ClN2O2 • HCl
FW: 513.5
Purity: ≥98%
Stability: ≥2 years at -20°C

Supplier as: A crystalline solid

Laboratory Procedures

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

Loperamide (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the loperamide (hydrochloride) in the solvent of choice. Loperamide (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 loperamide (hydrochloride) in ethanol is approximately 10 mg/ml and approximately 2.5 mg/ml in DMSO and DMF.

Loperamide (hydrochloride) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, loperamide (hydrochloride) should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. Loperamide (hydrochloride) has a solubility of approximately 0.5 mg/ml in a 1:1 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Loperamide is an opiate which potently and selectively activates μ opioid receptors (K_i = 0.16 nM) exclusively in the periphery.1-2 It is a much weaker agonist of the δ opioid receptor (K_i = 50 nM).1 Through its actions in the gut wall, loperamide has antidiarrheal action by increasing transit time and by altering intestinal transport of water and electrolytes.2,3 It also blocks voltage-sensitive sodium channels (IC_{50} = 270 nM) and high voltage-activated calcium channels (IC_{50} = 900 nM), presumably through an inhibitory effect on calmodulin.3,4,5 Loperamide is comparable to morphine in blocking peripheral pain in rats.6

References


Related Products

For a list of related products please visit: www.caymanchem.com/catalog/14875

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY; NOT FOR ADMINISTRATION TO HUMANS, NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

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 via email to your institution.

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