Diphenidol (hydrochloride)

CAS Registry No.: 3254-89-5
Formal Name: α,α-diphenyl-1-piperidinebutanol, monohydrochloride
Synonym: SKF 478A
MF: C₂₁H₂₇NO • HCl
FW: 345.9
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid

For long term storage, we suggest that diphenidol (hydrochloride) be stored as supplied at -20°C. It should be stable for at least two years. Diphenidol (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the diphenidol (hydrochloride) in the solvent of choice. Diphenidol (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 diphenidol (hydrochloride) in ethanol and DMSO is approximately 30 mg/ml and approximately 50 mg/ml in DMF.

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 diphenidol (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of diphenidol (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

Diphenidol is a non-selective muscarinic acetylcholine receptor antagonist.¹ It is also a non-specific inhibitor of voltage-gated ion channels (Na⁺, K⁺, and Ca²⁺) in neurons.² Diphenidol has been used to inhibit rotation-induced firing of type 1 medial vestibular nucleus neurons in a cat model of vertigo and to block the chemoreceptor trigger zone in the medulla that controls apomorphine-induced vomiting in a dog model of emesis.³,⁴

References