Biperiden (hydrochloride)

**CAS Registry No.:** 1235-82-1

**Formal Name:** α-bicyclo[2.2.1]hept-5-en-2-yl-α-phenyl-1-piperidinepropanol, monohydrochloride

**Synonyms:** NSC 84989, NSC 170950

**MF:** C21H29NO • HCl

**FW:** 347.9

**Purity:** ≥95%

**UV/Vis.:** λ_max: 246 nm

**Supplied as:** A crystalline solid

**Storage:** -20°C

**Stability:** ≥2 years

*Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.*

**Laboratory Procedures**

Biperiden (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the biperiden (hydrochloride) in the solvent of choice. Biperiden (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of biperiden (hydrochloride) in these solvents is approximately 0.5 mg/ml.

**Description**

Biperiden is a muscarinic acetylcholine receptor antagonist of (K_50's = 0.48, 6.3, 3.9, 2.4, and 6.3 nM for M_1-5 receptors, respectively, in CHO-K1 cells expressing cloned receptors).<sup>1</sup> It inhibits binding of [³H]quinuclidinyl benzilate (QNB) to muscarinic receptors in tissue homogenates (IC_50's = 79, 52, and 38 nM for rat heart, rat lung, and guinea pig lung, respectively) and in vivo (IC_50's = 2.5, 1.1, and 1.2 mg/kg for mouse cerebral cortex, cerebellum, and heart, respectively).<sup>2,3</sup> Biperiden (1 μM) increases spontaneous and electrically-evoked dopamine (DA) and electrically-evoked acetylcholine (ACh) release from rabbit caudate nucleus slices preincubated with dopamine in vitro.<sup>4</sup> It is also an uncompetitive NMDA receptor antagonist and inhibits NMDA-evoked ACh release at a concentration of 10 μM.<sup>5</sup> Biperiden (0.01-1.0 mg/kg) reduces physostigmine-induced tremor in rats in a dose-dependent manner.<sup>6</sup> Formulations containing biperiden have been used as an adjuvant treatment for Parkinson's disease.

**References**