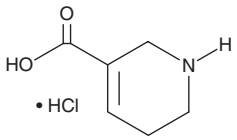
PRODUCT INFORMATION

Guvacine (hydrochloride)

Item No. 23361

CAS Registry No.: 6027-91-4
Formal Name: 1,2,5,6-tetrahydro-3-pyridinecarboxylic acid, monohydrochloride
MF: $C_6H_9NO_2 \bullet HCl$
FW: 163.6
Purity: ≥95%
Supplied as: A crystalline 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

Guvacine (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the guvacine (hydrochloride) in the solvent of choice. Guvacine (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of guvacine (hydrochloride) in these solvents is approximately 0.5, 20, and 0.25 mg/ml, respectively.

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 guvacine (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of guvacine (hydrochloride) in PBS, pH 7.2, is approximately 3 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Guvacine is an amino acid found in *A. catechu* (Betel nut).[1] It competitively inhibits GABA uptake (IC_{50} = 10 µM; K_i = 14 µM) in rat hippocampal brain slices.[1,2] *In vivo*, guvacine, at doses ranging from 50-100 mg/kg, decreases spontaneous activity in mice.[1] Administration of guvacine also decreases tail flick reaction time in a rat model of morphine analgesia.[3]

References

1. Johnston, G.A., Krogsgaard-Larsen, P., and Stephanson, A. Betel nut constituents as inhibitors of γ-aminobutyric acid uptake. *Nature* **258(5536)**, 627-628 (1975).
2. Pavia, M.R., Lobbestael, S.J., Nugiel, D., *et al.* Structure-activity studies on benzhydrol-containing nipecotic acid and guvacine derivatives as potent, orally-active inhibitors of GABA uptake. *J. Med. Chem.* **35(22)**, 4238-4248 (1992).
3. Mantegazza, P., Tammiso, R., Vicentini, L., *et al.* Nipecotic acid and guvacine antagonism on morphine analgesia in rats. *Pharmacol. Res. Commun.* **11(8)**, 657-662 (1979).

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