

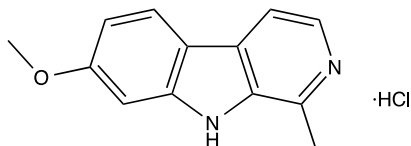
Catalog # 10-4520

Harmine

CAS# 343-27-1

7-Methoxy-1-methyl-9H-pyrido[3,4-b]indole hydrochloride

Lot # FBA1104



Selective competitive and reversible inhibitor of MAO-A ($IC_{50} = 8 \mu M$).¹ Harmine is a potent and specific inhibitor of both the kinase activity and autophosphorylation of tyrosine during translation DYRK1A (IC_{50} 's: DYRKA1A = 33 nM; DYRKA1B = 166 nM; DYRK2 = 1.9 μM ; DYRK4 = 80 μM).^{2,3} Inhibits self-renewal and promotes differentiation of glioblastoma stem-like cells (GSLC's) possibly via inhibition of Akt phosphorylation.⁴ Harmine has also been shown to possess antimicrobial, antifungal, antiplasmodial, antitumor, antioxidant, antimutagenic and antigenotoxic properties.⁵ Inhibits osteoclast differentiation and bone resorption via downregulation of c-Fos and NFATc1 induced by RANKL.⁶

- 1) Wouters (1998) *Structural Aspects of Monoamine Oxidase and its Reversible Inhibition Current Medicinal Chemistry* **5** 137
- 2) Seifert *et al.* (2008) *DYRK1A phosphorylates caspase 9 at an inhibitory site and is potently inhibited in human cells by harmine FEBS J.* **275** 6268
- 3) Gockler *et al.* (2009) *Harmine specifically inhibits protein kinase DYRK1A and interferes with neurite outgrowth FEBS J.* **276** 6324
- 4) Liu *et al.* (2013) *Harmine hydrochloride inhibits Akt phosphorylation and depletes the pool of cancer stem-like cells of glioblastoma J.Neurooncol.* **112** 39
- 5) Patel *et al.* (2012) *A review on medical importance, pharmacological activity and bioanalytical aspects of beta-carboline alkaloid "Harmine" Asian Pac.J.Trop.Biomed.* **2** 660
- 6) Yoneazwa *et al.* (2011) *Harmine, a β -carboline alkaloid, inhibits osteoclast differentiation and bone resorption in vitro and in vivo. Eur.J.Pharmacol.* **650** 511

PHYSICAL DATA

Molecular Weight:	248.71
Molecular Formula:	C ₁₃ H ₁₂ N ₂ O·HCl
Purity:	>98% (TLC: 10% Methanol/methylene chloride + 0.5% NH ₄ OH; R _f = 0.50)
Solubility:	Water (25 mg/mL)
Physical Description:	White solid
Storage and Stability:	Store as supplied at -20°C for up to two years from the date of purchase. Solutions in water may be stored at -20°C for up to 3 months.

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