

Product Data Sheet

Product Name: Harmine hydrochloride

Cat. No.: GC38413

Chemical Properties

Cas. No. 343-27-1

SMILES CC1=NC=CC2=C1NC3=C2C=CC(OC)=C3.Cl

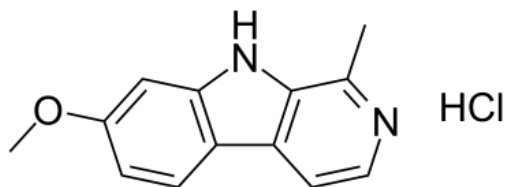
Formula $C_{13}H_{13}ClN_2O$ M.Wt 248.71

Solubility Soluble in DMSO Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Background

Harmine Hydrochloride (Telepathine Hydrochloride) is a natural dual-specificity tyrosine phosphorylation-regulated kinase (DYRK) inhibitor with anticancer and anti-inflammatory activities. Harmine has a high affinity of 5-HT_{2A} serotonin receptor, with an K_i of 397 nM[1].

Harmine inhibits tau phosphorylation by DYRK1A by selected DANDYs, with an IC_{50} of 190 nM[2]. Harmine negatively regulates homologous recombination (HR) by interfering Rad51 recruitment, resulting in severe cytotoxicity in hepatoma cells. Furthermore, NHEJ inhibitor Nu7441 markedly

Caution: Product has not been fully validated for medical applications. For research use only.

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sensitizes Hep3B cells to the anti-proliferative effects of Harmine[3].

It is shown that brain water content is significantly increased in the TBI group. Treatment with Harmine significantly reduces the tissue water content at 1, 3 and 5 days, compared with the TBI group. Harmine treatment significantly reduces the escape latency at 3 and 5 days, compared with the TBI group. Post-TBI administration of Harmine significantly improves the motor function recovery of the rats at 1, 3 and 5 days following TBI, compared with the TBI group without Harmine treatment. The neuronal survival rate in the Harmine-treated group is significantly increased, compared with the TBI group. Administration of Harmine results in marked elevation in the expression of GLT-1, compared with the TBI group. The administration of Harmine significantly reduces the expression of caspase 3, compared with the TBI group[4].

[1]. Glennon RA, et al. Binding of beta-carbolines and related agents at serotonin (5-HT(2) and 5-HT(1A)), dopamine (D(2)) and benzodiazepine receptors. *Drug Alcohol Depend.* 2000 Aug 1;60(2):121-32. [2]. Neumann F, et al. DYRK1A inhibition and cognitive rescue in a Down syndrome mouse model are induced by new fluoro-DANDY derivatives. *Sci Rep.* 2018 Feb 12;8(1):2859. [3]. Zhang L, et al. Harmine suppresses homologous recombination repair and inhibits proliferation of hepatoma cells. *Cancer Biol Ther.* 2015;16(11):1585-92. [4]. Zhong Z, et al. Treatment with harmine ameliorates functional impairment and neuronal death following traumatic brain injury. *Mol Med Rep.* 2015 Dec;12(6):7985-91.

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