Procaine hydrochloride

Cat. No.: HY-B0546A

CAS No.: 51-05-8

Molecular Formula: $C_{13}H_{21}ClN_2O_2$

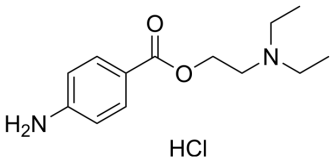
Molecular Weight: 272.77

Target: Histone Demethylase; DNA/RNA Synthesis; Bacterial

Pathway: Epigenetics; Cell Cycle/DNA Damage; Anti-infection

Storage: 4°C, sealed storage, away from moisture and light

* The compound is unstable in solutions, freshly prepared is recommended.



SOLVENT & SOLUBILITY

In Vitro

H_2O : ≥ 50 mg/mL (183.30 mM)

DMSO : 50 mg/mL (183.30 mM; Need ultrasonic)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.6661 mL	18.3305 mL	36.6609 mL
	5 mM	0.7332 mL	3.6661 mL	7.3322 mL
	10 mM	0.3666 mL	1.8330 mL	3.6661 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 130 mg/mL (476.59 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Procaine hydrochloride is a DNA-demethylating agent. Procaine hydrochloride acts through multiple targets and has a slow onset and a short duration of action[1][2].

In Vitro

Procaine hydrochloride (0.01-100 microM) inhibited the 5-HT3 receptor-mediated inward current in the whole-cell patch clamp recording. Procaine appears to produce a competitive inhibition on 5-HT3 receptors with a KD of 1.7 microM[1]. Procaine is a DNA-demethylating agent that produces a 40% reduction in 5-methylcytosine DNA content as determined by high-performance capillary electrophoresis or total DNA enzyme digestion. Procaine can also demethylate densely hypermethylated CpG islands. Procaine also has growth-inhibitory effects in these cancer cells, causing mitotic arrest[2]. Procaine functions as an excitant of limbic system cells, and that procaine alters synaptic transmission in some, but not all, output pathways from the amygdale[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Stem Cell Res Ther. 2021 Feb 4;12(1):107.

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REFERENCES

[1]. Fan, P. and F.F. Weight, Procaine impairs the function of 5-HT3 receptor-ion channel complex in rat sensory ganglion neurons. Neuropharmacology, 1994. 33(12): p. 1573-9.

[2]. Villar-Garea, A., et al., Procaine is a DNA-demethylating agent with growth-inhibitory effects in human cancer cells. Cancer Res, 2003. 63(16): p. 4984-9.

[3]. Adamec, R.E. and C. Stark-Adamec, The effects of procaine HCl on population cellular and evoked response activity within the limbic system of the cat. Evidence for differential excitatory action of procaine in a variety of limbic circuits. Prog Neuropsychopharmacol Biol Psychiatry, 1987. 11(4): p. 345-64.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA