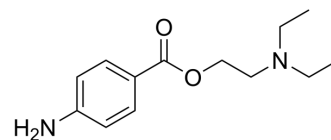


Procaine

Cat. No.:	HY-B0546
CAS No.:	59-46-1
Molecular Formula:	C ₁₃ H ₂₀ N ₂ O ₂
Molecular Weight:	236.31
Target:	Histone Demethylase; DNA/RNA Synthesis; Bacterial
Pathway:	Epigenetics; Cell Cycle/DNA Damage; Anti-infection
Storage:	Powder -20°C 3 years 4°C 2 years



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

SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (423.17 mM; Need ultrasonic)
H₂O : 1 mg/mL (4.23 mM; ultrasonic and warming and heat to 60°C)

	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	4.2317 mL	21.1586 mL	42.3173 mL
	5 mM	0.8463 mL	4.2317 mL	8.4635 mL
	10 mM	0.4232 mL	2.1159 mL	4.2317 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (10.58 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (10.58 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (10.58 mM); Clear solution
- Add each solvent one by one: PBS
Solubility: 2 mg/mL (8.46 mM); Clear solution; Need ultrasonic and warming and heat to 60°C

BIOLOGICAL ACTIVITY

Description

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

In Vitro

Procaine (0.01-100 μM) inhibits 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 K_D of 1.7 μM^[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.

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

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