Fenobam hydrate

Cat. No.: HY-101478A

CAS No.: 63540-28-3

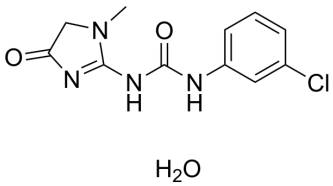
Molecular Formula: $C_{11}H_{13}ClN_4O_3$

Molecular Weight: 284.7

Target: mGluR; Apoptosis

Pathway: GPCR/G Protein; Neuronal Signaling; Apoptosis

Storage: Please store the product under the recommended conditions in the Certificate of Analysis.



H_2O

BIOLOGICAL ACTIVITY

Description

Fenobam hydrate is a selective and orally active mGluR5 antagonist (IC_{50}=84 nM) that can penetrate the blood-brain barrier. Fenobam hydrate shows the K_d values of 54 nM and 31 nM on rat and human recombinant mGlu5 receptors, respectively. Fenobam hydrate has anxiolytic activity, inhibits self-administration behavior in rat, and induces apoptosis in cancer cells. Fenobam hydrate can be used for research on neurological diseases, cancer and drug addiction[1][2][3].

IC_{50} & Target

mGluR5	human mGluR5	rat mGluR5
84 nM (IC_{50})	31 nM (Kd)	54 nM (Kd)

In Vitro

Fenobam hydrate (300 μM; 72 h) significantly inhibits proliferation and induces apoptosis in LM7 cells[2].

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

Apoptosis Analysis[2]

Cell Line:	LM7 cells
Concentration:	300 μM
Incubation Time:	72 h
Result:	Significantly reduced total number of cells, proliferating cells, and induced apoptosis.

In Vivo

Fenobam hydrate (30-60 mg/kg; p.o.; 3 times a week) significantly inhibits self-administration behavior in rats[3].

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

Animal Model:	Male Long-Evans rats (250-300 g)[3].
Dosage:	30-60 mg/kg
Administration:	Oral administration; 3 times a week.
Result:	Inhibited self-administration.

REFERENCES

[1]. Porter RH, et al. Fenobam: a clinically validated nonbenzodiazepine anxiolytic is a potent, selective, and noncompetitive mGlu5 receptor antagonist with inverse agonist activity. J Pharmacol Exp Ther. 2005 Nov;315(2):711-21.

[2]. Liao S, et al. Osteosarcoma cell proliferation and survival requires mGluR5 receptor activity and is blocked by Riluzole. PLoS One. 2017 Feb 23;12(2):e0171256.

[3]. Keck TM, et al. Fenobam sulfate inhibits cocaine-taking and cocaine-seeking behavior in rats: implications for addiction treatment in humans. Psychopharmacology (Berl). 2013;229(2):253-265.

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