Folic acid sodium

Cat. No.: HY-16637A

CAS No.: 6484-89-5

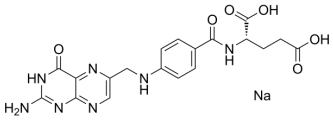
Molecular Formula: $C_{19}H_{19}N_7NaO_6$

Molecular Weight: 464.39

Target: Endogenous Metabolite; DNA/RNA Synthesis

Pathway: Metabolic Enzyme/Protease; Cell Cycle/DNA Damage

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



SOLVENT & SOLUBILITY

In Vitro

H_2O : 100 mg/mL (215.34 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.1534 mL	10.7668 mL	21.5336 mL
	5 mM	0.4307 mL	2.1534 mL	4.3067 mL
	10 mM	0.2153 mL	1.0767 mL	2.1534 mL

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

BIOLOGICAL ACTIVITY

Description

Folic acid (Vitamin B9) sodium is a orally active essential nutrient from the B complex group of vitamins. Folic acid sodium shows antidepressant-like effect. Folic acid sodium reduces the risk of neonatal neural tube defects. Folic acid sodium can be used to the research of megaloblastic and macrocytic anemias due to folic deficiency[1][2][3][4].

IC_{50} & Target	Microbial Metabolite	Human Endogenous Metabolite

In Vitro

Folic acid sodium plays a critical role in the prevention of chromosome breakage and hypomethylation of DNA[1].

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

In Vivo

Folic acid sodium (10, 50, 100 mg/kg; p.o.) shows an antidepressant-like effect in thisbehavioral mouse model[2].

Folic acid sodium (1, 10 nmol/site) shows no psychostimulant effect in mice habituated to the novel environment[2].

Folic acid sodium (1, 5 mg/kg; p.o.) prevents epigenetic modification of hepatic gene expression in the offspring in rats[3].

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

Animal Model:	30-40 g swiss mice[2]

Dosage:	10, 50, 100 mg/kg
Administration:	Oral administration
Result:	Decreased the immobility time in the forced swimming test (FST) (F_{324}=11.21) and produced a significant effect in the immobility time in the tail suspension test (TST) ($F_{3,20}$ =5.71).

Animal Model:	30-40 g swiss mice[2]
Dosage:	1-10 nmol/site
Administration:	Intracerebroventrical injection
Result:	Decreased the immobility time of mice in the FST ($F_{3,22}$=12.31) and TST ($F_{3,22}$=5.50).

Animal Model:	Virgin female Wistar rats[3]
Dosage:	1, 5 mg/kg (180 g/kg protein with 1 mg/kg folic acid or 90 g/kg casein with 1, 5 mg/kg folic acid)
Administration:	Oral administration
Result:	Prevented epigenetic modification of hepatic gene expression in the offspring.

CUSTOMER VALIDATION

- Cell Rep Med. 2023 Feb 14;100953.
- Br J Cancer. 2023 Jun 27.
- JCI Insight. 2022 Mar 1;e152330.
- J Mol Med (Berl). 2019 Aug;97(8):1183-1193.
- Microbiol Spectr. 2023 Sep 21;e0267123.

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REFERENCES

[1]. Butterworth CE Jr, et al. Folic acid safety and toxicity: a brief review. Am J Clin Nutr. 1989 Aug;50(2):353-8.

[2]. Brocardo PS, et al. Folic acid administration produces an antidepressant-like effect in mice: evidence for the involvement of the serotonergic and noradrenergic systems. Neuropharmacology. 2008 Feb;54(2):464-73.

[3]. Lillycrop KA, et al. Dietary protein restriction of pregnant rats induces and folic acid supplementation prevents epigenetic modification of hepatic gene expression in the offspring. J Nutr. 2005 Jun;135(6):1382-6.

[4]. Pietrzik K, et al. Folic acid and L-5-methyltetrahydrofolate: comparison of clinical pharmacokinetics and pharmacodynamics. Clin Pharmacokinet. 2010 Aug;49(8):535-48.

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