

Folic acid

Chemical Properties

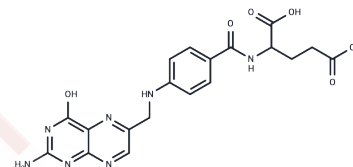
CAS No. : 59-30-3

Formula: C₁₉H₁₉N₇O₆

Molecular Weight: 441.4

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year



Biological Description

Description	Folic acid (Vitamin B9) is a vitamin B9 that is essential for the synthesis of DNA/RNA and for the production and maintenance of new cells. Folic acid deficiency can lead to anemia, neural tube closure defects, tumors, aging, and other diseases.
Targets(IC50)	Endogenous Metabolite,DNA/RNA Synthesis
In vitro	<p>METHODS: HUVEC cells were treated with Folic acid (2.5-100 μM) for 48 h. Cell proliferation was detected using xCELLigence RTCA real-time cell analyzer.</p> <p>RESULTS: Folic acid increased cell proliferation in the HUVEC cell line using a cytometric index to determine the EC50 dose of 50 μL.[1]</p> <p>METHODS: Neural tube explants were treated with Folic acid (90 μM) for 3 h and morphology was observed using microscopy.</p> <p>RESULTS: In the presence of Folic acid, cell migration from the neural tube explants was detected in 80% of the cultures within 2-3 h. The first cell to leave the initial explant was the first cell to leave the neural tube explant. The first cells leaving the initial explants were tightly organized neuroepithelial cells and the explants were firmly attached to the fibronectin layer. [2]</p>
In vivo	<p>METHODS: To investigate the role of Folic acid (1-100 mg/kg) in a behavioral model of depression, Swiss mice were administered Folic acid (1-100 mg/kg) in a single gavage dose and subjected to the forced swimming test (FST) and tail suspension test (TST).</p> <p>RESULTS: Oral administration of Folic acid reduced immobilization time in the FST (50-100 mg/kg) and TST (10-50 mg/kg). Folic acid produces antidepressant-like effects in the FST and TST. [3]</p>
Cell Research	To determine the effect of FA supplementation on BRCA1 and BRCA2 mRNA expression, all cell lines were treated with 0, 25, 50, 75, or 100 nmol/L FA for 72 hours before harvesting in TRI Reagent according to the manufacturer's instructions. (Only for Reference)

Solubility Information

Solubility	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2.5 mg/mL (5.66 mM),Suspension. DMSO: 25 mg/mL (56.63 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.2655 mL	11.3276 mL	22.6552 mL
5 mM	0.4531 mL	2.2655 mL	4.531 mL
10 mM	0.2266 mL	1.1328 mL	2.2655 mL
50 mM	0.0453 mL	0.2266 mL	0.4531 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Reference

- Pakdemirli A, et al. Role of mesenchymal stem cell-derived soluble factors and folic acid in wound healing. *Turk J Med Sci.* 2019 May 9;49(3):914-21.
- Zhao Y, Li Y, Zhu R, et al. RPS15 interacted with IGF2BP1 to promote esophageal squamous cell carcinoma development via recognizing m6A modification. *Signal Transduction and Targeted Therapy.* 2023, 8(1): 224.
- Boot MJ, et al. Folic acid and homocysteine affect neural crest and neuroepithelial cell outgrowth and differentiation in vitro. *Dev Dyn.* 2003 Jun;227(2):301-8.
- Zhan X Z, Wei T H, Yin Y Q, et al. Determination and mechanism of Xiao-Ai Jie-Du decoction against diffuse large B-cell lymphoma: In silico and In vitro studies. *Journal of Ethnopharmacology.* 2023: 117271.
- Liu C, Lai H, Chen T. Boosting Natural Killer Cell-Based Cancer Immunotherapy with Selenocystine/Transforming Growth Factor-Beta Inhibitor-Encapsulated Nanoemulsion. *ACS nano.* 2020, 14(9): 11067-11082.
- 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.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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Tel: 781-999-4286 E_mail: info@targetmol.com Address: 36 Washington Street, Wellesley Hills, MA 02481