

## Folinic acid

## Chemical Properties

CAS No. : 58-05-9

Formula: C<sub>20</sub>H<sub>23</sub>N<sub>7</sub>O<sub>7</sub>

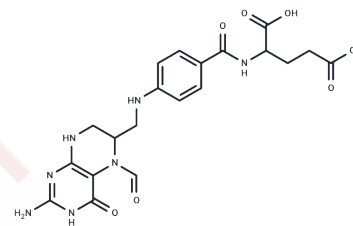
Molecular Weight: 473.44

Storage:

Keep away from direct sunlight, The compound is unstable in solution. Please use soon

Powder: -20°C for 3 years

Actual storage temperature shall be subject to the COA.



## Biological Description

Description	Folinic acid (Leucovorin) is a biofolate used in the treatment of methotrexate (MTX) toxicity reduction and as an adjuvant therapy for colon cancer.
Targets(IC50)	Endogenous Metabolite, Antifolate
In vitro	Methotrexate (MTX) alone induces a concentration-dependent increase in the percentage of micronucleated binucleated cells (MNBN) and abnormal cells (Abs). As the concentration of MTX increases, the nuclear division index (NDI) decreases. Similarly, the mitotic index (MI) also decreases at all tested concentrations of MTX. The addition of 50 µg/mL folinic acid significantly reduces the % MNBN (40-68%) and % Abs (36-77%). In the presence of 5 µg/mL folinic acid, inhibitory effects are observed as well (MNBN from 12% to 54%, Abs from 20% to 61%)[2].
In vivo	Treatment with folinic acid (7.0 mg/kg; intraperitoneal injection; every other day; for 3 weeks) appears to reverse the growth inhibition induced by Methotrexate (MTX) administration in young male Balb/c mice. Long-term MTX administration is known to inhibit skeletal growth in mice[1].

## Solubility Information

Solubility	DMSO: 260 mg/mL (549.17 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (4.22 mM), The compound is unstable in solution, please use soon. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

### Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.1122 mL	10.561 mL	21.122 mL
5 mM	0.4224 mL	2.1122 mL	4.2244 mL
10 mM	0.2112 mL	1.0561 mL	2.1122 mL
50 mM	0.0422 mL	0.2112 mL	0.4224 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.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

Iqbal MP, et al. Effect of methotrexate and folinic acid on skeletal growth in mice. *Acta Paediatr.* 2003 Dec;92(12): 1438-44.

Keshava, C., et al., Inhibition of methotrexate-induced chromosomal damage by folinic acid in V79 cells. *Mutat Res*, 1998. 397(2): p. 221-8.

Saltz L, Badarinath S, Dakhil S, Bienvenu B, Harker WG, Birchfield G, Tokaz LK, Barrera D, Conkling PR, O'Rourke MA, Richards DA, Reidy D, Solit D, Vakiani E, Capanu M, Scales A, Zhan F, Boehm KA, Asmar L, Cohn A. Phase III trial of cetuximab, bevacizumab, and 5-fluorouracil/leucovorin vs. FOLFOX-bevacizumab in colorectal cancer. *Clin Colorectal Cancer.* 2012 Jun;11(2):101-11. doi: 10.1016/j.clcc.2011.05.006. Epub 2011 Nov 4. PubMed PMID: 22055112.

Budai B, Nagy T, Láng I, Hitre E. The use of high dose d,l-leucovorin in first-line bevacizumab+mFOLFIRI treatment of patients with metastatic colorectal cancer may enhance the antiangiogenic effect of bevacizumab. *Angiogenesis.* 2013 Jan;16(1):113-21. doi: 10.1007/s10456-012-9303-z. Epub 2012 Sep 6. PubMed PMID: 22956187.

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