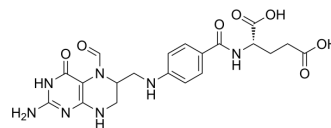


## Folinic acid

<b>Cat. No.:</b>	HY-17556
<b>CAS No.:</b>	58-05-9
<b>Molecular Formula:</b>	C <sub>20</sub> H <sub>23</sub> N <sub>7</sub> O <sub>7</sub>
<b>Molecular Weight:</b>	473.44
<b>Target:</b>	Antifolate; Endogenous Metabolite
<b>Pathway:</b>	Cell Cycle/DNA Damage; Metabolic Enzyme/Protease
<b>Storage:</b>	-20°C, protect from light, stored under nitrogen * In solvent : -80°C, 1 year; -20°C, 6 months (protect from light, stored under nitrogen)



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 250 mg/mL (528.05 mM; Need ultrasonic)					
		Solvent Concentration	Mass			
	<b>Preparing Stock Solutions</b>			1 mg	5 mg	10 mg
		1 mM		2.1122 mL	10.5610 mL	21.1220 mL
		5 mM		0.4224 mL	2.1122 mL	4.2244 mL
	10 mM		0.2112 mL	1.0561 mL	2.1122 mL	
Please refer to the solubility information to select the appropriate solvent.						
<b>In Vivo</b>	<ol style="list-style-type: none"> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 40% PEG300 &gt;&gt; 5% Tween-80 &gt;&gt; 45% saline Solubility: ≥ 2.08 mg/mL (4.39 mM); Clear solution</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.08 mg/mL (4.39 mM); Clear solution</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% corn oil Solubility: ≥ 2.08 mg/mL (4.39 mM); Clear solution</li> </ol>					

### BIOLOGICAL ACTIVITY

<b>Description</b>	Folinic acid (Leucovorin) is a biological folic acid and is generally administered along with <a href="#">Methotrexate (MTX)</a> (HY-14519) as a rescue agent to decrease MTX-induced toxicity <sup>[1]</sup> .
<b>IC<sub>50</sub> &amp; Target</b>	Human Endogenous Metabolite
<b>In Vitro</b>	Methotrexate (MTX) alone induces a concentration-related increase in % micronucleated binucleated cells (MNBN) and % aberrant cells (Abs). There is a decrease in nuclear division index (NDI) with increase in MTX concentration. Similarly, the mitotic index (MI) also decreases in all concentrations of MTX tested. The addition of Folinic acid at 50 µg/ mL significantly

reduces % MNBN (40-68%) and % Abs (36-77%). Inhibition is also seen at 5 µg/ mL Folinic acid (12 to 54% for MNBN and 20 to 61% for Abs) [1].

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

#### In Vivo

Folinic acid (7.0 mg/kg; intraperitoneal injection; every second day; for 3 weeks; Balb/c young growing male mice) treatment following Methotrexate (MTX) administration appears to reverse this growth inhibition (Chronic administration of MTX induces suppression of skeletal growth in mice)[2].

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

Animal Model:	24 Balb/c young growing male mice aged 3 weeks (11.88 ± 0.25 g)[2]
Dosage:	7.0 mg/kg
Administration:	Intraperitoneal injection; every second day; for 3 weeks
Result:	Following MTX administration appears to reverse this growth inhibition.

## CUSTOMER VALIDATION

- JAMA Oncol. 2022 Jan 1;8(1):e215445.
- Nat Commun. 2020 Apr 14;11(1):1792.
- EBioMedicine. 2024 Mar 13:102:105041.
- NPJ Precis Oncol. 2023 Dec 8;7(1):128.
- Mol Oncol. 2020 Nov;14(11):2894-2919.

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## REFERENCES

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

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

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

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