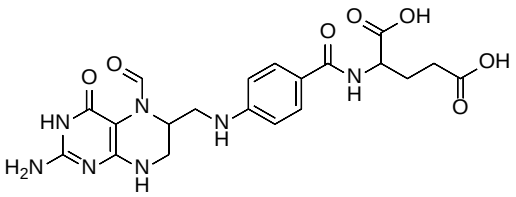
Product data sheet

MedKoo Cat#: 584331 Name: Leucovorin CAS: 58-05-9 (free acid) Chemical Formula: $C_{20}H_{23}N_7O_7$ Exact Mass: 473.1659 Molecular Weight: 473.446	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
Leucovorin is the active metabolite of folic acid. Leucovorin is used principally as its calcium salt as an antidote to folic acid antagonists which block the conversion of folic acid to folinic acid.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	172.5	364.35

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.11 mL	10.56 mL	21.12 mL
5 mM	0.42 mL	2.11 mL	4.22 mL
10 mM	0.21 mL	1.06 mL	2.11 mL
50 mM	0.04 mL	0.21 mL	0.42 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Tedeschi PM, Kathari YK, Farooqi IN, Bertino JR. Leucovorin rescue allows effective high-dose pralatrexate treatment and an increase in therapeutic index in mesothelioma xenografts. Cancer Chemother Pharmacol. 2014 Nov;74(5):1029-32. doi: 10.1007/s00280-014-2580-z. Epub 2014 Sep 9. PMID: 25205429; PMCID: PMC4209237.
2. Keshava C, Keshava N, Whong WZ, Nath J, Ong TM. Inhibition of methotrexate-induced chromosomal damage by folinic acid in V79 cells. Mutat Res. 1998 Feb 2;397(2):221-8. doi: 10.1016/s0027-5107(97)00216-9. PMID: 9541646.

In vivo study

1. Iqbal MP, Ahmed M, Umer M, Mehboobali N, Qureshi AA. Effect of methotrexate and folinic acid on skeletal growth in mice. Acta Paediatr. 2003 Dec;92(12):1438-44. PMID: 14971796.
2. Van der Wilt CL, Pinedo HM, Smid K, Peters GJ. Elevation of thymidylate synthase following 5-fluorouracil treatment is prevented by the addition of leucovorin in murine colon tumors. Cancer Res. 1992 Sep 15;52(18):4922-8. PMID: 1516048.

7. Bioactivity
Biological target:

Folinic acid (Leucovorin) is a biological folic acid and is generally administered along with Methotrexate (MTX) (HY-14519) as a rescue agent to decrease MTX-induced toxicity.

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In vitro activity

Folinic acid (Leucovorin) is generally administered along with MTX as a rescue agent to decrease MTX-induced toxicity. The addition of FA (folinic acid) at 50 micrograms ml-1 significantly reduced % MNBN (40-68%) and % Abs (36-77%). Inhibition was also seen at 5 micrograms FA (12 to 54% for MNBN and 20 to 61% for Abs). These results indicate that FA is capable of reducing the cytogenetic damage induced by MTX and appears to be an anticlastogenic agent.

Reference: Mutat Res. 1998 Feb 2;397(2):221-8. https://pubmed.ncbi.nlm.nih.gov/9541646/

In vivo activity

These data show that chronic administration of MTX induces suppression of skeletal growth in mice, possibly through the inhibition of the pathway of de novo DNA synthesis. Folinic acid treatment following MTX administration appears to reverse this growth inhibition.

Reference: Acta Paediatr. 2003 Dec;92(12):1438-44. https://pubmed.ncbi.nlm.nih.gov/14971796/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.