

# Product data sheet



MedKoo Cat#: 100520 Name: Leucovorin calcium hydrate CAS#: 6035-45-6 (calcium hydrate) Chemical Formula: C <sub>20</sub> H <sub>31</sub> CaN <sub>7</sub> O <sub>12</sub> Molecular Weight: 601.58	
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 calcium is an active metabolite of folic acid (also called folinic acid and citrovorum factor), which does not require metabolism by dihydrofolate reductase, the molecular target of folate antagonist-type chemotherapeutic drugs. Leucovorin calcium counteracts the toxic effects of these medications, 'rescuing' the patient while permitting the antitumor activity of the folate antagonist. This agent also potentiates the effects of fluorouracil and its derivatives by stabilizing the binding of the drug's metabolite to its target enzyme, thus prolonging drug activity.

## 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
Water	10.0	16.62

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.66 mL	8.31 mL	16.62 mL
5 mM	0.33 mL	1.66 mL	3.32 mL
10 mM	0.17 mL	0.83 mL	1.66 mL
50 mM	0.03 mL	0.17 mL	0.33 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.

### In vivo 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.

## 7. Bioactivity

### Biological target:

Folinic acid calcium salt pentahydrate (Leucovorin calcium salt pentahydrate) is generally administered along with methotrexate (MTX) as a rescue agent to decrease MTX-induced toxicity.

### In vitro activity

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As LV (Leucovorin) can abrogate antifolate toxicity, this study next examined if efficacy of PDX would be compromised by the addition of LV 24 h later. H2052 cells were treated with antifolate as before, but media containing 2 $\mu$ M LV was added for another 24 h period, followed by removal of drugs and culture in fresh media for a further 48 h. The addition of 2 $\mu$ M LV raised the IC50 slightly for MTX and pemetrexed (Fig. 2d).

Reference: Cancer Chemother Pharmacol. 2014; 74(5): 1029–1032. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4209237/v>

## In vivo activity

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The effect of LV (Leucovorin) treatment on PDX efficacy and toxicity was examined using H2052 xenografts in nude mice (Fig. 3). Using 60 mg/kg as the equivalent clinical dose, tumor regression was seen both with and without LV treatment in this cohort. Efficacy was nearly identical, but mice that were treated with LV had less toxicity and bodyweight remained close to control animals.

Reference: Cancer Chemother Pharmacol. 2014; 74(5): 1029–1032. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4209237/v>

*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.*