

## Vitamin U chloride

## Chemical Properties

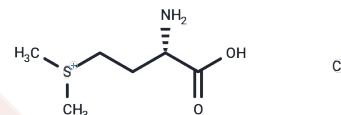
CAS No. : 1115-84-0

Formula: C<sub>6</sub>H<sub>14</sub>ClNO<sub>2</sub>S

Molecular Weight: 199.7

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

Actual storage temperature shall be subject to the COA.



## Biological Description

Description	Vitamin U chloride is a compound with antioxidant, anti-ulcer, and orally available properties that inhibits adipocyte differentiation and promotes skin wound healing, suitable for gastrointestinal ulcers.
Targets(IC50)	Others
In vitro	Vitamin U chloride (at 100 μM for 24 hours) promotes growth and migration of human dermal fibroblasts (hDFs), while concentrations of 0–1 mM activate the ERK1/2 signaling pathway in hDFs [1]. Vitamin U chloride (0.1 g/L in nutrient solution) mitigates cell membrane damage in higher plants under low-temperature conditions [2]. Vitamin U chloride (10–100 mM, 7 days) downregulates adipogenic factors and upregulates AMPK activity, inhibiting adipocyte differentiation [3].
In vivo	Vitamin U chloride (50 mg/kg; oral gavage) prevented valproic acid-induced liver injury in rats [4]. Vitamin U chloride (50 mg/kg; oral gavage; 3 days) prevented galactosamine-induced gastric injury in rats and exhibited antioxidant effects [5].

## Solubility Information

Solubility	DMSO: Soluble, Sonication is recommended. H <sub>2</sub> O: 80 mg/mL (400.6 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	5.0075 mL	25.0376 mL	50.0751 mL
5 mM	1.0015 mL	5.0075 mL	10.015 mL
10 mM	0.5008 mL	2.5038 mL	5.0075 mL
50 mM	0.1002 mL	0.5008 mL	1.0015 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

- Kim WS, et al. Accelerated wound healing by S-methylmethionine sulfonium: evidence of dermal fibroblast activation via the ERK1/2 pathway. *Pharmacology*. 2010;85(2):68-76.
- Ilona Rácz, et al. S-methylmethionine reduces cell membrane damage in higher plants exposed to low-temperature stress. *J Plant Physiol*. 2008 Sep 29;165(14):1483-90.
- Na Young Lee, et al. Inhibitory Effect of Vitamin U (S-Methylmethionine Sulfonium Chloride) on Differentiation in 3T3-L1 Pre-adipocyte Cell Lines. *Ann Dermatol*. 2012 Feb;24(1):39-44.
- Ertan Celik, et al. Vitamin U prevents valproic acid-induced liver injury through supporting enzymatic antioxidant system and increasing hepatocyte proliferation triggered by inflammation and apoptosis. *Toxicol Mech Methods*. 2021 Oct;31(8):600-608.
- Dileknur Topaloglu, et al. Gastroprotective effect of vitamin U in D-galactosamine-induced hepatotoxicity. *J Biochem Mol Toxicol*. 2022 Sep;36(9):e23124.

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