

## Isovalerylcarnitine

## Chemical Properties

CAS No. : 31023-24-2

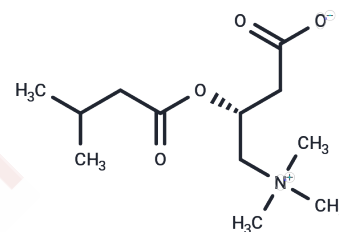
Formula: C<sub>12</sub>H<sub>23</sub>NO<sub>4</sub>

Molecular Weight: 245.32

Keep away from moisture

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

Actual storage temperature shall be subject to the COA.



## Biological Description

Description	Isovalerylcarnitine (3-methylbutyrylcarnitine) is a small molecule compound produced by the catabolism of L-leucine and the accumulation of isovaleric acid. Isovalerylcarnitine is also a selective and effective calpain activator that can promote cell apoptosis. Isovalerylcarnitine is related to isovaleric acidemia and can be used as a marker of isovaleric acidemia.
Targets(IC50)	Apoptosis,Proteasome,Endogenous Metabolite,Cysteine Protease
In vitro	Isovalerylcarnitine induces an early and marked increase in phagocytosis and cell killing while reducing proliferation in U937 leukemic cells[3].

## Solubility Information

Solubility	DMSO: 150 mg/mL (611.45 mM),Sonication is recommended. H2O: 50 mg/mL (203.82 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 (8.15 mM),Sonication is recommended. <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

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	1mg	5mg	10mg
1 mM	4.0763 mL	20.3815 mL	40.7631 mL
5 mM	0.8153 mL	4.0763 mL	8.1526 mL
10 mM	0.4076 mL	2.0382 mL	4.0763 mL
50 mM	0.0815 mL	0.4076 mL	0.8153 mL

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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

Pontremoli S, et al. Isovalerylcarnitine is a specific activator of calpain of human neutrophils. *Biochem Biophys Res Commun.* 1987 Nov 13;148(3):1189-95.

Pontremoli S, et al. Isovalerylcarnitine is a specific activator of the high calcium requiring calpain forms. *Biochem Biophys Res Commun.* 1990 Feb 28;167(1):373-80.

Ferrara F, et al. Evaluation of carnitine, acetylcarnitine and isovalerylcarnitine on immune function and apoptosis. *Drugs Exp Clin Res.* 2005;31(3):109-14.

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