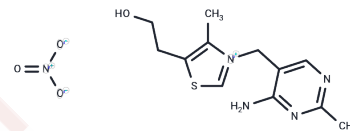


## Thiamine nitrate

## Chemical Properties

CAS No. :	532-43-4
Formula:	C <sub>12</sub> H <sub>17</sub> N <sub>5</sub> O <sub>4</sub> S
Molecular Weight:	327.36
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	Thiamine nitrate (Vitamin B1 nitrate) is an essential vitamin, and can enhance normal neuronal actives.
Targets(IC50)	Others,Endogenous Metabolite,Antibacterial
In vitro	In a study examining the effect of dietary Thiamine on homozygous knockout (KO) and knock-in (KI) mice compared to wild-type (WT) mice, it was found that at 7 weeks, Thiamine levels in the blood of KO and KI mice fed a conventional diet were significantly reduced to 0.058±0.051 μM and 0.126±0.092 μM, respectively, in contrast to WT mice (0.796±0.259 μM). Further, when subjected to a Thiamine-restricted diet (0.60 mg/100 g food), both KO and KI mice showed a drastic decrease in blood Thiamine concentrations, dropping to 0.010±0.009 and 0.010±0.006 μM after 5 and 14 days, correspondingly, compared to WT counterparts (0.609±0.288 μM). Additionally, Thiamine levels in the brain homogenates of KO and KI mice were also observed to be lower than in WT mice when fed a conventional diet, with concentrations being 1.33±0.96 nmol/g and 2.16±1.55 nmol/g wet weight, respectively, versus 3.81±2.18 nmol/g in WT. Notably, the Thiamine concentration in brain homogenates of KO and KI mice decreased further to 0.95±0.72 and 1.11±0.24 nmol/g wet weight respectively after 5 and 14 days on a Thiamine-restricted diet, compared to WT mice (3.65±1.02 nmol/g wet weight), ahead of showcasing a disease phenotype.

## Solubility Information

Solubility	DMSO: 4.62 mg/mL (14.11 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: 1 mg/mL (3.05 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	3.0547 mL	15.2737 mL	30.5474 mL
5 mM	0.6109 mL	3.0547 mL	6.1095 mL
10 mM	0.3055 mL	1.5274 mL	3.0547 mL
50 mM	0.0611 mL	0.3055 mL	0.6109 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

Kenneth Osiezagha, et al. Thiamine Deficiency and Delirium. *Innov Clin Neurosci*. 2013 Apr; 10(4): 26-32.

Kaoru Suzuki, et al. High-dose thiamine prevents brain lesions and prolongs survival of Slc19a3-deficient mice. *PLoS One*. 2017; 12(6): e0180279.

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