



# SZABO SCANDIC

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### SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

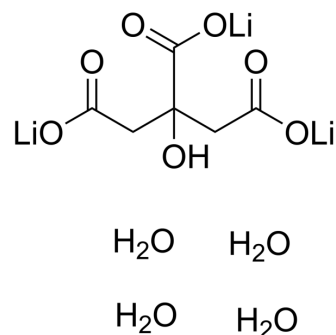
[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

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## Lithium citrate tetrahydrate

Cat. No.:	HY-B1295
CAS No.:	6080-58-6
Molecular Formula:	C <sub>6</sub> H <sub>13</sub> Li <sub>3</sub> O <sub>11</sub>
Molecular Weight:	281.98
Target:	Bacterial; ATP Citrate Lyase; HIF/HIF Prolyl-Hydroxylase; Endogenous Metabolite
Pathway:	Anti-infection; Metabolic Enzyme/Protease
Storage:	4°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



### SOLVENT & SOLUBILITY

In Vitro	H <sub>2</sub> O : ≥ 100 mg/mL (354.64 mM) * "≥" means soluble, but saturation unknown.																									
	<table border="1"> <thead> <tr> <th rowspan="2">Solvent</th> <th rowspan="2">Mass</th> <th colspan="3">Concentration</th> </tr> <tr> <th>1 mg</th> <th>5 mg</th> <th>10 mg</th> </tr> </thead> <tbody> <tr> <td rowspan="4">Preparing Stock Solutions</td> <td>1 mM</td> <td>3.5464 mL</td> <td>17.7318 mL</td> <td>35.4635 mL</td> </tr> <tr> <td>5 mM</td> <td>0.7093 mL</td> <td>3.5464 mL</td> <td>7.0927 mL</td> </tr> <tr> <td>10 mM</td> <td>0.3546 mL</td> <td>1.7732 mL</td> <td>3.5464 mL</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Solvent	Mass	Concentration			1 mg	5 mg	10 mg	Preparing Stock Solutions	1 mM	3.5464 mL	17.7318 mL	35.4635 mL	5 mM	0.7093 mL	3.5464 mL	7.0927 mL	10 mM	0.3546 mL	1.7732 mL	3.5464 mL				
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Please refer to the solubility information to select the appropriate solvent.																										
In Vivo	1. Add each solvent one by one: PBS Solubility: 50 mg/mL (177.32 mM); Clear solution; Need ultrasonic																									

### BIOLOGICAL ACTIVITY

Description	Lithium citrate (Litarex) tetrahydrate is the major active ingredient of Garcinia cambogia. Lithium citrate tetrahydrate competitively inhibits ATP citrate lyase with weight loss benefits. Lithium citrate tetrahydrate effectively inhibits stones formation and also inhibits HIF, and has antioxidation, anti-inflammation and anti-tumor effects <sup>[1][2][3][4]</sup> .
IC <sub>50</sub> & Target	Human Endogenous Metabolite
In Vitro	Lithium citrate tetrahydrate shows an HIF inhibitory effect compared with the control group in ARPE19 cells and 661W cells. Lithium citrate tetrahydrate can downregulate Hif1a and the downstream genes in ARPE19 cells and 661W cells. Lithium citrate tetrahydrate suppresses HIF-1α protein expression increased by CoCl <sub>2</sub> administration in ARPE19 cells and 661W cells [2]. In chicken hepatocytes, Lithium citrate tetrahydrate decreases the accumulation of lipid droplets and accelerated energy metabolism. Lithium citrate tetrahydrate protects the cells from ER stress by increasing the antioxidant status and mitochondrial functions <sup>[2]</sup> .

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MCE has not independently confirmed the accuracy of these methods. They are for reference only.

#### In Vivo

Lithium citrate (100-200 mg/kg) tetrahydrate treatment could reduce markers of renal impairment (Blood Urea Nitrogen and serum creatinine). There is significantly less calcium oxalate crystal deposition in mice (male C57BL/6J mice) treated with Lithium citrate tetrahydrate. Lithium citrate tetrahydrate attenuates the oxidative stress induced by calcium oxalate crystallization. Lithium citrate tetrahydrate has inhibitory effects on calcium oxalate-induced inflammatory cytokines, such as MCP-1, IL-1  $\beta$ , and IL-6. In addition, Lithium citrate tetrahydrate alleviates tubular injury and apoptosis caused by calcium oxalate crystals<sup>[1]</sup>.

The administration of Lithium citrate tetrahydrate can suppress body weight gain and fat accumulation in animals<sup>[3]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## CUSTOMER VALIDATION

- Food Chem. 2022: 134807.
- New J Chem. 03 Aug 2022.

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## REFERENCES

- [1]. Liu X, et al. Hydroxycitric acid inhibits renal calcium oxalate deposition by reducing oxidative stress and inflammation. *Curr Mol Med*. 2020 Jan 3.
- [2]. Ibuki M, et al. Therapeutic Effect of Garcinia cambogia Extract and Hydroxycitric Acid Inhibiting Hypoxia-Inducible Factor in a Murine Model of Age-Related Macular Degeneration. *Int J Mol Sci*. 2019 Oct 11;20(20). pii: E5049.
- [3]. Han S, et al. Hydroxycitric Acid Tripotassium Inhibits Calcium Oxalate Crystal Formation in the Drosophila Melanogaster Model of Hyperoxaluria. *Med Sci Monit*. 2019 May 17;25:3662-3667.
- [4]. Heymsfield SB, et al. Garcinia cambogia (hydroxycitric acid) as a potential antiobesity agent: a randomized controlled trial. *JAMA*. 1998 Nov 11;280(18):1596-600.

**Caution: Product has not been fully validated for medical applications. For research use only.**

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: [tech@MedChemExpress.com](mailto:tech@MedChemExpress.com)

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA