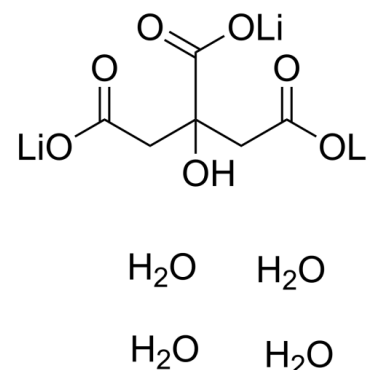


Data Sheet

Product Name:	Lithium citrate (tetrahydrate)
Cat. No.:	CS-4815
CAS No.:	6080-58-6
Molecular Formula:	C ₆ H ₁₃ Li ₃ O ₁₁
Molecular Weight:	281.98
Target:	ATP Citrate Lyase; Bacterial; Endogenous Metabolite; HIF/HIF Prolyl-Hydroxylase
Pathway:	Anti-infection; Metabolic Enzyme/Protease
Solubility:	H ₂ O : ≥ 100 mg/mL (354.64 mM)



BIOLOGICAL ACTIVITY:

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^{[1][2][3][4]}. *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 Hif1α and the downstream genes in ARPE19 cells and 661W cells. Lithium citrate tetrahydrate suppresses HIF-1α protein expression increased by CoCl₂ 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^[2]. *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 β, and IL-6. In addition, Lithium citrate tetrahydrate alleviates tubular injury and apoptosis caused by calcium oxalate crystals^[1]. The administration of Lithium citrate tetrahydrate can suppress body weight gain and fat accumulation in animals^[3].

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.

CAIndexNames:

1,2,3-Propanetricarboxylic acid, 2-hydroxy-, lithium salt, hydrate (1:3:4)

SMILES:

O=C(CC(C(O[Li])=O)(O)CC(O[Li])=O)O[Li].O.O.O.O

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

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