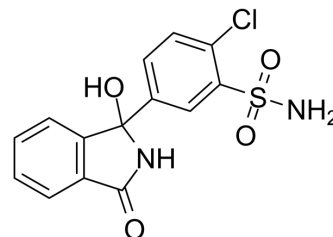


Chlorthalidone

Cat. No.:	HY-15833
CAS No.:	77-36-1
Molecular Formula:	C ₁₄ H ₁₁ ClN ₂ O ₄ S
Molecular Weight:	338.77
Target:	Others
Pathway:	Others
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 2 years -20°C 1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 41 mg/mL (121.03 mM)
 * "≥" means soluble, but saturation unknown.

	Solvent Concentration	Mass	1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM		2.9519 mL	14.7593 mL	29.5186 mL
	5 mM		0.5904 mL	2.9519 mL	5.9037 mL
	10 mM		0.2952 mL	1.4759 mL	2.9519 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
 Solubility: ≥ 2.08 mg/mL (6.14 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
 Solubility: ≥ 2.08 mg/mL (6.14 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Chlorthalidone is a thiazide-like diuretic used to treat hypertension.

In Vivo

Chlorthalidone is a thiazide-like diuretic. After oral intake, peak serum concentrations are achieved in 2-6 hours. The half-life of Chlorthalidone is approximately 42 (range 29-55) hours, reaching 45-60 hours after long-term dosing. However, interindividual variability in the half-life of Chlorthalidone is wide. Chlorthalidone is excreted unchanged by the kidneys. The natriuretic effect of Chlorthalidone is maximal at 18 hours and lasts more than 48 hours. Comparing different doses of Chlorthalidone, it has been observed that 25 mg daily is nearly as effective as higher doses, but with less risk of hypokalemia [1]. Chlorthalidone reduces calcium oxalate calculous recurrence but magnesium hydroxide does not. The effectiveness of Chlorthalidone or magnesium hydroxide is examined in the prevention of recurrent calcium oxalate kidney calculi. In a

double-blind random allocation design daily dosages of 25 or 50 mg. Chlorthalidone, 650 or 1,300 mg. magnesium hydroxide, or an identical placebo are administered. All groups showed significantly decreased calculous events compared to the pretreatment rates. During the trial 56.1 per cent fewer calculi than predicted developed in the placebo group (p less than 0.01), whereas the groups receiving low and high dosage magnesium hydroxide showed 73.9 and 62.3 per cent fewer calculi, respectively (p less than 0.001 and less than 0.01, respectively). Chlorthalidone treatment results in a 90.1 per cent decrease from predicted rates and both dosages yielded similar results. When the treatments are compared Chlorthalidone is significantly better than the placebo or magnesium hydroxide (p less than 0.01). The large decreases in calculous events seen when placebo or ineffective therapy is given underscore the positive treatment bias that occurs when historical controls are used and they demonstrate the need for proper experimental design^[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

- [1]. Barrios V, et al. Which thiazide to choose as add-on therapy for hypertension? Integr Blood Press Control. 2014 Jul 30;7:35-47.
- [2]. Ettinger B, et al. Chlorthalidone reduces calcium oxalate calculous recurrence but magnesium hydroxide does not. J Urol. 1988 Apr;139(4):679-84.
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Caution: Product has not been fully validated for medical applications. For research use only.

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