

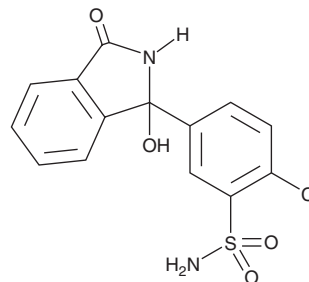
PRODUCT INFORMATION



Chlorthalidone

Item No. 16213

CAS Registry No.: 77-36-1
Formal Name: 2-chloro-5-(2,3-dihydro-1-hydroxy-3-oxo-1H-isoindol-1-yl)-benzenesulfonamide
Synonyms: Hygroton, NSC 69200, Oradil, Thalitone®
MF: C₁₄H₁₁ClN₂O₄S
FW: 338.8
Purity: ≥98%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Chlorthalidone is supplied as a crystalline solid. A stock solution may be made by dissolving the chlorthalidone in the solvent of choice. Chlorthalidone is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of chlorthalidone in ethanol is approximately 10 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Chlorthalidone is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, chlorthalidone should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Chlorthalidone has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Chlorthalidone is a thiazide-like diuretic that inhibits the Na⁺/Cl⁻ cotransporter in the distal convoluted tubule of the kidney, which prevents reabsorption of sodium and chloride leading to a reduction in plasma volume and cardiac output.¹ It also inhibits carbonic anhydrase (CA), including the isoforms CAVB, VII, IX, XII, and XIII (K_s = 2.8-23 nM) and, to a lesser extent, CAI, CAII, IV, VA, and VI (K_s = 138-1,347 nM), which may mediate its sustained vasodilatory activity.² Dietary administration of chlorthalidone (8 mg per animal per day) reduces arterial hypertension and prevents or reduces ventricular hypertrophy in DOCA-salt hypertensive rats.³ Formulations containing chlorthalidone have been used alone or in combination with other antihypertensive agents to lower arterial blood pressure and as adjuvants to address edema caused by cardiac or renal disorders.

References

1. Roush, G.C., Buddharaju, V., Ernst, M.E., *et al.* Chlorthalidone: Mechanisms of action and effect on cardiovascular events. *Curr. Hypertens. Rep.* **15(5)**, 514-521 (2013).
2. Temperini, C., Cecchi, A., Scozzafava, A., *et al.* Carbonic anhydrase inhibitors. Interaction of indapamide and related diuretics with 12 mammalian isozymes and X-ray crystallographic studies for the indapamide-isozyme II adduct. *Bioorg. Med. Chem. Lett.* **18(8)**, 2567-2573 (2008).
3. Cabral, A.M., Carvalhinho, F.B., Vasquez, E.C., *et al.* Effects of chlorthalidone on ventricular hypertrophy in deoxycorticosterone acetate-salt hypertensive rats. *Hypertension* **23(1 Suppl)**, I180-I184 (1994).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM