

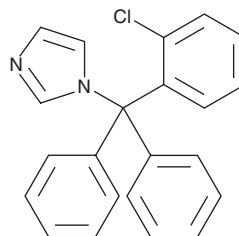
# PRODUCT INFORMATION



## Clotrimazole

Item No. 15278

**CAS Registry No.:** 23593-75-1  
**Formal Name:** 1-[(2-chlorophenyl)diphenylmethyl]-1H-imidazole  
**Synonyms:** BAY-B-5087, NSC 257473  
**MF:** C<sub>22</sub>H<sub>17</sub>ClN<sub>2</sub>  
**FW:** 344.8  
**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

Clotrimazole is supplied as a crystalline solid. A stock solution may be made by dissolving the clotrimazole in the solvent of choice, which should be purged with an inert gas. Clotrimazole is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of clotrimazole in these solvents is approximately 10, 3, and 20 mg/ml, respectively.

Clotrimazole is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, clotrimazole should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Clotrimazole has a solubility of approximately 0.2 mg/ml in a 1:4 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Clotrimazole is an imidazole antifungal that is active against a wide variety of fungal forms and is effective in many types of fungal infections.<sup>1-4</sup> It tightly binds sterol 14- $\alpha$  demethylase isoform B from *A. fumigatus* (K<sub>D</sub> = 103 nM) and, like other imidazoles, disturbs the fungal cell membrane.<sup>4,5</sup> In mammalian cells, clotrimazole potently inhibits the calcium-dependent potassium channels K<sub>v</sub>1.3 and IK-1 (IC<sub>50</sub> = 6.0 and 0.07  $\mu$ M, respectively).<sup>6</sup>

### References

1. Burgess, M.A. and Bodey, G.P. Clotrimazole (Bay b 5097): *In vitro* and clinical pharmacological studies. *Antimicrob. Agents Chemother.* **2(6)**, 423-426 (1972).
2. Shadomy, S. *In vitro* antifungal activity of clotrimazole (Bay b 5097). *Infect. Immun.* **4(2)**, 143-148 (1971).
3. Waitz, J.A., Moss, E.L., and Weinstein, M.J. Chemotherapeutic evaluation of clotrimazole [Bay b 5097, 1 (*o*-chloro- $\alpha$ -*o*-diphenylbenzyl) imidazole]. *Appl. Microbiol.* **22(5)**, 891-898 (1971).
4. Fromtling, R.A. Overview of medically important antifungal azole derivatives. *Clin. Microbiol. Rev.* **1(2)**, 187-217 (1988).
5. Warrilow, A.G., Melo, N., Martel, C.M., *et al.* Expression, purification, and characterization of *Aspergillus fumigatus* sterol 14- $\alpha$  demethylase (CYP51) isoenzymes A and B. *Antimicrob. Agents Chemother.* **54(10)**, 4225-4234 (2010).
6. Pegoraro, S., Lang, M., Dreker, T., *et al.* Inhibitors of potassium channels K<sub>v</sub>1.3 and IK-1 as immunosuppressants. *Bioorg. Med. Chem. Lett.* **19(8)**, 2299-2304 (2009).

#### 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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