

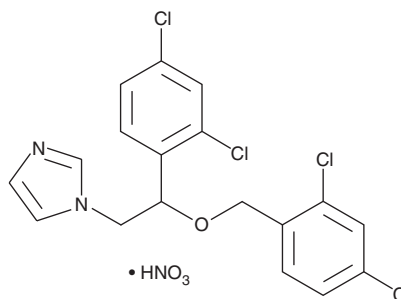
# PRODUCT INFORMATION



## Miconazole (nitrate)

Item No. 15420

**CAS Registry No.:** 22832-87-7  
**Formal Name:** 1-[2-(2,4-dichlorophenyl)-2-[(2,4-dichlorophenyl)methoxy]ethyl]-1H-imidazole, mononitrate  
**Synonyms:** NSC 169434, R 14889  
**MF:** C<sub>18</sub>H<sub>14</sub>Cl<sub>4</sub>N<sub>2</sub>O • HNO<sub>3</sub>  
**FW:** 479.1  
**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

Miconazole (nitrate) is supplied as a crystalline solid. A stock solution may be made by dissolving the miconazole (nitrate) in the solvent of choice. Miconazole (nitrate) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of miconazole (nitrate) in ethanol is approximately 0.1 mg/ml and approximately 25 mg/ml in DMSO and DMF.

Miconazole (nitrate) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, miconazole (nitrate) should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Miconazole (nitrate) has a solubility of approximately 0.3 mg/ml in a 1:2 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Miconazole is a widely used antifungal imidazole that acts by inhibiting the 14 $\alpha$ -demethylation of lanosterol, which consequently leads to the inhibition of ergosterol synthesis in fungal cell membranes.<sup>1,2</sup> Additionally, miconazole has been shown to induce reactive oxygen species in fungal biofilms, demonstrating a MIC value of  $\geq 256 \mu\text{M}$  against *Candida* spp.<sup>3</sup>

### References

1. Vanden Bossche, H., Marichal, P., Gorrens, J., *et al.* Biochemical approaches to selective antifungal activity. Focus on azole antifungals. *Mycoses* **32(Suppl 1)**, 35-52 (1989).
2. Saag, M.S. and Dismukes, W.E. Azole antifungal agents: Emphasis on new triazoles. *Antimicrob. Agents Chemother.* **32(1)**, 1-8 (1988).
3. Delattin, N., Cammue, B.P.A., and Thevissen, K. Reactive oxygen species-inducing antifungal agents and their activity against fungal biofilms. *Future Med. Chem.* **6(1)**, 77-90 (2014).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

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