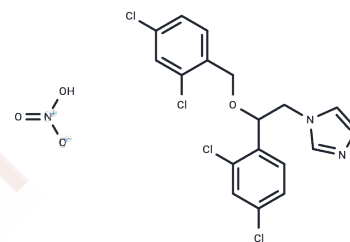


## Miconazole nitrate

## Chemical Properties

CAS No. :	22832-87-7
Formula:	C <sub>18</sub> H <sub>15</sub> Cl <sub>4</sub> N <sub>3</sub> O <sub>4</sub>
Molecular Weight:	479.15
Storage:	Powder: -20°C for 3 years   In solvent: -80°C for 1 year Actual storage temperature shall be subject to the COA.



## Biological Description

Description	Miconazole nitrate (R18134 nitrate), an imidazole antifungal agent, selectively affects the integrity of fungal cell membranes, high in ergosterol content and different in composition from mammalian cells membranes.
Targets(IC50)	Antibacterial,Antibiotic,Antifungal
In vitro	Miconazole induces changes in the actin cytoskeleton, indicative of increased filament stability, prior to ROS induction. [1] Miconazole disrupts steroidogenesis in Leydig and adrenal cells by inhibiting 17alpha-hydroxylase/17,20-lyase (P450c17) enzyme activity, thus reducing the conversion of progesterone to androstenedione. Miconazole reversibly inhibits (Bu)(2)cAMP-stimulated progesterone production in a dose- and time-dependent manner in MA-10 cells without affecting total protein synthesis or P450(scc) and 3beta-hydroxysteroid dehydrogenase (3beta-HSD) enzyme expression or activity. [2] Miconazole is known to interfere with the synthesis of fungal and bacterial lipid membranes as it restrains the synthesis of Ergosterol which results in accumulation of toxic methylated sterol intermediates in membranes and subsequently in fungal cell growth arrests. [3] Miconazole induces actin cytoskeleton stabilization in Saccharomyces cerevisiae prior to induction of reactive oxygen species, pointing to an ancillary mode of action. [4] Miconazole treatment releases Ca(2+) from the thapsigargin (TG)-sensitive ER pool of WEHI7.2 cells. Miconazole induces apoptosis, based on morphological and biochemical criteria, and on inhibition by the Bcl-2 oncogene. Miconazole-induced intracellular Ca(2+) changes is inhibited by overexpression of Bcl-2. Miconazole induces apoptosis in the glucocorticoid sensitive and resistant human T-cell leukemia lines, CEM-C7 and CEM-C1 respectively, in normal thymocytes and in normal lymphocytes, in addition to inducing cell death in WEHI7.2 cells. [5]

## Solubility Information

Solubility	DMSO: 163.33 mg/mL (340.87 mM),Sonication is recommended. Ethanol: 4.8 mg/mL (10.02 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (4.17 mM),Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and</i>

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In vivo Formulation	<i>used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>
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### Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.087 mL	10.4351 mL	20.8703 mL
5 mM	0.4174 mL	2.087 mL	4.1741 mL
10 mM	0.2087 mL	1.0435 mL	2.087 mL
50 mM	0.0417 mL	0.2087 mL	0.4174 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

- Thevissen K, et al. J Biol Chem,2007, 282(30), 21592-21597.
- Walsh LP, et al. J Steroid Biochem Mol Biol,2000, 75(4-5), 229-236.
- Pietschmann S, et al. Vet Res Commun,2009, 33(6), 489-505.
- François IE, et al. J Biol Chem. 2009 Nov 20;284(47):32680-5.
- Sobecks R, et al. Cell Death Differ. 1996 Jul;3(3):331-7.

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