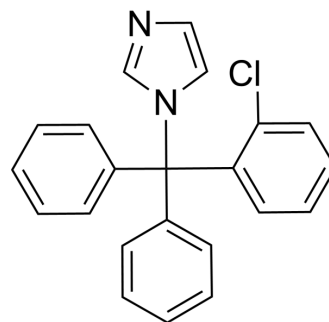


## Clotrimazole

<b>Cat. No.:</b>	HY-10882												
<b>CAS No.:</b>	23593-75-1												
<b>Molecular Formula:</b>	C <sub>22</sub> H <sub>17</sub> ClN <sub>2</sub>												
<b>Molecular Weight:</b>	344.84												
<b>Target:</b>	Fungal; Autophagy; Bacterial; Antibiotic												
<b>Pathway:</b>	Anti-infection; Autophagy												
<b>Storage:</b>	<table border="0"> <tr> <td>Powder</td> <td>-20°C</td> <td>3 years</td> </tr> <tr> <td></td> <td>4°C</td> <td>2 years</td> </tr> <tr> <td>In solvent</td> <td>-80°C</td> <td>2 years</td> </tr> <tr> <td></td> <td>-20°C</td> <td>1 year</td> </tr> </table>	Powder	-20°C	3 years		4°C	2 years	In solvent	-80°C	2 years		-20°C	1 year
Powder	-20°C	3 years											
	4°C	2 years											
In solvent	-80°C	2 years											
	-20°C	1 year											



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : 33.33 mg/mL (96.65 mM; Need ultrasonic)  
 H<sub>2</sub>O : < 0.1 mg/mL (insoluble)

Concentration	Solvent	Mass		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	2.8999 mL	14.4995 mL	28.9990 mL
	5 mM	0.5800 mL	2.8999 mL	5.7998 mL
	10 mM	0.2900 mL	1.4499 mL	2.8999 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: ≥ 2.5 mg/mL (7.25 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
 Solubility: ≥ 2.5 mg/mL (7.25 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
 Solubility: ≥ 2.5 mg/mL (7.25 mM); Clear solution

### BIOLOGICAL ACTIVITY

#### Description

Clotrimazole is an imidazole derivative, an antifungal compound and is a CYP (cytochrome P450) inhibitor. Clotrimazole has antibacterial activity.

#### IC<sub>50</sub> & Target

Antifungal; CYP

#### In Vitro

Clotrimazole (brand name Canesten or Lotrimin) is an antifungal medication commonly used in the treatment of fungal

infections (of both humans and other animals) such as vaginal yeast infections, oral thrush, and ringworm. It is also used to treat athlete's foot and jock itch. It is commonly available as an over-the-counter substance in various dosage forms, such as a cream, and also (especially in the case of ear infection) as a combination medicine. It is also available as a troche or throat lozenge (prescription only). For ear infection, it is often applied in liquid form, as ear drops. The antimycotic drug clotrimazole inhibits the function of the gastric H,K-ATPase in a manner similar to that observed for the Na,K-ATPase. Because of the high hydrophobicity of the compound, the interaction between clotrimazole and the ion pump occurs at the membrane domain in the apolar core of the membrane. The enzymatic activity was inhibited with a half-saturating concentration of 5.2 microM. Various partial reactions of the pump cycle were analyzed with the electrochromic styryl dye RH421 that has been widely used to study the transport mechanism of P-type ATPases. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## CUSTOMER VALIDATION

- Sci Data. 2022 Oct 8;9(1):610.
- Int J Mol Sci. 2023 Jul 28, 24(15), 12079.
- J Virol. 2019 Mar 5;93(6):e01744-18.
- Front Endocrinol. 2022 Jan 14;12:797025.
- PLoS Negl Trop Dis. 2019 Aug 20;13(8):e0007681.

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## REFERENCES

- [1]. Sawyer PR, Clotrimazole: a review of its antifungal activity and therapeutic efficacy. *Drugs*. 1975;9(6):424-47.
- [2]. Witzke A, Inhibition of the gastric H,K-ATPase by clotrimazole. *Biochemistry*. 2010 Jun 1;49(21):4524-32.
- [3]. Schaller K. In vitro antibacterial activity of different clotrimazole formulations. *Chemotherapy*. 1982;28 Suppl 1:32-6.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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