# Oxiconazole nitrate

**Cat. No.:** HY-B1324

**CAS No.:** 64211-46-7

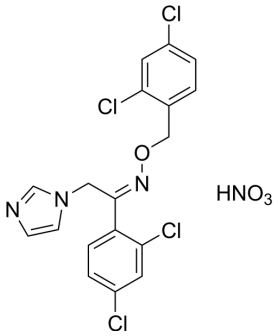
**Molecular Formula:** $C_{18}H_{14}Cl_4N_4O_4$

**Molecular Weight:** 492.14

**Target:** Fungal; Cytochrome P450; Antibiotic

**Pathway:** Anti-infection; Metabolic Enzyme/Protease

**Storage:** 4°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)




## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : ≥ 100 mg/mL (203.19 mM)
* "≥" means soluble, but saturation unknown.

**Preparing Stock Solutions**

| Concentration \ Mass (Solvent) | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 2.0319 mL | 10.1597 mL | 20.3194 mL |
| 5 mM | 0.4064 mL | 2.0319 mL | 4.0639 mL |
| 10 mM | 0.2032 mL | 1.0160 mL | 2.0319 mL |

Please refer to the solubility information to select the appropriate solvent.

**In Vivo**

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (5.08 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (5.08 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (5.08 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

Oxiconazole (Ro 13-8996) nitrate is a broad spectrum anti-fungal agent which can inhibit the growth of Candida, Aspergillus and Trichophyton. Oxiconazole nitrate is also a highly efficacious activator of CYP3A4 transactivation, which could be antagonized by Rifampicin (HY-B0272) in a competitive manner. Oxiconazole nitrate exhibits inhibitory effect against colorectal cancer (CRC) via peroxiredoxin-2 (PRDX2)-mediated autophagy arrest[1][2][3].

| $IC_{50}$ & Target | | |
|---|---|---|
| | CYP3 | CYP3A4 |

**In Vitro**

Oxiconazole (24 h; 0-40 μM) inhibits CRC cell growth[3].

Oxiconazole has antifungal activity against Candida, Aspergillus and Trichophyton[1].
Antifungal Activities of Oxiconazole[1].

| | *Candida albicans* | *Candida glabrata* | *Candida parapsilosis* | *Aspergillus fumigatus* | *Aspergillus flavus* | *Trichophyton mentagrophytes* | *Trichophyton rubrum* |
|---|---|---|---|---|---|---|---|
| Oxiconazole | 0.03 μg/mL | 0.01 μg/mL | 0.008 μg/mL | 2 μg/mL | 2 μg/mL | 2 μg/mL | 2 μg/mL |

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay[3]

| | |
|---|---|
| Cell Line: | HCT116, SW480, RKO, DLD-1, SW620, LoVo and NCM460 |
| Concentration: | 0-40 μM |
| Incubation Time: | 24 h |
| Result: | Exhibited inhibitory activity against HCT116, SW480, RKO, DLD-1, SW620, LoVo and NCM460 with $IC_{50}$s of 25.86 μM, 27.34 μM, 21.01 μM, 25.56 μM, 21.75 μM, 24.87 μM and 126.4 μM. |

**In Vivo**

Oxiconazole (50 mg/kg/day; IP; for 12 days) significantly restrains CRC cell growth[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

| | |
|---|---|
| Animal Model: | BALB/c nude mice (injected subcutaneously with HCT116 cells ($1\times10^7$/mouse)[3] |
| Dosage: | 50 mg/kg/day |
| Administration: | IP; for 12 days |
| Result: | Significantly restrained CRC cell growth and showed no obvious side effects. |

## CUSTOMER VALIDATION

- Int J Biol Sci. 2022; 18(9):3747-3761.

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## REFERENCES


[1]. Rossello A, et al. Synthesis, antifungal activity, and molecular modeling studies of new inverted oxime ethers of oxiconazole. J Med Chem. 2002 Oct 24;45(22):4903-12.

[2]. Svecova L, et al. Azole antimycotics differentially affect rifampicin-induced pregnane X receptor-mediated CYP3A4 gene expression. Drug Metab Dispos. 2008 Feb;36(2):339-48.

[3]. Shi J, et al. Repurposing Oxiconazole against Colorectal Cancer via PRDX2-mediated Autophagy Arrest. Int J Biol Sci. 2022 May 21;18(9):3747-3761.

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

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