# Difenoconazole

**Cat. No.:** HY-B0850

**CAS No.:** 119446-68-3

**Molecular Formula:** $C_{19}H_{17}Cl_2N_3O_3$

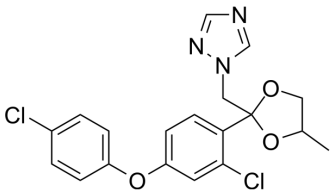
**Molecular Weight:** 406.26

**Target:** Fungal

**Pathway:** Anti-infection

**Storage:**

| | | |
|---|---|---|
| Powder | -20°C | 3 years |
| | 4°C | 2 years |
| In solvent | -80°C | 6 months |
| | -20°C | 1 month |



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 100 mg/mL (246.15 mM; Need ultrasonic)

| Preparing Stock Solutions | Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 2.4615 mL | 12.3074 mL | 24.6148 mL |
| | 5 mM | 0.4923 mL | 2.4615 mL | 4.9230 mL |
| | 10 mM | 0.2461 mL | 1.2307 mL | 2.4615 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 (6.15 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.15 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.15 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

Difenoconazole is a sterol demethylation inhibitor, as a fungicide. Difenoconazole binds the heme portion of the fungal cytochrome P450 51, interferes the mycelial growth and inhibits the spore germination of pathogens, suppressing fungal growth[1].

**In Vitro**

Difenoconazole inhibits the growth of Fusarium graminearum with an $EC_{50}$ of 1.69-19.6 mg/L[2].
Difenoconazole inhibits growth of Alternaria solani, Fulvia fulva,Botrytis cinerea, and Rhizoctonia solani with $EC_{50}$s of 0.131, 0.069, 0.297, and 0.252 mg/L, respectively[2].

| | |
|---|---|
| | MCE has not independently confirmed the accuracy of these methods. They are for reference only. |
| **In Vivo** | Difenoconazole (0.25-2 mg/L; exposure for 96 h) induces a large suite of symptoms in embryonic development, including hatching inhibition, slow heart rate, growth regression and morphological deformities[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

| | |
|---|---|
| Animal Model: | Zebrafish[1] |
| Dosage: | 0.25, 0.5, 1, 1.5 and 2 mg/L |
| Administration: | Exposure for 96 h |
| Result: | Caused significant body color blackening and decrease in the heart rate of zebrafish larvae over 24 h at 0.5 mg/L.<br>Inhibited the growth weight of adult zebrafish measured after 14 days' exposure at 0.25 mg/L. |

## REFERENCES

[1]. Mu X, et al. Evaluation of acute and developmental effects of difenoconazole via multiple stage zebrafish assays. Environ Pollut. 2013 Apr;175:147-57.

[2]. Dong F, et al. Chiral triazole fungicide difenoconazole: absolute stereochemistry, stereoselective bioactivity, aquatic toxicity, and environmental behavior in vegetables and soil. Environ Sci Technol. 2013 Apr 2;47(7):3386-94.



Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA