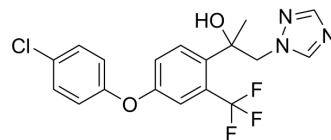


Mefentrifluconazole

Cat. No.:	HY-136063		
CAS No.:	1417782-03-6		
Molecular Formula:	C ₁₈ H ₁₅ ClF ₃ N ₃ O ₂		
Molecular Weight:	397.78		
Target:	Fungal; Cytochrome P450		
Pathway:	Anti-infection; Metabolic Enzyme/Protease		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro	DMSO : 100 mg/mL (251.40 mM; Need ultrasonic)				
		Solvent Concentration	Mass 1 mg	5 mg	10 mg
	Preparing Stock Solutions	1 mM	2.5140 mL	12.5698 mL	25.1395 mL
		5 mM	0.5028 mL	2.5140 mL	5.0279 mL
10 mM		0.2514 mL	1.2570 mL	2.5140 mL	
Please refer to the solubility information to select the appropriate solvent.					
In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 6.25 mg/mL (15.71 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 6.25 mg/mL (15.71 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 6.25 mg/mL (15.71 mM); Clear solution 				

BIOLOGICAL ACTIVITY

Description	Mefentrifluconazole is a novel azole derivative and used as an agrochemical broad-spectrum antifungal agent. Mefentrifluconazole is a potent, selective and orally active fungal CYP51 (K _d = 0.5 nM) inhibitor, but shows less inhibitory activity on human aromatase (IC ₅₀ =0.92 μM) ^[1] .
IC₅₀ & Target	CYP51A 0.5 nM (K _d)

In Vivo

Mefentrifluconazole undergoes extensive toxicity testing, including a full program of reproductive toxicity studies. Long term repeated dose toxicity and/or carcinogenicity studies have been conducted in rats, mice, and dogs. In each species, the highest dose level investigated gives rise to systemic toxicity^[1].

In the acute and repeat dose toxicity studies performed with Mefentrifluconazole. A single-dose administration to rats the LD50 is >2000 mg/kg bwt by the oral route, >5000 mg/kg bwt by the dermal route, and >5.314 mg/L by inhalation as a dust aerosol. Mefentrifluconazole is not a skin or an eye irritant, nor is it a phototoxicant in vitro^[1].

In the acute neurotoxicity study in rats, Mefentrifluconazole (oral administration; 2000 mg/kg bwt; single dose) gives rise to reduce body weight gain and transient neurobehavioral effects only on the day of treatment (unsteady gait, reduced motor activity, reduces grip strength of the forelimbs and increased distance between the hind limbs in the landing foot-splay test) [1].

In the repeated-dose toxicity studies, the liver is the target organ in each of the three species investigated. At higher dose levels in the rat (oral diets; 383/334 mg/kg/bwt/d (4000 ppm)) and the C57BL/6JRj mouse (61 mg/kg bwt/d (300 ppm)), reduces body weight gain and food consumption, alters clinical chemistry parameters, increases liver weight and is accompanied by liver cell hypertrophy, and/or liver cell necrosis. At low doses, increases liver weight is not associated with any histopathological alterations and is considered to be an adaptive change to treatment^[1].

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

REFERENCES

[1]. Tesh SA, et al. Innovative selection approach for a new antifungal agent mefentrifluconazole (Revysol®) and the impact upon its toxicity profile. Regul Toxicol Pharmacol. 2019 Aug;106:152-168.

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

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