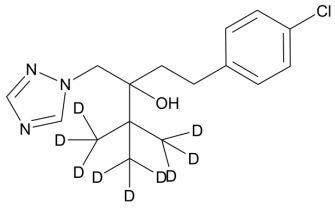
Tebuconazole-d9

Cat. No.:	HY-B0852S
CAS No.:	1246818-83-6
Molecular Formula:	$C_{16}H_{13}D_9ClN_3O$
Molecular Weight:	316.87
Target:	Fungal; Cytochrome P450
Pathway:	Anti-infection; Metabolic Enzyme/Protease
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Tebuconazole-d_9 is the deuterium labeled Tebuconazole. Tebuconazole is an agricultural azole fungicide which can also inhibit CYP51 with IC50s of 0.9 and 1.3 μM for Candida albicans CYP51 (CaCYP51) and truncated Homo sapiens CYP51 (Δ60 HsCYP51), respectively.

In Vitro

Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs[1].

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

Western Blot Analysis[2]

Cell Line:	HepG2 cells
Concentration:	20,40,80 μM
Incubation Time:	1–12 hours
Result:	Increased the nuclear translocation of peroxisome proliferator-activated receptors and the expression of cluster of differentiation 36, fatty acid transport protein (FATP) 2, FATP5, and carnitine palmitoyltransferase 1.

Apoptosis Analysis[3]

Cell Line:	Bovine mammary gland epithelial cells (MAC-T cells)
Concentration:	100,150,200,250,500,750 μM
Incubation Time:	24 hours
Result:	Decreased cells viability and proliferation and activates apoptotic cell death via the upregulation of pro-apoptotic proteins, such as cleaved caspases 3 and 8 and BAX. Induced loss of mitochondrial membrane potential in MAC-T cells. Induced mitochondria-mediated apoptotic MAC-T cell death by activating ER stress. Induced endoplasmic reticulum (ER) stress via the upregulation of Bip/GRP78; PDI; ATF4; CHOP; and ERO1-Lα.

REFERENCES

[1]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. Ann Pharmacother. 2019;53(2):211-216.

[2]. Warrilow AG, et al. Azole affinity of sterol 14α-demethylase (CYP51) enzymes from Candida albicans and Homo sapiens. Antimicrob Agents Chemother. 2013 Mar;57(3):1352-60.

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