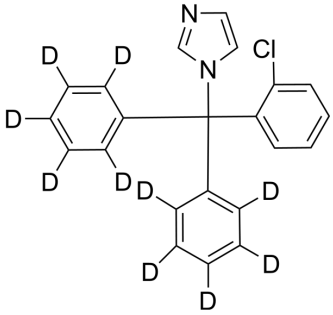
Clotrimazole-d_{10}

Cat. No.:	HY-10882S1
Molecular Formula:	$C_{22}H_7D_{10}ClN_2$
Molecular Weight:	354.9
Target:	Antibiotic; Bacterial; Autophagy; Fungal; Isotope-Labeled Compounds
Pathway:	Anti-infection; Autophagy; Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Clotrimazole-d_{10} is deuterated labeled Clotrimazole (HY-10882). Clotrimazole is an imidazole derivative, an antifungal compound and is a CYP (cytochrome P450) inhibitor. Clotrimazole has antibacterial activity.
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]. 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.

REFERENCES

[1]. Schaller K. In vitro antibacterial activity of different clotrimazole formulations. Chemotherapy. 1982;28 Suppl 1:32-6.

[2]. Sawyer PR, Clotrimazole: a review of its antifungal activity and therapeutic efficacy. Drugs. 1975;9(6):424-47.

[3]. Witzke A, Inhibition of the gastric H,K-ATPase by clotrimazole. Biochemistry. 2010 Jun 1;49(21):4524-32.

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

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

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