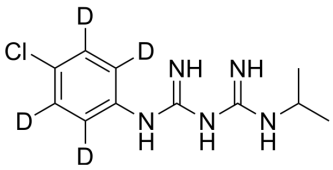
Proguanil-d4

Cat. No.:	HY-B0806S1
CAS No.:	1189805-15-9
Molecular Formula:	$C_{11}H_{12}D_4ClN_5$
Molecular Weight:	257.76
Target:	Antifolate; Parasite
Pathway:	Cell Cycle/DNA Damage; Anti-infection
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Proguanil-d_4 is the deuterium labeled Proguanil[1]. Proguanil, an antimalarial proagent, is metabolized to the active metabolite Cycloguanil (HY-12784). Proguanil is a dihydrofolate reductase (DHFR) inhibitor[2][3].
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.

REFERENCES

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

[2]. Pudney M, et al. Atovaquone and proguanil hydrochloride: a review of nonclinical studies. J Travel Med. 1999 May;6 Suppl 1:S8-12.

[3]. Srivastava IK, et al. A mechanism for the synergistic antimalarial action of atovaquone and proguanil. Antimicrob Agents Chemother. 1999 Jun43(6):1334-9.

[4]. Lochner M, et al. The antimalarial drug proguanil is an antagonist at 5-HT3 receptors. J Pharmacol Exp Ther. 2014 Dec351(3):674-84.

[5]. Stephen AO, et al. Prolonged administration of proguanil induces reproductive toxicity in male rats. J Toxicol Sci. 2011 Oct36(5):587-99.

[6]. Iguchi A, et al. The in vitro interactions and in vivo efficacy of atovaquone and proguanil against Babesia gibsoni infection in dogs. Vet Parasitol. 2013 Nov 8197(3-4):527-33.

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