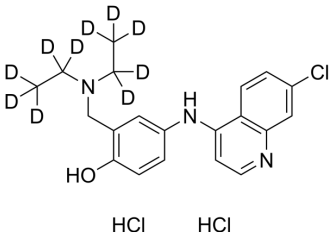
Amodiaquine-d_{10} hydrochloride

Cat. No.:	HY-B1322AS1
Molecular Formula:	$C_{20}H_{14}D_{10}Cl_3N_3O$
Molecular Weight:	438.84
Target:	Nuclear Hormone Receptor 4A/NR4A; Parasite; Histone Methyltransferase; Isotope-Labeled Compounds
Pathway:	Vitamin D Related/Nuclear Receptor; Anti-infection; Epigenetics; Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Amodiaquine-d_{10} hydrochloride is deuterated labeled Amodiaquine (HY-B1322A). Amodiaquine (Amodiaquin), a 4-aminoquinoline class of antimalarial agent, is a potent and orally active histamine N-methyltransferase inhibitor. Amodiaquine is also a Nurr1 agonist and specifically binds to Nurr1-LBD (ligand binding domain) with an EC_{50} of ~20 μM. Anti-inflammatory effect[1][2][3][4].
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]. Amodiaquine (10-20 μM; 4 hours) treatment suppresses LPS-induced expression of proinflammatory cytokines (IL-1β, interleukin-6, TNF-α and iNOS) in a dose-dependent manner[2]. Amodiaquine (5 μM; 24 hours) significantly inhibits neurotoxin (6-OHDA-induced cell death in primary dopamine cells as examined by the number of TH^+ neurons and dopamine uptake. The neuroprotective effect of Amodiaquine is also observed in rat PC12 cells[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Amodiaquine (40 mg/kg; intraperitoneal injection; daily; for 3 days; male ICR mice) treatment diminishes perihematomal activation of microglia/macrophages and astrocytes. Amodiaquine also suppresses ICH-induced mRNA expression of IL-1β, CCL2 and CXCL2, and ameliorated motor dysfunction of mice[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Chun-Hyung Kim, et al. Nuclear receptor Nurr1 agonists enhance its dual functions and improve behavioral deficits in an animal model of Parkinson's disease. Proc Natl Acad Sci U S A. 2015 Jul 14;112(28):8756-61.

[2]. Keita Kinoshita, et al. A Nurr1 agonist amodiaquine attenuates inflammatory events and neurological deficits in a mouse model of intracerebral hemorrhage. J Neuroimmunol. 2019 May 15;330:48-54.

[3]. Akira Yokoyama, et al. Effect of amodiaquine, a histamine N-methyltransferase inhibitor, on, Propionibacterium acnes and lipopolysaccharide-induced hepatitis in mice. Eur J Pharmacol. 2007 Mar 8;558(1-3):179-84.

[4]. M T HOEKENGA. The treatment of acute malaria with single oral doses of amodiaquin, chloroquine, hydroxychloroquine and pyrimethamine. Am J Trop Med Hyg. 1954 Sep;3(5):833-8.

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

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