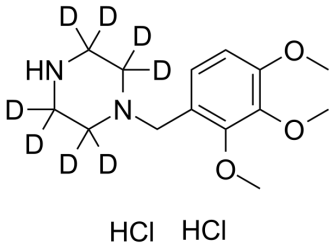
Trimetazidine-d8 dihydrochloride

Cat. No.:	HY-B0968S
CAS No.:	1219795-37-5
Molecular Formula:	$C_{14}H_{16}D_8Cl_2N_2O_3$
Molecular Weight:	347.31
Target:	Autophagy
Pathway:	Autophagy
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Trimetazidine-d8 dihydrochloride is the deuterium labeled Trimetazidine dihydrochloride. Trimetazidine dihydrochloride is a selective long chain 3-ketoyl coenzyme A thiolase inhibitor with an IC_{50} of 75 nM, which can inhibit β-oxidation of free fatty acid (FFA). Trimetazidine dihydrochloride is an effective antianginal agent and a cytoprotective drug, has anti-oxidant, anti-inflammatory, antinociceptive and gastroprotective properties. Trimetazidine dihydrochloride triggers autophagy. Trimetazidine dihydrochloride is also a 3-hydroxyacyl-CoA dehydrogenase (HADHA) inhibitor[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]. 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;53(2):211-216.

[2]. Shenghu He, et al. Protective effects of trimetazidine against vascular endothelial cell injury induced by oxidation. Journal of Geriatric Cardiology, December 2008 , Vol 5 No 4.

[3]. Jain S, et al. Trimetazidine exerts protection against increasing current electroshock seizure test in mice. Seizure. 2010 Jun;19(5):300-2.

[4]. Kantor PF, et al. The antianginal drug trimetazidine shifts cardiac energy metabolism from fatty acid oxidation to glucose oxidation by inhibiting mitochondrial long-chain 3-ketoacyl coenzyme A thiolase. Circ Res. 2000 Mar 17;86(5):580-8.

[5]. Chrusciel P, et al. Defining the role of trimetazidine in the treatment of cardiovascular disorders: some insights on its role in heart failure and peripheral artery disease. Drugs. 2014 Jun;74(9):971-80.

[6]. Hossain F, et al.Inhibition of Fatty Acid Oxidation Modulates Immunosuppressive Functions of Myeloid-Derived Suppressor Cells and Enhances Cancer Therapies. Cancer Immunol Res. 2015 Nov;3(11):1236-47.

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

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