
Product Data Sheet

Product Name: Trimetazidine-d8 dihydrochloride

Cat. No.: GC65386

Chemical Properties

Cas. No. 1219795-37-5

Formula C₁₄H₁₆D₈Cl₂N₂O₃

M.Wt 347.31

Solubility H₂O : ≥ 100 mg/mL (287.93 mM); H₂O : ≥ 50 mg/mL (143.96 mM); DMSO : 25 mg/mL (71.98 mM); Need ultrasonic)

Storage Store at -20°C, protect from light, stored under nitrogen

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure

Background

Trimetazidine-d8 dihydrochloride is the deuterium labeled Trimetazidine dihydrochloride. Trimetazidine dihydrochloride is a selective long chain 3-ketoacyl coenzyme A thiolase inhibitor with an IC₅₀ 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].

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].

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

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

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

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