

Product Data Sheet

Product Name: TCA1
Cat. No.: GC63789

Chemical Properties

Cas. No. 864941-32-2

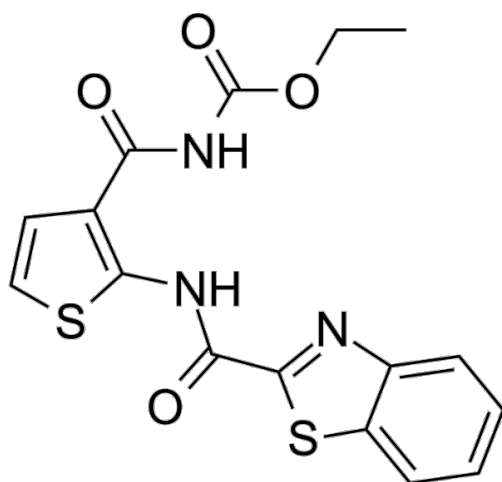
Formula C₁₆H₁₃N₃O₄S₂ M.Wt 375.42

Solubility DMSO : 125 mg/mL (332.96 mM; Need ultrasonic) Storage Store at -20°C

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

TCA1 is a small molecule with activity against drug-susceptible and -resistant Mycobacterium tuberculosis (Mtb). TCA1 inhibits enzymes involved in cell wall and molybdenum cofactor

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

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biosynthesis, such as DprE1 and MoeW[1].

TCA1 shows bactericidal activity against both replicating (WT and drug resistant) and nonreplicating *Mycobacterium tuberculosis* (Mtb). TCA1 inhibits biofilm formation by Mtb H37Rv[1]. TCA1 shows selective inhibitory activity against bacterial growth-it is inactive against *Escherichia coli*, *Staphylococcus aureus*, and *Pseudomonas aeruginosa*, suggesting that the target for its bactericidal activity is specific to the genus *Mycobacterium*[1].

TCA1 (40 mg/kg; oral gavage; 1 time/d for 5 d/week; for 4 weeks) is efficacious in acute and chronic Mtb infection mouse models[1]. In a mouse model of Mtb infection, after i.v. administration, TCA1 exhibits a low clearance and steady-state volume of distribution, with an elimination half-life of 0.73 h. After oral administration of 20 and 50 mg/kg in solution formulation, TCA1 shows a high C_{max} (2122 and 5653 nM, respectively), moderate exposure with oral bioavailability ranging from 19% to 46%, and a half-life of 1.8 h[1]. BALB/c mice infected with Mtb H37Rv[1] 40 mg/kg Oral gavage; 1 time/d for 5 d/week; for 4 weeks Effectively inhibits Mtb in vivo.

[1]. Feng Wang, et al. Identification of a small molecule with activity against drug-resistant and persistent tuberculosis. *Proc Natl Acad Sci U S A*. 2013 Jul 2;110(27):E2510-7.

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