
Product Data Sheet

Product Name: Ethambutol

Cat. No.: GC17176

Chemical Properties

Cas. No. 74-55-5

Chemical Name (2S)-2-[2-[[[(2S)-1-hydroxybutan-2-yl]amino]ethylamino]butan-1-ol

SMILES CCC(CO)NCCNC(CC)CO

Formula C₁₀H₂₄N₂O₂ M.Wt 204.31

Solubility Soluble in DMSO 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

Ethambutol is a bacteriostatic antimycobacterial agent, which obstructs the formation of cell wall by inhibiting arabinosyl transferases. Target: Antibacterial Ethambutol directly affects two polymers, arabinogalactan (AG) and lipoarabinomannan (LAM) in Mycobacterium smegmatis. In M. smegmatis, Ethambutol inhibits synthesis of arabinan completely and inhibits AG synthesis most likely as a consequence of this; more than 50% of the cell arabinan is released from the bacteria following Ethambutol treatment, whereas no galactan is released. Ethambutol main targets against embB gene product in M. avium. Ethambutol induces 60% changes in the embB gene in M. tuberculosis resistant mutants [1]. Ethambutol is effective against actively growing microorganisms of the genus Mycobacterium, including M. tuberculosis. Nearly all strains of M. tuberculosis and M. kansasii as well as a number of strains of the M. avium complex (MAC) are sensitive to Ethambutol. [1] Ethambutol is potency against M. tuberculosis (H37Rv) with MIC of 0.5 µg/mL in vitro [2]. Ethambutol is efficient on treatment of mycobacterial-infected macrophages. When M. tuberculosis infected macrophages are

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treated with 6 µg/mL Ethambutol, the log CFUs following treatment for 3 days is 4.17, while value in control group is 4.8. The MICs for *M. avium* (MTCC 1723) and *M. smegmatis* (MTCC 6) are 15 µg/mL and 0.18 µg/mL, respectively. Ethambutol is efficient in animal model. 100 mg/kg Ethambutol given orally 15 days post i.v. infection 1 x/week for 5 weeks, induces a lower log CFU compared with untreated (4.59 vs 5.07) [3].

References:

- [1]. Ethambutol. Tuberculosis (Edinb), 2008. 88(2): p. 102-5.
- [2]. Rastogi, N., V. Labrousse, and K.S. Goh, In vitro activities of fourteen antimicrobial agents against drug susceptible and resistant clinical isolates of Mycobacterium tuberculosis and comparative intracellular activities against the virulent H37Rv strain
- [3]. Kaur, D. and G.K. Khuller, In vitro, ex-vivo and in vivo activities of ethambutol and sparfloxacin alone and in combination against mycobacteria. Int J Antimicrob Agents, 2001. 17(1): p. 51-5.

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