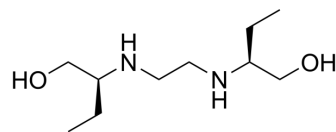


Ethambutol

Cat. No.:	HY-B0535		
CAS No.:	74-55-5		
Molecular Formula:	C ₁₀ H ₂₄ N ₂ O ₂		
Molecular Weight:	204.31		
Target:	Bacterial; Antibiotic		
Pathway:	Anti-infection		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



BIOLOGICAL ACTIVITY

Description

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 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 ×/week for 5 weeks, induces a lower log CFU compared with untreated (4.59 vs 5.07) [3].

CUSTOMER VALIDATION

- ACS Chem Biol. 2021 Dec 15.

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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 in human macrophages. *Curr Microbiol*, 1996. 33(3): p. 167-75.

[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.

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

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