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Zuschläge

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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

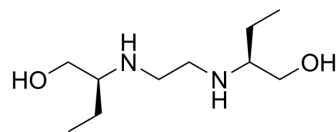
mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

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



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (489.45 mM; Need ultrasonic)

Concentration	Solvent	Mass		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	4.8945 mL	24.4726 mL	48.9452 mL
	5 mM	0.9789 mL	4.8945 mL	9.7890 mL
	10 mM	0.4895 mL	2.4473 mL	4.8945 mL

Please refer to the solubility information to select the appropriate solvent.

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.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA