Product Data Sheet

Product Name: Mafenide hydrochloride
Cat. No.: GC36529

Chemical Properties

Cas. No.	138-37-4		
SMILES	O=S(C1=CC=C(CN)C=C1)(N)=O.[H]Cl		
Formula	$C_7H_{11}ClN_2O_2S$	M.Wt	222.69
Solubility	DMSO：44 mg/mL (197.58 mM) ; Water:44 mg/mL (197.58 mM); Ethanol:8 mg/mL (35.92 mM)	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ 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	Mafenide hydrochloride		

Background

Mafenide is a sulfonamide antibiotic that inhibits growth of bacteria.[1,2] It inhibits growth of clinical isolates of *S. pyogenes*, methicillin-susceptible *S. aureus* (MSSA), methicillin-resistant *S. aureus* (MRSA), *Enterococcus*, Enterobacteriaceae, and Gram-negative bacilli from burn patients in an agar well diffusion assay (mean zone of inhibition = 24-37 mm) but not in a broth dilution assay with MIC values ranging from 250 to greater than 5,000 µg/ml.[1] Mafenide also inhibits growth of clinical isolates of *K. pneumoniae* that produce extended spectrum β-lactamase (ESBL), *P. aeruginosa*, and *A. baumannii-calcoaceticus* from burn patients in an agar well diffusion assay (mean zones of inhibition = 23.5, 28.9, and 25.8 mm, respectively) but not in a broth dilution assay (mean MICs = 1,024 µg/ml, 1,024 µg/ml, and 1,024 µg/ml, respectively).[2] It decreases mortality in a rat model of burn wounds seeded with rat virulent *P. aeruginosa*.[3] Mafenide also inhibits human carbonic anhydrase (CA) I and II (K_is = 41.91 and 0.612 µM, respectively).[4] Formulations containing mafenide have been used in the treatment of severe burns.

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1.Rodgers, G.L., Mortensen, J.E., Fisher, M.C., et al.In vitro susceptibility testing of topical antimicrobial agents used in pediatric burn patients: Comparison of two methodsJ. Burn Care Rehabil.18(5)406-410(1997) 2.Glasser, J.S., Guymon, C.H., Mende, K., et al.Activity of topical antimicrobial agents against multidrug-resistant bacteria recovered from burn patientsBurns36(8)1172-1184(2010) 3.Fox, C.L., Jr., Sampath, A.C., and Stanford, J.W.Virulence of Pseudomonas infection in burned rats and mice. Comparative efficacy of silver sulfadiazine and mafenideArch. Surg.101(4)508-512(1970) 4.Fidan, ?., Salmas, R.E., Arslan, M., et al.Carbonic anhydrase inhibitors: Design, synthesis, kinetic, docking and molecular dynamics analysis of novel glycine and phenylalanine sulfonamide derivativesBioorg. Med. Chem.23(23)7353-7358(2015)

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