
Product Data Sheet

Product Name: Mafenide

Cat. No.: GC36528

Chemical Properties

Cas. No. 138-39-6

SMILES O=S(C1=CC=C(CN)C=C1)(N)=OFormula C7H10N2O2S

M.Wt 186.23

Solubility DMF: 30 mg/ml, DMSO: 30 mg/ml, DMSO:PBS(pH 7.2) (1:4):
0.2 mg/ml, Ethanol: slightly solubleStore
Storage 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**

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_s = 41.91 and 0.612 µM, respectively).⁴ Formulations containing mafenide have been used in the treatment of severe burns.

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

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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 methods. *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 patients. *Burns* 36(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 mafenide. *Arch. 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 derivatives. *Bioorg. Med. Chem.* 23(23)7353-7358(2015)

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