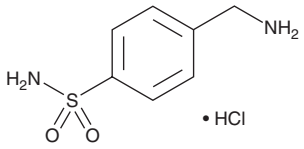
PRODUCT INFORMATION

Mafenide (hydrochloride)

Item No. 43465

CAS Registry No.: 138-37-4
Formal Name: 4-(aminomethyl)-benzenesulfonamide, monohydrochloride
Synonyms: *p*-Aminomethylbenzenesulfonamide, 4-Homosulfanilamid, Homosulfamine, Mesudin, Marfanil
MF: $C_7H_{10}N_2O_2S \bullet HCl$
FW: 222.7
Purity: ≥98%
Supplied as: A solid
Storage: -40°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Mafenide (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the mafenide (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Mafenide (hydrochloride) is sparingly soluble (1-10 mg/ml) in DMSO.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of mafenide (hydrochloride) can be prepared by directly dissolving the solid in aqueous buffers. Mafenide (hydrochloride) is soluble (≥10 mg/ml) in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

Description

Mafenide is a sulfonamide antibiotic.[1,2] It is active against 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 is also active against 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 for all).[2] It decreases mortality in a rat model of burn wounds seeded with rat virulent *P. aeruginosa*.[3] Mafenide also inhibits human carbonic anhydrase I (CAI) and CAII (K_is = 41.91 and 0.612 µM, respectively).[4] Formulations containing mafenide have been used in the treatment of bacterial infections associated with burn wounds.

References

1. Rodgers, G.L., Mortensen, J.E., Fisher, M.C., *et al. J. Burn Care Rehabil.* **18(5)**, 406-410 (1997).
2. Glasser, J.S., Guymon, C.H., Mende, K., *et al. Burns* **36(8)**, 1172-1184 (2010).
3. Fox, C.L., Jr., Sampath, A.C., and Stanford, J.W. Arch. Surg. 101(4), 508-512 (1970).
4. Fidan, İ., Salmas, R.E., Arslan, M., *et al. Bioorg. Med. Chem.* **23(23)**, 7353-7358 (2015).

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