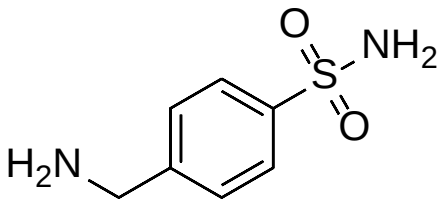
Product data sheet

MedKoo Cat#: 414319 Name: Mafenide Free Base CAS: 138-39-6 (free base) Chemical Formula: $C_7H_{10}N_2O_2S$ Exact Mass: 186.0463 Molecular Weight: 186.229	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
Mafenide Free Base is a sulfonamide that inhibits the enzyme CARBONIC ANHYDRASE and is used as a topical anti-bacterial agent, especially in burn therapy.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMF	30.0	161.09
DMSO	30.0	161.09
DMSO:PBS (pH 7.2) (1:4)	0.2	1.07

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	5.37 mL	26.85 mL	53.70 mL
5 mM	1.07 mL	5.37 mL	10.74 mL
10 mM	0.54 mL	2.69 mL	5.37 mL
50 mM	0.11 mL	0.54 mL	1.07 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Han C, Yang Y, Yu A, Guo L, Guan Q, Shen H, Jiao Q. Investigation on the mechanism of mafenide in inhibiting pyroptosis and the release of inflammatory factors. Eur J Pharm Sci. 2020 Apr 30;147:105303. doi: 10.1016/j.ejps.2020.105303. Epub 2020 Mar 12. Erratum in: Eur J Pharm Sci. 2022 Mar 1;170:106099. PMID: 32173407.

In vivo study

1. Han C, Yang Y, Yu A, Guo L, Guan Q, Shen H, Jiao Q. Investigation on the mechanism of mafenide in inhibiting pyroptosis and the release of inflammatory factors. Eur J Pharm Sci. 2020 Apr 30;147:105303. doi: 10.1016/j.ejps.2020.105303. Epub 2020 Mar 12. Erratum in: Eur J Pharm Sci. 2022 Mar 1;170:106099. PMID: 32173407.

7. Bioactivity
Biological target:

Mafenide is an effective sulfonamide-type antimicrobial agent used for burn wounds. Mafenide shows activity against both Gram-positive and Gram-negative organisms, including Pseudomonas aeruginosa, via inhibition of nucleotide synthesis.

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In vitro activity

MAF (mafenide) could inhibit pyroptosis in iBMDM and microglia BV2, and decrease the release of inflammatory factors. MAF could inhibit GSDMD cleavage by directly binding to the GSDMD-Asp275 site, while the expression of p30-GSDMD was simultaneously down-regulated and the release of inflammatory factors was decreased.

Reference: Eur J Pharm Sci. 2020 Apr 30;147:105303. https://pubmed.ncbi.nlm.nih.gov/32173407/

In vivo activity

MAF (mafenide) could reduce the levels of inflammatory factors in cerebrospinal fluid and peripheral blood of APP/PS1 mice, and suppress the activation of microglia.

Reference: Eur J Pharm Sci. 2020 Apr 30;147:105303. https://pubmed.ncbi.nlm.nih.gov/32173407/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.