

## Product Data Sheet

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Product Name: BMAP-27 acetate

Cat. No.: GC81541

### Chemical Properties

Cas. No.

Formula  $C_{158}H_{263}N_{45}O_{27} \cdot xC_2H_4O_2$  M.Wt 3225.06

Solubility DMSO: 100 mg/mL (Need ultrasonic) Storage Sealed storage, away from moisture

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

Gly-Arg-Phe-Lys-Arg-Phe-Arg-Lys-Lys-  
Phe-Lys-Lys-Leu-Phe-Lys-Lys-Leu-Ser-  
Pro-Val-Ile-Pro-Leu-Leu-His-Leu-NH<sub>2</sub>  
(Acetate salt)

### Background

BMAP-27 acetate is a cationic amphipathic  $\alpha$ -helical antimicrobial peptide with anticancer activity. BMAP-27 acetate disrupts the integrity and permeability of cell membranes, leading to the leakage of intracellular DNA, proteins and alkaline phosphatase. BMAP-27 acetate increases intracellular ROS

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

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levels and reduces plasma endotoxin and TNF- $\alpha$  concentrations. BMAP-27 acetate can be used in studies related to Salmonella infection, breast cancer, lung cancer and obstructive jaundice [1] [2] [3].

In Vivo, BMAP-27 (1 mg/kg; i.p.; single administration) TFA significantly reduces plasma levels of endotoxin, TNF- $\alpha$  and IL-6, decreases bacterial translocation, and reduces the mortality rate to 15% in mice with endotoxemia induced by bile duct ligation and LPS [3].

In Vitro, BMAP-27 (2-4  $\mu$ M) TFA potently inhibits the growth of *S. aureus* and *E. coli* with MIC values of 2-4  $\mu$ M<sup>[2]</sup>. BMAP-27 (2-5  $\mu$ M; 20-60 min) TFA rapidly kills *S. aureus* and *E. coli*, achieving near-complete bacterial death within 20 min at its MIC of 2  $\mu$ M<sup>[2]</sup>. BMAP-27 TFA efficiently depolarises the cytoplasmic membranes of *S. aureus* and *E. coli* at concentrations lower than its MIC of 2-4  $\mu$ M<sup>[2]</sup>. BMAP-27 (2 days) TFA exhibits strong dose-dependent cytotoxicity against human MDA-361 and A549 cancer cells, with IC<sub>50</sub> values lower than its haemolytic activity IC<sub>50</sub><sup>[2]</sup>. BMAP-27 (1 h) TFA exhibits moderate dose-dependent haemolytic activity against human red blood cells<sup>[2]</sup>. BMAP-27 (5-32  $\mu$ M; 2-5 min) TFA potently disrupts anionic POPC/POPG (2:1) membranes, shows moderate disruption of zwitterionic POPC/cholesterol (4:1) membranes at high concentrations, and exhibits Phosphatidylserine (PS) -dependent membrane disruption that correlates with its anticancer activity<sup>[2]</sup>.

### References:

- [1]. Xia R, et al. Insight into the inhibitory activity and mechanism of bovine cathelicidin BMAP 27 against Salmonella Typhimurium. Microbial pathogenesis. 2024 Feb;187:106540.
- [2]. Yang S, et al. Structural analysis and mode of action of BMAP-27, a cathelicidin-derived antimicrobial peptide. Peptides. 2019 Aug;118:170106.
- [3]. Ghiselli R, et al. Effects of the antimicrobial peptide BMAP-27 in a mouse model of obstructive jaundice stimulated by lipopolysaccharide. Peptides. 2006 Nov;27(11):2592-9.

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