

Product Information

Pediocin from *Pediococcus acidilactici*

Catalog Number **P0098**
Storage Temperature $-20\text{ }^{\circ}\text{C}$

CAS RN 133108-87-9

Product Description

Pediocins are class IIa bacteriocins, which are produced by *Pediococcus* species.^{1,2} They are cationic peptides containing between 35–50 amino acids.³ Most pediocins are thermostable proteins and function under a wide range of pH values.⁴ Pediocins show particularly strong activity against food-spoilage and pathogenic bacteria, such as *Listeria monocytogenes*, *Clostridium perfringens*, *Enterococcus faecalis*, and *Staphylococcus aureus*.⁴ This antimicrobial action of pediocins is based on interaction with the cytoplasmic membrane, which results in pore formations and cell death.¹ Since pediocins are degraded by the proteolytic enzymes of the gastrointestinal tract and seem to be non-toxic and non-antigenic to animals, they have the potential as food biopreservatives.⁵

The product is supplied as a solution of 100 mM sodium acetate, pH 5.

Purity: $\geq 95\%$ (HPLC)

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store the product at $-20\text{ }^{\circ}\text{C}$. The product when stored properly is stable for four years.

References

1. Bauer, R., and Dicks, L.M., Mode of action of lipid II-targeting lantibiotics. *Int. J. Food Microbiol.*, **101**, 201-216 (2005).
2. Nel, H.A. et al., Growth optimization of *pediococcus damnosus* NCFB 1832 and the influence of pH and nutrients on the production of pediocin PD-1. *J. Appl. Microbiol.*, **91**, 1131-1138 (2001).
3. Uteng, M. et al., Rapid two-step procedure for large-scale purification of pediocin-like bacteriocins and other cationic antimicrobial peptides from complex culture medium. *Appl. Env. Microbiol.*, **68**, 952-956 (2002).
4. Bhunia, A.K. et al., Purification, characterization and antimicrobial spectrum of a bacteriocin produced by *Pediococcus acidilactici*. *J. Appl. Bacteriol.*, **65**, 261-268 (1988).
5. Guerra, N.P. et al., Nutritional factors affecting the production of two bacteriocins from lactic acid bacteria on whey. *Int. J. Food Microbiol.*, **70**, 267-281 (2001).

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