

# PRODUCT INFORMATION



**Nisin (>900 IU/mg, contains min. 50% NaCl)**

Item No. 16532

**CAS Registry No.:** 1414-45-5

**Formal Name:** L-isoleucyl-(Z)-2,3-didehydro-2-aminobutanoyl-D-cysteinyl-L-isoleucyl-2,3-didehydroalanyl-L-leucyl-L-cysteinyl-threo-3-mercapto-D-2-aminobutanoyl-L-prolylglycyl-L-cysteinyl-L-lysyl-threo-3-mercapto-D-2-aminobutanoylglycyl-L-alanyl-L-leucyl-L-methionylglycyl-L-cysteinyl-L-asparaginyll-methionyl-L-lysyl-threo-3-mercapto-D-2-aminobutanoyl-L-alanyl-threo-3-mercapto-D-2-aminobutanoyl-L-cysteinyl-L-histidyl-L-cysteinyl-L-seryl-L-isoleucyl-L-histidyl-L-valyl-2,3-didehydroalanyl-L-lysine, cyclic (3→7),(8→11),(13→19),(23→26),(25→28)-pentakis (sulfide)

**MF:** C<sub>143</sub>H<sub>230</sub>N<sub>42</sub>O<sub>37</sub>S<sub>7</sub>

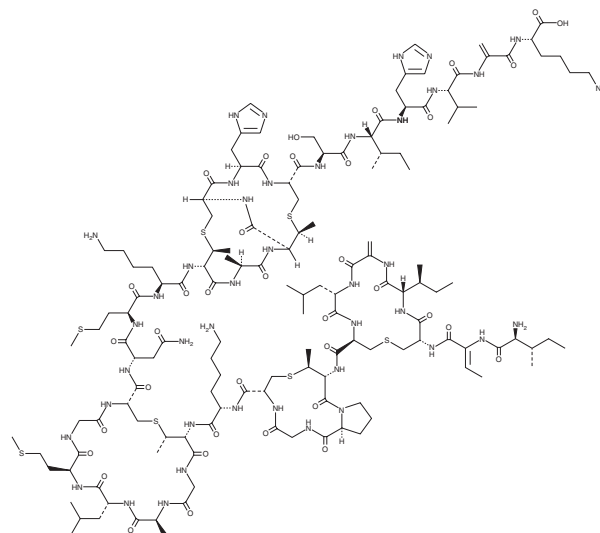
**FW:** 3,354.1

**Specific Activity:** 1126 IU/mg

**Supplied as:** A crystalline solid

**Storage:** 4°C

**Stability:** ≥4 years



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

## Laboratory Procedures

Nisin (>900 IU/mg, contains min. 50% NaCl) is supplied as a crystalline solid. A stock solution may be made by dissolving the nisin (>900 IU/mg, contains min. 50% NaCl) in the solvent of choice, which should be purged with an inert gas. Nisin (>900 IU/mg, contains min. 50% NaCl) is soluble in the organic solvent DMSO at a concentration of approximately 0.25 mg/ml.

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 nisin (>900 IU/mg, contains min. 50% NaCl) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of nisin (>900 IU/mg, contains min. 50% NaCl) in PBS (pH 7.2) is approximately 0.5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

## Description

Nisin A is a bacteriocin, a natural polycyclic antibacterial peptide.<sup>1</sup> It is produced by the lactic acid bacterium *L. lactis* using uncommon amino acids, including lanthionine, and is a member of the class of antibiotics referred to as lantibiotics.<sup>2</sup> Nisin A is particularly effective against Gram-positive bacteria and is commonly used as a food preservative.<sup>1,3</sup> Lantibiotics, including nisin A, form complexes with membrane-bound peptidoglycan precursors on the surface of bacteria, resulting in pore formation and cell death.<sup>1,3</sup>

## References

1. Breukink, E. and de Kruijff, B. *Biochim. Biophys. Acta* **1462**(1-2), 223-234 (1999).
2. Zendo, T. *Biosci. Biotechnol. Biochem.* **77**(5), 893-899 (2013).
3. Brötz, H. and Sahl, H.-G. *J. Antimicrob. Chemother.* **46**(1), 1-6 (2000).

### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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