Catalog Number: 155839, 216308

Nisin

Structure:¹

\[
\text{where Abu = } \omega\text{-amino butyric acid}
\]
\[
\text{Dha = dehydroalanine}
\]
\[
\text{Dhb = dehydrobutyric acid}
\]

Molecular Formula: C₁₄₃H₂₃₀N₄₂O₃₇S₇

Molecular Weight: 3354.25

CAS #: 1414-45-5

Physical Description: Cream colored powder

Description: A polypeptide (34 residues⁷) antibiotic structurally similar to subtilin⁶ but containing no tryptophan¹; a member of the lantibiotic family. Reduces the thermal resistance of bacterial spores in milk-based beverages.² The C-terminus of nisin is responsible for the initial interaction of nisin, binding to the target membrane.⁴ Active against Gram-positive bacteria at the cytoplasmic membrane.⁷

Form: Cream colored powder containing approximately 2.5% nisin, 75% sodium chloride and 22.5% denatured milk solids.

Activity: Approximately 1000 units/mg powder

Solubility: Soluble in dilute acids such as 0.02 N HCl (118 mg/ml). Any undissolved material is the dairy solids and should not be considered a problem. Stable to boiling in acid solutions.¹

References:

– Merck Index, 12th Ed., No. 6657.
– Breukink, E., et al., "The C-terminal region of nisin is responsible for the initial interaction of nisin with the target membrane."