

Resistance of listeria monocytogenes to the bacteriocin nisin

University of Surrey - Mechanism of Nisin, Pediocin 34, and Enterocin FH99 Resistance in Listeria monocytogenes, Probiotics and Antimicrobial Proteins

Producing species	Bacteriocin	Notes	Species of action	Characteristics
Antimicrobial activity against Listeria				
Listeria 1017	Lactocin 1017	Oncolytic protein bacteriocin	Class I bacteriocin, 0.3 KDa, 10 monomers	
				Class I nisin-resistant, 4.2 KDa, heat stable, active acidic and physiological pH.
				Antibacteriocin active
				Proteolytic inactive
				Degraded by nisin
Lactococcus lactis subsp. cremoris	Lactocin 10	Lactobacilli	Class II bacteriocin, active, 1.6KDa, narrow spectrum	
Lactococcus lactis subsp. lactis	Avalacin C10	Oncolytic protein bacteriocin	Class II bacteriocin, active, high molecular weight aggregate	
Lactococcus lactis	Lactocin F	Lactobacilli, streptococci	Class II bacteriocin, 0.3 KDa, 10 monomers, heat stable at 4°C, 10% TFA, 10% DMSO	
Lactococcus lactis	Lactocin B	Lactobacilli, streptococci	Class III bacteriocin, 0.3 KDa, heat stable, deodorant active, 10 monomers, 10% TFA, 10% DMSO	
Streptococcus thermophilus	Lactocin A	Lactobacilli	Class II bacteriocin, active, 0.3 KDa, 10 monomers	
Streptococcus casei	Lactocin 707	Lactobacilli	Class II bacteriocin, active, 0.3 KDa, 10 monomers	
Enterococcus faecalis	Enterocin 34	Enterococci	Class I bacteriocin, 3.4 KDa, 10 monomers, active, 10% TFA, 10% DMSO	
Enterococcus faecalis	Enterocin FH99	Enterococci	Class I bacteriocin, 1.1 KDa, 10 monomers, active, 10% TFA, 10% DMSO	
Pediococcus acidilactici	Pediocin P-1	Pediococci	Class I bacteriocin, 0.3 KDa, 10 monomers, active, 10% TFA, 10% DMSO	
Pediococcus acidilactici	Pediocin P-2	Pediococci	Class I bacteriocin, 0.3 KDa, 10 monomers, active, 10% TFA, 10% DMSO	
Pediococcus acidilactici	Pediocin Aeff	Pediococci	Class II bacteriocin, 0.3 KDa, 10 monomers, broad spectrum	
Pediococcus pentosaceus	Pediocin A	Pediococci	Class II bacteriocin, 0.3 KDa, 10 monomers, active, 10% TFA, 10% DMSO	
Enterococcus faecalis	Enterocin A	Enterococci	Class II bacteriocin, 0.3 KDa, 10 monomers, active, 10% TFA, 10% DMSO	
Enterococcus faecalis	Enterocin B	Enterococci	Class II bacteriocin, 0.3 KDa, 10 monomers, active, 10% TFA, 10% DMSO	
Enterococcus faecalis	Enterocin C	Enterococci	Class II bacteriocin, 0.3 KDa, 10 monomers, active, 10% TFA, 10% DMSO	
Enterococcus faecalis	Enterocin D	Enterococci	Class II bacteriocin, 0.3 KDa, 10 monomers, active, 10% TFA, 10% DMSO	
Enterococcus faecalis	Enterocin E	Enterococci	Class II bacteriocin, 0.3 KDa, 10 monomers, active, 10% TFA, 10% DMSO	
Enterococcus faecalis	Enterocin F	Enterococci	Class II bacteriocin, 0.3 KDa, 10 monomers, active, 10% TFA, 10% DMSO	
Antimicrobial activity against other bacteria				
Antimicrobial activity against foodborne pathogens				
Antimicrobial activity against probiotics				

Description:-

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Mechanism of Nisin, Pediocin 34, and Enterocin FH99 Resistance in Listeria monocytogenes

Immunogold labelling and transmission electron microscopy did not visibly show the incorporation of nisin into the cell membrane, probably because, if bound, the nisin epitopes were unable to form an antigen-antibody complex. Our products and expertise have helped fuel technical advances in dozens of commercial applications including flavoring, coloring, fragrances and chemical processes. This implies a substantial change in the surface architecture of this nisin resistant mutant which might involve a different protein display at the surface.

Nisin Resistance of Listeria monocytogenes Is Increased by Exposure to Salt Stress and Is Mediated via LiaR

All data sets were found to be normally distributed, and analysis of variance ANOVA was implemented using the mixed procedure in the software program SAS v.

Nisin and class IIa bacteriocin resistance among Listeria and other foodborne pathogens and spoilage bacteria.

Abstract The antibiotic susceptibility of wild Listeria monocytogenes strains and their corresponding nisin resistant variants was assessed. Keywords: Bacteriocin resistance; Enterocin FH99; L.

Antimicrobial susceptibility of nisin resistant Listeria monocytogenes of dairy origin

The nisin resistance phenotype of the F6861 mutant strain was completely stable after undergoing ten passages of growth in nisin-free media.

Glutamate decarboxylase

It was recently speculated that Lmo1746-47, along with AnrAB and VirRS, may form an antimicrobial sensing and detoxification module similar to the VraDE-BraSR-BraDE circuit in *Staphylococcus aureus*. Isogenic deletion mutations in liaR were constructed in 7 strains of L.

Cell wall changes in nisin

Our data indicate that while salt-induced nisin resistance does occur in all the strains tested, variation in the extent of the protective effect of salt does exist.

Cell wall changes in nisin

We suggest that under certain conditions *gadD1* may contribute to intracellular ATP pools and hence tolerance of nisin. Only those antibiotics whose MIC values were at least twofold higher or lower than those of the wild type strains are displayed.

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