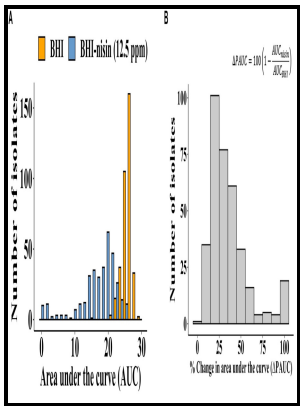
Resistance of listeria monocytogenes to the bacteriocin nisin

University of Surrey - Cell wall changes in nisin



Description: -
-Resistance of listeria monocytogenes to the bacteriocin nisin
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Notes: Thesis (Ph.D) - University of Surrey,1995.
This edition was published in -

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INTRODUCTION The food-borne pathogen Listeria monocytogenes must survive a number of environmental stresses in order to be successfully transmitted to a human host. Lmo2229 is a penicillin binding protein and was first described as contributing to nisin resistance due to overexpression in a spontaneous nisin-resistant strain of L. Salt-induced cross-protection against nisin is independent of growth phase.

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SigB thus seems to play a role in salt-induced nisin resistance in stationary-phase cells, but this seems at least partially independent of LiaR. Some of these genes, such as telA and lmo2229 , have identified roles in innate resistance to nisin. Results indicated that without a cell wall, the acquired nisin, pediocin 34, and enterocin FH99 resistance of the variants was lost.

Inhibition of Listeria monocytogenes by the Staphylococcus capitis

The cells were collected by centrifugation, washed twice with sterile deionised water and freeze dried. Antibiotic Test Target strains ScottA ScottAR Lm4 Lm4R Lm41 Lm41R Chloramphenicol E 8 4 4 4 8 8 Clindamycin E 1.

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

Lactic acid production, specific growth rate, potassium ion efflux, susceptibility to 13 antibiotics, cell-envelope fatty acid composition and bacteriocin cross-resistance were evaluated. Wild-type stationary-phase cells were also sensitive to nisin, with an average decrease in cell density of 3. In each strain, the rate of K+ efflux increased with increasing nisin concentration until it reached a maximum rate.

Antimicrobial susceptibility of nisin resistant Listeria monocytogenes of dairy origin

Nisin resistance can also be induced above the level of innate resistance. The nisin resistance phenotype of the F6861 mutant strain was completely stable after undergoing ten passages of growth in nisin-ffee media. There was only cross-resistance to the aminoglicosides kanamycin and

streptomycin and to the membrane disturbing polymixin B.

Antimicrobial susceptibility of nisin resistant Listeria monocytogenes of dairy origin

Reaction mixtures containing all components except reverse transcriptase were prepared for all RNA samples to determine background levels of DNA. Hence, a particular antibiotic resistant phenotype was not displayed by these strains.

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The objective of this researchwas to compare the heat resistance ofNisr andwild type WT Listeriamonocytogenes. Results indicated that without a cell wall, the acquired nisin, pediocin 34, and enterocin FH99 resistance of the variants was lost.

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