Staphylococcus aureus strains with antibacterial activity against coagulase-negative staphylococci isolated from Vermont dairy farms.

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Abstract

The aim of this study was to screen Staphylococcus aureus isolates from Vermont dairy farms for bacteriocin-like activity against coagulase-negative staphylococcus species of interest. Simultaneous antagonism tests and competitive broth assays were performed to screen for antibacterial activity in S. aureus isolates and investigate the conferred growth advantage in vitro. A total of eight S. aureus isolates were screened against a panel of 54 coagulase-negative Staphylococcus species, mainly Staphylococcus chromogenes and Staphylococcus equorum. Two S. aureus isolates displayed substantial antibacterial activity against the panel of coagulase-negative staphylococci. Further, competitive broth assays revealed that the S. aureus that appeared to express antibacterial activity in the simultaneous antagonism assay also had enhanced growth in a competitive broth assay when grown with coagulase-negative staphylococci isolates.