

Complete sequences of epidermin and nukacin encoding plasmids from oral-derived *Staphylococcus epidermidis* and their antibacterial activity

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## 論 文 要 旨

**Complete sequences of epidermin and nukacin  
encoding plasmids from oral-derived *Staphylococcus  
epidermidis* and their antibacterial activity**

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*Staphylococcus epidermidis* is a commensal bacterium in humans. To persist in the bacterial flora of the host, some bacteria produce antibacterial factors such as the antimicrobial peptides known as bacteriocins. In this study, we tried to isolate bacteriocin-producing *S. epidermidis* strains. Among 150 *S. epidermidis* isolates from the oral cavities of 287 volunteers, we detected two bacteriocin-producing strains, KSE56 and KSE650. Complete genome sequences of the two strains confirmed that they carried the epidermin-harboring plasmid pEpi56 and the nukacin IVK45-like-harboring plasmid pNuk650. The amino acid sequence of epidermin from KSE56 was identical to the previously reported sequence, but the epidermin synthesis-related genes were partially different. The prepeptide amino acid sequences of nukacin KSE650 and nukacin IVK45 showed one mismatch, but both mature peptides were entirely similar. pNuk650 was larger and had an additional seven ORFs compared to pIVK45. We then investigated the antibacterial activity of the two strains against several skin and oral bacteria and found their different activity patterns. In conclusion, we report the complete sequences of 2 plasmids coding for bacteriocins from *S. epidermidis*, which were partially different from those previously reported. Furthermore, this is the first report to show the complete sequence of an epidermin-carrying plasmid, pEpi56.