CARTILAGE-SPECIFIC ANTIMICROBIAL CLEC3A
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HINTERGRUND
Bacterial infection is one of the most frequent complications in joint replacement surgery. The incidence of septic arthritis following total joint arthroplasty is approximately 2%, leading to massive health problems and considerable cost to the national economy. A new approach to reduce such infections is made by coating prostheses and implants with bioactive, anti-infectious substances. In this context, coating with antimicrobial peptides has already been tested (see Gallo et al.), too, but a major drawback is the fact that such peptides from exogenous sources may cause an immune response.

LÖSUNG
Researchers of the Medical Faculty of the University of Cologne have now demonstrated that peptides of the cartilage-specific CLEC3A have antimicrobial activity against some of the most common nosocomial bacteria. Most strikingly, both Gram-negative and Gram-positive bacteria were killed by such fragments (please see figure). The clear advantage of these cartilage-specific CLEC3A-derived peptides is the lack of immunogenicity.

Several CLEC3A-derived peptides have been investigated to show antimicrobial activity. In addition, coating titanium substrates with CLEC3A-derived peptides significantly reduces bacterial adhesion on the titanium substrates. Furthermore, it has been proven by the researchers that these peptides have no cytotoxicity against primary human chondrocytes.

VORTEILE
- Non-immunogenic peptide due to its natural expression in cartilage
- Antibiotic activity against both Gram-positive and Gram-negative nosocomial bacteria
- Suitable for surface coating of prostheses
SERVICE

The invention is offered for licensing and further co development in collaboration with the researchers. In case of interest we will be pleased to inform you about the patent status.

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