New antimicrobial peptides in the treatment of pulmonary infections due to multidrug resistant bacteria

Applications

Applications for this technique are found in hospitals for treating patients with severe and multidrug resistant bacteria found in the lungs.

Problem addressed

Now that the dissemination of antibiotic (ATB) resistance is a major threat on human health, antimicrobial peptides (AMPs) LL-37 and CAMA seem to be promising candidates among the existing alternatives to conventional antibiotics.

Technology

This invention consists of extracting and using AMPs on strains that were isolated from lung infections and were either antibiotic susceptible (AS) or multidrug resistant (MDR). It is based on a potent and rapid antibacterial effect of AMPs against all tested strains with no difference between AS and MDR strains. Moreover, induction of bacterial resistance to AMPs was either inexistent or transient, tardive and much lower than that to ATBs. AMPs had no toxic effects on cells. Their reduced tendency to develop resistance along with their minimal cytotoxic and pro-inflammatory effects, make these AMPs interesting alternative drugs. While these findings suggest a prophylactic effect of AMPs, further studies are crucial to valorize their usage as preventive and/or therapeutic agents. AMPs represent potential future therapeutic solutions for lung infectious diseases associated to MDR bacteria.

Advantages

- Potent and rapid antibacterial effect
- No observed resistance
- Nontoxic
- Reduces medical costs

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