TECHNOLOGY OFFER:

New Broad-Spectrum Enzybiotics

BACKGROUND

Currently, bacterial resistances to antibiotics are increasing and this is a cause of much concern. Pneumococcus is a pathogen responsible for life-threatening diseases such as pneumonia, sepsis and meningitis. In the last years, it has been a significant increase in pneumococcal clinical strains resistant to various antibiotics, making it necessary to find alternative treatments against this pathogen.

In this line, the use of murein hydrolases (enzymes that specifically and efficiently degrade bacterial peptidoglycan) encoded by bacteria or bacteriophages is an interesting line of research to act against bacterial diseases. Specifically, it has been demonstrated that these enzymes are effective bactericidal drugs "in vivo".

TECHNOLOGY DESCRIPTION

Researchers from CSIC and CIBERES have synthetized new polypeptides of murein hydrolases with an improved bactericidal activity and a broad spectrum of action due to its better binding to pneumococcus and other Gram-positive and Gram negative bacteria. These synthetic polypeptides will help to obtain new pharmaceutical compositions for treating infections caused by pneumococcus and other Gram-positive and Gram negative bacteria and with an increased ability to degrade their cell walls.

ADVANTAGES:

- The obtained enzybiotics have better binding capacity to adhere bacterial cell wall, not only for pneumococcus but also for other Gram-positive and Gram negative bacteria.
- These favors the design of broad-spectrum enzybiotics.
- These enzybiotics have an increased bactericidal activity.
- The bactericidal efficiency is extended to all pneumococcal strains, including those multiresistant.
- The new enzybiotics show thermal stability that makes them very suitable for future clinical applications.

GOAL

Companies interested in the development of new antibiotics are sought to develop and commercialize the technology under a patent license.

PATENT

PCT application on May 2014

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