

AGNIESZKA ZDYBICKA-BARABAS, SYLWIA STĄCZEK, MAŁGORZATA CYTRYŃSKA

*Department of Immunobiology, Institute of Biology and Biochemistry, Faculty of Biology and Biotechnology, Maria Curie-Skłodowska University, Akademicka 19 St., 20-033 Lublin, E-mail: barabas@poczta.umcs.lublin.pl*

## DIVERSITY OF ANTIMICROBIAL PEPTIDES IN INVERTEBRATES

### Summary

Antimicrobial peptides (AMPs) are the key effectors of innate immunity. They exhibit antimicrobial, antifungal, antiprotozoal, and often antiviral and anticancer activities. Many of them are involved in neutralization of pathogen endotoxins, have immunomodulatory properties, and are therefore referred to as defense peptides (host defense peptides). The wealth and diversity of naturally occurring AMPs is evidenced by their numbers in the Antimicrobial Peptide Database ([aps.unmc.edu/AP/main.php](http://aps.unmc.edu/AP/main.php)), which contains data on over 2100 peptides identified in animals. Of these, over 570 are invertebrate peptides, including 495 described in arthropods. The unusually widespread presence of AMPs in all kingdoms clearly indicates their fundamental role in the evolutionary success of complex multicellular organisms. Their essential role in invertebrate immunity further emphasizes the fact that most species produce a set of defense peptides varied in terms of spatial structure, biochemical properties, mechanism of action and spectrum of antimicrobial activity.

Key words: antimicrobial peptides, cecropins, defense peptides, defensins, innate immunity, invertebrates