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Plant medicine and veterinary potential of antimicrobial peptides produced by entomopathogenic nematode symbiotic bacteria

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Antibiotics-resistance of pathogenic organisms emerged as a new challenge to plant protection, veterinary and even human clinical practice. The antibiotic multidrug-resistance can be overcome by anti-microbial compounds of totally different mode of action. Biocontrol potential of antimicrobial peptides produced by EPB), Xenorhabdus budapestensis (EMA) and X. szentirmaii (EMC) will be discussed and summarized in this presentation. (1) We determined several important plant and veterinary pathogenic organisms, (belonging to Gram (+) and (-) bacterium, oomycetal, fungal, and Protista species) susceptible to the native cell-free conditioned media (CFCM) *in vitro*. (2) We determined if the resistance toward known antibiotics influences the susceptibility of the test organisms toward CFCM of EMA and/or EMC. (3) We started experiments aiming at to reveal the potential of use EMA/EMC antimicrobials in *in vivo* conditions. Accordingly one active compound, Bicornutin A was identified from the EMA CFCM. This is the novel linear sextapeptide. Further efforts toward developing application technology of EPB antimicrobial peptides against fire blight (Erwinia amylovora); Potato blight (Phytophthora infestans); plant diseases caused by Clavibacter, Curtobacter, Xanthomonas and Ralstonia species are proposed. As for veterinary application, we found that all studied Aeromonas hydrophila; Bacillus cereus, Corynebacterium pseudotuberculosis, E. coli; Salmonella, Listeria monocytagenes; Pasteurella multicida; Rhodococcus equi; Streptococcus equi and Bordatella bronchoseptica strains, independently of their resistance to other antibiotics; proved extremely sensitive to Bicornutum A.

Biography

Habil Andras Fodor completed his PhD at Eötvös University, Budapest, Hungary. He was granted Welcome Fellowship at MRC (Cambridge, UK). He built his carrier as Research Associate at Biological Research Center of the Hungarian Academy of Sciences. He became Associate Professor at Eötvös University and habilitated. He spent a Postdoctoral year at University of Missouri-Columbia. He spent years as visiting Scientist at the Ohio State University. He became a Research Professor (2009) at the University of Pannonia, Keszthely Hungary. He was granted a Fulbright Fellowship for the 2014/15 Academic year. He has published more than 25 papers in reputed journals.

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