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Abstract

Bacillus thuringiensis: A source of peptide antibiotics

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Abstract:

Bacillus thuringiensis (Bt) produces bioinsecticides and antibiotics that are very safe. In the present study, more than 600 Bt (QBT) strains were explored based on the proteomics of the crystal d-endotoxins, responsible of the insecticidal activity and on the bacteriocins that are peptide antibiotics and the investigation of the corresponding genes. 25% of the strains have shown bacteriocin activities against the pathogenic bacteria such as Bacillus cereus and Staphylococcus aureus at 30oC. Bacteriocin production was found to be dependent on media composition, type of substrate (solid/liquid), temperature, physiological state of the cells and presence of plasmids. Plasmid cured Bt. 4Q7 produced a 100oC thermostable glycoprotein type bacteriocin. Heat-sensitive bacteriocins specifically killed S. aureus cells very quickly. All these bacteriocins have novel characteristics that have not been previously reported and might have important applications as probiotics and in human microbiome.

Biography:

Samir Jaoua, has completed his PhD from the University of Technology of Compiegne (UTC, France), and postdoctoral studies from Ciba-Geigy (Novartis) in Basle (Switzerland). He is Professor of Microbiology at the Department of Biological and Environmental Sciences (CAS, Qatar Univ.). He is also Qualified Professor of France Universities "Section 64: Molecular Biology and Biochemistry" and Professor at the University of Sfax (Tunisia). Prof. Samir Jaoua is molecular and microbial geneticist. He has published 126 papers in reputed journals. His H-index is 34 with 3825 citations.

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