Svetoslav Dimitrov Todorov, J Antivir Antiretrovir 2014, 6:2
http://dx.doi.org/10.4172/1948-5964.S1.022

OMICS Group Conferences
Accelerating Scientific Discovery

4th World Congress on
Virology

October 06-08, 2014 Hilton San Antonio Airport, TX, USA

Biochemical, antimicrobial and molecular characterization of a noncytotoxic bacteriocin produced by selcted Lactic acid bacteria with antiviral activity

Svetoslav Dimitrov Todorov
Brazil

It is well known that many lactic acid bacteria (LAB) are capable of producing a variety of antimicrobial compounds, which may contribute to their colonization of habitats and their competitive advantage over other bacteria. Besides production of lactic acid, which causes a drop in pH enough to inhibit certain strains, as its non-dissociated form triggers a lowering of the internal pH in sensitive bacteria that causes a collapse in the electrochemical proton gradient resulting in a bacteriostatic or bactericidal effect, LAB can produce other organic acids, diacetyl, hydrogen peroxide, and bacteriocins. In addition to effect on closely related species, some bacteriocins may present an unusual activity against some Gram-negative bacteria, yeast, Micobacterium spp, and even viruses.

Bacteriocins, produced by Lactobacillus plantarum, Enterococcus mundtii, Ent. faecium have been investigated for they ability to reduce the multiplication of herpes simplex viruses HSV-1 (strain F) and HSV-2 (strain G), a polio virus (PV3, strain Sabin) and a measles virus (strain MV/BRAZIL/001/91, an attenuated strain of MV). This antimicrobial peptide presented various degrees in viral inactivation. Bacteriocin produced by Ent. mundtii ST4V was able to inactivate the herpes simplex viruses HSV-1 and HSV-2, a polio virus PV3 and a measles virus strain MV/BRAZIL/001/91, an attenuated strain of MV. MV, HSV-1 and HSV-2 were 95.5%–99.9% inactivated by peptide ST4V at 400 µg/ml. Monkey kidney Vero cells were not inactivated, even at four times the level peptide ST4V displayed antiviral activity, indicating that the effect was not due to cytotoxicity. In similar manners have been studied bacteriocins produced by L. plantarum ST4V or En. faecium ST5Ha.

Taking in consideration that LAB normally have well accepted GRAS status and some of them are potential probiotics, this give a new ideas and opportunities for control of viral infections.

Biography

Svetoslav Todorov has completed his Ph.D at ENITIAA, Nantes, France and Sofia University, Sofia, Bulgaria and postdoctoral studies from Stellenbosch University, South Africa and visiting professor at Sao Paulo University, Brazil. He has published more than 100 papers in reputed journals and serving as a member of the editorial board. He is reviewer for more than 80 international journals. He has also delivered various keynotes and plenary lectures both nationally and internationally.

slavi310570@abv.bg