International Journal of PharmTech Research
CODEN (USA): IJPRIF, ISSN: 0974-4304, ISSN(Online): 2455-9563
Vol.9, No.12, pp 806-815, 2016

Some Physiological and Biological Studies on Reuterin production from *Lactobacillus reuteri*

Mohamed M.I.Helal[1 *],Amal M Hashem[1], Madeha O.I.Ghobashy[2&3] and Al Shimaa G. Shalaby[1].

[1]Chemistry of Natural and Microbial Products Dept., Division of Pharmaceutical and drug industries, National Research Center, Dokki, Cairo, Egypt.
[2]Microbiology Department, Faculty of Sciences, Ain Shams University, Cairo, Egypt.
[3]Biology Department, Faculty of Sciences, Tabuk University,Tabuk, Saudi Arabia.

Abstract : Lactic Acid Bacteria (LAB) can be used as food preservatives to improve food stability and safety. This is due to its ability to produce antimicrobial substances which can inhibit the growth of the food poisoning organisms. LAB produce antimicrobial compounds named bacteriocins. This study focused on bacteriocin named reuterin which produced from *Lactobacillus reuteri* strain and its optimal production condition. The metabolite *L. reuteri* bacteriocin (reuterin) was extracted and the antimicrobial activity was evaluated against some hospitalized bacterial and fungal pathogens. The reuterin producing *L. reuteri* exhibited the highest inhibition zone (22.2, 22.5 and 22.7 mm) against *E.coli*, *Staphylococcus aureus* and *Candida albicans*, respectively, when grown on optimized condition, i.e., growth on 2% glucose, soy bean (sb) or yeast extract as nitrogen source, all MRS salts medium and inoculated by 21 $x10^8$ cfu/ml, pH 6.5 at 37°C for 24hr anaerobically. This study gave us the possibility to use reuterin as food preservative to control pathogenic microorganisms and food spoilage.
Key Words: *Lactobacillus reuteri*, reuterin, inhibition zone, amikacin and fluconazole.

Mohamed M.I.Helal *et al* /International Journal of PharmTech Research**,** 2016,9(12): 806-815.

*****