

***In vitro* assessment of the *Bifidobacterium* spp. for antimicrobial activities**

Shahram Naghizadeh Raeisi, Nasim Farahmand, Irene Ouoba, Jane Sutherland and Hamid Ghodusi
Islamic Azad University, Iran

The aim of this research was to study the potential antagonistic activity of *Bifidobacterium* spp. against pathogen organisms. The inhibitory properties of 14 isolates of bifidobacteria, isolated from fermented milk in the UK, was studied against indicator bacteria (*Salmonella* DT124, *Salmonella enteritidis*, *Escherichia coli*), using the spot test and well diffusion assay.

The positive antimicrobial effects of the tested isolates using spot test, even with buffered media, indicated the production of some presumptive antimicrobial compounds. Regarding the results of well diffusion assay, no antagonistic activity was observed with un-concentrated supernatant, which might be due to low concentration of antibacterial compounds or a result of dilution by diffusion into agar. However, concentration of supernatants by freeze drying/vacuum evaporation increased the amount of antibacterial compounds in the supernatant which then showed an inhibition zone of more than 3 mm diameter. When concentrated supernatants were neutralized, then no antimicrobial activities was observed. Based on these observations, it could be concluded that the inhibition activities of isolates from fermented milks depend on the production of organic acids such as lactic and acetic during fermentation. *Bifidobacterium longum* and *Bifidobacterium breve* showed more antagonistic property compared to *Bifidobacterium animalis subsp. lactis* not only in spot test but also in well diffusion assay, which might be due to the concentration or type of individual organic acids derived from their metabolisms.

Biography

Shahram Naghizadeh Raeisi has completed his PhD in food science at London Metropolitan University recently. His PhD research project was focused on the characterization of probiotic bacteria isolated from fermented milks in the UK. He has been contributing to food science and technology education for 6 years and also working as a director of research for Kalleh dairy company in Iran. He has published more than 11 papers in reputed and local Journals.

shn0212@londonmet.ac.uk