

**P108***Characterization of bifidobacteria in the indigenous honeybee of Saudi Arabia***Mohammad Ansari, Ahmad Al-Ghamdi, Khalid Khan**

Bifidobacteria were isolated from the intestinal tract of the indigenous honeybee of Saudi Arabia, *Apis mellifera jemenitica*, and investigated for potential application as a probiotic agent against some drug multi-resistant human pathogen, based on the findings of *in vitro* inhibition assays. A total of 07 bifidobacteria strains (designated as KsuBF1-KsuBF07) were isolated using a culture-dependent method and their 16S rRNA gene sequences were analysed. The KsuBF isolates belonged to three distinct bifidobacterial phylotypes that were similar to those found in the Japanese honeybee, *Apis cerana japonica*. Although the Saudi Arabian and Japanese honeybees are distinct species with different traits and habits, the observation that they share highly similar bifidobacterial phylotypes suggests that bifidobacteria are conserved among honeybee species. Despite having extremely high 16S rRNA gene sequence similarities, the KsuBF isolates had markedly different carbohydrate fermentation profiles. In addition, *in vitro* growth inhibition assays revealed that the cell-free supernatants of all KsuBF isolates exhibited antagonistic effects on drug multi-resistant *E. coli*, *P. aurescens*, *B. subtilis* and *S. aureus* growth. These results indicate that the bifidobacteria isolated from the gut of indigenous Saudi Arabian honeybee could potentially be employed to produce some probiotics against some human pathogens. Keywords: Bifidobacterium, Saudi Arabian honeybee, drug multi-resistant human pathogens, probiotics