Comparative accounts of probiotic properties of spore and vegetative cells of *Bacillus clausii* UBBC07 and in silico analysis of probiotic function

Ahire JJ, Kashikar MS, Sudha MR. (2021) Comparative accounts of probiotic properties of spore and vegetative cells of *Bacillus clausii* UBBC07 and in silico analysis of probiotic function. 3 Biotech. 11(3):116. doi: 10.1007/s13205-021-02668-0.

Summary :

In this study, the spores and vegetative cells of B. *clausii* were independently evaluated for probiotic properties such as acid, gastric juice, bile, and intestinal fluid tolerance, adhesion to solvents/mucin and zeta potential. In addition, in silico identification of genome features contributing to probiotic properties were investigated. The results showed that spores were highly stable at gastric acidity and capable to germinate and multiply under intestinal conditions as compared to vegetative cells. The higher hydrophobicity of spores, compared to vegetative cells, is advantageous for colonization and persistence in the intestine. Furthermore, the presence of F 0 F 1 ATP synthase, amino acid decarboxylase, bile acid symporter, mucin/collagen/fibronectin-binding proteins, heat/cold shock proteins, and universal stress proteins suggests that the strain is able to survive stress. In conclusion, the results demonstrate that B. *clausii* UBBC07 spores show significantly higher survival and adhesion in in vitro gastrointestinal conditions as compared to vegetative cells. Besides, this study provides a comparative analysis of the in vitro probiotic properties of spores and vegetative cells of *Bacillus clausii* UBBC07.
