Identification of Bifidobacterium Animalis Ssp. Lactis Based On 16S-23S rRNA Gene and using in fermentation dairy products.

Ali M Awaad[1], Mounir M Tohamy[2], Ali M El-Refy[1], Fawzy A El-Feky[1] and Ahmed I Ismail[1]*
[1]Department of Biotechnology, Faculty of Agriculture, Al-Azhar University, Egypt
[2]Department of Dairy, faculty of Agricultural Al-Azhar University, Egypt
Email:ali.maged2010@gmail.com

Abstract
Bifidobacterium represent one of the major genera of the intestinal tract of human and animals used as probiotics in dairy and nondairy foods for restore the intestinal microflora which confers a health benefit. The identification of Bifidobacterium by phenotypic features is commonly unreliable, time, money, and effort consuming. We sought to improve the Bifidobacterium identification method based on molecular level to identify probiotic bacteria in complex microbial communities. The application of 16S-23S rRNA oligonucleotide primers is the best and most reliable, rapid, and precise species and sub species identification approach. The ribosomal intergenic spacer region (ISR) located between the highly conserved 16S rRNA and 23S rRNA shows a high degree of variation in length and sequence and potential for intra species discrimination and providing the phylogenetic Relationship of the Genus Bifidobacterium spp. Results showed that one of the two primer sets Bflac2-Bflac5 species specific gives positive results differentiating between B. animalis ssp. Lactis isolated from breast fed infants milk of human and that isolated from feces of breast fed infant and detecting reference strain for B. animalis ssp. Lactis DSM10140. DNA sequences of the two strains were submitted to the Genbank NCBI under accession number (KT758845) named as B. animalis ssp. Lactis Egm1 (Egyptian milk) and accession number (KT758846) named as Egf1 Egyptian feces while the second primer give false positive result. Also, we aim to obtain patent protection under Intellectual property rights (IPRs) for B. animalis ssp. Lactis which was isolated from Egyptian resources to be used for a better and healthier food and dairy products.

Keywords:Molecular Biology- probiotecs – dariry products .



Iam a biotechnologist PhD student in Banha university-Egypt interested about dairy microbial for the detection and isolation and identification of a new species and sub species from dairy products and natural resources and using this strains as a starter culture in dairy products, food supplements and pharmaceutical preparations. I have excellent experience in the technical support and solving problems in industrial of dairy products to overcome dairy products issues and problems an around the world.