

## 3<sup>rd</sup> International Conference and Exhibition on **Probiotics, Functional & Baby Foods**

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## Probiotics as unique functional ingredients for management of type 2 diabetes and its complications: A review of current data

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**Background and aim:** Type 2 diabetes is a complicated metabolic disorder with both short- and long-term undesirable complications. In recent years, there has been growing evidence that functional foods and their bioactive compounds, due to their biological properties, may be used as complementary treatment for type 2 diabetes mellitus. In this review, we have highlighted potential properties of probiotics as main functional food components in medical nutrition therapy in diabetes.

**Methods:** Relevant articles, including *in vitro*, animal models and human studies with appropriate design, as well as review articles with good quality, published between 1990- 2014, through searches of the Medline and PubMed databases were obtained.

**Results:** Studies showed that probiotics, especially lactic acid bacteria and bifidobacteria, could attenuate several aspects of metabolic disorders; probiotics improve the features of metabolic syndrome, modulate gut microbiota and regulate satiety and food intake. More interestingly, probiotics have favorable effects on weight management via increased adiponectin levels, modulation of adipocytokines, induction of thermogenesis, lypolysis and  $\beta$ -oxidation. Probiotics could also increase dietary fat excretion and decrease adiposity. Consumption of probiotics-rich dairy products in diabetic patients decreased lipid and lipoprotein levels, lipid peroxidation, glycosilated hemoglobin and inflammatory markers. Moreover, probiotics-rich dairy products increased total antioxidant capacity, insulin sensitivity, and modulated immune responses in diabetic patients.

**Conclusion:** The potential efficacies of probiotics have made them as excellent choice for supplementary treatment in type 2 diabetes. However further investigations as human clinical studies areneeded to obtain the optimum dose and duration of supplementation with probiotics-rich foods in diabetic patients.

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