

## Role of Probiotics in Health and Disease

**M. Shiva Prakash**

ICMR-National Institute of Nutrition, India

**P**robiotic bacteria have become increasingly popular during the last two decades. Human body is host to some  $10^4$  bacteria, majority of which reside in the gastrointestinal tract and these play an important role in health maintenance. A majority of the indigenous flora is benign and exhibit health promoting properties like *Lactobacilli* and *Bifidobacteria* etc. Hence identification of indigenous probiotics will be of great benefit in the concept of Probioterapy against many diseases.

**Research:** We have obtained various probiotic microflora from our sponsored i.e. Unique Biotech. Ltd. Hyderabad, India. These were subjected to microbiological, biochemical and molecular techniques for classifying them to Genus and species etc. and studied for probiotic properties. These re-confirmed probiotics were subsequently used for the development of probiotic based food supplements. Finally these were evaluated for clinical applicability on obesity, type-2 diabetes mellitus and anaemic subjects. Earlier to this we have conducted studies on drug based probiotics in children suffering from malnutrition, elderly individuals and hypercholesterolemia patients.

**Results:** The probiotics with drug based showed the immunomodulation effect upon supplementation to malnourished children and elderly subjects and alteration in lipid profile in hypercholesterolemia subjects'. Similarly the probiotic based food supplements have also shown alteration in lipid profile and immunomodulation in obese subjects. Further the developed probiotic curd showed a significant role in the management of blood glucose and immune status in type-2 diabetes mellitus, .In addition the haemoglobin levels increased upon supplementation of probio chikkies in anaemic subjects.

**Conclusion:** Upon compilation of all the above research studies we have observed that both drug and food based probiotics have good potential on human health therefore their application in various diseases need to be assessed for their efficacy i.e. whether to recommend drug form or as food supplement. Our experience on these aspects will be presented for discussion.