General Introduction

The Greek philosopher and father of medicine Hippocrates wrote thousands of years ago ‘Let food be thy medicine, let medicine be thy food’. However during recent times, the concept of food having medicinal value has been reborn as ‘functional foods’ and the focus of scientist has been to look into the health promoting effect of food apart from safe nutrient provision and overcoming deficiencies. It is anticipated that this kind of functional foods, will contribute to an overall better state of health for the consumers. Examples of functional foods earlier used include micronutrients, vitamins, antioxidants, dietary fibre, proteins, bioactive peptides and polyunsaturated fatty acids but the concept has now moved towards gastrointestinal function, in particular the impact of gut bacteria.

The concept in which the gut microbiota composition may be influenced through the use of live microbial dietary additions dates back as far as prebiblical ages. There exists in the gut of animals a very complex population of microorganism which interact with each other and with the host. Our immune system, when healthy, is enormously helped by the presence of an army of trillions of friendly bacteria which line the mucus layer of a healthy intestine. It is said that 80% of our immune system is in the intestine. The 'good' bacteria in our gastrointestinal system can only provide us with optimum health if the proper balance of different types of bacteria is maintained in the gut. The composition of the gut microbiota is affected by factors such as age, stress, environment, diet and medicine.

Manipulation of the human gastrointestinal microbiota is currently being attempted as a means of introducing new microorganisms into the digestive tract which are beneficial to the human host or are able to bring
about advantageous changes to the equilibrium populations and metabolic activities of the indigenous microbiota. Microorganisms that have been used to achieve these goals have been called ‘probiotics. The word “probiotics” was derived from Greek words *pro* and *biotos* and translated as “for life”. The origin of the first use of the word can be traced back to 1953, when Kollath used it to describe the restoration of the health of malnourished patients by different organic and inorganic supplements.

The scientific rationale for the use of live microbes in the prevention and treatment of infections came to light most transparently at the beginning of the 20th century when Elie Metchnikoff hypothesized that replacing or diminishing the number of putrefactive bacteria in the gut with Lactic Acid Bacteria could normalize bowel health and prolong life. Elie Metchnikoff is considered the Grand Father of Probiotics. According to the guidelines of the Food and Agriculture Organisaton of the United Nations (FAO) and the World Health Organisation (WHO) probiotics is defined as “Live microorganisms which when administered in adequate amounts can confer a health benefit on the host” This definition is widely accepted as it embraces all applications of live microbes, not just those for intestinal benefits (Anukam and Reid, 2007). Over the years scientific research in probiotic microbiology has progressed considerably and significant advances have been made in the selection and characterization of specific probiotic cultures and substantiation of health claims relating to their use. The growing awareness of the relationship between diet and health has led to an increasing demand for food products that support health above and beyond providing nutrition. (Parvez et al., 2006).

Probiotics now represents an expanding research area. There is significant increase in research undertaken in this area during the past 5 years.
especially in developing countries including India and much still remains to be done to standardize the meaning of the term probiotic and which strains actually fulfil the criteria for true probiotic microorganisms.

In the present study an earnest attempt has been performed to characterize a probiotic strain of Indian origin fulfilling majority of the criteria of a true probiotic microorganism.