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Marvelous Millet and its Bioactives Prevents Diet Induced Obesity in Mice

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Excess calorie intake than expenditure leads to weight gain, obesity and associated comorbidities due to low-grade inflammation, oxidative stress, altered adipose tissue secretome and dysbiosis of beneficial gut microflora. Consumption of whole grains and their bioactives (polyphenols, dietary fibres) and prebiotics and probiotics have been suggested as alternate approaches for obesity management. Millets, belong to whole grain category, are rich in dietary fibres, proteins, energy, minerals, vitamins and antioxidants. Finger millet, also known as ragi, is an important food crop and has been shown to alleviate diabetic complications. There are no reports on the protective effects of finger millet whole grain, bran and its bioactives on rodent models of high-fat diet-induced obesity and associated gut bacterial dysbiosis. Our research strongly suggested that finger millet whole grain, bran, its dietary fiber and polyphenol extract supplementation protected the mice from high-fat diet induced obesity. Finger millet and its bioactives prevented body weight gain, improved lipid profile and anti-inflammatory status, alleviated oxidative stress, regulated the expression of several obesity-related genes, increased beneficial gut bacteria (*Lactobacillus*, *Bifidobacteria* and *Roseburia*) and suppressed the abundance of *Enterobacter* in caecal contents. Data suggests that inclusion of finger millet in regular diet could be beneficial for the management of metabolic diseases.

Biography:

Dr. Kondepudi is working as a Scientist, Food & Nutrition Biotechnology Division of National Agri-Food Biotechnology Institute located in S. A. S. Nagar, Punjab, India. His research goal is to develop novel functional foods that could improve overall metabolic health. His work involves whole grains and their bioactives (dietary fibers, prebiotics and polyphenols); ingredients from spices and probiotics that could beneficially modulate gut microflora and contribute for the prevention and management of obesity and metabolic syndrome. High-fat diet induced obese rodent models, nutrigenomic and metagenomic approaches for evaluating efficacy of bioactive ingredients and functional foods are being employed in their studies.