OMICS Group Conferences
Accelerating Scientific Discovery
World Congress on Endocrinology
August 26-28, 2013 Raleigh, North Carolina, USA

Camel milk contains insulin like protein on attenuating the key enzymes activities of carbohydrate metabolism in Streptozotocin-induced diabetic rats

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Abstract

Camel milk is different from other ruminant milk; having low cholesterol; low sugar; high minerals especially Zinc; high vitamin C; low protein and large concentrations of insulin. In Saudi Arabia, camel milk is traditionally used for many medical approaches. The study was designed to investigate the antihyperglycemic effect of camel milk on streptozotocin (STZ)-diabetic rats. Diabetes was induced in adult male albino rats of the Wistar strain, weighing 180–200 g, by administration of streptozotocin (40 mg/kg of body weight) intraperitoneally. Diabetic rats showed increase of plasma glucose and glycosylated haemoglobin (HbA1c) and a decrease of plasma insulin and haemoglobin (Hb). Activities of gluconeogenic enzymes such as glucose 6-phosphatase, fructose 1, 6-bisphosphatase increased and glucokinase, glucose 6-phosphate dehydrogenase decreased in the liver along with glycogen. Oral administration of camel milk 250 ml for 45 days prevented the above changes and improved towards normalcy. Histological study of pancreas and liver also confirmed the biochemical findings. These results indicate that camel milk possesses antihyperglycemic effect on long-term treatment and its effect was comparable with glibenclamide.

Biography

Dr.G.Chandramohan has completed his Ph.D at the age of 28 years from Annamalai University, Tamil Nadu, India and now he is working as an Assistant Professor in the Department of Community Health Sciences, College of Applied Medical Sciences, King Saud University, Riyadh, Saudi Arabia. During his doctoral program, he has isolated a novel antidiabetic compound from the south Indian medicinal plant and he has patented his invention and patent was granted recently by IPR, India (Patent Grant No. 243139). Senior Research Fellowship and University Research Studentship have been awarded for his doctoral research by Indian Council of Medical Research and Annamalai University respectively.

Dr. G.Chandramohan is very active in participation in scientific meeting in abroad an example of these activities; International Conference on Diabetes & Metabolism" on 13-14 December 2010, California, USA; "Experimental Biology 2011" on 9-13th December, 2011, Washington, USA; Symposium of "The Use of Zinc Finger Nucleases for the Development of Next Generation Cell Lines and Animal Models" Heidelberg, Germany" on 5th December 2011; "2nd World Congress on Diabetes & Metabolism" on 6-8th December 2011, Philadelphia, Pennsylvania, USA and "World Nutrition Rio 2012" on 27th-30th April 2012, Rio De Janeiro, Brazil and 3rd International Conference on Clinical & Experimental Cardiology, on 15-17th April, 2013, Chicago, USA etc. Special Recognition and Special Appreciation Award received as Organizing Committee Member for the "3rd International Conference on Clinical & Experimental Cardiology", Chicago, USA.

He has also served as a Session Chair Person and organizing committee member for the "IstInternational conference on Diabetes & Metabolism" was held in California, USA (2010) and 2nd World Congress on Diabetes & Metabolism" was held in Philadelphia, Pennsylvania, USA (2011) respectively. He has published a good number of papers in reputed journals. He is serving as an editorial board member and reviewer in reputed journals. He is also evaluator for the Indian government scientific projects. Recently, he has completed three major research projects.