

TITLE

Influence of 3-Hydroxymethyl Xylitol, a Novel Antidiabetic Compound Isolated From *Casearia Esculenta* (Roxb.) Root, on Glycoprotein Components in Streptozotocin-Diabetic Rats

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Casearia esculenta root (Roxb.) is widely used in traditional system of medicine to treat diabetes in India. An active compound, 3-hydroxymethyl xylitol (3-HMX), has been isolated, and its optimum dose has been determined in a short duration study and patented. In addition, the long-term effect of 3-HMX in type 2 diabetic rats on antihyperglycemic, antioxidants, antihyperlipidaemic, and protein metabolism and kidney marker enzymes was investigated, and its effect was shown previously. In this study we investigated the effect of 3-HMX on plasma and tissue glycoproteins in streptozotocin-diabetic rats. Animals were divided into five groups viz., control group, 3-HMX (40 mg/kg of body weight) treated group, diabetic group, diabetic + 3-HMX (40 mg/kg of body weight) and diabetic + glibenclamide (600 µg/kg of body weight). 3-HMX was administered orally at a dose of 40 mg/kg of body weight for 45 days. The study shows significant increases in the level of sialic acid except kidney and elevated levels of hexose, hexosamine and fucose in the liver and kidney of diabetic rats, and the treatment with 3-HMX and glibenclamide showed reversal of these parameters towards normalcy. Thus the study indicates that 3-HMX possesses a significant beneficial effect on glycoprotein components.

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 *Casearia esculenta* root and he has patented his invention and patent was granted recently by IPR, India. 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, Santa Clara, California, USA, and "Experimental Biology 2011" on 9-13th April, 2011, Washington, USA etc. He has published a good number of papers in reputed journals and serving as an editorial board member in reputed journals. He is also evaluator for the Indian government scientific projects. Recently, he has completed one major research project on "Role of camel milk in diabetes mellitus".