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## *Butea monosperma* increased glucose uptake in skeletal myocytes of type 2 diabetic model mice

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*Butea monosperma* has previously shown to increase muscle glycogen in type 2 diabetic model mice. In this study, mechanism of anti-diabetic action of the bark was elucidated by measuring glucose uptake in skeletal myocytes of type 2 mice. Ethanol extract of *B. monosperma* was fed to diabetic mice at a dose of 200 mg/kg twice daily for 40 days. The skeletal muscle isolated from mice was homogenized to prepare the membrane fraction. Membrane-bound GLUT transporters were quantified using mice GLUT1 and GLUT4 ELISA kits (USCn Life Science Inc. USA), Hexokinase II activity by "Hexokinase II Colorimetric Assay kit" (Sigma Aldrich, USA) and estimated Glucose-6-phosphate by colorimetric G-6-P assay kit (Abcam, USA). The glycogen synthase activity was determined following a method described by Danforth *et al.* (1965). In the muscle homogenate assayed Glycogen content using a colorimetric Glycogen assay kit (Abcam, USA). The extract significantly increased membrane docked GLUT1 and GLUT4 transporters by 74.50% ( $p<0.05$ ) and 131.12% ( $p<0.01$ ) respectively. Hexokinase II activity in skeletal myocytes was increased by 53.1% ( $p<0.05$ ) whereas, Glucose-6-phosphate content was lowered ( $p<0.05$ ). Glycogen synthase activity was significantly increased ( $p<0.01$ ) in the presence of 10 mM G-6-P by 76.06%. However, no change was observed in the presence of 0.1mM G-6-P. Muscle glycogen content was increased by 69.34% ( $p<0.05$ ). Result indicates that enhancement of glucose uptake was partly related to increased membrane docked GLUT1 and GLUT4 transporters in skeletal myocytes. The increase in glycogen content in skeletal myocytes is associated with enhanced Hexokinase II and glycogen synthase activity.

### Biography

M Mohona is a senior student of the Department of Pharmaceutical Sciences and is pursuing MPharm degree in Pharmacology & Clinical Pharmacy at North South University. Previously she has attended various national and international Diabetes Conferences where she presented her research work. She has a passion for further research on Diabetology.

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