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## Novel “Mcy” protein from fruits of *Momordica cymbalaria*, for effective treatment of diabetes mellitus

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The study was aimed to evaluate the protective effects of a novel anti-hyperglycemic “Mcy protein” (17 KDa) isolated from the fruits of *Momordica cymbalaria* in streptozotocin induced- diabetes rat model. The protein was purified by Ammonium sulfate precipitation, Gel filtration and High Performance Liquid Chromatography (HPLC) and further biochemically characterized. Fasting blood glucose and, serum and tissue lipid levels were measured along with biochemical analysis for hepatic and renal function tests. Mcy protein significantly reduced the fasting blood glucose and, serum as well as tissue lipid levels ( $p < 0.05$ ), besides normalizing the levels of liver and kidney function markers in the treated diabetic rats when compared to the diabetic controls. The *in vitro* studies are promising to say that Mcy has good inhibitory actions on both  $\alpha$ -glucosidase and aldose reductase enzyme activities with an  $IC_{50}$  224  $\mu$ g/ml and 164  $\mu$ g/ml respectively. This proves to be effective in preventing development of diabetic complications like severe post prandial hyper glycemia (PPHG) and cataract and thus preventing further deleterious effects like neuropathy, nephropathy and retinopathy. Structural studies using circular dichroism spectroscopy indicate that MCP contains 84.27% of  $\alpha$ -helix and 1.24% of  $\beta$  strand. Thus MCP is an effective alternative complementary medicine and beneficial therapeutic agent for diabetes mellitus.

### Biography

Saritha Marella has done Post-graduation in the Department of Biochemistry, Sri Venkateswara University, Tirupati in 2002. She was a member in the Society of Biological Chemists from 2000-2002 and worked as Lecturer on contract basis for teaching Under-graduate and Post-graduate students from 2002-2004 and from 2005-2007 respectively. She worked as JRF in DST-PURSE funded by Department of Science and Technology, New Delhi for 3 years during her Doctoral work and published work in 5 international journals. She also presented papers (Oral and Poster presentation) in many international symposia and conferences. She also acted as a member in the Organizing Committee and as a Resource person in some of the national conferences.

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