

Possible Modulation of FAS and PTP-1B Signaling in Ameliorative Potential of *Bombax ceiba* against High Fat Diet Induced Obesity

Authors : Paras Gupta, Rohit Goyal, Yamini Chauhan, Pyare Lal Sharma

Abstract : Background: *Bombax ceiba* Linn., commonly called as Semal, is used in various gastro-intestinal disturbances. It contains lupeol which inhibits PTP-1B, adipogenesis, TG synthesis and accumulation of lipids in adipocytes and adipokines whereas the flavonoids isolated from *B. ceiba* has FAS inhibitory activity. The present study was aimed to investigate ameliorative potential of *Bombax ceiba* to experimental obesity in Wistar rats, and its possible mechanism of action. Methods: Male Wistar albino rats weighing 180–220 g were employed in present study. Experimental obesity was induced by feeding high fat diet for 10 weeks. Methanolic extract of *B. ceiba* extract 100, 200 and 400 mg/kg and Gemfibrozil 50 mg/kg as standard drug were given orally from 7th to 10th week. Results: Induction with HFD for 10 weeks caused significant ($p < 0.05$) increase in % body wt, BMI, LEE indices; serum glucose, triglyceride, LDL, VLDL, cholesterol, free fatty acid, ALT, AST; tissue TBARS, nitrate/nitrite levels; different fat pads and relative liver weight; and significant decrease in food intake (g and kcal), serum HDL and tissue glutathione levels in HFD control rats. Treatment with *B. ceiba* extract and Gemfibrozil significantly attenuated these HFD induced changes, as compared to HFD control. The effect of *B. ceiba* 200 and 400 mg/kg was more pronounced in comparison to Gemfibrozil. Conclusion: On the basis of results obtained, it may be concluded that the methanolic extract of stem bark of *Bombax ceiba* has significant ameliorative potential against HFD induced obesity in rats, possibly through modulation of FAS and PTP-1B signaling due to the presence of flavonoids and lupeol.

Keywords : obesity, *Bombax ceiba*, free fatty acid, protein tyrosine phosphatase-1B, fatty acid synthase

Conference Title : ICPP 2014 : International Conference on Pharmacy and Pharmacology

Conference Location : London, United Kingdom

Conference Dates : September 26-27, 2014