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In vitro and in vivo anti-obesity potential of *Ferula asafoetida*

Sneha Jagtap, Sonali Sharma, Ruchi Shekhar, Nitin Lunagariya and Kamlesh Kumar Bhutani
National Institute of Pharmaceutical Education and Research, India

Asian spices have been proved as vast source of bioactives against ills of human body. Present study explores anti-obesity activity of *Ferula asafoetida* and its potential as a functional food. Methanolic extract of *Ferula asafoetida* resin was subjected to various chromatographic techniques and sesquiterpene coumarin ethers such as ligupersin A, epi-conferdione, galbanic acid, 10-R-karatavicinol, 5-S-hydroxy umbelliprenin, microlobin, umbelliferone, vanillin and ferulic acid were identified. The extract was evaluated for anti-adipogenic activity using 3T3 L1 preadipocytes. Asafoetida extract showed 72.76±3.33% and 22.79±1.01% lipid accumulation as compared to control at 25 and 50 µg/mL concentrations, respectively. Further extract was evaluated for in vivo anti-obesity activity using high fat diet rat model. Female Spargue-Dawley rats were fed with high fat diet for 30 days followed by 2 weeks treatment with asafetida extract at 300 mg/kg. Treatment showed significant decrease in weight gain and no change in food intake. Serum triglyceride level in treatment group was found to be 54.49±5.66 mg/dL as compared to 99.32±7.85 mg/dL in HFD control group. Treatment showed reduced weights of gonadal fat pad, mesenteric fat pad and retroperitoneal fat pad. Methanolic extract of *Ferula asafoetida* showed weight-reducing and anti-hyperlipidemic activity.

Biography

Sneha Jagtap has received her BPharm from Sardar Patel University, Vallabh Vidyanagar, Gujarat in June 2009 and her MS (Pharm) from National Institute of Pharmaceutical Education and Research (NIPER), India, in June 2011. In August 2011, she has joined PhD under supervision of Professor Kamlesh Kumar Bhutani, Head, Department of Natural Products, NIPER, Mohali. She is working on anti-obesity potential of culinary and medicinal plants.

snehajagtap@yahoo.com

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