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Antiobesity activity of some *Cirsium* species

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Obesity is a serious and chronic health problem that is the basis of many diseases such as cardiovascular diseases, certain types of cancer, osteoarthritis and diabetes. *Cirsium (Asteraceae)* genus is represented by 67 species (79 taxa, 32 endemic) in Turkey. *Cirsium* genus have been used as anti-inflamatory, diuretics and venoactive remedies, traditionally. The goal of the present study is to evaluate antiobesity effect of the methanolic extracts of some *Cirsium* species in normal and high fat diet (HFD) induced obese rats. Male Spraque Dawley rats were divided into seven groups. HFD induced obese rats were treated with methanolic extract (200 mg/kg) and orlistat (5 mg/kg) orally, besides non-obese control group were treated with normal diet for eight weeks. At the end of the experimental duration, to interpret antiobesity activity, body weight was measured per week for eight weeks and serum samples were obtained for lipid profile analysis. Serum samples from rats were analyzed in terms of some biochemial parameters, low density lipoprotein (LDL), high density lipoprotein (HDL), triglycerides (TG), leptin and adiponectin. Oral administration of the extracts and positive control orlistat reduced body weight ($p<0.005$). Morever, the treatments resulted in increased serum HDL ($p\leq0.05$) and adiponectin ($p\leq0.05$); decreased in LDL ($p\leq0.05$), TG ($p\leq0.05$) and leptin ($p\leq0.05$). According to results, the methanolic extracts of some *Cirsium* species displayed antiobesity activity. Thus, the *Cirsium* species can be a potential source of herbal medicine for obesity and its complications. Further investigations and human trials are required for understanding the therapeutic effects of *Cirsium* species for the global health problem.

Recent Publications

1. Duman H, Tugay O, Dirmenci T and Ertuğrul K (2017) A new species of *Cirsium* sect. Epitrachys *(Asteraceae: Cardueae)* from the south of Turkey. Turkish Journal of Botany 41:375–382.
2. Dobrić S, Petrović S, Kukić-Marković J, Samardžić S and Milutinović V (2017) Pharmacological characterization of *Cirsium ligulare* Boiss.(Asteraceae) herb decoction. Vojnosanitetski Pregled 74(7):652–658.
3. Lee Y J, Lee J H, Kim Y H, Kim J H, Yu S Y, et al. (2015) Assessment of the pectolinarin content and the radical scavenging-linked antiobesity activity of *Cirsium setidens* Nakai extracts. Food Science and Biotechnology 24:2235–2243.
4. Nazaruk J (2008) Antioxidant activity and total phenolic content in *Cirsium* five species from north–east region of Poland. Fitoterapia 79:194–196.
5. Thompson D, Edelsberg J and Colditz G A (1999) Lifetime health and economic consequence of obesity. Archives of Internal Medicine 159:2177–2183.

Biography

Sila Özlem Şener has her expertise in Pharmacognosy and Phytoteraphy, studying enyzme activities, isolations, HPLC analysis, *in vivo* and *in vitro* studies on wound healing and anti obesity mechanisms.

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