

# Histological Impact of Sour Cherry Leaves Aqueous Extract on High Fat Diet Induced Wistar Rats

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## Abstract

Regular intake of High Fat Diet (HFD) may increase the risk of obesity. Anti-obesity drugs are limited and have several side effects. Natural products have been proposed as one of the crucial strategies to manage obesity. Sour cherries known as *Prunus cerasus* are a rich source of bioactive compounds with beneficial health properties. Furthermore, leaves are considered as plant wastes, but their usage can be attractive. The objective of this study was the evaluation of the anti-obesity effects of *Prunus cerasus* leaves aqueous extract (PC) on high fat diet induced Wistar rats. The obesity is induced in Wistar rats by a high-fat diet (HFD) for 14 weeks. After the confirmation of obesity by calculating the Lee index, rats were divided into: Group 1: rats continued taking the HFD; Group 2: rats received the PC extract in combination with HFD; Group 3: obese rats were treated with Orlistat (30 mg/kg bw); Group 4: rats fed with standard diet treated with PC extract (ND+PC) and Group 5: a control group fed with Normal diet (ND). The heart, liver, testes, adipose tissues and the kidneys were sectioned into 5 µm-thick sections which were stained with hematoxylin and eosin solution (H &E) for histological analysis. The additions of PC extract as well as Orlistat to the HFD reduced body gain by 9, 84% and 15,61% respectively. The histological sections of adipose tissue, liver and kidney demonstrates the effectiveness of the extract in preserving their architecture. The obtained results suggest for the first time that that aqueous extract from sour cherry leaves has a significant anti-obesity impact by reducing body weight and protecting the the liver, kidney, and tadipose tissue functions in obese rats. We can suggest this product as a natural weight loss treatment or dietary supplement.

## Keywords

Sour Cherry Leaves, Aqueous Extract, Histology, Anti-Obesity Effect, HFD