



## BREWER'S YEAST PEPTIDE EXTRACT IN THE PREVENTION OF OBESITY

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In the past decades, obesity and associated metabolic complications have reached epidemic proportions and their incidence is increasing worldwide at an alarming rate. Brewer's spent yeast (BSY) is a byproduct from the brewing industry. Most of this byproduct is sold as animal feed or has to be disposed as waste. However, because of its high nutritional value, the isolation of certain cell components has been studied as a way to valorize such byproduct. Some of these compounds possess bioactivity and thus potential physiological value. In order to upgrade this byproduct, the aim of this study was to investigate the effects of a peptide extract obtained from BSY in an animal model of diet-induced obesity. The extract was obtained by hydrolysis of the autolysate BSY fraction (<20KDa) with commercial extract of *Cynara cardunculus* followed by nanofiltration. The lower MW fraction (< 3KDa) was concentrated by reverse osmosis and freeze dried. Twenty Sprague-Dawley rats were randomly divided into four groups of five animals each and subjected to different dietary treatments for 12 weeks: St, standard diet group; St+BSY, standard diet with BSY group; HF, high-fat diet group; HF+BSY, high-fat diet with BSY group. The BSY extract was supplied in the drinking water at 300 mg/kg/day. To assess some of the features of the metabolic syndrome, oral glucose tolerance tests, systolic blood pressure measurements and blood biochemical analysis were performed throughout the study. The results showed that the BSY extract decreased the food and energy ingestion of the animals submitted to HF diet. The body weight of the animals in HF+BSY group was significantly lower than that of the animals in the HF diet group after the 10th week of the study. Leptin levels were also reduced in HF+ BSY group comparatively to HF group. The BSY extract also showed hypoglycemic effect and a decrease of inflammatory markers. These properties highlight the potential use of BSY extract as nutraceutical or functional ingredient for the management and treatment of obesity.

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