Potential anti-obesity assessment of selected medicinal plants in obese animal model

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Obesity is considered a significant health challenge in medicine. It has a negative impact on blood pressure, cholesterol, triglyceride and insulin sensitivity. Obesity has been associated with cardiovascular disease, diabetes mellitus and cancers. Despite the increasing public health preventive measures, obesity is on the rise in developed and developing countries. Factors that lead to obesity are modifiable and non-modifiable. Modifiable factors are diet, lifestyle, physical activity and environmental factors while non-modifiable factors include genetics and ethnicity. Therefore, to assess the anti-obesity effects of medicinal plants, it is necessary to choose a suitable animal model. This will allow the study of the molecular mechanisms of obesity. A variety of natural products, including crude extracts and isolated compounds from plants, is expected to prevent diet-induced obesity and to reduce body weight by targeting various important pathways related to energy homeostasis. The mechanisms of action of medicinal plants in obesity could be by stimulating thermogenesis, enhancing lipolysis, lowering lipogenesis, decreasing lipid absorption, modulation of fat and suppressing appetite. Even though some medicinal plants showed promising anti-obesity activity in animal models, reports on their safety and efficacy in humans are still not established.