

Morinda citrifolia L. leaf extract prevent weight gain in Sprague-Dawley rats fed a high fat diet

ABSTRACT

Background: *Morinda citrifolia* L. is widely used as a folk medicinal food plant to manage a panoply of diseases, though no concrete reports on its potential anti-obesity activity. This study aimed to evaluate the potential of *M. citrifolia* leaf extracts (MLE60) in the prevention of weight gain in vivo and establish its phytochemical profile.

Design: Male Sprague-Dawley rats were divided into groups based on a normal diet (ND) or high fat diet (HFD), with or without MLE60 supplementation (150 and 350 mg/kg body weight) and assessed for any reduction in weight gain. Plasma leptin, insulin, adiponectin, and ghrelin of all groups were determined. ¹H NMR and LCMS methods were employed for phytochemical profiling of MLE60.

Results: The supplementation of MLE60 did not affect food intake indicating that appetite suppression might not be the main anti-obesity mechanism involved. In the treated groups, MLE60 prevented weight gain, most likely through an inhibition of pancreatic and lipoprotein activity with a positive influence on the lipid profiles and a reduction in LDL levels . MLE60 also attenuated visceral fat deposition in treated subjects with improvement in the plasma levels of obesity-linked factors . ¹Spectral analysis showed the presence of several bioactive compounds with rutin being more predominant.

Conclusion: MLE60 shows promise as an anti-obesity agents and warrants further research.

Keyword: *Morinda citrifolia*; Anti-obesity; Flavonoids; High fat diet; Lipoprotein lipase; Pancreatic lipase