

ANTI-DIABETIC AND ANTI-OBESITY EFFICACY OF SELECTED KENYAN PLANT EXTRACTS ON RATS FED A HIGH FAT AND FRUCTOSE DIET

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Plants are reported to have anti-diabetic and anti-obesity effects hence can be explored in the treatment of these disorders. In this study, ethanolic and aqueous extracts were prepared from *Mangifera indica* L, *Lonchocarpus eriocalyx* (Harms), *Urtica massaica* Mildbr., *Schkuhria pinnata* (Lam) and *Launaea cornuta*. Ethanolic extracts of all plants (1:100 dilutions), *in vitro*, showed at least 29% inhibition of pancreatic lipase, but no effect on α -glucosidase activity. The administration of the extracts for 74 days caused a significant reduction of liver triglycerides in male Wistar rats that had been fed on a high fat and fructose diet (HFFD). There was also a tendency by the extracts to prevent liver steatosis by reducing ALT and AST levels. Additionally, glycaemia and atherogenicity improved but hyperinsulinemia and insulin resistance did not decrease. Conversely, there were inconsistencies on the effects of the extracts on the evaluated parameters evaluated. However, *Urtica massaica* was consistent in reducing glycaemia (fasting blood glucose, urinary glucose, % HbA1c) and markers of hepatic steatosis (ALT and AST), which were lower than the control. Hence, findings of this exploratory study imply that these plants inhibit pancreatic lipase and therefore may be beneficial in obesity treatment. Moreover, *Urtica massaica* could be further investigated for anti-diabetic properties.

Keywords: Diabetes, Plant extracts, Triglycerides, High fat high fructose, Liver steatosis, Obesity.

BIOGRAPHY

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