

Antioxidant and antihyperglycaemic effects of an aqueous extract from *Momordica charantia* fruit in a type II diabetic rat model

ABSTRACT

The aim of this study was to determine the antioxidant and antihyperglycaemic activities of an aqueous extract from *Momordica charantia* (MC) fruit in a type II diabetic rat model. In this study, diabetes mellitus was induced in one-day-old neonatal rats by a single injection of streptozotocin (STZ) (85 mg/kg). The animals were separated into four groups as follows: the normal control group (NC), the diabetic control group (DC), the MC-treated diabetic group (DMO), and the glibenclamide-treated diabetic group (DPG). At the end of four weeks of treatment, the malondialdehyde (MDA) concentration was measured in the serum and pancreas. Ferric thiocyanate (FTC), thiobarbituric acid (TBA) and 1, 1-Diphenyl-2-picrylhydrazyl (DPPH) levels, and the total phenol and flavonoid content of the MC extracts were evaluated. The results showed a reduction of blood glucose in the DMO and DPG groups as compared to the DC group. Administration of MC reduced the MDA concentration in plasma and in the pancreas of the DMO group. Antioxidant activity in the MC extract was indicated by a high IC₅₀ value for free radical scavenging. Based on these results, it can be concluded that the MC fruit aqueous extract would alleviate oxidative stress induced by diabetes through antioxidant activity and free radical scavenging.

Keyword: Diabetes type II; *Momordica charantia*; Antioxidant activity; Ferric thiocyanate; Thiobarbituric acid; L-Diphenyl-2-picryl-hydrazyl; Malondialdehyde