Hypoglycemic Effect of a Protein Fraction from Water Extract of *Moringa oleifera* Leaves in Diabetic Mice

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INTRODUCTION: *Moringa oleifera* Lam. has been used in folk medicine for the treatment of diabetes due its hypoglycemic effect already described in the scientific literature and fairly credited to the compounds produced by secondary metabolism. This work aimed to evaluate the effect of a protein fraction obtained from leaves of *M. oleifera* upon the glycemia of diabetic mice.

MATERIALS AND METHODS: Proteins were extracted from the powdered leaves, by aqueous extraction, precipitated with ammonium sulfate (0-90\%) and, submitted to exhaustive dialysis against distilled water, resulting, after lyophilization, in the protein fraction called *Mo*-PFL (Protein Fraction of *M. oleifera* Leaves).

RESULTS AND DISCUSSION. *Mo*-PFL was intraperitoneally administered to alloxan-induced diabetic mice (glycemia > 250 mg/dL), at doses of 300 and 500 mg/Kg, promoting a significant reduction in blood glucose levels at 1, 3 and 5 h after dosing. However, *Mo*-PFL showed no hypoglycemic effect when administered orally.

*In vitro* assay showed that *Mo*-PFL is digested by enzymes present in the gastrointestinal tract of mammals, suggesting that the hypoglycemic effect of this fraction is indeed due to the action of proteins. This is reinforced by reducing the hypoglycemic effect when *Mo*-PFL was boiled for 1 h before being administered intraperitoneally to diabetic mice. Furthermore, through dot-blot immunoassay, the anti-human insulin antibody recognized *Mo*-PFL, suggesting the presence of antigenic epitopes insulin-like in its structure.

CONCLUSION: Proteins of *M. oleifera* can be included in the arsenal of hypoglycemic molecules present in the leaves of this plant.

Keywords: *Moringa oleifera*, leaf proteins, hypoglycemic activity
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