INTRODUCTION: *Moringa oleifera* is a plant native to India which is used in traditional medicine for treating diabetes. Despite the relationship between *Moringa* and hypoglycaemic property of its parts, data on insulin-like proteins present in this species are not available. Our team prepared a protein isolate from leaves of *Moringa* with hypoglycaemic effect in mice and reaction against anti human-insulin antibodies. **AIM:** The aim of this study was to obtain from that protein isolate a semipurified chromatographic fraction with hypoglycaemic activity. **METHODOLOGY:** The hypoglycaemic protein isolate obtained from *Moringa* leaves was applied to a DEAE-cellulose column and a fraction was eluted with the equilibration buffer (0.05 M Tris HCl, pH 7.5) containing 0.3 M NaCl. This fraction was further chromatographed on Sephacryl S-200, generating three fractions, the latter of which contains low molecular mass peptides (S3). **RESULTS AND DISCUSSION:** S3 was injected intraperitoneally into male Swiss mice at a dose of 0.1 mg/Kg body weight, providing a significant reduction in blood glucose at 3 and 5 hours after injection (p < 0.05 vs. control group). Furthermore, with the immunoassay by Dot blot, the anti-insulin antibody recognized S3, suggesting the presence of antigenic insulin-like epitopes in its structure. Through tricine-SDS-PAGE, it was observed the presence of peptides with molecular mass similar to that of insulin, 6 kDa. S3 showed no hemagglutinating activity, in contrast to that seen with the protein isolate, indicating that the insulin-like protein present in S3 is not a lectin. **CONCLUSION:** This work shows that proteins of *M. oleifera* may be included in the arsenal of hypoglycaemic molecules present in the leaves of this plant.

Keywords: *Moringa oleifera*, insulin-like protein, hypoglycemic

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