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Effects of malted barley extract and banaba extract on blood glucose levels in genetically diabetic mice.

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Abstract

This study investigated the therapeutic effects of a malted barley extract (MBE) and of banaba extract on blood glucose, insulin, and other biochemical parameters in genetically diabetic mice (C57BL/KsJ(-) m (+/+) Lepr (db)). The mice were divided into three groups-control, MBE, and banaba-according to supplementation. Both MBE and banaba extracts were orally administered to the animals for 12 weeks at doses of 62.5 mg/kg of body weight and 0.8 mg/kg of body weight, respectively. The body and organ (liver and kidney) weights were not different among groups. Fasting blood glucose was significantly lower in the MBE group compared with the control ($P < .05$). Hemoglobin A1c content was significantly lower in the MBE group compared with either the control or banaba group ($P < .05$). There was no significant difference in the serum insulin level among groups. The glucose-6-phosphatase activity in kidney was significantly lower in both the MBE and banaba groups compared with the control group ($P < .05$), but there was no significant difference between the MBE and banaba groups. Therefore, the results of this study demonstrate that MBE alleviates many of the symptoms of diabetes in genetically obese mice and may offer promise as a therapeutic supplement for the normalization of blood glucose levels in humans with hyperglycemia and have beneficial effects in patients with non-insulin-dependent diabetes mellitus.