

Acute hypoglycemic effect of ethanolic extracts from *Marrubium vulgare*

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Abstract

Marrubium vulgare is used in Mexican traditional medicine for the treatment of diabetes mellitus. The hypoglycemic effects produced by the acute administration of various ethanolic extracts (root, leaf and stem) from *M. vulgare* (REE) on normoglycemic rats were investigated. Both extracts (root and stem) resulted in significant reductions of glycemia in healthy rat after intragastric administration at a dose of 100 mg/kg. The ethanolic root extract oral administration was conducted to determine oral glucose tolerance test using glucose as substrate. The increase in plasma glucose level was significantly suppressed by the extract after substrate administration. These results suggest that REE might exert its anti-diabetic effect by suppressing carbohydrate absorption from intestine, and thereby reducing the postprandial increase of blood glucose. Therefore, *M. vulgare* is a source for obtaining lead compounds for designing therapeutic agents with potential antidiabetic effects.

Keywords: Antidiabetic; Glucose tolerance test; *Marrubium vulgare*

Introduction

Diabetes is a group of metabolic diseases characterized by hyperglycemia resulting from defects in insulin secretion, insulin action, or both. In addition, the total number of people with diabetes is project to increase from 171 million in 2000 to 366 million in 2030 (Wild et al., 2004). The pathogenesis of diabetes mellitus is managed by insulin and oral administration of hypoglycemic drugs such as sulfonylureas and biguanides (Goodman and Gilman, 2009). Unfortunately, apart from having a number of side effects, none of the oral