Invitro Studies of Antioxidant, Antiradical, Antidiabetic Activities and Prevention of Advanced Glycation Endproducts by 

*Cinnamomum zeylanicum*

Kassaee S.M. *, Kassaee S.N. 

1 Department of Biology, Hamedan Branch, Islamic Azad University, Hamedan, Iran
2 Faculty of Pharmacy, Hamadan University of Medical Sciences, Hamedan, Iran

* E-mail: kassaee2001@yahoo.com

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Abstract

Nowadays medicinal plants are in the focus of attention because of their roles in prevention and treatment of many diseases. The aim of this study was in vitro assessment of antioxidant and antidiabetic properties of *Cinnamon zeylanicum*. Aqous extract of cinnamon were prepared by maceration method. The 0.25, 0.5, 1 and 2 mg/ml concentration of this extract were prepared. The phytochemical properties of *Cinnamon* detected by measuring the phenol and flavonoid, total antioxidant capacity, radical scavenging power, metal chelating ability and thiol groups assay. Antidiabetic activities also were assayed with fructosamine formation inhibition and advanced glycation end products(AGEs) inhibition abilities by spectrophotometric and spectroflurometric methods respectively. Ability of the extracts in prevention of glycated albumin fragmentation was assayed by SDS-PAGE. The content of phenol and flavonoid were determined by standard methods. The data were analyzed by one way ANOVA procedure according to SPSS software program. *Cinnamin* exhibited 31.34±1.83 mg GAE/g extract of phenol contents and also 19.89±1.37 mg QE/g extracts of flavonoid content respectively. All methods confirmed the antioxidant and antiradical effects of *cinnamom* in a concentration related manner. This plant has antidiabetic properties and reduced fructosamine and AGEs formation and also could inhibit glycated albumin fragmentation. *Cinnamom* has antioxidant and antidiabetic properties and could prevent complications of diabetes mellitus. According to these properties, we can suggest using this plant in diabetic patients.

Keywords: Antioxidants, *Cinnamomum zeylanicum*, Diabetes Mellitus, Glycation.