



Determination of blood glucose lowering and metabolic effects of *Mespilus germanica* L. extract on normal and streptozocin-induced diabetic Balb/c mice

S. Yaghubi Beklar^{1,2}, M. Hamzeh^{1,3}, R. Ataee^{4*}

¹Student Research Committee, Faculty of Medicine, Mazandaran University of Medical Sciences, Sari, Iran.

²Department of Toxicology, Faculty of Pharmacy, Mazandaran University of Medical Sciences, Sari, Iran.

³Department of Anatomy, Faculty of Medicine, Molecular and Cell Biology Research Center, Mazandaran University of Medical Sciences, Sari, Iran.

⁴Department of Pharmacology and Toxicology, Faculty of Pharmacy, Mazandaran University of Medical Sciences, Sari, Iran.

Background and objectives: The serum glucose lowering, normalization animal body weight and antioxidative stress effects of *Mespilus germanica* L. leaf extract were investigated in normal and streptozotocin-induced Balb/C mice. **Methods:** The leaves of *M. germanica* were extracted using acetone/water (70:30) by percolation method and concentrated using rotary-evaporator device and its total phenolics and flavonoids content were determined using Folin-Ciocalteu and aluminum chloride methods, respectively. The study was conducted on forty eight matured male Balb/C mice (20-30 g) divided into 6 groups (n=8). Diabetes mellitus was induced by single intraperitoneal injection of 35 mg/kg of streptozotocin (STZ). Extracts of *Mespilus germanica* were used orally at the dose of 50, 100 and 200 mg/kg body weight per day for 21 days. **Results:** Oral administrations of the *Mespilus germanica* L. leaf extract significantly decreased serum glucose, oxidative stress and lipid peroxidation and maintained animal body weight during treatment period ($p < 0.05$) compared to metformin (200 mg/kg) in over 100 mg/kg, 200 mg/kg and 50 mg/kg dosages, respectively. **Conclusions:** It was concluded that the plant and its phytochemicals could be considered as new appropriate therapeutic options for diabetes mellitus.

Keywords: diabetes, flavonoids, *Mespilus germanica*, mice