Evaluation of in vivo antidiabetic activity of some Onobrychis species

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Onobrychis Miller belongs to Fabaceae family and is widely distributed in Southwest Asia, Mediterranean countries and temperate regions of Europe; there are around 170 species. Onobrychis viciifolia (Scop.) known as sainfoin is used as fodder legume in many countries and has many beneficial effects for ruminants such as affording high protein and energy value, anthelmintic activity in cattle and sheep with preventive activities against bloat; these benefits are attributed to the tannin content of the plant. From a chemical point of view, no sufficient studies have been conducted on the Onobrychis species. Biological activity studies have also revealed that Onobrychis species have not been yet investigated properly. In the current study the aerial parts of four different Onobrychis species namely, O. albiflora Hub.-Mor., O. argyrea (Boiss) subspecies argyrea (Boiss), O. galegifolia (Boiss) and O. tournefortii (Willd.) Desv. were evaluated for their potential antidiabetic activities on alloxan induced diabetic mice. Furthermore the phytochemical content of the aerial parts was analyzed using the HPLC method. The highest activity was observed with treatment of O. albiflora aerial part extract. Significant decreases were determined in the blood glucose levels as follows: 180.83±47.48 and 252.83±50.47 mg/dL at 100 mg/kg and 200 mg/kg dose treatments of O. albiflora respectively, when compared to an isotonic saline solution control group with glucose levels of 494.20±27.32. Among the tested standard compounds rutin and isoquercetin were detected in the examined species. O. albiflora and O. argyrea subspp. argyrea contain the highest amount of rutin (1.1981±0.0017%) and isoquercetin (0.7318±0.0197%) respectively. Antidiabetic activities of the tested Onobrychis species indicate a possible correlation with their rutin and isoquercetin contents. Therefore rutin and isoquercetin may be antidiabetic compounds that contribute to the antidiabetic activity of the tested Onobrychis species.

Biography

Gulcin Saltan Iscan has completed his PhD at Ankara University and Postdoctoral studies at Louis Pasteur University, School of Pharmacy. She is working as a Professor at Ankara University, Faculty of Pharmacy. She has published more than 90 papers in reputed journals.

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