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Investigations on secondary metabolites of a relict oak: *Quercus pontica*

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The genus *Quercus* L. (Fagaceae) has been the subject of intense research due to its important role in the maturation of wines in oak barrels, durability and protection against fungal decay and its application as a food. Some of the *Quercus* (oak) species are used as antifungal, anti-diarrheic, astringent, for the treatment of hemorrhoid, tonsillitis, and diabetes [1]. In our previous studies we found that different *Quercus* species exhibited antimicrobial, antioxidant, tyrosinase and α -glucosidase inhibitory properties [2-4]. The genus *Quercus* is known to contain various classes of compounds such as saponins, flavonoids, and tannins. As a part of our ongoing investigations on the *Quercus* species [1-4], we have investigated leaves of *Quercus pontica* C. Koch. A phenolic acid (rosmarinic acid), four flavonol glycosides (kaempferol 3-O- β -glucopyranoside, kaempferol 3-O-(6''-O-galloyl)- β -glucopyranoside, kaempferol 3-O-(6''-O-coumaroyl)- β -glucopyranoside, quercetin 3-O- β -glucopyranoside), a dihydrochalcone (phlorizin) and a flavanol (catechin) were isolated from the ethyl acetate subfraction of the methanol extract of *Q. pontica*. The structure of isolated compounds were elucidated by spectroscopic methods (¹H, ¹³C, and 2D-NMR). To the best of our knowledge, the occurrence of a chalcone is being reported for the first time from the genus *Quercus*. Our investigations on DNA binding properties and inhibitory effects on topoisomerase I and II of isolated compounds is currently ongoing.

References

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