Antioxidant, Anticholinesterase and Antimicrobial Activities of Three Wild Growing Centaurea species in Anatolia

Mehmet Boğa, Abdulselem Ertaş, Nesrin Haşimi, Yeter Yeşil, Ufuk Kolak, Gülәçә Topçu

Department of Pharmaceutical Tech. Faculty of Pharmacy, Dicle University, Diyarbakır, Turkey
Department of Pharmacognosy, Faculty of Pharmacy, Dicle University, Diyarbakır, Turkey
Department of Nutrition and Dietetics, School of Health, Batman University, Batman, Turkey
Department of Pharm. Botany, Faculty of Pharmacy, Istanbul University, Istanbul, Turkey
Department of Analytical Chemistry, Faculty of Pharmacy, Istanbul University, Istanbul, Turkey
Department of Pharmacog. & Phytochem. Faculty of Pharmacy, Bezmialem Vakif University, Istanbul, Turkey
mehmetboga1980@gmail.com

The genus Centaurea belongs to Compositae family and it comprises more than 500-600 species that are widespread all over the world, in particular around the Mediterranean and western Asia area. The genus comprises about 207 taxa including 134 endemic species classified in 4 sections, endemism is 64% in Turkey.1 Centaurea species are named as zerdali dikeni, timur dikeni and peygamber çiçegi, in Anatolia.2 Centaurea species have various biological activities and these species are widely used as expectorant, antidiabetic, antipyretic and antidiarrhoeal in Turkish traditional medicine. These species includes sesquiterpene lactones, flavonoids and phenolic compounds.3 The purpose of this study was to extend the knowledge on its medicinal properties, namely its potential antioxidant, anticholinesterase and antimicrobial activity of Centaurea balsamita Lam., C. depressa Bieb. and C. lycopifolia Boiss. et Kotschy. Antioxidant activities were tested against DPPH free radical, ABTS cation radical scavenging and cupric reducing antioxidant capacity (CUPRAC), and anticholinesterase activity was assessed against acetylcholinesterase and butyrylcholinesterase and antimicrobial activities were determined with disc diffusion method. The methanol extract of C. balsamita exhibited the highest effect in ABTS cation radical scavenging activity at 100 μg/mL concentration. Petroleum ether extracts of three Centaurea species exhibited moderate inhibitory activity against butyrylcholinesterase enzymes, at 200 μg/mL. Among all of the extracts, acetone extracts of Centaurea species showed moderate antimicrobial activity against Candida albicans.

Kaynaklar: