Anatomical characteristics and antioxidant ability of *Centaurea sadleriana* reveals an adaptation towards drought tolerance

**1. Introduction**

Genus *Centaurea* L. belongs to family *Asteraceae* and comprises annual, biennial and perennial herbaceous plants. In the flora of Europe and Serbia, 221 species and 32 species have been recorded, respectively [1,2]. Ethnopharmacological studies reveal that many species were well known for their use in traditional medicine and for treatment of various diseases [3-5]. Owing to their potential use in medicine, secondary metabolites isolated from *Centaurea* species, as well as their biological activities, were the subject of numerous investigations. For this genus, the presence of sesquiterpene lactones, flavonoids, triterpenes, acetylenes, cyanogenic glycosides, alkaloids and saponins is common. Some samples also contained triterpene alcohols and lignans. As *Centaurea* species were generally classified as essential oil-poor plants, the investigations of these and antioxidant properties are rather scarce. However, anti-inflammatory, antimicrobial, antifungal and cytotoxic activities had been found for extracts or natural products of some of the *Centaurea* species [3,5-14].

All aerobic organisms possess antioxidant defence mechanisms that provide balanced production of reactive oxygen species (ROS). ROS include superoxide radical (O$_2^-$), hydroxyl radical (OH), singlet oxygen (O$_2^*$) and hydrogen peroxide (H$_2$O$_2$). They are generated both in oxidative metabolism of normal cells and during different stress-inducing situations. Some of them include pathogen invasion, exposure to...