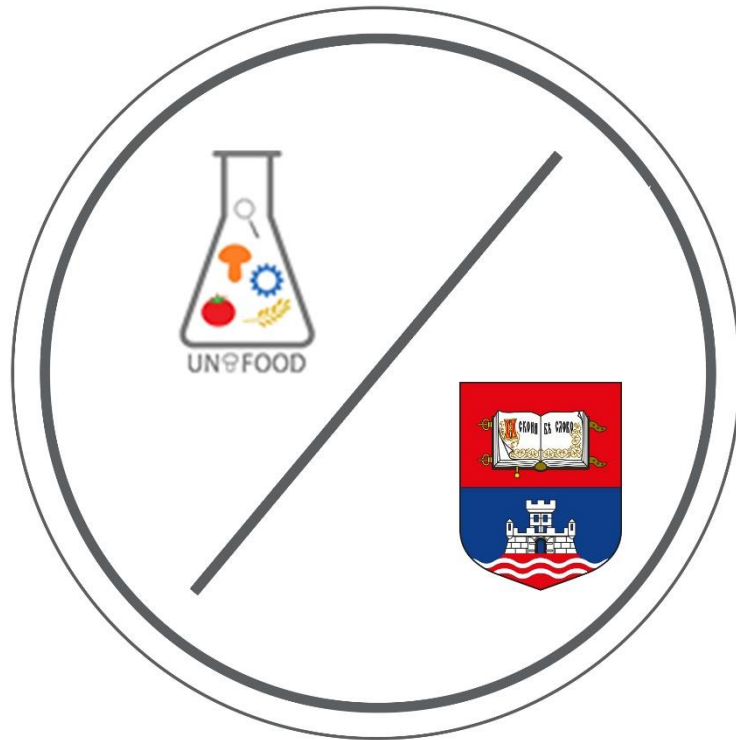


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## Book of Abstracts

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## PHYTOCHEMICAL COMPOSITION AND *IN VITRO* BIOLOGICAL ACTIVITIES OF GOJI BERRY CULTIVATED IN SERBIA

*Tijana, D, Ilić<sup>1</sup>, Nemanja, V, Krgović<sup>2</sup>, Mirjana, D, Marčetić<sup>3</sup>, Bojana, B, Vidović<sup>1</sup>*

<sup>1</sup> University of Belgrade-Faculty of Pharmacy, Department of Bromatology, Belgrade, Serbia

<sup>2</sup> Institute for Medicinal Plant Research “Dr. Josif Pančić”, Belgrade, Serbia

<sup>3</sup> University of Belgrade-Faculty of Pharmacy, Department of Pharmacognosy, Belgrade, Serbia

\*Corresponding author: [tilic@pharmacy.bg.ac.rs](mailto:tilic@pharmacy.bg.ac.rs)

Due to the presence of many nutrients and bioactive compounds, fruits of *Lycium* species (*Fructus Lycii*, goji berries) are recognized as a “superfood,” which regular consumption might exert many beneficial health effects. Therefore, in addition to China and other Asian countries, the cultivation of *Lycium* species has become widespread throughout Europe. This study investigated the total phenolics (TPC), total flavonoids (TFC) and polysaccharides content, as well as biological properties of goji berry (*Lycium barbarum* L.) cultivated in the Belgrade region, Serbia. The HPLC method was used for the identification of individual phenolic compounds (rutin, quercetin-diglucuronide, chlorogenic acid and caffeic acid). Antioxidant properties of goji berry extracts with different solvent were evaluated for radical scavenging (DPPH, ABTS), reducing power (CUPRAC, FRAP), and  $\beta$ -carotene/linoleic acid bleaching inhibition capacity. Additionally, goji berry extracts were screened for their anti-diabetic ( $\alpha$ -amylase,  $\alpha$ -glucosidase), anti-tyrosinase, and anti-acetylcholinesterase activities. Methanol was identified as the most effective solvent for the extraction, resulting in the highest contents of TPC (3.76 mg GAE/g dry weight), TFC (0.65 mg CE/g dry weight), as well as superior antioxidant activity evaluated by all assays. Also, the methanol extract of goji berry inhibited all tested enzymes in concentration-dependent manners. The highest enzyme inhibitory activity was shown for tyrosinase ( $IC_{50}$  of  $1.4 \text{ mg} \pm 0.01 \text{ mg/mL}$ ). The  $IC_{50}$  values were  $4.66 \pm 0.25 \text{ mg/mL}$ ,  $10.68 \pm 0.07 \text{ mg/mL}$ ,  $7.07 \pm 0.1 \text{ mg/mL}$  for  $\alpha$ -amylase,  $\alpha$ -glucosidase and acetylcholinesterase inhibition activity, respectively. Overall, obtained results suggest that goji berry cultivated in Serbia is a valuable source of bioactive compounds that can be use in the food, nutraceutical, and cosmetic industries.

*Keywords: goji berry, bioactive compounds, antioxidant, enzyme inhibitory activity*

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