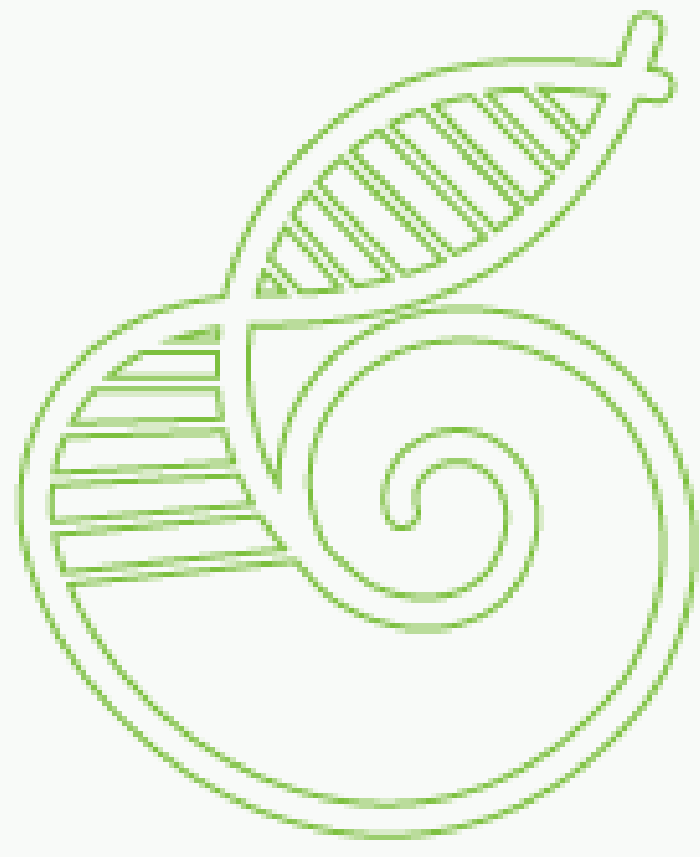


Biljne bioaktivne tvari

ISVU šifra: 444 I I

P+V+S: 2+2+0

ECTS: 6



SVEUČILIŠTE U ZAGREBU

PRIRODOSLOVNO-MATEMATIČKI FAKULTET

Biološki odsjek

BOTANIČKI ZAVOD

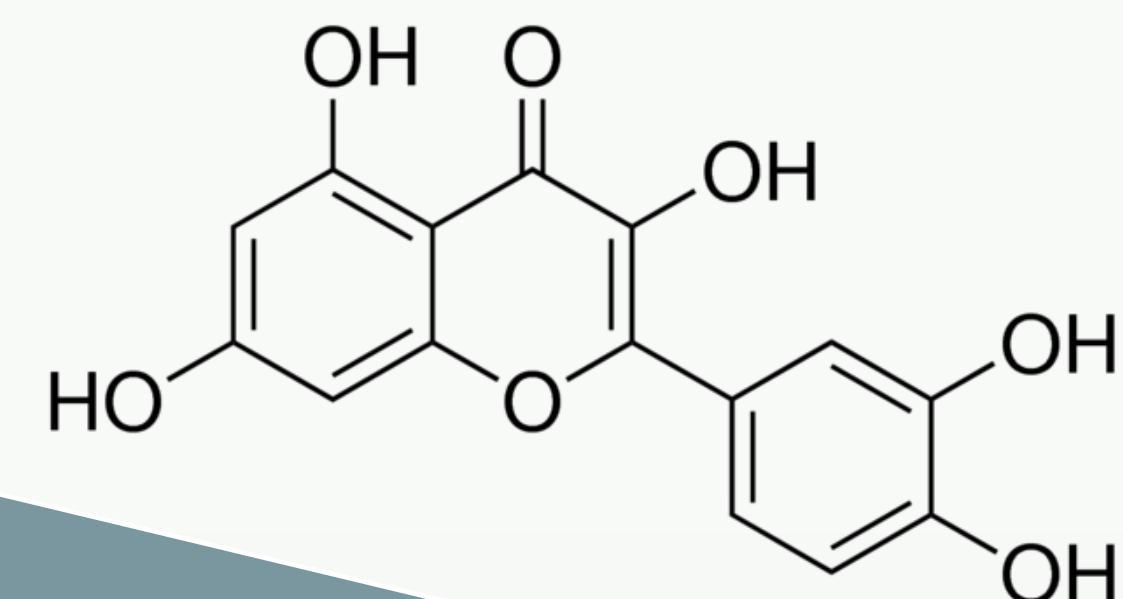
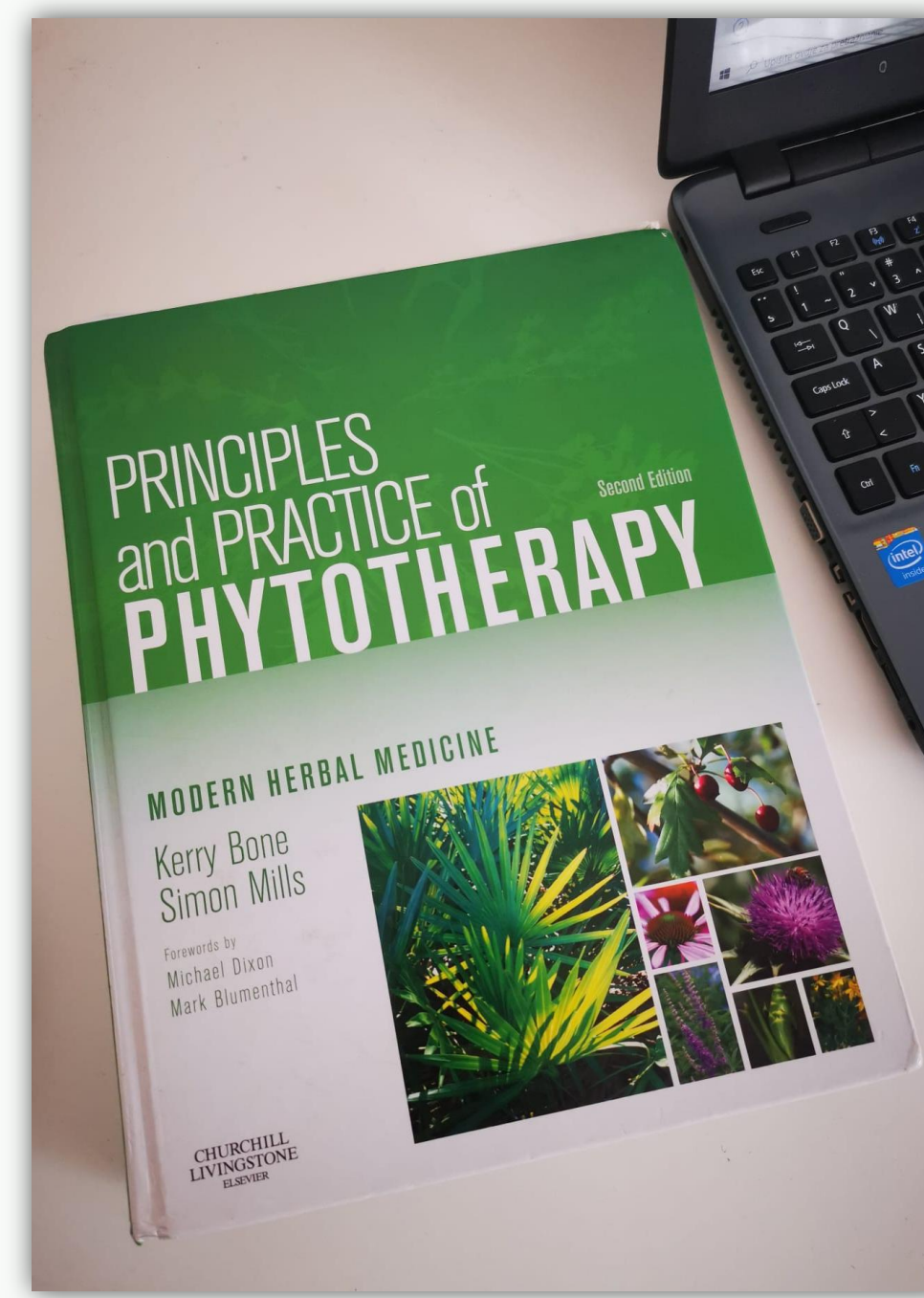
Predavanja:

prof. dr. sc. Gordana Rusak

Vježbe u praktikumu:

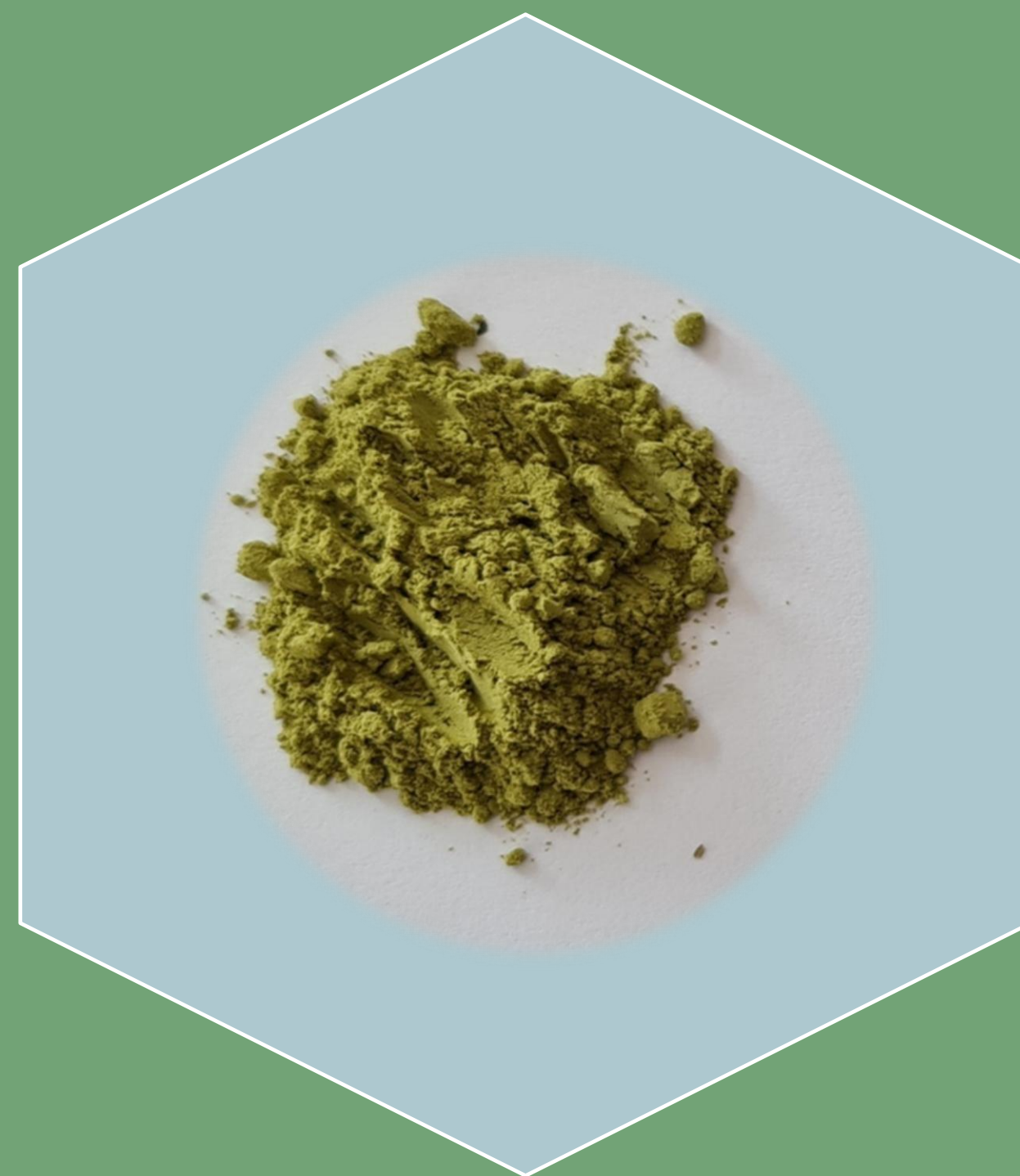
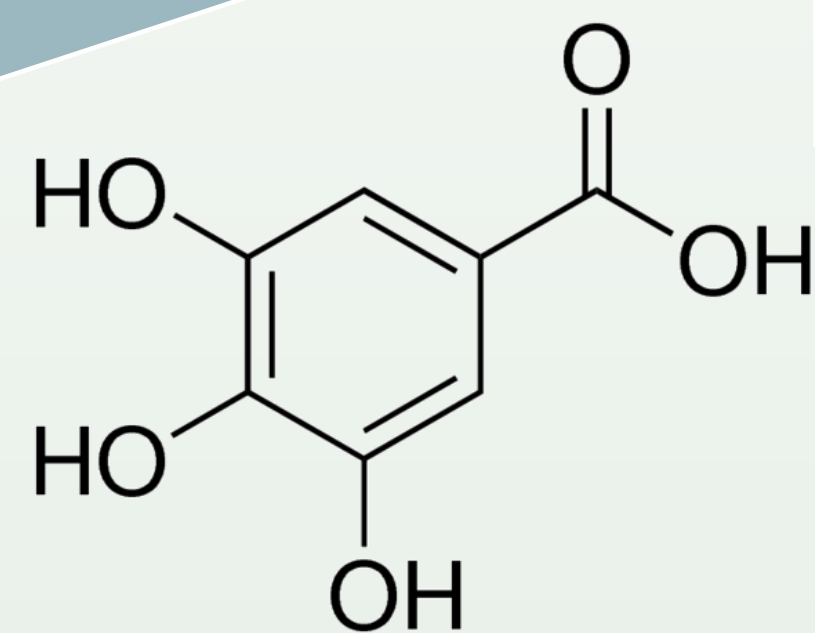
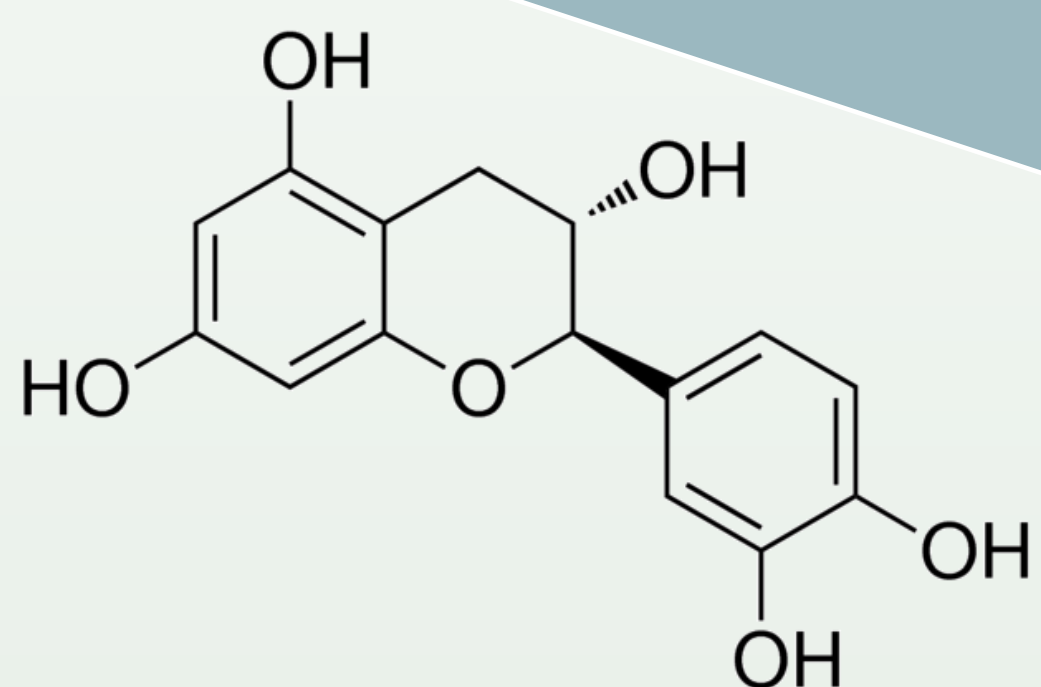
doc. dr. sc. Ivana Šola

dr. sc. Valerija Vujčić Bok



Biljne bioaktivne tvari,
identifikacija,
biološki učinci i bioraspoloživost

Za svaku skupinu bioaktivnih tvari iznosi se pregled njihova kemizma, njihovi biološki učinci na ljudski organizam, te eventualne opasnosti pri primjeni u terapiji. Naglasak je postavljen na mehanizme djelovanja spomenutih tvari.

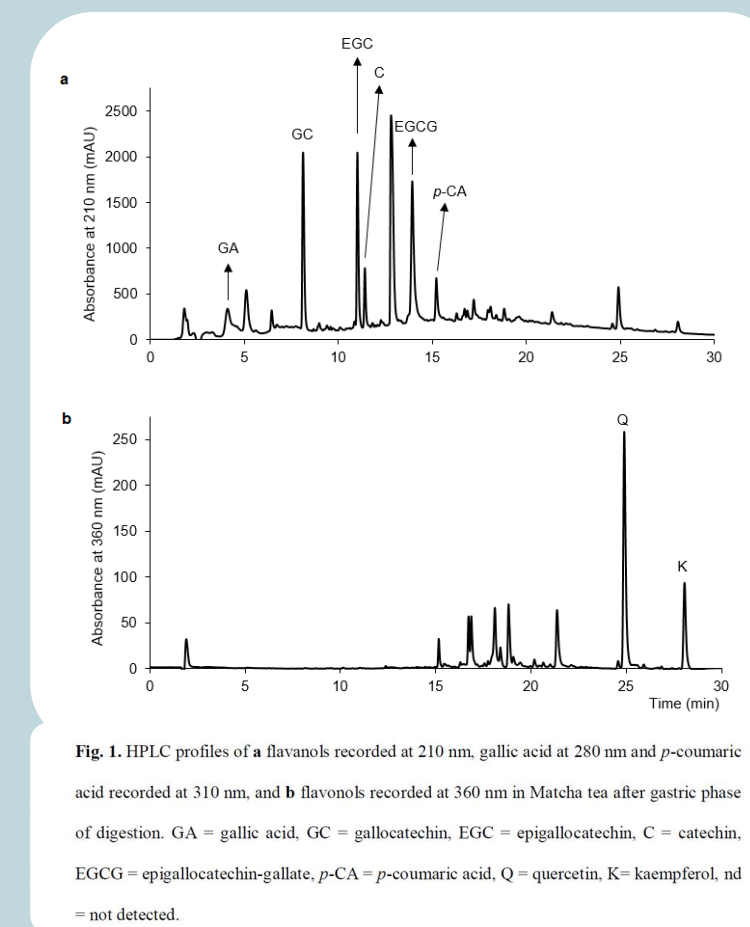


PRAKTIKUM (kondenzirana satnica):

1. HPLC analize fenolnih tvari

2. Spektrofotometrijsko određivanje sadržaja fenolnih tvari i antioksidacijske aktivnosti

3. Ispitivanje stabilnosti prehrambenih fitokemikalija *in vitro* modelom humane probave



Tab. 1. α -glucosidase and α -amylase inhibitory activity of Matcha and Sencha green tea before and after exposure to *in vitro* digestive condition.

	Before digestion			After digestion		
		Gastric phase	Intestinal phase		Gastric phase	Intestinal phase
α -glucosidase (% inhibition)						
Matcha	70.91±2.99 ^a	62.90±1.44 ^a	113.46±6.09 ^b			
Sencha	56.85±9.67 ^b	34.21±3.44 ^b	66.64±10.50 ^b			
α -amylase (% inhibition)						
Matcha	nd	nd	nd			
Sencha	nd	nd	nd			

Values represent mean ± standard deviation of 3 replicates. Different letters indicate significant difference at $p < 0.05$.

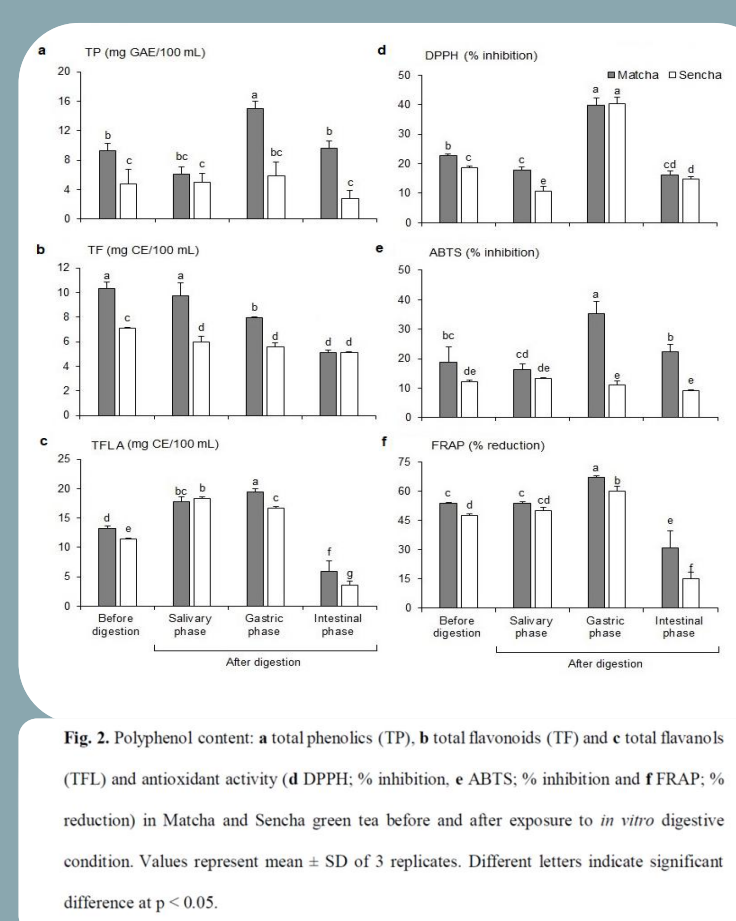


Fig. 2. Polyphenol content, total phenolics (TP), total flavonoids (TF) and total flavonols (TF) and antioxidant activity of DPPH, % inhibition, ABTS, % inhibition and FRAP, % inhibition in Matcha and Sencha green tea before and after exposure to *in vitro* digestive condition. Values represent mean ± SD of 3 replicates. Different letters indicate significant difference at $p < 0.05$.

Izdvojene publikacije Laboratorija za fitokemiju:

- ✦ Rusak, G.; Komes, D.; Likić, S.; Horžić, D.; Kovač, M. (2008) Phenolic content and antioxidative capacity of green and white tea extracts depending on extraction conditions and the solvent used. *Food Chemistry* 110, 852–858
- ✦ Rusak, G.; Šola, I.; Vujčić Bok, V. (2021) Matcha and Sencha green tea extracts with regard to their phenolics pattern and antioxidant and antidiabetic activity during *in vitro* digestion. *Journal of Food Science and Technology* 58, 3568–3578
- ✦ Šola, I.; Vujčić Bok, V.; Pinterić, M.; Auer, S.; Ludwig-Müller, J.; Rusak, G. (2020) Improving the phytochemical profile and bioactivity of Chinese cabbage sprouts by interspecific transfer of metabolites. *Food Research International* 137, 109726

Laboratorij za fitokemiju, Marulićev trg 9A, HR-10000 Zagreb

E-mail: gordana.rusak@biol.pmf.hr, ivana.sola@biol.pmf.hr, valerija.vujcic@biol.pmf.hr