



COST ACTION GREENERING – DATA COLLECTION

First name, Family Name:	Zdenka Hromádková
Type (Academic or Industrial):	Academic (Research)
Country:	Slovakia
Leadership position in the COST:	MC Member on CA18224
Working Group in which you are involved:	WG1
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Laboratory/Company: Institute of Chemistry, Slovak Academy of Sciences (ICH SAS), Department of Glycomaterials, Bratislava, Slovakia

Laboratory/Company info:

The activities of ICH SAS are mainly pursued by eight scientific departments. The Department of Glycomaterials (3 laboratories) contributes to the development of efficient methods of isolation, characterization and structural analysis of polysaccharides from cereal and forest waste materials as well as from invasive and medicinal plants with the aim of utilizing waste for the preparation of carbohydrates with potential biological effects on human health.

Link to the home page of the Laboratory/Company:

ICH SAS: https://www.sav.sk/?lang=en&lang_change=en, ICH: <http://chem.sk>

Fields of expertise:

- the polysaccharides from the agricultural and forestry waste and invasive plants
- environmentally friendly procedures (ultrasound, microwaves) for the isolation and purification of polysaccharides
- determination of composition and structure using modern analytical methods
- in cooperation with other institutions, testing the biological activities
- application of polysaccharides, as additives in food, pharmacy, or cosmetics - preparation of new functional polysaccharides

5 Main publications or patents:

- Košťálová, Z., Hromádková, Z. (2019). Structural characterisation of polysaccharides from roasted hazelnut skin. *Food Chem.* 286, 179-184.
- Košťálová, Z., Aguedo, M., Hromádková, Z. (2016). Microwave-assisted extraction of pectin from unutilized pumpkin biomass. *Chem. Eng. Process.* 102, 9-15.
- Ebringerová, A., Hromádková, Z. (2010). An overview on the application of ultrasound in extraction, separation and purification of plant polysaccharides. *Cent. Eur. J. Chem.* 8(2), 243-257.
- Hromádková, Z., Košťálová, Z., Ebringerová, A. (2008). Comparison of conventional and ultrasound-assisted extraction of phenolics-rich heteroxylans from wheat bran. *Ultrason. Sonochem.* 15(6), 1062-1068.



- Ebringerová, A., Hromádková, Z., Heinze, T. (2005). Hemicellulose. In: Polysaccharides 1: Structure, Characterization and Use. (Ed. Heinze, T.) Book Series: Adv. Polym. Sci. 186, 1-67.

Collaborations:

Jessenius Faculty of Medicine, Department of Pharmacology, Martin, Slovakia; Global Change Research Institute, Czech Academy of Sciences, Brno, Czech Republic; University of Chemistry and Technology, Faculty of Food and Biochemical Technology Prague Czech Republic.

Facilities:

All equipments of ICH SAS- <http://www.chem.sk/activities/analytics/>

- Ultrasound-assisted extraction (equipment with disruptor horn)
- Supercritical fluid extraction (MV-10 ASFE System, Waters)
- NMR analyses (Bruker 400 and 600)
- HPAED-PAD analyses
- GC-MS analyses
- GPC/SEC analyses
- FT-IR analyses (KBr, Smart Orbit)