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BOOK OF ABSTRACTS

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E-YPP33. ISOLATION, CHARACTERIZATION AND EVALUATION OF ANTIOXIDANT ACTIVITY OF DIFFERENT PECTIC POLYSACCHARIDE FRACTIONS

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In the recent years, polysaccharides derived from different natural products are of considerable interest from the viewpoint of their potential *in vitro* antioxidant activities.[1]

The aim of the current study was the isolation and characterization of water-soluble (WE) and acid-soluble (AE) pectic polysaccharide fractions from alcohol-insoluble solids of orange peels, leek and rosehip fruits and evaluation of their antioxidant potential. Additionally, other polysaccharide fractions from fresh rose hip fruits and dried mountain tea by-products were isolated by citric acid and ultrasound-assisted acid extractions, respectively. As a result, citric acid extracted pectic polysaccharide fraction from rose hip contained the highest total phenolic content (9.6%) and demonstrated the highest antioxidant activity evaluated by ORAC method (2022 μmol TE/g). The WE pectin fractions from rosehip and orange peels showed also promising antioxidant potential by ORAC method (543 and 454 μmol TE/g). However, most of the fractions did not demonstrate activity by HORAC method. Only fraction obtained from rosehip fruits by citric acid extraction and WE fraction from orange peels showed higher antioxidant activity by HORAC method (164 and 172 μmol TE/g). It was established that pectic polysaccharide fractions with high (WE leek pectin-81 mol%) and low (AE leek pectin-39.8 mol%) homogalacturonan fragment proportions did not participate in the radical scavenging activity. The most important features for better evaluation of antioxidant properties of pectic polysaccharides are fractions purity, total carbohydrate content and the quantitative and qualitative composition of co-precipitated "contaminants" such as poliphenols and proteins.

Keywords: pectic polysaccharides, total phenols, antioxidant activity, ORAC, HORAC

References

1. J. Wang, Sh. Hu, Sh. Nie, Q. Yu, and M. Xie, *Oxid. Med. Cell Longev*. **2016**, 1-13.

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