

August 13-14, 2018  
Paris, FranceAyse Ezgi Unlu et al., Insights Enzyme Res 2018, Volume 2  
DOI: 10.21767/2573-4466-C1-002

## THE EXTRACTION OF BIOPHENOLICS FROM OLIVE LEAF USING GREEN SOLVENTS

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All aerobic organisms generate reactive oxygen species, which are highly reactive against most of the molecules present in the cell. Organisms produce antioxidant molecules in order to eliminate the harmful effects of reactive oxygen species. Antioxidant molecules are diverse type of compounds, such as enzymes, minerals, vitamins, carotenoids, polyphenols, etc. Biophenols, which are secondary metabolites, also have a significant role as antioxidant molecules. Olive leaf is a valuable natural source regarding biophenolic compounds. These compounds include oleuropein, verbascoside, rutin, apigenin-7-glucoside, hydroxytyrosol, tyrosol, caffeic acid, p-coumaric acid, vanillic acid, vanillin, etc. Many researches have been made for the extraction of biophenolics from olive leaf. They are commonly extracted by using organic solvents, mainly ethanol and methanol and/or with water. Green solvents gain increasing attention in many fields of research due to the increasing conscious of protection of the environment. Reports show that green solvents are good candidates to replace organic solvents in many biotechnological processes and are under extensive research for the ones that it is not yet. In this study, we investigated the effect of different types of deep eutectic solvents as green solvents on the extraction of biophenolics from olive leaf and compared the extraction yield and the type of extracted biophenols with conventional solvents. It was found that most of deep eutectic solvents tested provided promising results also depending on the extraction conditions.

### Biography

Ayşe Ezgi Unlu graduated from Ankara University, Faculty of Engineering, Department of Chemical Engineering in 2002. She completed her master degree in 2005 at Ankara University in Turkey. The synthesis of Naproxen, a member of NSAIDs, was the subject of the master thesis using commercial lipase subjected to various pre-treatment strategies that enhanced the activity. Investigation of different parameters on the production of lipase by *Candida rugosa* and also proteomic analysis of the isoenzymes was another subject of interest. Ayşe Ezgi Unlu completed her Ph.D. in 2012 at Ankara University in Turkey. Two important antioxidant enzymes, catalase and superoxide dismutase production by *Rhodotorula glutinis* was studied comprehensively during PhD thesis. She received a postdoctoral grant from TÜBİTAK, with a project about the synthesis of flavonoid polymers using green solvents, at the Institute of Technical Biocatalysis, Technical University of Hamburg, Harburg in Germany, between 2014-2015. She is currently working at Biotechnological Research Group in the Department of Chemical Engineering, Ankara University. The research area includes enzymes, enzymatic reactions, fermentation, protein synthesis, proteomics, experimental design, enzymatic biopolymers and green solvents.

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