EXTRACTION AND DETERMINATION OF ANTIOXIDANT COMPOUNDS

Merichel Plaza* and Charlotta Turner

Lund University, Department of Chemistry, Centre for Analysis and Synthesis
P.O. Box 124, SE-22100, Lund, SWEDEN

In recent years, there has been an increasing interest in diet rich in fruits and vegetables and this is mostly due to their presumed role in the prevention of various degenerative diseases. This is mainly due to the presence of bioactive compounds, such as polyphenols, among others. Prior to the use of these polyphenols in specific applications, such as food, pharmaceutical, and cosmetic industries, they need to be extracted from their natural matrices, and then analyzed and characterized. The development of an efficient procedure to extract phenolic compounds from different sources is a challenging task due to the structural diversity of phenolic compounds, their presence in complex matrices and interaction with other cellular components. Hence, an important aspect to consider is the development of fast, cost-effective, and environmentally adaptable extraction procedures able to isolate the compounds of interest from these natural sources. Therefore, in this work pressurized liquid extraction (PLE) using mainly water as a solvent was used to extract antioxidant compounds from natural matrices. In addition, the contribution of individual compounds to the total antioxidant capacity of the extracts was evaluated by developing an analytical technique consisting of HPLC-DAD coupled to an electrochemical detector (ECD) and a charged aerosol detector (CAD).

Keywords: Pressurized liquid extraction, Antioxidants, Polyphenols, Pressurized hot water extraction.

*Corresponding author: merichel.plaza@organic.lu.se