OBTAINING POLYPHENOL EXTRACTS WITH BIOACTIVE PROPERTIES

Description

The Trace Determination, Speciation and Proteomics research group has developed an eco-friendly methodology to obtain extracts from the agri-food residues with a high content of polyphenols together with some bioactive properties, showing great potential for their application in the food, pharmaceutical and cosmetic industries. Figure 1.

How does it work?

The technology used is based on solid-liquid extraction assisted by magnetic stirring and heating, which is simple, inexpensive, easy to perform and to scale up to industrial production.

One of the key points of this methodology involves the use of water or hydroalcoholic mixtures with low ethanol ratios as extraction solvent. Figure 2.

Advantages

The application of this methodology allows to:

- Reuse and valorise the waste generated in many industries, contributing to the Sustainable Development Goals as well as to the circular economy.

- Obtain high added-value compounds with antioxidant, antimicrobial, antihaemolytic and neuroprotective properties.

- Produce bioactive extracts stable against subsequent freezing and/or drying treatments and thus being possible their redissolution in other media.

Where has it been developed?

The technology has been developed by the Trace Determination, Speciation and Proteomics research group of the Complutense University of Madrid, which is able to adapt the extraction procedures to the type of residue and polyphenols of interest. Additionally, the Group is provided with the instrumentation required for the analysis and characterization of the extracts obtained.

And moreover

The extraction solvents used are compatible with the Green Chemistry concept, furthermore ethanol from biorefineries can be used.

The extracts obtained have potential application in the cosmetic (skin care products), food (natural dyes, functional food, and food packaging) and health (prevention therapist) industries.

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