EuroSciCon

3rd Edition of International Conference on

Agriculture & Food Chemistry

July 23-24, 2018
Rome, Italy

Xi Yao et al., J Food Nutr Popul Health 2018, Volume 2
DOI: 10.21767/2577-0586-C2-005

APPLICATION OF IONIC LIQUIDS IN THE MICROWAVE-ASSISTED EXTRACTION OF ISOORIENTIN FORM

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According to our previous research, orientin, isoorientin, vitexin, and isovitexin are four representative flavonoid compounds in bamboo plant, which have significant biological activities. In this paper, the application of 1-n-butyl-3-methylimidazolium based ionic liquids aqueous solutions in the microwave assisted extraction (MAE) technique was first developed for the extraction of isoorientin from leaves of *Dendrocalamus farinosus*. Response surface experimental design was used to explore for the best extraction conditions of isorientin: The amount of leaves 0.5 g, in the 1.5 mol/L 1-Butyl-3-methylimidazolium tetrafluoroborate [bmim][BF4] system, the extraction temperature 60.2 , extraction time 12.36 min, and liquid-to-solid ratio of 16.74:1 mL/g. Under optimized conditions, the extraction yield was 1.693 mg/g. The recovery was in the range 93.8~100.4% with relative standard deviation lower than 3.0% by the proposed procedure. Furthermore, the comparison of the proposed ILMAE approach with the conventional method was also studied to demostrate the method feasibility. It is worth mentioning that the proposed approach could dramatically improve both the extraction efficiency of theisorientin and the total extraction time. On the basis of extraction solvent and time, the proposed extraction technique was a green, rapid and alternative technique to extract and analyze isoorientin in bamboo samples.

Biography

Xi Yao completed his PhD in Chemical Processing of Forest Products by Chinese Academy of Forestry Sciences. He worked as Associate Researcher of Photochemistry at International Centre for Bamboo and Rattan (ICBR). He has authored over 30 manuscripts in reputed journals. His current research is focused on biomedical/biopesticide products and health products from plant resource.

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