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Sustainable extraction based on eutectic solvents to recover phenolic compounds from green propolis

AUTHORS

Leticia CONTIERI / MULTIDISCIPLINARY LABORATORY OF FOOD AND HEALTH (LABMAS), SCHOOL OF APPLIED SCIENCES (FCA), UNIVERSITY OF CAMPINAS (UNICAMP), RUA PEDRO ZACCARIA, LIMEIRA
Leonardo MESQUITA / MULTIDISCIPLINARY LABORATORY OF FOOD AND HEALTH (LABMAS), SCHOOL OF APPLIED SCIENCES (FCA), UNIVERSITY OF CAMPINAS (UNICAMP), RUA PEDRO ZACCARIA, LIMEIRA
Rodrigo PIZANI / MULTIDISCIPLINARY LABORATORY OF FOOD AND HEALTH (LABMAS), SCHOOL OF APPLIED SCIENCES (FCA), UNIVERSITY OF CAMPINAS (UNICAMP), RUA PEDRO ZACCARIA, LIMEIRA
Sónia VENTURA / CICECO - AVEIRO INSTITUTE OF MATERIALS, DEPARTMENT OF CHEMISTRY, UNIVERSITY OF AVEIRO, AVEIRO, AVEIRO
Maurício ROSTAGNO / MULTIDISCIPLINARY LABORATORY OF FOOD AND HEALTH (LABMAS), SCHOOL OF APPLIED SCIENCES (FCA), UNIVERSITY OF CAMPINAS (UNICAMP), RUA PEDRO ZACCARIA, LIMEIRA

PURPOSE OF THE ABSTRACT

Phenolic compounds from propolis have been highlighted with several biological effects. Thus, the production of propolis extracts could be an excellent strategy to be applied in several fields, like food, pharmaceutical, and cosmetics. Normally, ethanol is the most used solvent applied to produce propolis extracts. However, in some cultures, such as Muslims and in some groups, like children, pregnant women, and individuals with intolerance/dependence to ethanol, the consumption of ethanolic extracts is not recommended. In addition, there are huge requirements from the industrial sector, especially from the food segment, to produce natural, efficient, and sustainable processes to recover natural extracts. This said, in this work, eutectic solvents arise as an alternative to replace organic solvents. They are prepared by mixing a hydrogen donor (HBD) and one hydrogen bond acceptor (HBA) in a specific proportion or ratio. Most of them are highly soluble in water, are easy to prepare and through the conjugation of HBA:HBD it is possible to control the physicochemical and biological properties of the final eutectic mixture. In this context, the main objective of this work is the development of an alternative process using eutectic solvents to recover phenolic compounds from green propolis. After a complete screening and optimization of the extraction of the phenolic compounds present in the green propolis, the best solvent was selected as well as the best conditions to perform the extraction were defined.

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FIGURES

FIGURE 1

FIGURE 2

KEYWORDS

PROPOLIS | EXTRACTS | EUTETIC SOLVENTS | PHENOLIC COMPUNDS

BIBLIOGRAPHY