

عنوان مقاله:

(Subcritical Water Extraction of Bioactive Compounds from Ginger (Zingiber officinale Roscoe)

محل انتشار:

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خلاصه مقاله:

Ginger is one of the commonly used spices that has been exhibited to have pharmaceutical activities. These therapeutic properties are mainly attribute to gingerols and shogaols. To extract these bioactive compounds, subcritical water extraction (SWE) was employed as a green method. The influence of adding co-solvents, temperature, retention time and particle size on extraction yield were investigated. In addition the impact of ultrasonic and enzyme pretreatment was studied. Enzyme-assisted SWE with 2% ethanol as co-solvent and using ginger having particle size of 1mm, operated at 130°C and 20 bars for 30 min, is approved as optimized condition. At this condition, the total obtained polyphenol content and the concentration of total gingerols and shogaol were 5325 µg GAE/g dried ginger and 2990.5 µg bioactive/g dried ginger, respectively. Pretreatment of ginger powder with α-amylase prior to SWE, resulted in a 2.8 and 2.22 folds increase in total polyphenol content and concentration of total gingerols and shogaol, respectively. SEM analysis was conducted to evaluate the effect of pretreatment on morphology of ginger .and analyze the extraction process

کلمات کلیدی:

ginger, Gingerol, Shogaol, Subcritical water, Enzyme Pretreatment

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