Aplikasi natural deep eutectic solvents (NADES) berbasis kolin klorida dalam ultrasound-assisted extraction pada ekstraksi resveratrol dari kulit kacang tanah (arachis hypogaea l.) = Application of choline chloride-based natural deep eutectic solvents (NADES) in ultrasound-assisted extraction of resveratrol from peanut (arachis hypogaea l.) pericarp

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Abstrak

ABSTRAK
Resveratrol 3,5,4 -trihidroksistilben merupakan suatu senyawa fitoaleksin stilben yang terdapat pada kulit kacang tanah Arachis hypogaea L., yang memiliki banyak khasiat seperti kardioprotektif, antioksidan, antidiabetes, dan antihiperkolesterolemia melalui mekanisme penghambatannya terhadap HMG-CoA reduktase. Terdapat banyak cara ekstraksi resveratrol yang dapat diterapkan. Penelitian ini bertujuan untuk mengevaluasi kemampuan Natural Deep Eutectic Solvents NADES -Ultrasound Assisted Extraction UAE untuk ekstraksi resveratrol dari kulit kacang tanah dan dibandingkan dengan metode konvensional maserasi. Hasil ekstraksi diuji dengan Kromatografi Cair Kinerja Tinggi KCKT . Hasil penelitian menunjukkan senyawa resveratrol berhasil diekstraksi dengan NADES-UAE. Hasil tertinggi diperoleh pada NADES campuran kolin klorida dan asam oksalat, pada kondisi rasio sampel-pelarut 1:20 g/ml dan waktu ekstraksi 15 menit, dengan perolehan kadar 0,0485 mg/g simplisia. Namun, metode maserasi memberikan kadar resveratrol yang lebih tinggi dibandingkan hasil NADES-UAE yaitu 0,2212 mg/g simplisia.
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ABSTRACT
Resveratrol 3,5,4 trihydroxystilbene is a naturally occurring stilbene phytoalexin compound found in peanut Arachis hypogaea L. pericarp and has known for many biological activities including cardioprotective, antioxidant, antidiabetic, and anti hypercholesterolemia through its HMG CoA reductase inhibitory activity. There are many methods can be applied to extract resveratrol. The aim of this study was to evaluate natural deep eutectic solvents NADES based ultrasound assisted extraction UAE for their potential to obtain resveratrol from peanut pericarp and compared with the conventional maceration method. The extracts were analysed by High Performance Liquid Chromatography HPLC . The results showed, resveratrol successfully extracted by NADES UAE, with highest resveratrol content obtained by NADES composed of choline chloride and oxalic acid 0,0485 mg g dry weight , under conditions solid liquid ratio 1 20 g ml and extraction time of 15 minutes. However, maceration method gives the higher amount of resveratrol content 0,2212 mg g dry weight than NADES UAE result.