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Optimization of supercritical fluid extraction of asiaticoside from Centella asiatica using Central Composite Design (CCD)

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Abstract

The extraction of asiaticoside was performed using supercritical fluid extraction to produce highly concentrated extracts. The effects of three factors (co-solvent percentage, pressure, and temperature) on the asiaticoside content were screened using the Two-Level Factorial design and optimized using the Central Composite Design. Asiaticoside was extracted following the treatment combinations of three parameters, namely co-solvent (5–15%), temperature (70–90°C), and pressure (1–20 MPa). The optimized extraction parameters were identified at 10%, 10.5 MPa, and 80°C for co-solvent percentage, pressure, and temperature, respectively. © 2020 Taylor & Francis Group, LLC.

Author keywords

asiaticoside; Centella asiatica; extraction; optimization; supercritical fluid extraction

Effluent treatment; Solvents; Supercritical fluid extraction

Engineering uncontrolled terms

Asiaticoside ; Centella asiatica ; Central composite designs; Cosolvents; Extraction parameters; Three parameters; Treatment combinations; Two level factorial designs

Engineering main heading

Supercritical fluids

Topic name

Centella; Asiatic Acid; Madecassoside

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