

Supercritical Fluid and Organic Solvent Extraction of Skin Lightening Agent from Licorice

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The purpose of this study is, with extracting glabridin from licorice using supercritical carbon dioxide modified with co-solvents, to enhance the low purity of glabridin in licorice extracts. Various operation parameters, including pressures, temperatures, the types and amount of co-solvent, and superficial velocities, were investigated by lab-scale supercritical fluid extractor (1L). The content of glabridin within licorice extracts was determined by HPLC, and the purity of glabridin in licorice extracts was defined as a ratio of weight of glabridin to weight of dried licorice extract. The organic solvent extraction with 95% ethanol was carried out for a comparison to the supercritical fluid extraction (SFE), which produced 0.96 wt% of the purity and 0.199 wt% of the extraction yield of glabridin in licorice. The purity and recovery of glabridin were 9.31 wt% and 86.74%, respectively. In the case where SiO₂ was applied to SFE, the purity of glabridin was 16.09 wt%.