

Effect of Acetic Acid Fermentation on Bioactive Components and Anti-Xanthine Oxidase Activities in Vinegar Brewed from Monascus-Fermented Soybeans

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Abstract : Vinegars have been used as an alternative remedy for treating gout, but the scientific basis remains to be elucidated. In this study, acetic acid fermentation was applied for the first time to Monascus-fermented soybeans to examine its effect on the bioactive components together with the xanthine oxidase inhibitory (XOI) activity of the soy vinegar. The content of total phenols (0.47~0.97 mg gallic acid equivalents/mL) and flavonoids (0.18~0.39 mg quercetin equivalents/mL) were spectrophotometrically determined, and the content of organic acid (10.22~59.76 mg/mL) and isoflavones (6.79~7.46 mg/mL) were determined using HPLC-UV. The analytical method for ubiquinones (0.079~0.276 µg/mL) employed saponification before solvent extraction and quantification using LC-MS. Soy vinegar also showed significant XOI (95.3%) after 20 days of acetic acid fermentation at 30 °C. The results suggest that soy vinegar has potential as a novel medicinal food.

Keywords : acetic acid fermentation, bioactive component, soy vinegar, xanthine oxidase inhibitory activity

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