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Supercritical fluid fractionation affects the distribution of antioxidant compounds of fractions from rice bran extracts

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Ethanol extract (E) of rice bran was fractionated by supercritical CO₂ fluid system into four fractions (R, F1, F2, and F3) at 45°C and pressures of 30, 25, 20, and 15 MPa, respectively. This study aimed to evaluate the distribution of antioxidant compounds (γ -oryzanol, ferulic acid, and phenolic compounds) and antioxidant activities of supercritical CO₂ fractions. Results showed that the contents of γ -oryzanol and ferulic acid in different fractions were in the order of F > E > R; while the highest amount of phenolics was detected in R. E exerted the strongest 2,2-Di-Phenyl-Picryl-Hydrazyl (DPPH) and ABTS radicals scavenging activities. The contents of total phenolic compounds, γ -oryzanol and ferulic acid in fractions were significantly positive correlated with the antioxidant capacities. Linear structural models analysis showed that although the correlation between antioxidant components is high, the scavenging activities of both free radicals mainly related to total phenolic compounds.

Biography

Be-Jen Wang has completed her PhD from Cornell University. She was an Associate Professor in China Medical University from 1992 to 1995. Since 1995, she is working as Professor of National Chiayi University. Her research concentrates on Food Science and Nutrition. She has published more than 40 papers in reputed journals and 12 related patents in Food Science and Technology.

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