Synopsis of Original Research Paper

Purification and Identification of Tyrosinase-inhibitory Peptides from Rice Proteins and Their Whitening Effects

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Rice bran, which is the residue from brown rice in the production of white rice, is one of the most abundant agricultural by-products in Japan. After squeezing rice oil, the residual defatted rice bran powder contains a lot of proteinaceous fractions as well as starchy and cellulosic polysaccharides. In this study, we investigated the purification and identification of tyrosinase-inhibitory peptides obtained by hydrolyzing enzymatically the protein of rice bran. The tyrosinase-inhibitory peptides were purified from the enzymatic hydrolyzate by size-exclusion and hydrophobic chromatography. Three kinds of tyrosinase-inhibitory peptide were identified by MALDI TOF-MS analysis. The peptides showed the same monophenolase-inhibitory activity as that of arbutin as a control. In future, the tyrosinase-inhibitory peptides obtained from rice bran are expected to be utilized as a cosmetic material.