Abstract

The volatile components of Green Oolong tea No. 12 fermented with culture supernatants of five *Bacillus subtilis* strains, one strain of *Saccharomyces cerevisiae* and β-D-glycosidase enzymes were investigated. Initially, the culture supernatants of all different strains were prepared and subsequently used as crude enzymes to ferment tea samples while pure enzyme was prepared by adding in distilled water. After 2 h-fermentation, the volatile components were extracted using solid phase microextraction (SPME) technique and determined by gas chromatography-mass spectrometry (GC-MS). At least 54 components were identified in all samples. Linalool, hotrienol and γ-terpinene were found to be the major components in dry Green Oolong tea while *B. subtilis*-fermented teas provided 2-pentylfuran and limonene in higher amounts. The contents of most major volatiles increased remarkably in the fermented tea samples. Superior quantity of volatile components was related to the use of *B. subtilis* culture supernatants compared to other cultures and pure enzyme whereas 2-pentylfuran and limonene were responsible for the special odor of *B. subtilis*-fermented teas. Some microbes will be added to instant tea to increase aromatic quality of tea which may be applied to tea manufacturing process next future.