

Bioactivity of Peptides from Two Mushrooms

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Abstract : Mushrooms, or macro-fungi, as an important superfood, contain many bioactive compounds, particularly bio-peptides. In this research, mushroom proteins were extracted by buffer or buffer plus salt (0.15 M), along with an ultrasound bath to extract the intercellular protein. As a result, the highest amount of proteins in mushrooms were categorized into albumin. Proteins were also hydrolyzed and changed into peptides through endogenous and exogenous proteases, including gastrointestinal enzymes. The potency of endogenous proteases was also higher in *Agaricus bisporus* than *Terfezia clavaryi*, as their activity ended at 75 for 15 min. The blanching process, endogenous enzymes, the mixture of gastrointestinal enzymes (pepsin-trypsin- α -chymotrypsin or trypsin- α -chymotrypsin) produced the different antioxidant and antibacterial hydrolysates. The peptide fractions produced with different cut-off ultrafilters also had various levels of radical scavenging, lipid peroxidation inhibition, and antibacterial activities. The bio-peptides with superior bioactivities (less than 3 kD of *T. clavaryi*) were resistant to various environmental conditions (pH and temperatures). Therefore, they are good options to be added to nutraceutical and pharmaceutical preparations or functional foods, even during processing.

Keywords : bio-peptide, mushrooms, gastrointestinal enzymes, bioactivity

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