Enhancing the Antioxidant Ability of Trametes Versicolor Polysaccharopeptides by an Enzymatic Hydrolysis Process

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ABSTRACT

Polysaccharopeptides (PSPs) are among the main bioactive constituents of Trametes versicolor (T. versicolor). The purpose of this research was to investigate the antioxidant activities of enzymatic hydrolysates obtained from T. versicolor polysaccharopeptides by 80 U/mL β-1,3-glucanase (PSPs-EH80). The half-inhibitory concentration (IC50) of PSPs-EH80 in metal chelating assay, ABTS and DPPH radical scavenging test results were 0.83 mg/mL, 0.14 mg/mL and 0.52 mg/mL, respectively, which were lower than that of PSPs-EH 20 U/mL. The molecular weights of the PSPs-EH80 hydrolysates were 300, 190, 140 and 50 kDa, respectively, and the hydrolysis of polysaccharides by β-1,3-glucanase did not change the original functional group. PSPs-EH80 reduced the reactive oxygen species (ROS) content at least twice that of treatment without PSPs-EH80. In addition, an oxidative damage test showed that PSPs-EH80 can improve HaCaT cell survival. According to our results, PSP demonstrates the potential of anti-oxidative damage; besides, enzyme hydrolysis can improve the ability of the PSP.

Keywords: polysaccharopeptides (PSPs); enzymatic hydrolysates; antioxidant activities

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