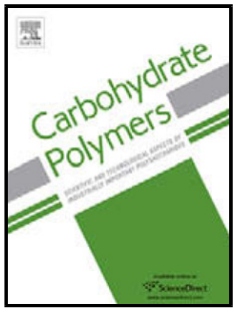

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Optimization of ultrasonic-assisted extraction and *in vitro* antioxidant activities of polysaccharides from *Trametes orientalis*

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ABSTRACT

A Box-Behnken design was employed to optimize ultrasonic-assisted extraction of *Trametes orientalis* polysaccharides (TOP). The crude polysaccharides were purified by DEAE cellulose-52 chromatography, giving a main fraction named as PTOP. The antioxidant properties of PTOP were evaluated by different *in vitro* antioxidant assays, such as 1,1-Diphenyl-2-picrylhydrazyl (DPPH) radical scavenging activities, reducing power, superoxide radical scavenging activities, and chelating ability of ferrous ions. The results showed that optimal extraction parameters were as follows: ratio of water to raw material 30.6 mL/g, ultrasonic power 109.8 W, extraction temperature 40.2°C, and extraction time 42.2 min. Under these conditions, the experimental yield of polysaccharides was 7.49±0.14%, which agreed closely with the predicted value (7.47%). Furthermore, PTOP exhibited antioxidant capacity in a concentration-dependent manner in all assays.

Keywords

Trametes orientalis polysaccharides ultrasonic-assisted extraction antioxidant