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The characteristics and antioxidation of *Oudemansiella radicata* selenium polysaccharides on lipopolysaccharide-induced endo-toxemic mice

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Abstract: The selenium polysaccharides (SPS) by *Oudemansiella radicata* were isolated, and two hydrolysates (enzymatic-SPS (ESPS) and acidic-SPS (ASPS)) were obtained by enzymolysis and acidolysis. The endo-toxemic-induced lung and kidney damages were successfully established by the lipopolysaccharides (LPS) injection (5 mg/kg/d). The *in vivo* mice experiments indicated that the ESPS showed superior antioxidant and protective effects against the LPS-toxicities by increasing the antioxidant activities, reducing lipid peroxidation, improving the inflammatory response and elevating the kidney and lung functions than SPS and ASPS. Furthermore, the selenium contents and structure of SPS, ESPS and ASPS were investigated through FAAS, GC, UV, HPGPC, FT-IR, NMR and the results indicated that SPS, ESPS and ASPS were homogeneous heteropolysaccharide with an average molecular weight of 3.12×10^4, 1.77×10^4, 1.41×10^4 Da, respectively. The conclusions demonstrated that the polysaccharides by *O. radicata* might be suitable

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