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Isolation, identification, and antioxidant activity of polysaccharides from the shell of abalone (*Haliotis discus hannai* Ino)

Z.L. Wang[1]*, H.B. Liang[1]*, W. Guo[1]*, Z.F. Peng[1], J.D. Chen[1] and Q.Q. Zhang[1,2]

[1]Institute of Biomedical and Pharmaceutical Technology, Fuzhou University, Fuzhou, China
[2]Institute of Biomedical Engineering, Chinese Academy of Medical Sciences, Tianjin, China

*These authors contributed equally to this study.
Corresponding authors: Z.L. Wang / Q.Q. Zhang
E-mail: IBPTwzl@fzu.edu.cn / zhangqiq@126.com

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ABSTRACT. In this study, two antioxidative substances, a homogeneous polysaccharide [abalone shell polysaccharide (ASP-1), corresponding to the first peak by size exclusion chromatography] and a non-polysaccharide compound [abalone shell compound (ACS-2), corresponding to the second peak by size exclusion chromatography], were extracted from the abalone (*Haliotis discus hannai* Ino) shell. We primarily focused on the investigation of ASP-1. As a heteropolysaccharide, ASP-1 is comprised of 9.3% uronic acid and 86.4% saccharide, the latter including mannose, ribose, rhamnose, glucose, galactose, arabinose, and two unknown monosaccharides, NO1 and NO2, with a mass ratio of 9.5:10.1:2.2:18.2:21.8:5.5:16.5:16.2. The antioxidant activity assays indicated that 5.0 mg/mL ASP-1 has significant scavenging effects on superoxide radicals (86.2%) compared to the positive control of ascorbic acid (95.6%).

Key words: Abalone shell; Polysaccharides; Antioxidant activity

