



象皮和拟替代品猪皮、鱼鳞中胶原及其抗氧化活性研究

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中文摘要:目的:研究传统中药象皮和拟替代品猪皮、鱼鳞的胶原结构和抗氧化活性。方法:通过正交试验设计法,优选了象皮胶原的最佳提取条件,与拟替代品胶原对其结构和含量进行比较,采用水杨酸法测定其各自清除羟基自由基能力。结果:首次从象皮中提取了结构完整且质量较多的胶原,与拟替代品的胶原结构类型相似,其象皮胶原、猪皮胶原、鱼鳞胶原清除自由基能力衡量值 C_{50} 分别为 $0.51, 0.60, 0.42 \text{ g} \cdot \text{L}^{-1}$ 。结论:通过比较和鉴定,象皮胶原蛋白为I型胶原,抗氧化能力较强,明确了象皮的有效成分,为今后进一步探讨象皮替代品研究提供了重要参考依据。

中文关键词:象皮 胶原 抗氧化

Extraction and antioxidant activity of collagen from elephant skin, pig skin and fish scales

Abstract:Objective: To study collagen structure of the traditional Chinese medicine elephant skin and the proposed alternatives such as pig skin, fish scale, and antioxidant activity. Method: Orthogonal experimental design method was employed to determine the optimal extraction condition of collagen from the elephant skin, and the structure and content of collagen of proposed alternatives were compared, their scavenging ability were determined by salicylic acid. Result: Collagen extracted from elephant skin with the optimal conditions was the structural integrity and good quality first time, and collagen structure of the elephant skin was similar to the proposed alternatives. Free radical scavenging capacity of collagen, values of C_{50} were $0.51 \text{ g} \cdot \text{L}^{-1}$ of elephant skin, $0.60 \text{ g} \cdot \text{L}^{-1}$ of pig skin and $0.42 \text{ g} \cdot \text{L}^{-1}$ of fish scale. Conclusion: By comparing and identification of proteins that the collagen of elephant skin is type I collagen, with a strong antioxidant capacity, is the active ingredients of elephant skin. It provides a further study of alternatives as an important reference.

keywords:elephant skin collagen antioxidant

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