

林学—应用研究

欧李叶片中多酚的提取工艺优化

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摘要:

【研究目的】以欧李叶片为试验材料, 多酚提取率为评价指标, 探讨欧李叶片多酚提取的工艺条件。【方法】以丙酮为提取剂, 选定浸提时间、溶剂浓度、料液比、浸提温度为考察的4个因素, 以L9(34)正交试验设计, 采用常规提取法和微波提取法研究提取欧李叶片中多酚的最佳条件。【结果】利用常规法从欧李叶片中提取多酚各因素对多酚提取率影响的主次顺序为: 浸提温度>浸提时间>固液比>提取剂浓度, 得出最优方案为A1B3C3D3, 与试验中最佳处理组合A1B3C3D3相一致; 利用微波法从欧李叶片中提取多酚各因素对提取率影响的主次顺序为: 提取剂浓度>固液比>辐射时间>辐射功率, 得出最优方案为A1B2C3D2, 与试验中最佳处理组合A1B2C2D2不一致。【结论】欧李叶片中多酚提取的最佳工艺为70%丙酮溶液, 固液比1:450, 浸提时间1.5 h, 浸提温度70℃。

关键词: 欧李叶片; 多酚; 提取工艺

The Optimization of Polyphenols Extraction Process of Prunus Humilis leaves

Abstract:

【OBJECTIVE】This paper used Prunus Humilis leaves as experimental materials, the rate of polyphenols extraction indicators as the evaluation standard to explore the extraction process conditions of polyphenols in Prunus Humilis leaves. 【METHOD】This paper had chosen acetone as extraction agent, and selected the extraction time, the solvent concentration, the liquid-solid ratio and the extraction temperature as four investigation factors, and used the L9(34) orthogonal experiment design, and used regular extraction method and microwave extraction method to study the best conditions of the extraction process of polyphenols of Prunus Humilis leaves. 【RESULTS】The primary and secondary effects of polyphenols extraction indicators by using regular extraction method from Prunus Humilis leaves was as follows: extraction temperature>extraction time>solid-liquid ratio>extraction concentration; the optimal scheme was A1B3C3D3, which corresponded with the best treatment combination A1B3C3D3. The primary and secondary effects of polyphenols extraction indicators by using microwave method from Prunus Humilis leaves was as follows: extraction concentration>solid-liquid ratio>irradiation time>radiated power; the optimal scheme was A1B2C3D2, which did not correspond with the best treatment combination A1B2C2D2. 【CONCLUSION】The best extraction process of polyphenols in Prunus Humilis leaves was the 70% of acetone solution, the solid-liquid ratio was 1:450, the extraction temperature was 70℃, the extraction time was 1.5 h.

Keywords: Prunus Humilis leaves polyphenols extraction process

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