

藤三七茎总黄酮微波提取工艺优化

孟祥凤,张红*,赵艺飞,左晓哲,尚爽

(德州学院生命科学学院,山东德州 253023)

摘要:以自然生长的藤三七茎为原料,利用不同浓度的乙醇作为提取剂,采用微波法提取总黄酮。在单因素试验的基础上,分别研究不同部位、料液比、乙醇浓度、微波功率及微波时间对藤三七总黄酮提取率的影响,并得出影响因素主次和最佳提取方案。结果表明,藤三七茎较其他部位总黄酮含量高,且茎不易被氧化;藤三七茎中总黄酮的最佳提取工艺为:微波时间 70 s,微波功率 320 W,乙醇浓度 70%,料液比 1:80(g/mL),在此条件下,黄酮提取率为 7.42%。影响提取率的因素主要为微波功率和乙醇浓度,在生产加工中应对其加以控制。

关键词:藤三七;总黄酮;不同部位;微波提取法;正交试验

Optimization of Microwave Extraction Technique of Total Flavonoids from *Anredera cordifolia* Stem

MENG Xiang-feng, ZHANG Hong*, ZHAO Yi-fei, ZUO Xiao-zhe, SHANG Shuang
(College of Life Sciences, Dezhou University, Dezhou 253023, China)

Abstract: The stems of naturally growing *Anredera cordifolia* were used as raw materials, and total flavonoids was extracted by microwave method with different concentrations of ethanol as extractant. Based on single-factor experiments, the effects of different parts, material-liquid ratio, ethanol concentration, microwave power and time on the extraction rate of total flavonoids from *Anredera cordifolia* were investigated, and the order of influencing factors and optimal extraction technique were determined. The result showed that the content of total flavonoids in stem of *Anredera cordifolia* was higher than that in other parts, and the stem was not easily oxidized. The best extraction technique of total flavonoids from *Anredera cordifolia* stem was as follows: microwave time 70 s, microwave power 320 W, ethanol concentration 70%, and material-liquid ratio 1:80 (g/mL). Under these conditions, the extraction yield was 7.42%. The main factors affecting the extraction rate were microwave power and ethanol concentration, which should be controlled during production and processing.

Key words: *Anredera cordifolia*; total flavonoids; different parts; microwave extraction method; orthogonal test

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藤三七为落葵科落葵薯属多年生缠绕藤本植物^[1],其根叶微苦、性温,能补益肝肾、壮腰膝、活血消肿化痰,用于腰膝痹痛、病后体弱、跌打损伤、骨折^[2],

具有抗癌防老等功效,其主要活性成分为皂苷类和黄酮类化合物^[3]。藤三七生长速度快,受环境影响小,为极易采取的食品原料。近年来对藤三七的开发研究逐

作者简介:孟祥凤(1998—),女,汉族,本科在读,研究方向:食品检测与分析。

*通讯作者:张红,博士,副教授,研究方向:食品功能成分。