



转基因何首乌毛状根生物转化瑞香素的研究

投稿时间: 2010-10-25 责任编辑: 吕冬梅 [点此下载全文](#)

引用本文: 邓文娟,周良彬,于荣敏.转基因何首乌毛状根生物转化瑞香素的研究[J].中国中药杂志,2011,36(3):351.

DOI: 10.4268/cjcm20110327

摘要点击次数: 353

全文下载次数: 187

广告合作



作者中文名	作者英文名	单位中文名	单位英文名	E-Mail
邓文娟	DENG Wenjuan	暨南大学药学院, 广东 广州 510632	College of Pharmacy, Jinan University, Guangzhou 510632, China	
周良彬	ZHOU Liangbin	暨南大学药学院, 广东 广州 510632	College of Pharmacy, Jinan University, Guangzhou 510632, China	
于荣敏	YU Rongmin	暨南大学药学院, 广东 广州 510632	College of Pharmacy, Jinan University, Guangzhou 510632, China	lyrm@jnu.edu.cn

基金项目: 广东省自然科学基金(04010461)

中文摘要:目的: 利用转基因何首乌毛状根对瑞香素(D)进行生物转化研究,对其生物转化产物进行分离、鉴定,并建立其产物的时效曲线图。方法: 将瑞香素投入何首乌毛状根悬浮培养体系中,共培养36 h后,利用TLC和HPLC进行产物检测,硅胶柱层析法分离纯化,核磁共振技术进行结构鉴定,利用HPLC考察共培养时间对转化产物(I)、降解产物含量的影响及分析转化产物降解的原因。结果: 瑞香素在何首乌毛状根悬浮培养体系中发生了生物转化反应。分离鉴定出一个产物:瑞香素-8-O-β-D-葡萄糖苷(II)。何首乌毛状根悬浮培养体系转化生成II的最佳共培养时间为36 h,总摩尔转化率为32.11%。蔗糖-水培养基(仅含有蔗糖和水)可以使何首乌毛状根悬浮培养体系转化率大幅增加,总摩尔转化率达72.44%。初步推断产物(II)的降解与MS培养基中金属离子有关。结论: 使用何首乌毛状根悬浮培养体系可大量生物合成天然药材中含量极低的活性化合物——瑞香素-8-O-β-D-葡萄糖苷。

中文关键词: 何首乌毛状根 生物转化 瑞香素 瑞香素-8-O-β-D-葡萄糖苷

Biotransformation of daphnetin by suspension transgenic hairy roots of *Polygonum multiflorum*

Abstract: Objective: To investigate the biotransformation of daphnetin by suspension transgenic hairy root of *Polygonum multiflorum* and provide a biotechnological method for large-scale production of the daphnetin-8-O-β-D- glucoside using this new culture system. Method: Daphnetin was added into the media of suspension to culture 36 h. The biotransformation product was detected with TLC and HPLC, and isolated by various chromatographic methods. The influence of co-cultured time on conversion ratio, content of degradation product and the reason for the degradation of product II were investigated using HPLC. Result: One biotransformation product, daphnetin-8-O-β-D- glucoside, was obtained, the optimal co-cultured time in suspension hairy root of *P. multiflorum* was 36 h with the highest biotransformation molar ratio of 32.11%, the sucrose medium (sucrose-only) can increase the biotransformation molar ratio to 72.44%. The result demonstrated that the degradation products of the product II was induced by the MS medium. Conclusion: The potential application of suspension transgenic hairy root of *P. multiflorum* in the sucrose-only medium on generating daphnetin-8-O-β-D- glucoside could be prospective.

keywords: hairy roots *Polygonum multiflorum* biotransformation daphnetin daphnetin-8-O-β-D-glucoside.

[查看全文](#) [查看/发表评论](#) [下载PDF阅读器](#)