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诱导子对丹参毛状根酚酸类和丹参酮类成分积累的影响

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中文摘要：目的: 考察生物诱导子真菌菌丝提取物和非生物诱导子茉莉酸甲酯及二者协同作用对丹参毛状根酚酸类和丹参酮类成分积累的综合性影响。 方法 :在继代培养21 d的丹参毛状根中添加不同的诱导子及诱导子组合,分别测定不同收获期毛状根的生长量和两大类成分的积累量。 结果 :3种处理均显著抑制了丹参毛状根的生长,促进了隐丹参酮和二氢丹参酮Ⅰ的积累,但对酚酸类成分的积累却有不同的作用,茉莉酸甲酯可以促进酚酸类成分的积累,真菌诱导子在一定程度上抑制了酚酸类成分的积累。 结论 :真菌诱导子和茉莉酸甲酯以及二者协同作用对丹参毛状根不同成分的积累具有不同的影响,3种处理条件下水溶性成分的积累和脂溶性成分的积累基本不存在关联性。

中文关键词：丹参毛状根 真菌诱导子 茉莉酸甲酯 次生代谢

Effects of elicitors on accumulation of phenolic acids and tanshinones in *Salvia miltiorrhiza* hairy root

Abstract: Objective : To observe the effects of a biotic elicitor fungal hyphae extract, an abiotic elicitor methyl jasmonate and their synergistic action on the accumulation of phenolic acids and tanshinones in *Salvia miltiorrhiza* hairy root. Method : Different elicitors were added to *S. miltiorrhiza* hairy root, which was subcultured for 21 days, the dry weight and contents of phenolic acids and tanshinones were determined at different harvest-time. Result : *S. miltiorrhiza* hairy root growth was significantly inhibited by all three treatments and the accumulation of cryptotanshinone and dihydrotanshinone were promoted by each elicition. As for the accumulation of phenolic acids, there were differences between fungal elicitor and methyl jasmonate treatments, they were promoted by methyl jasmonate while inhibited in a certain extent by fungal hyphae extract. Conclusion : Fungal elicitor, methyl jasmonate and their synergistic action have significant influence on accumulation of components in *S. miltiorrhiza* hairy root, and the effect varies between phenolic acids and tanshinones. There is no correlation between production of water-soluble ingredients and fat-soluble components on the whole under three different treatments.

keywords:*Salvia miltiorrhiza* hairy root fungal elicitor methyl jasmonate secondary metabolism

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