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中文标题 检索 跨刊检索

柱前衍生HPLC分析铁皮石斛多糖中单糖组成的变异规律

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中文摘要:通过采集铁皮石斛不同种质、年龄及近缘种的药材,采用柱前衍生HPLC法测定多糖中的单糖组成。结果表明,铁皮石斛与近缘种间,铁皮石斛种质与年龄间各种单糖的绝对量和相对量均存在显著差异,其中甘露糖绝对峰面积,铁皮石斛近缘种间变幅为 0.854×10^7 ~ 10.340×10^7 ,铁皮石斛种内为 1.467×10^7 ~ 8.475×10^7 ,一至三年生样品分别为 4.411×10^7 (2.577×10^7 ~ 6.516×10^7)、 5.528×10^7 (3.179×10^7 ~ 8.475×10^7)、 3.601×10^7 (1.467×10^7 ~ 5.888×10^7);甘露糖与葡萄糖比值(相对峰面积),铁皮石斛近缘种间为0.976~16.599,种内为2.679~7.831,在供试样品中只有肿节石斛、报春石斛的相对峰面积与铁皮石斛重叠。研究结果揭示了铁皮石斛多糖中的单糖组成的变异规律,通过品种选育、采收期的控制可改变铁皮石斛中单糖的组成;利用铁皮石斛甘露糖与葡萄糖的相对峰面积可排除多数铁皮石斛混用品,为铁皮石斛质量控制、资源培育提供依据。

中文关键词:铁皮石斛 柱前衍生法 HPLC 单糖

Variation of monosacchride composition of polysacchrides in *Dendrobium officinale* by pre-column derivatization HPLC method

Abstract:The monosacchride composition of polysacchrides in *Dendrobium officinale* of different germplasm, physiological ages and closely related species were determined by pre-column derivatization HPLC. The results showed that the absolute and relative volumes of all monosacchrides were significantly different between *D. officinale* and its closely related species, different germplasm and physiological ages of *D. officinale*. Absolute peak areas of mannose ranged from 0.854×10^7 to 10.340×10^7 in closely related species of *D. officinale*, ranged from 1.467×10^7 to 8.475×10^7 in different germplasm of *D. officinale* and were 4.411×10^7 (2.577×10^7 ~ 6.516×10^7), 5.528×10^7 (3.179×10^7 ~ 8.475×10^7) and 3.601×10^7 (1.467×10^7 ~ 5.888×10^7), respectively, in one to three physiological ages of *D. officinale*. The ratio of mannose to glucose peak areas (relative peak area) ranged from 0.976 to 16.599 in closely related species of *D. officinale* and from 2.679 to 7.831 in different germplasm of *D. officinale*. Only the relative peak areas of *D. pendulum* and *D. primulinum* were in the range of different germplasm of *D. officinale* in all tested samples. The results revealed the variation of monosacchride composition of polysacchrides in *D. officinale*. Monosacchride composition of *D. officinale* could be altered by breeding new varieties and controlling harvesting season. Most adulterants of *D. officinale* could be ruled out according to the relative peak areas of *D. officinale*, providing a basis for quality control and resources training of *D. officinale*.

keywords:*Dendrobium officinale* pre-column derivatization method HPLC monosacchride

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