

论文

中药黄草石斛rDNA ITS序列分析

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摘要:

目的 研究黄草石斛ITS片段遗传多样性,分析该片段在黄草药材DNA分子鉴别和石斛属植物系统学研究中的意义。方法 用一对引物进行PCR扩增,扩增产物纯化后用双脱氧终止法(Sanger dideoxy)测序。结果 获得核糖体DNA中ITS和5.8SrDNA完整序列,14个石斛类群的ITS 1与ITS 2序列的长度分别为228-233bp和242-247 bp。石斛种间ITS 1序列的差异百分率为11.79% - 31.58% ,ITS 2序列的差异百分率为10.29% - 25.30% ,金钗石斛种内ITS 1序列的差异百分率为0.87% ,ITS 2序列无差异。石斛各类群与外类群的差异百分率ITS 1序列为23.56% - 36.89% ,ITS 2序列为26.52% - 33.31%。用NJ法根据ITS 1与ITS 2序列数据重建系统发生树。结论 两段序列在石斛种内保守,在种间有较大的差异,与外类群的差异最大,可作为中药黄草石斛分子鉴定的标记,而石斛属的系统发生关系尚须进一步研究

关键词: 石斛属 黄草 ITS序列

rDNA ITS SEQUENCING OF HERBA *DENDROBII* (HUANGCAO)

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Abstract:

AIM To study the genetic diversity of ITS sequences of Herba *Dendrobii*(Huangcao) and analyze the utility of ITS sequences in molecular authentication of Herba *Dendrobii* (Huangcao)and phylogenetic of *Dendrobium*. METHODS The ITS gene fragment was amplified using a pair of primers. The PCR products were purified and sequenced by the methods of Sanger Dideoxy. RESULTS The DNA sequence of 228-233 bp ITS 1, 242-247 bp ITS 2 gene fragments and 5.8S rDNA were obtained from 14 samples of *Dendrobium*. The interspecific substitution varies from 11.79% to 31.58% at ITS 1 and 10.29% to 25.30% at ITS 2. The intraspecific substitution of *D.nobile* is 0.87% at ITS 1 and without difference at ITS 2. The substitution between *Dendrobium* and outgroup varies from 23.56% to 36.89% at ITS 1 and 26.52% to 33.31% at ITS 2. The phylogenetic tree based on ITS 1 and ITS 2 data was set up. CONCLUSION The ITS 1 and ITS 2 gene fragments were highly conservative at intraspecific level in *Dendrobium*, while they were less conservative at interspecific level in *D.nobile*. They were least conservative between *Dendrobium* and outgroup. Hence, the sequence of this fragment is a good molecular marker for authentication of the Huangcao. But, further study is necessary for the phylogenetic of *Dendrobium*.

Keywords: Herba *Dendrobii* (Huangcao) ITS sequences *Dendrobium*

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