

研究论文

## 雌雄异株稀有植物伞花木 (*Eurycorymbus caraleriei*) 自然居群的等位酶遗传多样性研究

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**摘要** 伞花木(*Eurycorymbus caraleriei*)为中国特有的第三纪孑遗单种属植物,雌雄异株.采用超薄平板微型聚丙烯酰胺等电聚焦电泳方法对其5个自然居群和1个人工迁地保护居群的等位酶变异进行了初步研究.对7个酶系统中14个位点的等位酶居群遗传多样性及遗传结构分析结果表明:伞花木具有较高水平的遗传多样性,其每位点平均等位基因数 $A=1.6$ ,平均多态位点比率 $P=42.9\%$ ,平均预期遗传杂合度 $He=0.216$ ;各居群的遗传多样性无显著性差异,但都表现为严重偏离Hardy-Weinberg平衡的杂合子过量;其遗传变异主要发生在居群内(93.1%),居群间分化较小( $Gst=0.069$ ),居群间遗传一致度较高( $I=0.965\sim 1.000$ ).推断这可能是由于其古老孑遗性、雌雄异株、混和传粉方式的生物学特性以及其长寿命的生活史等原因所导致;同时,居群间的较高基因流( $Nm=3.128$ )也可能起到很大的作用.还使用UPGMA聚类方法推断了武汉植物园迁地保护的野外居群来源,在对迁地保护居群的评价中发现迁地保护居群仅保存了该物种基因型多样性的16%,在此基础上提出了今后进一步的保育策略.

**关键词** [伞花木](#) [孑遗植物](#) [单属种植物](#) [居群遗传结构](#) [迁地保育](#)

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## Allozymic Genetic Diversity in *Eurycorymbus caraleriei* (Levl.) Rehd.et Hand.-Mazz. , an Endemic and Dioecious Tree in China

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**Abstract** Allozymic variation of five natural populations and one ex situ population of *Eurycorymbus caraleriei* (Levl.) Rehd.et Hand. Mazz.was analyzed using isoelectric focusing in thin-layer polyacrylamide slab gels.Fourteen loci of seven enzyme systems were scored for the analysis of population genetic diversity and structure.A high genetic diversity was observed in this dioecious species,with mean number of alleles per locus =1.6,mean percentage of polymorphic loci  $P=42.9\%$  and average expected heterozygosity  $He=0.216$ .An excess of heterozygous genotypes was found in all populations,which resulted in a significant deviation from the Hardy-Weinberg equilibrium.The low value of the relative magnitude of genetic differentiation among populations( $Gst=0.069$ )suggests little genetic differentiation and a sufficient gene flow ( $Nm=3.128$ ) occurred among natural populations.UPGMA cluster analysis using Nei's (1978) unbiased genetic distance revealed that the ex situ population was firstly clustered with Shimen population, suggesting the ex situ collection is probably form Shimen population.Although the gene diversity in ex situ collection was found for accounting for about 85% of the total genetic variation in the species,genotype diversity retained in ex situ collection only covered about 16% of the total of the species.As the result,we strongly recommend that more genotypes should be collected from natural populations to maintain the genetic integrity of the species in ex situ collection.

**Key words** [Eurycorymbus caraleriei \(Levl.\) Rehd.et Hand. Mazz.;](#) [Relic plant species;](#) [Mono species genus;](#) [Population genetic structure;](#) [Ex situ conservation](#)

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