

分子系统学研究中分子位点数与遗传差异信息可靠性的关系 The Correlation Between the Number of RAPD-loci and the Reliability of the Information on Genetic Variation in Molecular Phylogenetic Studies

周泽扬, 夏庆友, 鲁成, 冯丽春, 向仲怀 ZHOU Ze-yang, XIA Qing-you, LU Cheng, FENG Li-chun, XIANG Zhong-huai

西南农业大学蚕桑学农业部部级重点实验室, 重庆 400716 The Key Sericultural Laboratory of Agricultural Ministry, Southwest Agricultural University, Chongqing 400716

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摘要 用桑蚕(包括不同生态地理品种59个及野桑蚕)和桑属植物(包括12个种和2个变种)两类截然不同的材料,探讨了分子系统学研究中RAPD分子位点数与遗传差异信息可靠性间的关系。发现:(1)所分析的位点数多少与所能提供系统信息的量及可靠性之间有明显的关系;(2)当位点数在20以下时,得到的遗传差异的结果极不可靠,随着位点数的增加所提供的信息量及可靠性增加。当位点数超过70个时,所提供的信息可靠性趋于稳定;(3)对桑蚕和桑属植物两种截然不同的材料的分析,均得相似结果。由此推论:在用RAPD进行生物系统学研究中,以分析70个左右位点数为好;这一结论受研究对象的影响小,在其它类似的研究中或许具有一定的参考价值。

Abstract:We studied the correlation between the number of RAPD-loci investigated and the reliability of the information on genetic variation analysis using quite different two-kind materials, silkworms(including 59 geographic varieties of Bombyx mori belonging to different ecotype, as well as Bombyx mandarina M.)and mulberries(including 12 species and 2 varieties). The results showed as follows:(1)There was obvious correlation between the numbers of RAPD-loci investigated and the reliability of the information on genetic variation analysis. (2)The data were not suitable for the genetic variation analysis when the number of RAPD-loci investigated was smaller than 20. The more RAPD loci were analyzed, the more accurate genetic diversity would be identified when the number of the locus was varied from 20 to 70. Furthermore, the stable information to be available is shown when the number exceeded 70. (3)The similar regularities mentioned above were observed in both silkworm and mulberry. In order to get reliable information of genetic variation in molecular phylogenetic studies, at least 70 RPD loci would be investigated. And the results obtained in this study might be referential for AFLP and RFLP analysis.

关键词 [分子系统学](#) [RAPD位点数](#) [遗传差异](#) [蚕](#) [桑](#) **Key words** [molecular phylogeny](#) [RAPD loci](#) [Genetic variation](#) [Silkworm](#) [Mulberry](#)

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