

Phylogenetic Relationships in the *Drosophila nasuta* Species Group (Diptera :  
*Drosophilidae*) : A RAPD Approach  
利用 RAPD 的方法探討輝顏果蠅 *Drosophila nasuta* 種亞群的親緣關係(雙翅  
目：果蠅科)

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Abstract

Random amplified polymorphic DNA (RAPD) analysis was applied to 14 species and subspecies of the *Drosophila nasuta* subgroup of the *D. immigrans* species group, plus *D. immigrans* as an outgroup. Forty primers of an arbitrary nucleotide sequence plus 2 pyruvate kinase gene-specific primers were used to amplify DNA fragments from genomic DNA of the 15 genotypes. Different RAPD fragment patterns were observed for different species, even subspecies. A dendrogram of the 15 genotypes was reconstructed using UPGMA of cluster analysis of SPSS. Data from the RAPD analysis is in concordance with that from morphological diagnostic characters in the *D. nasuta* subgroup, especially in the relationships between *D. nasuta* and *D. albomicans*; *D. sulfurigaster* spp. and Taxon-I, Taxon-j, and *D. pallidifrons*.

Key words : *Drosophila nasuta*; RAPD; Phylogenetic relationships

中文摘要

本研究以 RAPD 的分析方法針對輝顏果蠅 *Drosophila nasuta* 種亞群中的 14 個種及亞種進行親緣關係的分析並以 *D. immigrans* 為外群。40 個隨機多型性核酸引子及 2 個丙酮酸鹽激酶的引子來放大此 15 個基因型的基因組 DNA。觀察得知不同的種甚至亞種均可得到不同 DNA 條帶模式。一個系統樹則應用 SPSS 套裝軟體的群聚分析程式以 UPGMA 的方式建立之。從 RAPD 的資料顯示，其結果和以形態診斷所得結果具一致性，尤其在 *D. nasuta* 與 *D. albomicans* 之間；*D. sulfurigaster* 亞種間；及 Taxon-I, Taxon-J 及 *D. pallidifrons* 之間的關係更為明顯。

關鍵字：輝顏果蠅; RAPD; 親緣關係