# 建立蝴蝶蘭品種分子鑑定技術與國際合作

# Development and international cooperation of molecular testing technology in *Phalaenopsis*

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植物品種權為智財權的一種，為落實品種權保護及保障育種者權利，我國根據 UPOV 公約於 2005 年開始實施植物品種及種苗法。蝴蝶蘭是非常受歡迎的花卉，也是台灣重要的外銷旗艦種苗，隨著國際花卉市場的開放與競爭，發展高效率的蝴蝶蘭品種鑑定系統以強化植物品種權保護為當務之急。SSR (simple sequence repeat)分子標誌具有高度多型性、高再現性、快速與可建立自動化高通量分析等優點，被廣泛應用於植物品種鑑定。本場整合成功大學、桃園場及台南場已開發之 SSR 分子標誌，以蝴蝶蘭原生種與商業品種作為共同試驗材料，篩選出十組具高度鑑別力的 SSR 分子標誌，並已建立標準作業流程

及蝴蝶蘭 DNA 資料庫達 200 個品種，未來可協助 DUS 檢測作業進行外表性狀極相似品種之鑑別，也將逐年新增具蝴蝶蘭及朵麗蝶蘭品種權新品種之分子鑑別資料。此技術已與荷蘭及日本植物品種檢定單位進行交流，以提升鑑別結果的國際可信度。

Plant variety right, one of intellectual property rights, can protect breeders' rights. 「The Plant Variety and Plant Seed Act」was enforced on June 30, 2005 in accordance with the UPOV 1991 convention in Taiwan. *Phalaenopsis* is Taiwan's top flower export because a large number of *Phalaenopsis* varieties have been bred every year. As the opening and competition of global flower market, developing an identification system of *Phalaenopsis* is quite urgent for enhancing the protection of plant breeders' rights (PBR). The simple sequence repeats (SSRs) is one of powerful molecular markers for variety identification because of its high polymorphism, high data reproducibility, rapidness, ease of operation and feasibility for high-throughput analysis. In this study, we developed ten sets SSR markers from NCKU (National Cheng Kung University), TYDARES (Taoyuan District Agricultural Research and Extension Station), TNDAIS (Tainan District Agricultural Research and Extension Station) and TSIPS

(Taiwan Seed Improvement and Propagation Station) for testing the transferability and discriminative power in *Phalaenopsis* species and cultivars. The results showed that these SSR markers can be used to complement the DUS testing for identifying the similar morphology varieties. TSIPS has established *Phalaenopsis* database based on the established SSR makers and testing Standard Operating Procedure (SOP) by using BioNumerics software. DNA database from 10 makers stored on computer is over 200 varieties today. This database will be extended every year by adding new *Phalaenopsis* and *Doritaenopsis* applicants for PVR. In the future, the standardization and authority of the technologies will enhance through cooperation and technical exchange of Naktuinbouw, NCSS and TSIPS.