

計畫編號：01

計畫名稱：利用「分子育種技術」創造文心蘭花色新品系

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計畫中文摘要：

蘭西文心蘭品系是台灣目前最大宗的外銷切花品種，每年產值已達四億元，產量達三千萬支，但由於人工雜交育種不易，故現在仍以此黃花品系為主。單一花色的花卉已逐漸無法應付市場需求，為免文心蘭市場遭受淘汰，利用先進的遺傳工程技術進行分子育種，創造多樣性的花色品系是最有效的解決策略。台大植科所葉開溫及吳克強教授最近已從文心蘭花瓣組織中選殖出數個調控花色(花青素及類胡蘿蔔素)的基因，並轉殖至文心蘭組織。目前在實驗室中的試驗已成功證實轉殖株的存在。

本研究將採取以下研究策略：(一)利用 Myb 基因轉殖至文心蘭，可改造成紅色花朵的文心蘭。(二)利用 CCD 及反義股 PTD 基因轉殖至文心蘭，可改造成純白色花朵的文心蘭。(三)利用反義股 CHS 基因轉殖至文心蘭，可改造成黃白相間花朵的文心蘭。(四)利用花瓣專一表達的啟動子進行基因的調控，可精準調控花色基因的表達量。

計畫英文摘要：

Oncidium Grower Ramsey is a major cut flower cultivar and annual output value has already been up to 400 million. Because Oncidium possess self- incompatibility, so that it is hard to get new color flower by traditional breeding. Single color (yellow) of Oncidium Grower Ramsey has been already unable to deal with market demand gradually. Utilizing advanced gene engineering to carry on the molecule breeding, it is the most effective settlement tactics to create the diversified strains. We have chosen several genes controlling floral pigment (anthocyanin and carotenoid) from flower of Oncidium Grower Ramsey, and have transformed into it successfully in our lab. This research will adopt the following strategies : (1) get red color flower using Myb gene. (2) get white color flower using CCD and antisense PTD gene. (3) get yellow and white mix color flower using antisense CHS gene. (4) These four genes were driven by sepal specific promoter (Pchrc).