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• 計畫英文名稱	Association of Micronutrients and Cell Cycle Analysis of Exfoliated Urothelial Cells in Dye Workers
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• 中文關鍵字	細胞週期；泌尿上皮細胞；染料工作人員；微量營養素；膀胱癌
• 英文關鍵字	Cell cycle；Urothelial cell；Dye worker；Micronutrient；Bladder cancer
• 中文摘要	台灣酸性染料製造過程中常見的中間物質聯苯胺已被確認爲人類的致癌物質。而微量營養素如維生素 A、維生素 E、.alpha.-胡蘿蔔素、.beta.-胡蘿蔔素、番茄紅素等以及微量元素如硒等被認爲與癌症的預防有關,其抑癌機轉可能與其抗氧化能力、抑制細胞增生及促進細胞分化等功能有關。由以往本實驗室之研究顯示,膀胱癌患者或有泌尿系統疾病者其泌尿上皮細胞中屬非倍數體者之比例確有偏高的現象,且顯現出與染料製造廠員工之職業暴露程度亦有關係,故本研究測定員工血漿中微量營養素以瞭解對職業暴露所產生之泌尿上皮細胞非倍數體百分比的增加是否具有修飾作用。研究結果發現在微量營養素與研究個案 G/sub 0/G/sub 1/異常值的比較方面,發現硒濃度較高(.gtoreq.120.mu.g/L)者似乎比濃度較低者有較少之異常值,維生素 A、維生素 E 及.beta.-胡蘿蔔素亦然,但都未達統計上顯著差異;在泌尿細胞週期 S 值的表現上亦有同樣趨勢。又在職業高暴露組中,硒及.alpha.-胡蘿蔔素對泌尿上皮細胞週期的 G/sub 0/G/sub 1/異常確有預防的作用,且兩者間的交互作用呈統計上的顯著性。
• 英文摘要	Benzidine-based dyes were the main product of dye-manufactories before 1992 in Taiwan. Some researches have shown that benzidine exposure could be harm for systematic heath, even had induced cancers. At present, benzidine had listed as human carcinogens by EPA and IARC. Bladder cancer is the most one induced by benzidine and the latency period is about 18 to 25 years. Micronutrients such as vitamin A, vitamin E, .alpha.-carotene, .beta.-carotene, lycopene and the trace element, selenium, had been recognized as anticancer agents and concerned with the ability of antioxidation, which might be inhibiting cell proliferation and promoting cell differentiation. Our previous studies showed that patients with bladder cancer or urinary diseases had higher percentage of aneuploidy in their urothelial cells. The level of occupational exposure of dye workers was also association with the result of urinary epithelium cell cycle analysis. In this study, it was found that individuals with higher selenium level (.gtoreq.120.mu.g/L) had the lower abnormal G/sub 0/G/sub 1/proportion, and

similar on individuals with higher vitamin A, vitamin E and .beta.-carotene level, but not statistical significance. The similar trends still were observed on S proportion of urothelial cell cycle analysis. Besides, there were a significant protection of selenium and .alpha.-carotene on G/sub 0/G/sub 1/ proportion. We concluded that selenium and some micronutrients in plasma might be able to modify the carcinogenicity in uroepithelial cells of dye-manufacturing workers.