• 系統編號	RC8901-0173
• 計畫中文名稱	台灣烏腳病盛行地區皮膚癌病例與健康對照之週邊淋巴細胞姊妹染色分體交換、微核及染色體斷裂與砷甲基化代謝能力及血清微量營養元素之相關性研究
• 計畫英文名稱	A Study on the Association between Peripheral Lymphocyte Sister Chromatid Exchanges, Micronuclei and Chromosome Break and Arsenic Methylation Capability and Serum Micronutrient among Skin Cancer and
• 主管機關	行政院國家科學委員會
• 計畫編號	NSC88-2314-B038-112
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• 使用語言	中文
• 研究人員	薛玉梅 Hsueh, Yu-Mei
• 中文關鍵字	皮膚癌；烏腳病；砷；姐妹染色體交換；淋巴球；染色體斷裂
• 英文關鍵字	Skin cancer；Blackfoot disease；Arsenic；Sister chromatid exchange；Lymphocyte；Chromosome breakage
• 中文摘要	本研究爲探討烏腳病高盛行地區皮膚癌與非皮膚癌病患,血液淋巴細胞姊妹染色分體交換頻數與慢性砷暴露指標、營養狀態(血清中.alpha.和.beta.-胡蘿蔔素、維生素 A、.alpha.-維生素 E、番茄紅素等微量營養素)和尿液中無機砷之代謝能力(尿液砷代謝物種比例)之間的關係。研究對象乃選擇居住於烏腳病高盛行里,好美、復興、新民三里居民。在 80 年 9 月,82 年 2 月與 85 年 9 月進行三次健康檢查,經由高醫皮膚科醫師作皮膚科檢查,依照臨床診斷標準判斷。目前本研究中之皮膚癌大都爲波文氏症(Bowen's disease)。新發生之波文氏症共 21 人,另外選取年齡、性別配對非波文氏症者 34 人爲對照組。測定自發性週邊血液淋巴細胞之姊妹染色分體交換頻數。研究對象的尿液利用高效能液相色層分析儀及原子吸收光譜儀進行砷物種(三價砷、五價砷、單甲基砷酸及雙甲基砷酸)分析及定量。血清微量營養素(.alpha.-維生素 E、.alpha.和.beta.-胡蘿蔔素、番茄紅素與維生素 A)濃度則利用高效能液相色層分析儀測定。本研究發現皮膚癌病患與健康對象之姊妹染色分體交換頻率隨尿液中無機砷百分比增加而增加,但隨雙甲基砷酸百分百分比增加而有降低趨勢,未達統計上顯著性。血清中.beta.胡蘿蔔素較低者有顯著偏高的姊妹染色分體交換頻率。其作用機轉仍須作進一步探討。
• 英文摘要	To explore the relationship among cytogenetic damages, sister chromatid exchanges (SCEs) in skin cancer patients and controls and chronic arsenic indices (duration of living in BFD endemic area, duration of drinking artesian well water and cumulative arsenic

exposure), serum micronutrients (.alpha. and .beta.-carotene, retinol, lycopene and .alpha.-tocopherol), and arsenic methylation capability (ratio of arsenite (AsIII), arsenate (AsV), monomethylarsonic acid (MMA), and dimethylarsinic acid (DMA)), residents aged 30 or older were recruited from three arseniasis-hyperendemic villages from January to February 1993. Total 21 cases were diagnosed by experienced dermatologists from Kaohsiung Medical College. In this study all skin cancer were Bowen's disease. In addition, 34 age-sex-matched healthy controls were chosen as study subjects. Spontaneous frequencies of peripheral lymphocytes were compared between cases and controls. Urinary arsenic was examined by high performance liquid chromatography (HPLC) to speciate AsIII, AsV, MMA, DMA and then quantified by atomic absorption spectrophotometry. Serum .alpha. and .beta.-carotene, retinol, lycopene and .alpha.-tocopherol were tested by HPLC. The spontaneous frequency of sister chromatid exchanges was associated with elevated proportion of urinary inorganic arsenic percentage, and inversely associated with DMA percentage, but not statistically significant. On the other hand, The spontaneous frequency of sister chromatid exchanges was significantly inversely associated with serum .beta.-carotene level, but it needs further studied.