Analysis of Genetic Polymorphisms of MDR1 Promoter in Taiwan Healthy Population

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Objective: **Multidrug resistance is one of the most severe problems in chemotherapy. When P-glycoprotein, the product of multidrug resistance 1 gene (*MDR1*), is over-expressed in human tumors, it results in multidrug resistance to cancer cells. The multiplicity of single nucleotide polymorphism (SNP) within *MDR1* is related to the expression and function of *MDR1*, the drug response, and the disease susceptibility. In this study, the genetic distribution of upstream regulatory region about 3 kb of *MDR1* including 18 SNPs for healthy population in Taiwan has been investigated by using the denaturing high performance liquid chromatography (DHPLC). Gene variations in several SNP regions have been found, -129 (T→C), -41 (A→G), -824 (T→C), -1017 (T→C), -1459 (G→A), and -1517 (T→C).This study demonstrated the entire polymorphisms of *MDR1* promoter regions by the DHPLC in Taiwanese. The influence of genetic variations on p-glycoprotein level and transcriptional regulation could be clarified by functional genomic analysis.**

Key words: Multidrug resistance 1 gene, promoter, single nucleotide polymorphism

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