

Significant Association of *Caveolin-1* Single Nucleotide Polymorphisms with Childhood Leukemia in Taiwan賴昭怡¹, 王仲興^{1,2,3}, 蔡佳紋^{1,4}, 張文馨^{1,3}, 包大諷^{1,3,4}**Chao-Yi Lai¹, Chung-Hsing Wang^{1,2,3}, Chia-Wen Tsai^{1,4}, Wen-Shin Chang^{1,3}, Da-Tian Bau^{1,3,4}**¹Terry Fox Cancer Research Laboratory,²Department of Pediatrics, China Medical University Hospital,³Graduate Institute of Clinical Medical Science,⁴Graduate Institute of Basic Medical Science, China Medical University

Backgrounds: A growing body of evidence indicates that *caveolin-1* (*Cav-1*) may influence the development of human cancers. However, the exact role of caveolin-1 in child leukemia is still controversial. We investigated six novel polymorphic variants of *Cav-1*, includes C521A (rs1997623), G14713A (rs3807987), G21985A (rs12672038), T28608A (rs3757733), T29107A (rs7804372), and G32124A (rs3807992), and analyzed the association of specific genotype with child leukemia susceptibility. **Materials and Methods:** In total, 266 patients with child leukemia and 266 age-matched healthy controls recruited from two major medical centers in Taiwan were genotyped investigating these polymorphisms' association with child leukemia. **Results:** We found that there were significant differences between child leukemia and control groups in the distributions of their genotypes ($P=4.1 \times 10^{-8}$ and 0.0167) and allelic frequencies ($P=4.9 \times 10^{-10}$ and 3.7×10^{-3}) in the *Cav-1* G14713A and T29107A polymorphisms, respectively. As for the haplotype analysis, those who had GG/AT or GG/AA at *Cav-1* G14713A/T29107A showed a decreased risk of child leukemia compared to those with GG/TT, while those of any other combinations were of increased risk. **Conclusion:** The A allele of the *Cav-1* G14713A is risky, the A allele of the *Cav-1* T29107A is protective, for the development of child leukemia and may be novel useful genomic markers for early detection of child leukemia.