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Expression Analysis of DEK, AF4 and FLI1 Genes in All-Trans-Retinoic Acid (ATRA) Treated Acute Promyelocytic Leukaemia t(15;17) Patients by Quantitative Real-Time PCR

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Abstract: All-trans retinoic acid (ATRA) sensitivity of acute promyelocytic leukaemia (APL) cells is strictly dependent on the presence of t(15;17), but the molecular background of this sensitivity remains obscure. We showed the down-regulation of DEK, AF4 and FLI1 genes in the vitamin D treatment of APL cell line HL-60, using cDNA array technology in our previous study. This finding prompted us to investigate the expression of these genes in APL patient samples. The effect of ATRA was studied in 6 APL patients carrying t(15;17). Two samples from each patient were compared with a primary diagnostic sample and a sample taken at remission. Frozen RNA samples were obtained from bone marrow aspirates and converted to cDNA, and then quantitative real-time PCR was performed. Among the traits of these 3 genes, the over-expression of FLI1 was particularly remarkable. The findings suggest that FLI1 over expression may be involved in APL and that it can be corrected after remission induction. Whether or not ATRA treatment has any effect on these genes may be studied in an experimental model in order to find new potential targets for rational drug discoveries.

Key Words: DEK, AF4, FLI1, Acute Promyelocytic Leukemia, All-Trans-Retimic Acid

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