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Expression levels and clinical significances of hsa-miR-29 family and their target genes in the bone marrow of patients with multiple myeloma

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The microRNA (miR)-29 family has been deregulated in several types of hematologic malignancies. However, role of this family and their target genes DNMT3A (DNA methyltransferase 3A) and TET2 (Ten-Eleven Translocation 2) remains unclear. Here, we have made an attempt to determine the relative expression levels of three miRNAs and target genes in patients with newly diagnosed Multiple myeloma (MM) using quantitative real-time PCR. Moreover, the expression levels of selected miRNAs and genes and their correlations with clinical parameters were compared and analyzed. The ROC curve was used to analyze their diagnostic efficacy for MM. The expression level of hsa-miR-29b-3p was significantly higher in patients with newly diagnosed MM compared with the control group. ROC analysis showed that hsa-miR-29b-3p demonstrated a moderate diagnostic power in MM. The relative expression level of hsa-miR-29b-3p in patients with high LDH levels was markedly reduced compared to that in patients with normal and low LDH levels. *DNMT3A* expression level was significantly increased in patients with high LDH levels and patients with lambda light chain. Our results indicate that hsa-miR-29b-3p may be used as a potential biomarker in the diagnosis of MM.

Keywords: Blood cancer, DNA methylation, Hematological cancer, Kahler's disease