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[ADVANCED](#)[TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

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[\[PDF \(585K\)\]](#) [\[References\]](#)**Differentiation-associated alteration in gene expression of importins and exportins in human leukemia HL-60 cells**Takuji SUZUKI¹⁾, Yoko ISHIGAMI¹⁾, Norihisa OKADA¹⁾, Akihiro KANEKO²⁾, Ryuuta FUKUTOMI³⁾ and Mamoru ISEMURA¹⁾

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ABSTRACT

Employing the DNA microarray technique, we previously reported the alteration in gene expression of nucleocytoplasmic transport factors, importins and exportins, induced by 1,25-dihydroxyvitamin D₃ (DVD) in human leukemia HL-60 cells. Here, we used the quantitative reverse transcription-polymerase chain reaction method to confirm such previous findings, and compared them with those from the cells treated with all-*trans*-retinoic acid (ATRA). The results indicated that the gene expression of the transport factors examined was mostly down-regulated following differentiation induced by DVD and ATRA, but importin α 5 gene expression was up-regulated in either case. The differences were found in the gene expression of importin α 3 and exportin 6 between the cells after treatments with DVD and ATRA. These variations may be related to the difference between HL-60 cell lineages differentiating into monocytes/macrophages and granulocytes. The present findings provide further evidence to support the important roles of importins and exportins in cell differentiation.

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