

## Expression of inhibitory receptor ILT3 on normal hematopoietic stem cells and leukemic progenitors

**Hanna Dobrowolska, George Vlad and Nicole Suci-Foca**  
Columbia University Medical Center, USA

The inhibitory receptor ILT3 is a member of the immunoglobulin-like transcript family and is expressed by monocytes and dendritic cells. Since little is known about ILT3 expression during the differentiation of human hematopoietic stem cells (HSC), we studied ILT3 expression on normal and leukemic hematopoietic progenitors.

*In vitro* differentiation of human HSC obtained from peripheral blood was induced using interleukin-3 (IL-3) and granulocytes-monocytes colony stimulating factor (GM-CSF). Culture was maintained for 20 days. Flow cytometry analysis of CD34+ human HSC indicated lack of cell surface ILT3 expression. However, on day 10 of culture, ILT3 was detected on a cell population co-expressing CD13, CD33, HLA-DR, CD11c (+/-), and dim cMPO. These cells were negative for CD34, CD117 and CD14. This phenotype is most consistent with that of pro-monocytes.

To study ILT3 expression on leukemic precursors, we analyzed bone marrow cells obtained from 49 patients with acute myeloid leukemia (AML). We found that ILT3 was present on the surface of leukemic cells from all patients with AML displaying monocytic differentiation, but not on leukemic cells from patients with other types of AML.

Our data indicate that expression of ILT3 is acquired by normal myeloid precursors at the pro-monocyte stage. ILT3 is also expressed by the leukemic counterparts of monocyte precursors and may represent a useful marker for the diagnosis of AML with monocytic differentiation. Although the function of ILT3 on the pro-monocytes is not yet known, our findings suggest that ILT3 may participate in the regulation of HSC maturation and malignant transformation.

### Biography

Hanna Dobrowolska has completed her Ph.D. at the age of 27 years from Jagiellonian University Cracow Poland and University of Louisville USA. She is the Associate Research Scientist in Columbia University USA. Her research interests focuses on hematopoietic stem cells and novel markers in diagnosis and treatment of blood malignancies. The results of her work have been presented in numerous international meetings and publish in recognized journals.

hmd2122@columbia.edu