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### **The role of microRNA-125b in calcitriol-induced differentiation of human leukemia and lymphoma cells**

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**M**icro RNAs are short (~22 nucleotides) single strands of RNA that function as regulators of mRNA translation. They have integral roles in a broad array of biological processes. Many micro RNAs are implicated in the anticancer action of calcitriol (active form of vitamin D). One of the most important is miR-125b known as regulating vitamin D receptor (VDR) and vitamin D 24-hydroxylase-CYP24 expression. Moreover, miR-125b have been reported to be involved in a variety of cancers regulating cell cycle, differentiation and apoptosis by targeting a number of genes such as transcription factors, matrix-metalloproteases, members of Bcl-2 family, p53, NF- $\kappa$ B. The aim of our work was to study the role of miRNA-125b in anti cancer activity of calcitriol in human leukemia and lymphoma cells. In our experiments we measured the expression of micro RNA-125b after calcitriol treatment and correlated it with the level of mRNA and protein example vitamin D receptor, vitamin D 24-hydroxylase-CYP24, membrane associated rapid response steroid receptor ERp57 and others which are responsible for differentiation of cells. We conclude that micro RNA-125b may regulates crucial molecules engaged in differentiation process of human leukemia and lymphoma cells after exposure to calcitriol.

#### **Biography**

Justyna Trynda is PhD student at Institute of Immunology and Experimental Therapy, Polish Academy of Science. She has completed her MSc in Biology from University of Agriculture in Wroclaw and also Molecular Biology from Jagiellonian University in Krakow. Before her PhD studies, she worked in Laboratory of Electron Microscopy in University of Agriculture in Wroclaw as Senior Technician. She has published 2 papers as co-author in reputed journals and presented results of her research at a national conference.

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