

Choroby rozrostowe krwi - analiza transkryptomu z zastosowaniem mikromacierzy DNA

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Blood proliferative diseases – application of the DNA microarrays for transcriptome analysis

Summary

Hematopoiesis is a complex process precisely regulated by a wide spectrum of cooperating factors. Dysfunction of hematopoietic cell proliferation, differentiation or maturation usually leads to the malignant transformation. The DNA microarray-based transcriptome analysis helped to revise the traditional classification of hematological disorders, predict their outcome, test potential therapeutic agents and better understand basic mechanisms underlying cancer origin and development. Here, the results of gene expression profiling in myelo- and lymphoproliferative diseases such as leukemia, lymphoma and myelodysplastic syndromes, are presented. Two microarray technologies were applied in this area of research: Affymetrix gene chips and cDNA microarrays. Among them, Lymphochip is a prominent example of a specialized cDNA microarray tool designed to investigate gene expression in the immunological system and hematological diseases. It seems that typical problems connected with microarray results analysis – small number of patients, loss of reproducibility can be overcome by increasing the number of samples and application of identical protocols, equipment and reagents in different laboratories.

Key words:

proliferative diseases, leukemia, lymphoma, myelodysplastic syndromes, transcriptome, gene expression profiling, microarrays.

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