POLITECHNIKA ŚLĄSKA

WYDZIAŁ AUTOMATYKI, ELEKTRONIKI I INFORMATYKI

Praca doktorska

Selection of miRNA isoform markers differentiating between follicular thyroid cancer and follicular thyroid adenoma from high-throughput sequencing data

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Streszczenie rozprawy doktorskiej (w języku angielskim)

Selection of miRNA isoform markers differentiating between follicular thyroid cancer and follicular thyroid adenoma from high-throughput sequencing data.

Follicular thyroid cancer (FTC) is the second most frequently occurring thyroid cancer. It is diagnosed in 10-20% of cases, depending on the studied population. Histology and cytology of FTC is similar to ones from benign follicular thyroid adenoma (FA), therefore markers differentiating those tumors are urgently needed.

Main aim of the work is to select miRNA markers differentiating between follicular thyroid cancer and follicular thyroid adenoma.

The task was solved by self projected and implemented software used for analysis of high-throughput sequencing data.

Result of the work was that hsa-miR-7-5p,hsa-miR-486-5p, hsa-miR-151a-5p and hsa-miR-139-5p are the most important markers of follicular thyroid tumors malignity. Performance of designed classifier based on those miRNAs was described by accuracy of 0.82, specificity 0.94 and negative predictive value 0,67.

Results of the work lead to optimistic expectation that proposed miRNA markers will improve diagnostic possibilities of follicular thyroid tumors and will be introduced to clinical practice.