



**Fund “Nauka” Project № 24005 Resume – Special Competition-based Session
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“Investigating of the expression levels of complement genes and their epigenetic regulators in breast cancer tumor tissue”

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Breast cancer (BC) is the most common malignant tumor in women in our country and in most developed countries, ranking second among the causes of cancer death. In the last 30 years, the incidence of BC in Europe has doubled. The immune system plays an important role in the prognosis and effectiveness of BC therapy because it is a characteristically immunogenic tumor. Determining the place of the complement system in the immune response in BC is a relatively new necessity, given the recently demonstrated non-canonical intracellular activities in tumor cells of a number of complement proteins and their association with disease progression.

One of the factors for ineffective treatment of BC is the overexpression of membrane-bound complement regulatory proteins (mCRP), as well as the overexpression in tumor of soluble complement regulatory proteins (sCRP).

The aim of the present project proposal is to obtain information on the role of miRNAs in the dysregulation of gene expression of complement membrane and soluble regulators of complement activation in tumor cells in BC. The research is aimed at searching for miRNAs with a role in complement activation/inhibition in the context of BC.

The expected results of the implementation of the study are: establishment of new data on expression levels of miRNAs affecting the expression of complement regulators in BC patients and obtaining new data about the nature of complement activation in the conditions of the tumor environment in BC.

The scientific research is interdisciplinary, combining the expertise of molecular biologists, oncologists and pathologists. The application of modern molecular biological methods is planned.