



Fund “Nauka” Project № 18010 Resume

“Identification of new generation biomarkers for diagnostic assessment of activity and follow-up of patients with systemic lupus erythematosus”

Project leader: Assoc. prof. Maria Radanova, PhD

Lupus nephritis is one of the most serious, significant and frequent manifestations of the systemic lupus erythematosus (SLE). Conventional laboratory markers for diagnosis and assessment of the disease are characterized by low sensitivity and specificity in terms of their role in monitoring lupus nephritis. Therefore, there is a need for expansion of the serum multi-panel of biomarkers in LN. In recent years, the application of more advanced screening technologies such as gene expression, microarray technology and deep sequencing have opened up the possibility to find new categories of biomarkers, such as circulating non-protein-encoding endogenous RNAs (non-coding RNAs, ncRNAs).

The aim of the current study is to identify new generation biomarkers for diagnostic assessment of activity and follow-up of patients with systemic lupus erythematosus (SLE).

For the realization of our goal, the following tasks were planned:

- a selection of SLE patients with and without lupus nephropathy;
- selection of healthy volunteers for the control group;
- isolation of total RNA from patients' blood and healthy controls;
- preparing of RNAs sample pools for deep sequencing;
- analysis of the expression levels of individual ncRNAs in the plasma of SLE patients.

We expect to find in SLE and lupus nephritis new biomarkers with the potential to complete and amplify the conventional biomarkers in diagnosis and monitoring of SLE.