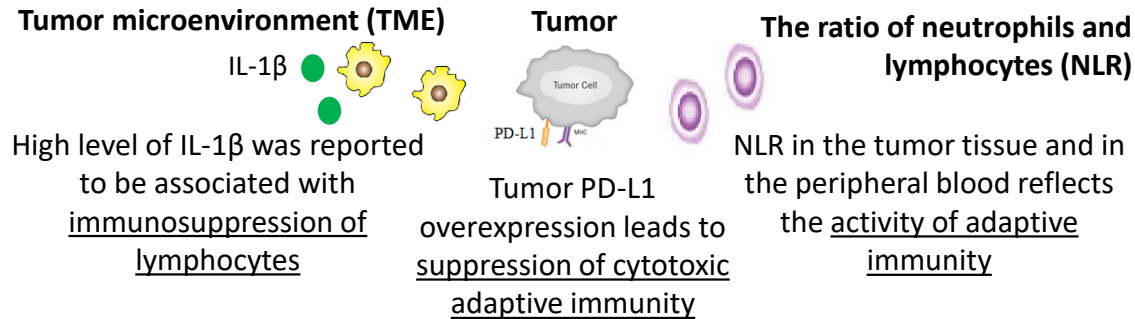


# Tumor PD-L1 expression and blood biomarkers of activity of adaptive immunity and tumor microenvironment in patients with solid tumors

A. Malkova<sup>1</sup>, R. Orlova<sup>1</sup>, N. Zhukova<sup>1</sup>, E. Kaledina<sup>1</sup>, A. Gubal<sup>2</sup>, V. Sharoyko<sup>2</sup>

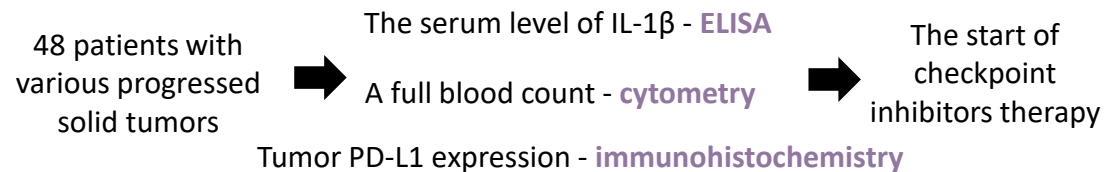
<sup>1</sup>Medicine, Saint-Petersburg state university, Saint-Petersburg, Russian Federation, <sup>2</sup>Chemistry, Saint Petersburg State University, Saint Petersburg, Russian Federation

## INTRODUCTION



The aim of the work is to study the relationship between the tumor expression of the PD-L1, the concentration of serum IL-1β, a possible marker of TME activity, and NLR, a marker of adaptive immunity activity.

## MATERIALS AND METHODS



Statistical analysis was performed using GraphPad Prism 6 (Graph Pad Software, USA) using the methods of Fisher, Mann-Whitney, and Spearman's statistical analysis.

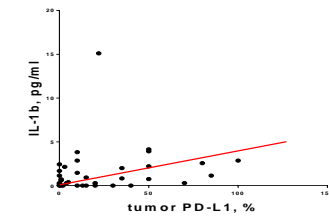
The project is supported by grant (contract №20-015-00498\20 of 19.02.2020).

## RESULTS

Positive PD-L1 expression was observed in 72,92% (35/48) of the patients, while IL-1β was detected in 66,67% (32/48) and high NLR was registered in 35,42% (17/48).

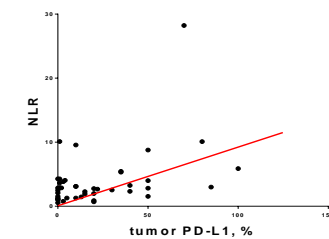
In a group with positive PD-L1 expression the mean concentration of IL-1β was 1,65± 0,54 pg/ml, the mean NLR was 4,26±0,94 10<sup>9</sup>/L, what exceeds the meanings of the group with negative expression, but without statistical significance

Correlation between PD-L1 and IL-1β



$r=0,327$ ;  
 $p=0,037$

Correlation between PD-L1 and NLR



$r=0,327$ ;  
 $p=0,034$

## CONCLUSIONS

- The study revealed a positive correlation between the tumor PD-L1 expression, the serum IL-1β concentration and the NLR.
- The obtained result may indicate the influence of the immunosuppressive properties of the tumor on the state of the patient's immunity.
- A comprehensive determination of tumor PD-L1 expression, serum IL-1β concentration and NLR can be used as an assessment of the patient's immune status before starting treatment with checkpoint inhibitors.

**Corresponding author:** Malkova Anna ("St. Petersburg State University", 199034, Universitetskaya emb. 7–9, St. Petersburg, Russian Federation),

Phone: +7 9052647990, e-mail: [anya.malkova.95@mail.ru](mailto:anya.malkova.95@mail.ru)