Abstract:

Today, tumors are considered not only as a complex of genetically mutated cells with pathological function of excessive proliferation, invasiveness and increased viability, but increased attention is paid for the tumor microenvironment created by the tumor itself. This microenvironment generates conditions, which differ from the normal tissues – for example local hypoxia, lactic acidosis and tumor-induced immunosupression – all these abnormalities lead to increased viability of the tumor tissue. Myeloid-derived suppressor cells (MDSCs) seem to be one of the main mediators of the escape from immunosurveillance. MDSCs represent a heterogenous cell population of myeloid origin. In active state, MDSCs produce enhanced amount of reactive oxygen species, nitrogen compounds and arginase, which represent the mechanisms of the suppression of the anti-tumor immune response. That makes MDSCs a promising therapeutic target. However, recent studies also point out the physiological role of MDSCs, which seems to be essential to consider for succesfull MDSCs targeting.

Key words:

Tumor microenvironment, immunosurveillance theory, immunoediting, myeloid-derived suppressor cells, immunosuppresion in tumors, therapeutic targeting of MDSCs, physiological role of MDSCs