CHARACTERISTICS OF TUMORS THAT DEVELOPED IN ATHYMIC MICE AFTER TRANSPLANTATION WITH MALIGNANTLY TRANSFORMED *EX VIVO* HUMAN CD^{4+}-T-LYMPHOCYTES

D. D. Zhdanov[a, b, *], A. N. Gabasvili[a, c], Y. A. Gladilina[a], D. V. Grishin[a], V. S. Pokrovsky[a, b, d], M. V. Pokrovskaya[a], S. S. Alexandrova[a], A. A. Plyasova[a], N. N. Sokolov[a]

[a] *Institute of Biomedical Chemistry, Moscow, 119121, Russia*

[b] *Peoples Friendship University of Russia (RUDN University), Moscow, 117198, Russia*

[c] *Vavilov Institute of General Genetics, Moscow, 119991, Russia*

[d] *Blokhin Cancer Research Center, Moscow, 115478, Russia*

**e-mail: zhdanovdd@mail.ru*

Normal human CD^{4+}-T-lymphocytes can undergo malignant transformation after prolong cultivation in conditions of high Endonuclease G (EndoG) expression. The aim of this work was to study biochemical and cytogenetic features of malignantly transformed *ex vivo* human $CD4^{+}$-T-lymphocytes as well as biochemical and morphological characteristics of tumors developed in athymic mice after transplantation of such cells. Transformed cells formed fast developing tumor nodes and led to death of experimental mice. Telomerase activity was significantly higher, whereas telomere length was lower in transformed cells if compared to initial normal cells. Malignant cells showed high level of chromosomal abnormalities. Malignant transformation of human CD^{4+}-T-lymphocytes and tumor formation were associated with the expression of genes involved in cell cycle regulation. Developed tumors were classified as multicomponent T-cell lymphomas and panniculitis-like T-cell lymphomas. Thus, transformed CD^{4+}-T-lymphocytes can develop malignant tumors with different histological morphology.

Keywords: human T-lymphocytes, tumor, malignant transformation, EndoG, cisplatin, telomerase