# MOUSE CYTOKINE-INDUCED KILLER CELLS DEVELOPED FROM DIFFERENT SOURCES

**Issabekova A., Zhunussova M., Zhumabekova M., Ogay V.**

*National Center For Biotechnology (Nur-Sultan, Kazakhstan)*

zhunusova.madison@gmail.com

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**Introduction**: In Kazakhstan, death from colorectal cancer is on the leading position among cancer-related deaths in the population, and since 2013 colorectal cancer is one of the three cancer diseases subject to the National Screening Program. The treatment protocol used for colorectal cancer therapy with metastases has very low efficacy. Another strategy in cancer therapy is immunotherapy with cytokine-induced killer cells (CIK cells). Human CIK cells are isolated from peripheral blood mononuclear cell fraction using IFN-γ, IL-2cytokine and anti-CD3 monoclonal antibodies. As a result, a heterogenous population which consists mainly of CD3+CD56-, CD3+CD56+ cells and of a small population of CD3-CD56+cells is obtained. Among the killer cells obtained, CD3+CD56+ have the greatest cytotoxic activity. For developed preclinical studies of CIK cells in murine model we search the best source of CIK cells within spleen, lymph nodes, bone marrow.

**Methods**: CIK cells will be proliferated from mouse spleen, lymph nodes, bone marrow cells. Spleen, lymph nodes, bone marrow cells without monocytes and erythrocytes expanded with IFN-γ, IL-2cytokines and anti-CD3 monoclonal antibodies for 14 days. Positive selection of CIK cells against NK1.1and DX5 will be performed on immune beads (Miltenyi biotech).

**Results**: CIK cells are characterized by both MHC-restricted and MHC-unrestricted anti-tumor cytotoxicity against a broad range of cancer cells. Mouse CIK cells have distinct phenotype from human CIK cells. NK1.1and DX5 are murine natural killer markers. According to literature data after culturing spleen cells for 21day NK1.1+ and DX5+ of TCRαβ+ CD3+ CD8+ T cells have the greatest cytotoxicity. We evaluated NK1.1+ and DX5+ cells after culturing cells isolated from spleen, lymph nodes and bone marrow for 14 days. NK1.1positive cells were 53,3% and DX5+ were 5% from bone marrow cells, but bone marrow cells showed low amounts of expanded cells. 21,8% of spleen cells showed NK1.1+ phenotype, 20% of DX5 (CD49b). Lymph nodes gave rise to 12,3% NK1.1+ cells. According to proliferation potential and portion of NK1.1+ and DX5+, spleen and lymph nodes are prospective sources of CIK cells.

**Conclusion**: Spleen and lymph node cells may be sources for expansion of mouse CIK cells.