The aim of the research was to determine the ability of thymic multipotent stromal cells and their derivatives to interact with lymphocytes obtained from different sources. It was shown that a part of thymic cells from 6–8-weeks-old C57BL mice in vitro were characterized by such properties: the ability to adhere to the surfaces of cell-culture plastic, the specific fibroblast-like
morphology, and the ability to directed adipogenic and osteogenic differentiation. Due to these properties, the cell populations isolated from thymus could be attributed to the multipotent mesenchymal stromal cells (MMSC) or mesenchymal stem cells (MSCs). We have shown that all types of stromal cells have an ability to interact with the lymphoid cells obtained from different sources (thymocytes, splenocytes, cells of the lymph nodes and bone marrow). The largest number of intercellular associations has been formed with the thymocytes, and the smallest one – with the lymphoid cells of bone marrow. Among differentiated forms osteogenic cells are capable to create higher number of intercellular associations, as compared to adipocytes. Thus, probably the intercellular contact interactions between the MSCs and hematopoietic cells might be used as one of the new approaches for efficient and directed modification of the cell properties.

Key words: mesenchymal stem cells from thymus, MSCs, differentiation, lymphoid cells, intercellular contacts.

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