

Mesenchymal stem cells (MSC) represent a heterogeneous population of nonhematopoietic stem cells with multipotent differential potential. MSC can be isolated from various tissues of organism, the most common tissue are bone marrow or adipose tissue. MSC are good candidates for treatment of autoimmune diseases and possess the ability to prevent graft rejection or graft versus host disease. The immunosuppressive drugs are currently used for inhibition of unwanted immune reaction but they exhibit serious side effects. The use of MSC in therapy can reduce doses of immunosuppressive drugs and eliminate side effects. The study of MSC and immunosuppressant interactions should be detected before MSC can be used for clinical application.

We aimed to analyze the interaction between MSC and immunosuppressive drugs and their effect on immune cells. Cyclosporine A and mycophenolate mofetil were used in our research. We demonstrated changes in the expression of surface molecules, production of interleukin 6 and in metabolic activity of MSC after treatment with immunosuppressive drugs. MSC are in organism, in cooperation with the number of other cells. Therefore we studied MSC cocultured with splenocytes in the presence of immunosuppressive drugs. Our results show the effect of MSC and immunosuppressive drugs on different populations of immune cells. The changes in expression of surface molecules and soluble factors were detected after treatment with immunosuppressive drugs and MSC, the immune response was switched to anti inflammatory direction.