

INFLUENCE OF PEACH LEAVES EXTRACT ON THE CYTOKINE PROFILE IN EXPERIMENTS IN VITRO

Zaychenko G.V., Sharifov Ch. Sh., Khalieieva O. L.
The National University of Pharmacy, Kharkiv, Ukraine
haleeva67@mail.ru

Cytokines are a group of polypeptide regulatory molecules the immune system (interleukins, interferons, growth factors) performing the functions of mediators of intercellular interactions in the regulation of the modulating effects on the immune system. The study of the levels of cytokines allows to obtain information about the functional activity of various types of immune competent cells. Moreover, the determination of cytokine levels are widely used in the study of new modulators of the immune system to participate in the process of implementing the mechanisms of natural and specific immunity. According to the literature the leaves extract of the peach ordinary has anti-inflammatory and immuno-biological activity.

Purpose. Study the effect of leaves extract of the peach ordinary to the level of pro-inflammatory and anti-inflammatory cytokines in experiments in vitro.

Materials and methods. Pharyngeal tonsil cells of children received after adenotomy prepared as a suspension by using the medium RPMI 1640 containing additives. For cell culture added solution of the leaves extract of the peach ordinary in dose of 10 mcg and 100 mcg per sample. Solution of the leaves extract of the peach ordinary passed through a filter of type Milipore. In control used similar concentrations of glucose. Through day of cultivation at 37⁰ C samples centrifuged and in the part above the sediment by enzyme immunoassay method using the enzyme immunoassay analyzer Lab Line (Austria) determined the concentration of interleukin-1beta (IL-1 β), interferon gamma (IFN- γ), interleukin-4 (IL-4), interleukin-10 (IL-10).

Results. Research has shown that the leaves extract of the peach ordinary in dose of 10 mcg and 100 mcg reduced the level of pro-inflammatory cytokine IL-1 β in cell culture of a pharyngeal tonsil in experiments in vitro and no significant effect on the level of IFN- γ and anti-inflammatory cytokines IL-4 and IL-10.

Known, that pro-inflammatory cytokines increase process of exudation and promotes to the high activity of inflammatory reaction, needed for formation of the adequate inflammatory response immediately after exposure to damaging factor. Later, however, the production of these cytokines should be reduced. Overexpression of pro-inflammatory cytokines can lead to the development excessive inflammatory reaction. The use of the leaves extract of the peach ordinary may have a positive effect in case of chronic inflammation. The positive side is the fact that the leaves extract of the peach ordinary does not change the levels of IL-10, which is cytokine IL-1 β antagonist and IL-4, under the influence of which the immune response is shifts toward the formation of antibodies.

Conclusions. Leaves extract of the peach ordinary in vitro system is able to reduce the level of pro-inflammatory cytokine IL-1 β . Immunomodulatory effect of leaves extract of the peach ordinary can be used in cases where the inflammatory response to the impact of the damaging factor is protracted.