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The Effect of Drugs with Alpha-Glutamyl-Tryptophan *in vitro* on Cytokine Secretion and Level of Surface Molecule ICAM-1

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The study of the molecular mechanisms underlying the action of immunomodulatory drugs is relevant to substantiate their therapeutic effect. In this work, a comparative analysis of spontaneous and TNFa-induced secretion of proinflammatory cytokines IL-1a and IL-8, as well as the level of the adhesion molecule ICAM-1 in the culture of endothelial cells EA.hy 926 and on peripheral blood mononuclear cells of healthy donors in vitro in the model of inflammation when cultivated in the presence of alpha-glutamyl-tryptophan (α-Glu-Trp) and the drug Cytovir-3 is shown. The aim was to study the cellular mechanisms mediating the immunomodulatory effect of the drugs α-Glu-Trp and Cytovir-3. It was shown that α-Glu-Trp reduced TNFa-induced IL-1a production and enhanced the TNFa-stimulated level of the ICAM-1 surface molecule of endothelial cells. At the same time, the drug reduced the secretion of TNFa-induced cytokine IL-8 and increased the spontaneous level of ICAM-1 on mononuclear cells. The drug Cytovir-3 had an activating effect on endothelial cells EA.hy 926 and mononuclear leukocytes of human peripheral blood. In his presence, there was an increase in spontaneous secretion of IL-8 by endothelial and mononuclear cells. The drug also increased the level of TNFa-induced ICAM-1 on endothelial cells and increased the spontaneous level of this surface molecule on mononuclears. Suppression of stimulated production of proinflammatory cytokines under the action of α-Glu-Trp independently and as part of Cytovir-3 may cause its anti-inflammatory properties. However, an increase in the level of the ICAM-1 surface molecule indicates mechanisms that increase the functional activity of the studied cells, which is equally important for the implementation of an effective immune response to infection and repair of damaged tissues during inflammatory reactions.

Keywords: alpha-glutamyl-tryptophan, Cytovir-3, EA.hy 926 endothelial cells, human peripheral blood mononuclear leukocytes, ICAM-1, cytokine secretion, ARVI