

TRANSFER FACTOR AS MEDIATOR OF CELLULAR IMMUNITY

E.V.Abuhammash, st.,

Supervisor - prof. A.G.Dyachenko

SSU, Department of Hygiene and ecology

Transfer factor (s) - are small molecules, that transfer the ability to recognize pathogens (bacterial or viral) cells of the immune system, never exposed to this pathogen. The function of the transfer factor is to convert non-sensitized naive lymphocytes in highly specific cells that meet standard way to antigenic stimulation. As soon as the lymphocytes are similar conversion, they are after exposure to the antigen begin to express all the properties that are typical of naturally sensitized cells, including skin reactivity *in vivo*, the transformation of lymphocytes, clonal proliferation and the production of effector molecules, such as a MIF. Immunological studies showed that TF does not function as antigen or superantigen. It is also shown that TF is not able to induce the formation of antibodies in the recipient, even if the antigen is the cellular response (Lawrence, Pappenheimer, 1956; Rapaport et al., 1960). No less important was the fact that the results in the expression of TF in the recipient of an identical set of donor immunological markers, ie we can talk about moving to the donor for a long time a specific immunologic memory (Jensen et al., 1962). The high specificity of immunological TF confirmed in experiments to transplant skin grafts.

Isolated from the crude extract of leukocytes active fraction contains a short TF for the polypeptide chains 44-60 of amino acid residues, which are variable (N-terminal) and conservative (C-terminal) part of (Kirkpatrick, 1993). The C-terminal domain contains a highly conserved decapeptide (LeuLeuTyrAlaGlnAspLeu / ValGluAspAsn) (Kirkpatrick, 2000). This is decapeptide sequence is found in all the purified transfer factor, but not in the primary structure of a large number of analyzed antigens. Like immunoglobulins, TF immunologically definitely linked to the intact antigen molecules (Kirkpatrick et al., 1985), but recovery or alkylation does not lead to dissociation of TF on the light and heavy chains. T lymphocyte receptors do not bind antigens intact molecules, as do the TF, although immune responses, which are transferred to recipients by TF mediated by T lymphocytes. It is believed that the transfer factor molecule after connecting with the corresponding antigen of the intact molecule can interact with the variable region of alpha and / or beta-chain T-cell receptors (Dwyer, 1996). Development of methods for production and purification of individual specific TF against specific pathogens offers great opportunities for the development and production of new means of molecular immunotherapy for patients with specific defects in cellular immunity. In addition, because the TF has no species specificity, drugs derived from lymphocytes of immunized animals are free to be used to treat people (Dwyer, 1996; Grinevich et al., 2008). In this case, the main target of the TF are effector mechanisms of cellular immune responses, it does not address the humoral immune system. Provides literature and own results of the TF as immunocorrector.