

DIFFERENT PYROGENS INDUCE DIFFERENT CHANGES IN THE IMMUNE RESPONSE

L. Janský, P. Reymanová and J. Kopecký, Dept. of Animal Physiology, Faculty of Biology, Southbohemian Univ., Budweis, Czech Rep.

In order to specify the role of individual cytokines in the immune response under in vitro conditions, isolated and cultivated human peripheral blood mononuclear cells (PBMC) were used for experiments. Different pyrogens (lipopolysaccharide from *Esch. coli* - LPS, live *Borrelia burg.*) were applied and the time course of changes in concentrations of different cytokines in the medium were measured using the ELISA method. It was found that activation of PBMC by LPS increases production of IL 1 β , TNF α and IL 6 significantly. Production of IL 10, IL 12 and INF γ was not influenced. In contrast to LPS, infection of PBMC by live *Borrelia*, besides IL 1 β , TNF α and IL 6, also increases production of IL 12 and INF γ . Production of IL 1 β , IL 6 and TNF α increases immediately after incubation both with LPS and *Borrelia*, while production of IL 12 and INF γ starts to increase only after 8 hour of cultivation. Data suggest that activation of the immune cascade due to infection of different pyrogens is being realized by different membrane receptors and by different transmission pathways. Infection by *Borrelia* activates not only the early steps of the immune response (macrophages and T cells), but also the late phase of the immune cascade, probably due to activation of killer cells. Results indicate that under in vivo conditions the febrile state could be induced and maintained due to action of different cytokines.

jansky@mbox.cesnet.cz