

Adherent and non-adherent dendritic cells TLR signalling after exposition to nematode

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Autoimmunological diseases are significant problem in Western countries. No effective therapy against this group of disorders is available, hence new cure strategy is required. One of promising alternative is using dendritic cells (DC) pre-exposed to nematodes. Parasite induces semi-mature profile of DC, which results in therapeutic activity of cells. However, molecular mechanisms are not established yet. Toll-like receptors (TLR) and transmembrane pattern recognition receptors (PRRs) participate in maturation of DC. Moreover, the impact of parasitic worms on TLR has already been shown. The aim of this study was to evaluate the influence of intestinal parasite of mice Heligmosomoides polygyrus on adherent and non-adherent fraction of dendritic cells TLR-signalling. Immature DC JAWS II was cultured for 48 hours with live H. polygyrus L4 stage isolated from intestine of BALB/c mice. Ratio of non-adherent to adherent cells, MAPK and PI3K pathway activity of DC were measured on a Muse Cell Analyzer. Gene encoded TLR-2, 3, 4, 6, and 9 expression was evaluated by Real-time PCR method. Live H. polygyrus L4 stage decreased the ratio of non-adherent to adherent fraction, and affected cell anabolism as inhibited activation of MAPK I Pi3K signal pathway and influenced differently on TLR expression in adherent and non-adherent immature JAWS II line dendritic cells. It suggests that nematode differently impact on maturation of two fractions of DC.

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