I0100  COINCIDENCE DETECTION TAILORS MACROPHAGE RESPONSES TO INFLAMMATORY SIGNALS

Jelena Bezbradic Mirkovic

1Kennedy Institute of Rheumatology, University of Oxford, Oxford, UNITED KINGDOM

The purpose of an inflammatory response is context dependent: in infection, inflammation aims to eliminate the insult and induce protective immunity, while in sterile injury, inflammation aims to limit the damage and enable tissue repair. In most cases, the same immune cells, receptors and signalling pathways control both types of responses. How such a system directs a response that is tailored to its inducer currently remains poorly understood. To address this major knowledge gap we will discuss how tissue-resident immune cells such as macrophages integrate signals from cytokines with signals emanating from microbial and tissue-damage sensors to direct a response that is tailored to a specific pathophysiologic situation. Specifically, we will discuss the signal integration between cytokine receptor for IFN-γ and the phagocytic receptor for immunoglobulin, FcγRI, which induces cell-intrinsic antimicrobial functions of phagocytes that neither receptor can elicit alone. The mechanisms of receptor cooperation as described here for FcγRI and IFN-γR are probably a common theme for other microbial sensors and cytokine receptors. The functional coupling between
different classes of surface receptors allows context-dependent responses in leukocytes and unveils novel therapeutic opportunities for the treatment of inflammatory diseases.

Disclosures: The author has declared no conflicts of interest.