

## International Conference on **Innate Immunity**

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### **Soluble pattern recognition molecules and associated proteins – update on innate immune system and the lectin pathway of the complement system**

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In the context of immunity, pattern recognition is the art of discriminating friend from foe and innocuous from noxious. The basis of discrimination is the existence of evolutionarily conserved patterns on microorganisms, which are intrinsic to these microorganisms and necessary for their function and existence. Such immutable or slowly evolving patterns are ideal handles for recognition by defence mechanisms such as the complement system. Complement is a proteolytic cascade system comprising around 35 different soluble and membrane-bound proteins. It constitutes a central part of the innate immune system, mediating several major innate effector functions and modulating adaptive immune responses. The complement cascade proceeds via controlled, limited proteolysis and conformational changes of constituent proteins through three activation pathways: the classical pathway, the alternative pathway and the lectin pathway, which converge in common effector functions. I will review the nature of the pattern recognition molecules involved in complement activation, as well as their close relatives with no or unknown capacity for activating complement. I will also discuss what kind of diseases may develop if an inflammatory generating mechanism like the complement system is out of control.

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### **Expression of receptors on neutrophils in the immunosenescence and the influence of immunodulator cytokines**

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This work will address the expression of receptors on neutrophils involved with immune response triggers by PAMPs and DAMPs. Neutrophils exhibit changes related to their function against diseases during the immunosenescence. However, contradictory data have shown a proinflammatory as well as an anti-inflammatory deviation of the immune response in the immunosenescence. Although diseases are in the center of the immune response because different types of attack will result in different mechanisms of the immunity, characteristics of the cells will predict the protection or susceptibility. In the microenvironment of a lesion, the presence of several soluble factors can activate or deactivate inflammatory cells. The direction of the immune response, therefore, is determined through the effects of such factors in these cells. We have analyzed expression of PRRs on neutrophils obtained from elderly subjects in the presence of inflammatory and anti-inflammatory factors. Ability of these cells to destroy bacteria and yeasts has been determined. Our results might help to elucidate the immunosenescence events.

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