

Presentation:

Leaderless Cytokines as DAMP's: Role of REDOX

Speaker:

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Abstract:

A number of intracellular molecules released upon cell injury have been termed damage-associated molecular pattern molecules (DAMPs) since they contribute to the induction of the inflammatory/immune response. Leaderless secretory proteins are a group of proteins with cytokine activity that lack secretory signal peptide and are actively secreted by cells of the innate immunity through non classical, highly regulated pathways. Due to their cytosolic accumulation, leaderless secretory proteins can also be passively released by any type of dying cells, thereby acting as DAMPs.

Cytosolic proteins released outside the cell move from a reducing to an oxidizing milieu, and are then rapidly oxidized, with detrimental consequences for their folding and activity. I will discuss the hypothesis that the prompt extracellular inactivation of oxidation-sensitive LSPs or DAMPs can be advantageous to limit and solve the acute inflammatory response. However, persistent release and function of DAMPs, promoting and promoted by a disordered redox environment may favour and sustain chronic inflammation, with preclusion of healing and prolonged pathologic effects.