

Friend and Foe: Innate immune recognition and response to cell death

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The innate immune system monitors the health of cells. When a cell dies by necrosis, its plasma membrane loses integrity and thereby exposes the cell's internal constituents. Innate immune cells are endowed with receptors that can detect some of these internal components, called Damage-Associated Molecular Pattern (DAMPs). Upon detecting the exposed DAMPs, innate immune cells mobilize an acute inflammatory response and also alert the adaptive immune system to danger. These responses can be a double-edged sword providing defenses against an injurious agent but also causing tissue damage leading to disease. Discovery efforts are identifying novel DAMPs that have the features of being universally expressed and very abundant in all cells, and also evolutionally highly conserved. Insights into these DAMPs and their cognate receptors will be discussed.