

The Role of Toll-Like Receptors in Orchestrating the Innate Immune Response

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Macrophages represent one of the cornerstones of the innate immune system. They detect infectious organisms via a plethora of receptors, they phagocytose them, and then orchestrate an appropriate host response to them. While the inflammatory pathways leading to appropriate host response have been reasonably well defined, it has been unclear how macrophages are able to define the threat precisely; how does the cell know, for example, whether the vacuole within it contains a Gram-positive or Gram-negative bacterium? Recent work from a number of laboratories has indicated that the family of Toll-like receptors plays a key role in bar coding invading microorganisms. The mechanism by which they do this and how this is coupled to the phagocytic response will be discussed.

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