

## **Salmonella virulence factor SipB induces activation and release of IL-18 in human dendritic cells**

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### **Abstract**

Interleukin-18 (IL-18) plays an important role in innate and acquired immunity, in particular against intracellular pathogens. However, little is known about the microbial factors that trigger IL-18 secretion by dendritic cells (DCs). To determine the influence of bacterial virulence factors on the activation and release of IL-18, we infected human monocyte-derived DCs with virulence mutants of the facultative intracellular pathogen *Salmonella typhimurium*. Our results show that infection by *S. typhimurium* causes caspase-1-dependent activation of IL-18 and triggers the release of IL-18 in human DCs. The secretion of IL-18 by the DCs was closely correlated with the ability of the *S. typhimurium* strains to induce apoptosis. We demonstrate that activation and release of IL-18 are blocked by mutations in the *Salmonella sipB* gene, which encodes a virulence factor that activates caspase-1 to induce apoptosis. These findings indicate that the activation and release of IL-18 induced by bacterial virulence factors may represent one component of innate immunity against the intracellular bacteria. *J. Leukoc. Biol.* 72: 743–751; 2002.