

**P031** MD-2 is an opsonin for Gram-negative bacteria  
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Both Toll-like receptor 4 (TLR4) and MD-2 deficient mice succumb to otherwise non-fatal Gram negative bacteria inocula, demonstrating the pivotal role played by these proteins in anti-bacterial defence in mammals. MD-2 is a soluble endogenous ligand for TLR4 and a receptor for lipopolysaccharide (LPS). LPS-bound MD-2 transmits an activating signal onto TLR4. Here we show that MD-2 binds to the surface of live Gram-negative bacteria. As a consequence, MD-2 enhances cellular activation, bacterial internalization and intracellular killing, all in a TLR4 dependent manner. The data, therefore, suggest that soluble MD-2 is a genuine opsonin which enhances proinflammatory opsonophagocytosis by bridging live Gram-negative bacteria to the LPS transducing complex. The presented results extend our understanding of bacterial recognition by phagocytes, and imply that xenobiotics based on MD-2 might be valuable for developing novel anti-bacterial strategies.