# Monoclonal Antibodies Immunoreactive with Lipolysaccharide Binding Protein (LBP) and Methods of Their Use

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## Technology description

Sepsis is a morbid condition induced by a toxin, the introduction or accumulation of which is most commonly caused by infection or trauma. Sepsis-inducing toxins have been found associated with pathogenic bacteria, viruses, plants and venoms. Among the well described bacterial toxins are the endotoxins or lipopolysaccharides (LPS) of the gram-negative bacteria. Upon introduction of LPS into the blood it binds to lipopolysaccharide binding protein (LBP). LBP recognizes the lipid A region of LPS and forms high affinity complexes with both rough and smooth form LPS. During the acute phase, LBP is synthesized by hepatocytes, and reaches very high concentrations in serum. The macrophage/ polymorphonuclear leukocyte differentiation antigen, CD14, binds LPS in the presence of LBP when present as LPS-LBP complexes, and this binding event activates cellular responses. Therefore, there continues to be a need for reagents that interfere with LPS:CD14-mediated cell activation.
Scientists at UCSD have discovered methods and compositions for treating LBP-mediated LPS-induced myeloid cell activation comprising administering a therapeutically effective amount of an anti-LBP monoclonal antibody molecule immunoreactive with lipopolysaccharide binding protein (LBP). Surprisingly, anti-LBP antibodies are described that do not inhibit LPS binding to LBP, and yet interfere with cellular activation binding. In addition, the invention relates to methods for detecting the presence of LBP in samples.

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