

Original article

# The role of complement activity in the sensitivity of *Salmonella* O48 strains with sialic acid-containing lipopolysaccharides to the bactericidal action of normal bovine serum

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## Abstract

Sialic acids are important constituents of animal tissue glycoconjugates and are also present in the antigens of some bacterial strains. Capsular polysaccharides with sialic acid (NeuAc) have been extensively studied with regard to sensitivity to the bactericidal action of serum, whereas little is known in this regard about lipopolysaccharides (LPS) which contain NeuAc. Strains of *Salmonella* O48, able to infect animals and containing the same structures of LPS with NeuAc, were examined for their susceptibility to the bactericidal action of normal bovine serum (NBS). The strains showed varied sensitivity to the bactericidal action of NBS, which indicates that the expression of LPS containing NeuAc residues is not critical for the strains' resistance to the serum's activity. In this study the mechanisms of complement activation responsible for killing serum-sensitive *Salmonella* O48 rods by NBS were also established. Three such mechanisms were distinguished: activation of the classical/lectin pathways, important (decisive) in the bactericidal mechanism of complement activation, parallel activation of the classical/lectin and alternative pathways, and independent activation of the classical and lectin or the alternative pathway.

**Key words:** *Salmonella*, normal bovine serum, sialic acid, lipopolysaccharide