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Progress towards the development of a glycoconjugate vaccine against *Helicobacter pylori*

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Helicobacter pylori infection is particularly common in developing countries as well as Indigenous populations of North America and has been associated with chronic gastritis and increased risk of ulcers and gastric cancer in adults. Author's group has been interested in the development of a conjugate vaccine based on lipopolysaccharide (LPS), a major cell surface component of *H. pylori*. It has been identified a common antigenic LPS core epitope, α -1,6-glucan, and have recently demonstrated that synthetic glycoconjugates based on a truncated *H. pylori* LPS devoid of Lewis antigens and presenting an α -1,6-glucan epitope in the outer core region induced broadly cross-reactive bactericidal antibodies in immunized animals and conferred partial protection against *H. pylori* challenge in a mouse model. To investigate the candidacy of α -1,6-glucan as an alternative vaccine strategy we prepared glycoconjugates based on dextrans produced by lactic acid bacteria *Leuconostoc mesenteroides* B512F. The conjugates were immunogenic in both rabbits and mice and induced specific IgG responses against α -1,6-glucan-expressing *H. pylori* LPS. Future studies will focus on further development of *H. pylori* vaccine formulations, including the choice of carrier proteins and adjuvants.

Biography

Eleonora Altman is a Senior Research Officer at the National Research Council of Canada and has joined NRC in 1984 after receiving her PhD degree in Carbohydrate Chemistry from the University of British Columbia. She has an extensive expertise in structural characterization of bacterial polysaccharides and application of NMR spectroscopy and mass spectrometry to structural analysis. Over the past 15 years, she has been involved in studies related to the role of lipopolysaccharide in the pathogenesis of *Helicobacter pylori*. She has published 95 papers in international journals within the area of structural analysis and glycobiology.

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