

Increased in-vitro and in-vivo biological activity of lipopolysaccharide extracted from clinical low virulence vac A genotype *Helicobacter pylori* strains

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Helicobacter pylori infection in man is associated with chronic gastritis and peptic ulcer disease. The virulence factors of the species are still under investigation. Among these, the lipopolysaccharide (LPS) is a potential pathogenic factor of the micro-organism, whose biological activity can be estimated by immunological parameters. The aim of this study was to determine the ability of pure LPS extracted from clinical isolates of *H. pylori* to induce mitogenicity, secretion of tumour necrosis factor-alpha (TNF-alpha), and spleen growth in a murine model. Rough and smooth LPS from *Salmonella typhimurium* were used as controls. The results showed that, like the control LPS, all extracts of LPS induced mitogenic activity, stimulated synthesis of TNF-alpha and induced spleen growth, although the effects produced by the majority of the *H. pylori* LPS samples analysed were less intensive than those produced by the *S. typhimurium* LPS. The immunological parameters analysed allowed the detection of two types of *H. pylori* LPS: one of low biological activity and one of high biological activity. The most active LPS were extracted from strains isolated from patients with increased mucous damage associated with epithelial regeneration. Surprisingly, these strains were *cagA* negative and belonged to a low virulence genotype according to *vacA* gene (*slbm2* and *s2m2*). The results suggest the need to re-evaluate the role of the LPS as a virulence factor for some strains of *H. pylori*.

Biography

Fernando Kawaguchi has completed his Medical Studies at the age of 26 years from Faculty of Medicine – Concepcion University- Chile (1987) and postgraduated studies from Gifu University School of Medicine-Japan (1988-1993). Pancreas and Biliar Studies from Aichi Cancer Center-Japan, including Echoendoscopy Training (1991-1993). He obtained Clinical Digestive Oncology PhD from Gifu University (March 1993). He returned to Chile at Concepcion University Faculty of Medicine, Internal Medicine Department, Gastroenterology Unit (1993-2012). He obtained Academic degree of Associated Prof level, obtaining H Pylori National Project to identify its pathogenicity and virulence through Biomolecular and Microbiology Research (1996). Became Director of Gastroenterology Unit from Trabajador Hospital (1998-2008) introducing an Multidisciplinary group in immunopathology cancer research through Flow Cytometry analysis in fresh solid tumours. And also Echo endoscopy in diagnosis and Minimal Invasive Cancer Therapy from Stomach, Colon and Biliopancreatic areas supporting many papers and scientific meetings in reputed national and International journals.

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