



# **Serological and faecal biomarkers in inflammatory bowel disease**

av

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## Abstract

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The inflammatory bowel diseases (IBD), Crohn's disease and ulcerative colitis, are relapsing and remitting disorders characterised by chronic inflammation at various sites in the gastrointestinal tract, resulting in diarrhoea and abdominal pain. Neither the aetiology nor the pathophysiology is yet fully understood, and there is currently no cure.

The overall aim of this thesis was to add a piece of the puzzle to understanding the complex pathogenesis of IBD; to determine the role of genetic and environmental factors in the development of antibodies in IBD - which could provide insight to the aetiology of the diseases; and to find sensitive and specific faecal biomarkers to predict future flare in the diseases.

By conducting twin-studies, we found that some serological antibodies associated with Crohn's disease seemed to be genetically predisposed (anti-OmpC and anti-I2). Genetic predisposition do not play a predominant role in the generation of other antibodies, such as ASCA, anti-CBir1 or the autoantibody most commonly found in ulcerative colitis; pANCA. Exposure to environmental factors during childhood are suggested to be of importance in the development of ASCA and anti-CBir1 in CD. Active smoking seemed to have a protective effect against development of pANCA.

Faecal calprotectin is a known marker for intestinal inflammation. In our third study, three faecal calprotectin assays were compared, which revealed overall poor agreement. This implies that standardisation of the method is highly needed.

In our final study, we measured faecal eosinophil derived neurotoxin (EDN) and eosinophil cationic protein (ECP) in patients with IBD every third month over a two-year period. The results revealed that the risk of relapse in UC can be predicted by measuring EDN consecutively.

*Keywords:* Crohn's disease, ulcerative colitis, inflammatory bowel disease, faecal calprotectin, antibodies, eosinophils, ECP, EDN.

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