**Faecalibacterium prausnitzii** strain HTF-F and its extracellular polymeric matrix attenuate clinical parameters in DSS-induced colitis

Jerry Wells  
Wageningen University, The Netherlands

A decrease in the abundance and biodiversity of intestinal bacteria within the *Firmicutes* phylum has been associated with inflammatory bowel disease (IBD). In particular, the anti-inflammatory bacterium *Faecalibacterium prausnitzii*, member of the *Firmicutes* phylum and one of the most abundant species in healthy human colon, is under represented in the microbiota of IBD patients. The aim of this study was to investigate the immunomodulatory properties of *F. prausnitzii* strain A2-165, the biofilm forming strain HTF-F and the extracellular polymeric matrix (EPM) isolated from strain HTF-F. For this purpose, the immunomodulatory properties of the *F. prausnitzii* strains and the EPM were studied in vitro using human monocyte-derived dendritic cells. Then, the capacity of the *F. prausnitzii* strains and the EPM of HTF-F to suppress inflammation was assessed in vivo in the mouse dextran sodium sulphate (DSS) colitis model. The *F. prausnitzii* strains and the EPM had anti-inflammatory effects on the clinical parameters measured in the DSS model but with different efficacy. The immunomodulatory effects of the EPM were mediated through the TLR2-dependent modulation of IL-12 and IL-10 cytokine production in antigen presenting cells, suggesting that it contributes to the anti-inflammatory potency of *F. prausnitzii* HTF-F and its EPM may have a therapeutic use in IBD.

**Biography**

Jerry Wells graduated from Gonville & Caius College in the University of Cambridge with a PhD and obtained a Masters in Business Administration from the University of Nottingham, UK in 2004. In 2008 he was appointed as full Professor in The University of Wageningen, as the Chair of the Host-Microbe Interactions Group. He has more than 20 years research experience since obtaining his PhD. His major research interests are in the field of host-microbial interactions, mucosal immunology, bacterial infection and immunity, intestinal-health related research. He is an inventor on 18 patent applications and has authored more than 140 articles, including articles in Nature, Nature Biotechnology, Nature Reviews Microbiology and PNAS.

jerry.wells@wur.nl

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