

Differential Inflammatory Genes Expression Between the Inflamed and the Unaffected Gut Tissues of Inflammatory Bowel Disease Patients

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Inflammatory bowel disease (IBD) is a chronic inflammatory condition of the human gastrointestinal tract with no known cure; periods of subsided inflammation are followed by periods of hyper-inflammation. The two major disease types are Ulcerative colitis (UC) and Crohn's disease (CD). The disease's immunology was studied to understand the pathogenesis. Chronic intestinal inflammation is promoted by immune cell-produced cytokines. Gene expression of the cytokines in diseased tissue was compared to that of healthy tissue to determine the role cytokines play in the immune response. IBD surgical patient tissue was obtained and, after tissue processing, Total RNA was extracted. RT-qPCR was conducted to determine the gene expression of various targeted genes and the roles of the cytokines present at the site of the immune response. A Human Inflammation 96-well plate was run to further study the multifactorial pathogenesis of IBD. Data demonstrates that IBD is a multifactorial inflammatory process in which cytokines play a major role, and that the defective negative regulatory mechanism also contributes to the pathogenesis of this disease; it also provides additional insight for the development of IBD therapeutic targets. Future work includes recruiting more cases and further investigating the mechanism of differential cytokine gene expression.