Characterization of the novel ST2/IL-33 system in patients with inflammatory bowel disease

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Background: ST2 has been proposed to be a regulator of inflammation and Th1/Th2 balance. ST2L is the IL-33 membrane receptor and belongs to the IL-1R family. The soluble variant, ST2s, is identical to the extracellular region of ST2L and competes for IL-33 binding, inhibiting receptor signaling. Although ST2s has been associated with inflammatory processes in patients with sepsis, trauma, asthma, and autoimmunity, until now there are no reported studies showing the role of ST2/IL-33 in inflammatory bowel disease (IBD). Methods: Expression of ST2 and IL-33 was determined in serum and colonic biopsies from IBD patients. ST2 transcript and protein was determined by reverse-transcription polymerase chain reaction (RT-PCR) and enzyme-linked immunosorbent assay (ELISA)/immunoblot, respectively, and IL-33 protein by ELISA. Intestinal mucosa localization of ST2 and IL-33 was conducted by immunofluorescence. Results: ST2s transcript in the colonic mucosa was mainly expressed in UC patients rath