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## The effects of kombucha tea on intestinal integrity in mice

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Zonula Occludens (ZO) proteins (ZO-1 and ZO-2) are important intracellular Tight Junction (TJ) proteins which link the cell cytoskeleton to the transmembrane TJ proteins. Destruction of TJ which is called the leaky gut syndrome attributed to the cause of many autoimmune and inflammatory diseases such as Inflammatory Bowel Disease (IBD). So, reducing intestinal permeability is the goal of therapeutic approaches. Healing effect of Kombucha Tea (KT) on the gastrointestinal system particularly its extraordinary effect on the healing of intestinal ulcer has been purported traditionally and reported scientifically. To evaluate the therapeutic effect of fKT on leaky gut syndrome, fKT was administered to mice colitis model. The model was set up by administration of 3.5% (w/v) dextran sodium sulfate salt for seven days and then fKT was administered for the next 14 days. Our results showed, fKT could ameliorate the disease symptoms of DSS-induced colitis, including body weight loss, bleeding, diarrhea, survival rate and histological injury contains: epithelial defects, crypt atrophy, edema, PMN infiltration and mucosal disruption in mice. Along with these changes ZO-1 and ZO-2 expression as major constituent of intestinal TJ were also decreased in mice with colitis and improved by fKT treatment. Such a decrease may explain the defect and less degree of complexity in the intestinal tight junction during leaky gut phenomenon. Since fKT reduced the symptoms of colitis in our experimental models, our findings may increase its promising medicinal value in the treatment of human IBD.

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