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Summary

THE ROLE OF SECRETORY LEUKOCYTE PROTEASE INHIBITOR IN THE PATHOGENESIS OF INFLAMMATORY BOWEL DISEASE AND A COLON PROTECTIVE EFFECT OF DAIKENCHUTO

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Secretory leukocyte protease inhibitor (SLPI) protects against experimental colitis by maintaining intestinal epithelial barrier function, and the Japanese herbal medicine Daikenchuto exerts anti-inflammatory effects partly through induction of SLPI.

KEY POINTS

- SLPI-deficient mice developed more severe DSS-induced colitis with sustained inflammation, increased neutrophil infiltration, elevated proinflammatory cytokines, and impaired intestinal epithelial barrier function compared to wild-type mice.
- Administration of recombinant SLPI or the protease inhibitor SSR69071 ameliorated DSS-induced colitis in mice.
- Neutrophil elastase activity was increased in SLPI-deficient mice, and SLPI appears to protect the intestinal barrier by inhibiting excessive neutrophil elastase activity.
- Daikenchuto treatment significantly increased SLPI expression in the colon and attenuated DSS-induced colitis, suggesting its anti-inflammatory effect operates at least partly through SLPI induction.
- This study received funding from Tsumura & Co., the manufacturer of Daikenchuto.

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