

**THE POTENTIAL OF PALIASA LEAF EXTRACT (*Kleinhovia hospita* L.) AS
AN AGENT FOR REPAIRING THE COLON MUCOSA IN ULSERATIVE
COLITIS RATS**

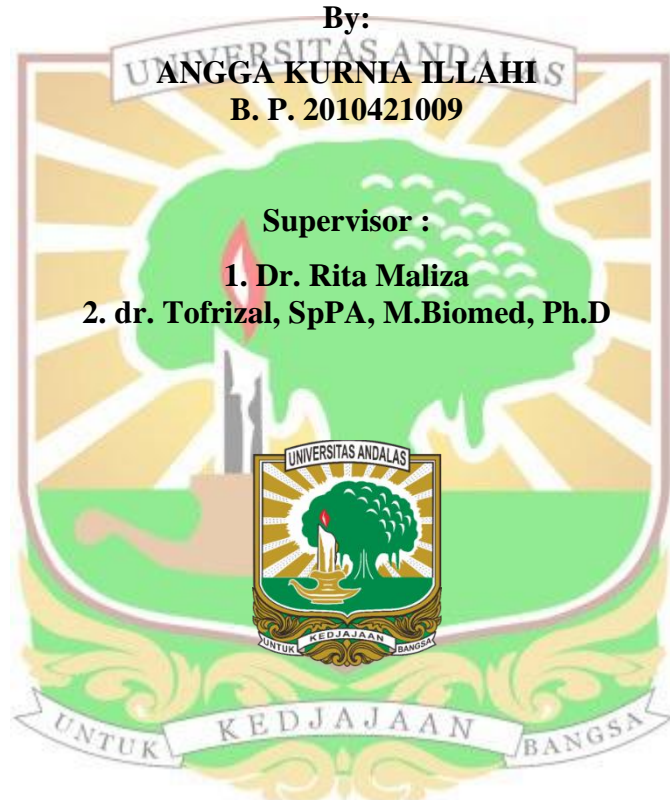
BIOLOGY UNDERGRADUATE THESIS

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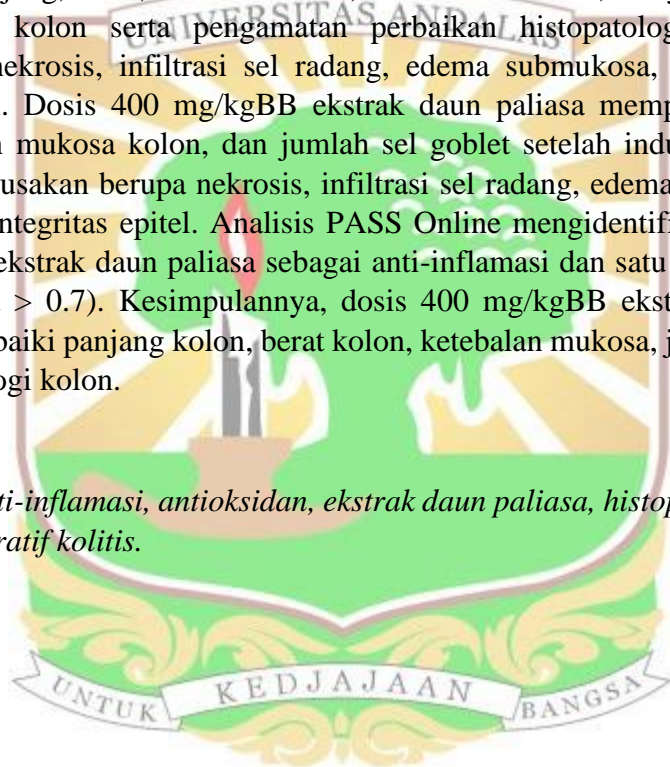
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ABSTRAK

Ulceratif kolitis adalah penyakit radang usus yang menyerang mukosa kolon. Daun paliasa (*Kleinhovia hospita* L.) mengandung senyawa bioaktif yang berpotensi memperbaiki mukosa kolon pada ulseratif kolitis. Penelitian ini bertujuan untuk mengevaluasi potensi ekstrak daun paliasa secara *in silico* sebagai anti-inflamasi dan antioksidan, serta perbaikan histopatologi kolon pada tikus yang diinduksi kolitis menggunakan 1% dextran sodium sulfat secara *in vivo*. Sebanyak 25 tikus jantan dibagi menjadi kelompok normal, induksi kolitis, sulfasalazine (100 mg/kgBB), dan ekstrak daun paliasa dengan dosis 100 mg/kgBB dan 400 mg/kgBB. Dilakukan pengukuran panjang, berat, diameter kolon, ketebalan mukosa, dan jumlah sel goblet pada histologi kolon serta pengamatan perbaikan histopatologi kolon berupa berkurangnya nekrosis, infiltrasi sel radang, edema submukosa, dan peningkatan integritas epitel. Dosis 400 mg/kgBB ekstrak daun paliasa memperbaiki panjang, berat, ketebalan mukosa kolon, dan jumlah sel goblet setelah induksi kolitis, serta mengurangi kerusakan berupa nekrosis, infiltrasi sel radang, edema submukosa, dan meningkatkan integritas epitel. Analisis PASS Online mengidentifikasi 18 senyawa bioaktif dalam ekstrak daun paliasa sebagai anti-inflamasi dan satu senyawa sebagai antioksidan ($P_a > 0.7$). Kesimpulannya, dosis 400 mg/kgBB ekstrak daun paliasa efektif memperbaiki panjang kolon, berat kolon, ketebalan mukosa, jumlah sel goblet, serta histopatologi kolon.

Kata kunci: *anti-inflamasi, antioksidan, ekstrak daun paliasa, histopatologi, mukosa, perbaikan, ulseratif kolitis.*



ABSTRACT

Ulcerative colitis is an inflammatory bowel disease that affects the colonic mucosa. The leaves of *Kleinhovia hospita* L. contain bioactive compounds with potential to repair colonic mucosa in ulcerative colitis. This study aims to evaluate the potential of paliasa leaf extract through in silico methods as an anti-inflammatory and antioxidant, and its effect on the histopathological improvement of the colon in rats induced with colitis using 1% dextran sodium sulfate in vivo. Twenty-five male rats were divided into normal, colitis induction, sulfasalazine (100 mg/kg BW), and paliasa leaf extract groups with doses of 100 mg/kg BW and 400 mg/kg BW. Measurements of colon length, weight, diameter, mucosal thickness, and goblet cell count in colonic histology were conducted, along with observations of histopathological improvements, including reduced necrosis, inflammatory cell infiltration, submucosal edema, and increased epithelial integrity. The 400 mg/kg BW dose of paliasa leaf extract improved colon length, weight, mucosal thickness, and goblet cell count after colitis induction, and reduced damage such as necrosis, inflammatory cell infiltration, submucosal edema, and increased epithelial integrity. PASS Online analysis identified 18 bioactive compounds in the paliasa leaf extract with anti-inflammatory potential and one compound with antioxidant potential ($P_a > 0.7$). In conclusion, the 400 mg/kg BW dose of paliasa leaf extract effectively improved colon length, colon weight, mucosal thickness, goblet cell count, and colonic histopathology.

Keywords: *anti-inflammatory, antioxidant, paliasa leaf extract, histopathology, mucosa, repair, ulcerative colitis*

