

**PENGARUH *LACTOCOCCUS LACTIS D4* TERHADAP
HISTOPATOLOGI FIBROSIS HEPAR TIKUS PUTIH (*RATTUS
NOVERGICUS STRAIN WISTAR*) MODEL IKTERUS OBSTRUKTIF
DENGAN PEWARNAAN SIRIUS RED**



Tesis

**Diajukan ke Fakultas Kedokteran Universitas Andalas sebagai
pemenuhan salah satu syarat untuk mendapatkan gelar Dokter Spesialis**

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**PROGRAM STUDI PENDIDIKAN DOKTER SPESIALIS BEDAH
FAKULTAS KEDOKTERAN UNIVERSITAS ANDALAS
RSUP DR. M. DJAMIL PADANG
2024**

Effect of Lactococcus Lactis D4 on Histopathology of Liver Fibrosis in Wistar Rats with Obstructive Jaundice Using Sirius Red Staining

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Abstract

Background: Obstructive jaundice is a clinical condition associated with high morbidity and mortality, primarily due to sepsis and compromised systemic immunity. Liver fibrosis, a major complication, is characterized by excessive extracellular matrix deposition. The gut- liver axis plays a pivotal role in this pathology, with probiotics emerging as promising therapeutic agents. **Objective:** This study investigates the impact of Lactococcus lactis D4 on liver fibrosis in Wistar rats with obstructive jaundice, assessed using Sirius Red staining. **Methods:** A randomized controlled trial was conducted on Wistar rats, divided into control and treatment groups. Liver tissue samples were analyzed histologically for collagen deposition, quantified using Sirius Red staining. Statistical comparisons were made to evaluate treatment effects. **Results:** The Lactococcus lactis D4-treated group demonstrated a significant reduction in collagen deposition compared to the control group ($p < 0.05$). This suggests that Lactococcus lactis D4 attenuates liver fibrosis by modulating the gut-liver axis and reducing systemic inflammation. **Conclusion:** The findings underscore the potential of Lactococcus lactis D4 as an adjunctive therapeutic agent for managing liver fibrosis, particularly in obstructive jaundice cases. Further studies are warranted to explore its clinical applicability.

Keywords: Lactococcus lactis D4, liver fibrosis, obstructive jaundice, probiotics, Sirius Red staining

