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Author: Zahra Habibi

Thesis Title: Postbiotic effects of *Lactobacillus plantarum* on dexamethasone-induced fatty liver in rats.

Abstract:

This study was conducted to investigate the potential effects of postbiotic compounds derived from *Lactobacillus plantarum* on dexamethasone-induced fatty liver. To carry out the experiment, *Lactobacillus plantarum* was first cultured in a specialized medium in an incubator, after which the supernatant was collected. Subsequently, twenty young adult male rats were randomly divided into four groups. One group served as the control, another group received postbiotic gavage, one group was intraperitoneally injected with dexamethasone, and the final group received both postbiotic gavage and intraperitoneal dexamethasone injection. After two weeks, the rats were euthanized, and blood samples were collected to measure blood parameters (AST, ALT, ALP, TG, Chol, GGT, HDL, LDL, TAC, MDA, and SOD), followed by liver dissection for histological examination. Pathological analysis of liver sections revealed a reduction in fat vacuole accumulation in the dexamethasone + postbiotic group compared to the dexamethasone-only group. Biochemical analysis showed a significant increase in the levels of ALP, AST, SOD, and GGT enzymes in the dexamethasone group.

Keywords: Dexamethasone, Corticosteroid, non-alcoholic fatty liver disease (NAFLD), *Lactobacillus plantarum*, postbiotic.