

## CHAPTER V CONCLUSION AND SUGGESTION

### A. Conclusion

1. Administration of a high-fat diet (HFD) and propylthiouracil (PTU) in groups B, C, D, E, and F increased LDL levels compared with the healthy control group (A), which received only standard feed, indicating that the hypercholesterolemic rat model was successfully established.
2. Administration of a non-fermented rambutan seed (*Nephelium lappaceum* L.) infusion (0-day fermentation) at a dose of 19.2 mg/kgBW for 14 days in group C reduced LDL levels, with a mean decrease of  $23.87 \pm 25.90$  mg/dL.
3. Administration of rambutan seed infusion fermented with yogurt for 3 days at a dose of 19.2 mg/kgBW in group D reduced LDL levels, with a mean decrease of  $29.42 \pm 18.22$  mg/dL.
4. Administration of rambutan seed infusion fermented with yogurt for 5 days at a dose of 19.2 mg/kgBW in group E reduced LDL levels, with a mean decrease of  $30.04 \pm 21.56$  mg/dL.
5. Administration of rambutan seed infusion fermented with yogurt for 7 days at a dose of 19.2 mg/kgBW in group F reduced LDL levels, with a mean decrease of  $74.38 \pm 34.12$  mg/dL.
6. The reduction in LDL levels in the 7-day fermentation group (F) was statistically significantly different from the healthy control group (A), the negative control group (B), and the 0-, 3-, and 5-day fermentation groups (C, D, and E), indicating that 7-day fermentation produced the greatest LDL-lowering effect.
7. There were statistically significant differences in the changes in LDL levels among all groups of Wistar rats, including the healthy control, negative control, and all treatment groups receiving fermented rambutan seed infusion ( $p = 0.001$ ).
8. Overall, administration of rambutan seed infusion fermented with yogurt at a dose of 19.2 mg/kgBW for 14 days affected the reduction of

LDL levels in male Wistar rats induced with a high-fat diet and PTU, with a fermentation duration of 7 days being the most effective condition.

## **B. Suggestion**

Further studies are required to evaluate additional parameters, such as triglycerides, in order to gain a more comprehensive understanding of the mechanisms underlying LDL reduction. In addition, research on rambutan seed infusion fermented with yogurt still needs to be expanded, including broader exploration of dose variations and fermentation duration, the use of different probiotic strains as fermentation starters to compare their effectiveness, the use of individual cages to minimize confounding factors, as well as the conduct of toxicity tests (both acute and long-term), followed by clinical trials in humans.

