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**THE EFFECT OF CONSUMPTIONS OF *ANADARA GRANOSA* ON
HEMATOLOGICAL PARAMETERS IN RATS**

By


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DECLARATION

I hereby declare that this thesis is my original work and has not been submitted previously or currently for any other degree at UiTM or any other institutions.

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ABSTRACT

Blood cockle is known to be rich in protein and iron compared to other seafood. Seafood generally has the ability to boost hematological parameters when consumed in appropriate amounts and time. This study was designed to determine the protein content of blood cockle and evaluate the effect of blood cockle extract to boost hematological parameter in rats. Eighteen rats were divided randomly into 3 groups: control (normal diet), low dose (7.0 mg/ml protein / kg) and high dose (52.0 mg/ml protein / kg). Both low and high dose groups were given the respective dose orally for 3 consecutive weeks. Lymphocyte and MCV values showed significant differences ($p = 0.043$, $p = 0.043$) respectively between control and high dose groups. There was a significant difference in WBC value between low dose and high dose groups ($p = 0.049$). Significant differences were also observed in Hb, HCT and RDW values between low dose and high dose groups ($p = 0.042$, $p = 0.020$, $p = 0.019$). Based on the findings, it can be concluded that blood cockle has high protein content and capabilities in boosting hematological parameters.

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Seafood is one the type of foods that consume in human diet besides meats and vegetables. Seafood is a big part of our local diet as Malaysians rely on seafood as the main source of animal protein. Different types of seafood are available such as fish, shellfish and crustaceans. Generally, seafood is known to have range of nutrients, notably long-chain omega-3 fatty acids eicosapentaenoic acid (EPA), docosahexaenoic acid (DHA), low in fats, high protein content and essential minerals (Rittenschober, Nowak, & Charrondiere, 2013). These nutrients are essential in the human body as it is required for normal body functioning. In Malaysia, there is a believed that seafood capable in boosting hematological parameters naturally. For example, cockle has the capability in increasing the hemoglobin level in anemic patients while crab can boost platelet level in patients with dengue fever.

The emergence of Complementary and Alternative Medicine (CAM) has raised awareness of the community in applying an alternative method in treating disease. According to The US National Center for Complementary and Alternative Medicine (NCCAM), they focused on two major groups includes natural product and mind and body practices ("Complementary, Alternative, or Integrative Health: What's In a Name? | NCCIH," 2008). The use of natural products such as herbs and seafood by our ancestors has long been practiced, although there is no scientific explanation of the benefit at that time. According to World Health Organization (2001), it is a common