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EFFECT OF *PERNA VIRIDIS* ON HEMATOLOGICAL PARAMETER IN RATS

BY

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DECLARATION

I hereby declare that this thesis is based on my original work. I also declare the thesis has not previously or currently submitted by any other degree student at UiTM or other institutions.

JULY 2015

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ABSTRACT

THE EFFECT OF CONSUMPTION OF *PERNA VIRIDIS* ON

HEMATOLOGICAL PARAMETER IN RATS

Perna viridis has been used for many centuries to cure many diseases traditionally. It also contains nutrients that may help in increase hematological parameter, thus, *Perna viridis* has the potential to be used to boost blood parameter. The objective of this study is to quantify the amount of protein and determine the effect of *Perna viridis* on hematological parameter in rats. The sample was processed through the freeze drying process and the amount of protein was determined using Bradford assay. The tested dose was 7.0mg/ml protein/kg and 52.0mg/ml protein/kg and each dose was administrated orally to two different groups for three weeks and one control group, n=6. Cardiac puncture was performed in all rats for hematological analysis. The protein concentration in 10mg/ml of *Perna viridis* powder is 0.55 mg/ml. The hematological analysis reveals that lymphocyte percentage we increase significantly (P<0.05) between control and high dose group. Hemoglobin (HGB) concentration show increase in mean for the high dose group and low dose group compared to control group but not significantly. As for platelet count, there is a significant increase in low dose group (p<0.05) compare to the high dose group.. As a conclusion, it has proven that *Perna viridis* has the ability to increase the platelet count at the low dose concentration and has the ability to increase HBG at low dose and high dose of consumption.

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Seafood has been a major source to supply many important nutrition to human. It's not only good in taste but also rich in nutritional value. A consumer can get full benefit from its protein, lipid and essential vitamin and minerals (Sampels, 2014). In a marine animal, the large and most diverts groups come from phylum mullusca. Within molluscan, bivalvia made up the largest class in mullusca which made up around 20,000 species include invertebrates like clam and mussels (Chapman, 2009). For mussels, *Mulitus* and *Perna* is the most abundant mussel species (Grienke, Silke, & Tasdemir, 2014) Mussels have been used traditionally. For example, in China the used of the sauce from a decoction of *Mylitus edulis* believe can improve immune system, improve kidney and liver dysfunction and as impotence and menoxenia (Grienke et al., 2014).

There are many benefits of mussel and also other shellfish due to their content. For example mussel, they contain high protein due to their large part of muscle tissue (Grienke et al., 2014). Bivalve molluscs also contain essential vitamin, essential amino acid, enzyme, peptide and polysaccharides (Karnjanapratum, Benjakul, Kishimura, & Tsai, 2013). There is research stated that shellfish are rich in vitamin A, D and E (Rittenschober, Nowak, & Charrondiere, 2013). Not only that, shellfish also contain niacin (vitamin B_3), vitamin B_6 and vitamin B_{12} which is important for many metabolic processes (Michał Majewski, 2014). Recently, there are many study that proven that most shellfish like mussels contain high level of n-3 polyunsaturated fatty acid (PUFAs) (Michał Majewski, 2014).

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