

## Effect of Boiled Water Parasite Kapok (*Dendrophthoe pentandra*) Leaves on Total Cholesterol Levels and Histopathology of Hepar of Hypercholesterolemic Mice

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**Abstract.** This study aims to determine effect of boiled water parasite kapok (*Dendrophthoe pentandra*) leaves on the total cholesterol level and histopathology of hepar of hypercholesterolemic mice (*mus musculus*). This study used 20 ICR male mice divided into 4 treatment groups namely normal mice group, hypercholesterolemic mice group, mice group with boiled water kapok parasite at a dose of 400 mg/kg BW, and 800 mg/kg BW, respectively. The animal group was given boiled water kapok parasite after standard feeding and cholesterol feed for 2 weeks. The parameters observed in this study were total cholesterol levels, the amount of fat granules in the liver tissue of mice which were observed in the form of liver-preserved preparations made by paraffin method. The results showed that the administration of parasitic kapok (*Dendrophthoe pentandra*) at a dose of 400 mg/kg BW and 800 mg/kg BW had an effect on decreasing the total cholesterol level of mice and the histopathology of hepar of showed improvement after the therapy.

### Introduction

Hypercholesterolemia is also a risk factor for stroke and for peripheral arterial disease (PAD). Hypercholesterolemia is defined as plasma cholesterol levels that exceed the normal threshold and pose a strong risk factor for cardiovascular disease also some factors that are out of control that can increase the risk of hypercholesterolemia. This factor includes age, sex, and heredity. But, there are several risk factors that can be changed. For example, an unhealthy diet, being overweight, and lack of exercise. Adult total cholesterol levels are expressed high when it reaches a value of 240 mg/dl or more. While in children and adolescents, the total cholesterol value that reaches a value of 200 mg/dl or more has been declared high<sup>(1)</sup>.

*Dendrophthoe pentandra* (L.) Miq. is one of the Indonesian mistletoes species which belong to the family of Loranthaceae. This species in commonly found grew on many different species of host plant<sup>(2,3)</sup>.

The parasite contains quercetin, saponin and tannin flavonoids which are believed to reduce total cholesterol and LDL levels in the blood through increased excretion of bile acids and are believed to have antioxidant effects to prevent LDL oxidation and inflammatory reactions so as to prevent aortic wall changes. Flavonoids in the form of quercetin as antioxidants and anti-inflammatory can be used as hypercholesterolemic therapy<sup>(4,5)</sup>. Besides that, *D. pentandra* extract has also been proven as a potential source of natural antioxidant and antidiabetic compounds<sup>(6)</sup>.

This study aimed to determine the effect of boiled water parasite kapok (*Dendrophthoe pentandra*) leaves on the total cholesterol level and histopathology of hepar of hypercholesterolemic mice (*mus musculus*).