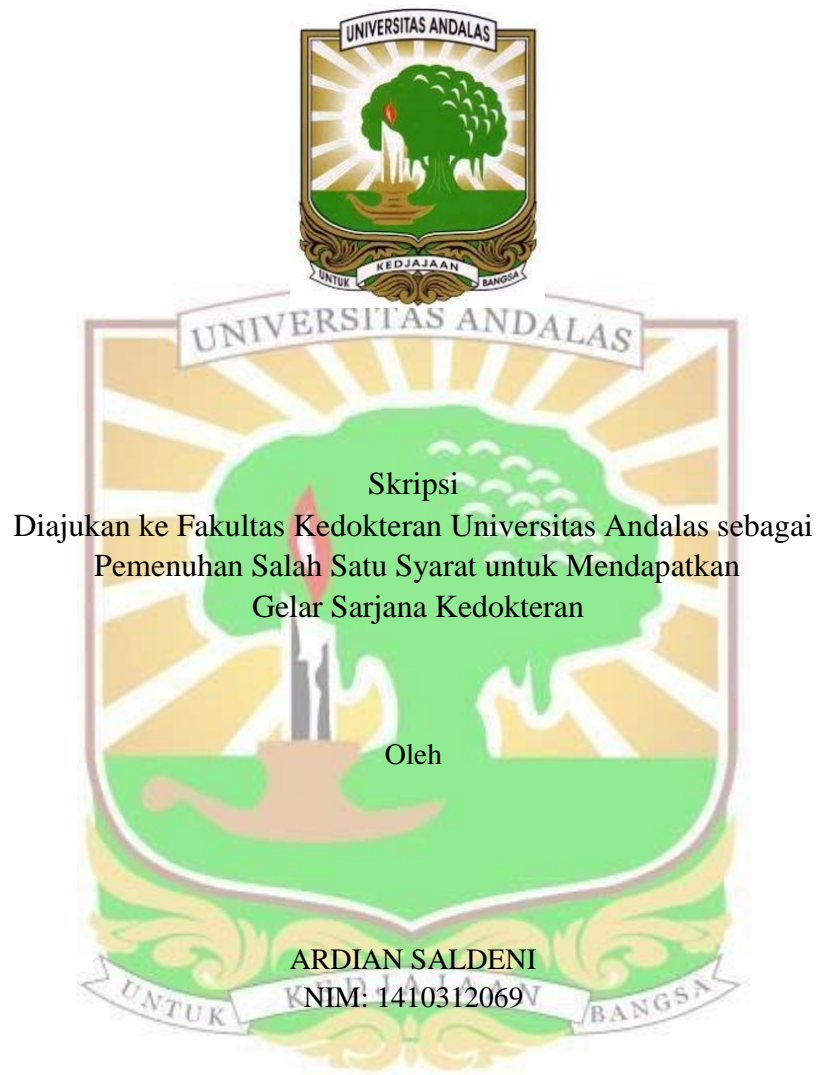


PENGARUH PEMBERIAN EKSTRAK SELEDRI (*Apium graveolens*)
TERHADAP GAMBARAN MIKROSKOPIS TUBULUS GINJAL TIKUS
(*Ratus norvegicus*) YANG DIINDUKSI DIET HIPERKOLESTEROL



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THE EFFECT OF SELEDRI EXTRACT (*Apium graveolens L.*) ON THE MICROSCOPICAL DESCRIPTION OF RATS (*Rattus norvegicus*) RENAL TUBULE INDUCED BY DIET HYPERCOLESTEROL

**By
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ABSTRACT

Cholesterol causes an increase and activation of the enzyme NADH / NAD (P) H oxidase, resulting in an increase production of anion superoxide, which is one of the free radicals that cause oxidative stress. Celery contains antioxidant compounds that can counteract free radicals. This study aimed to determine the effect of celery extract on microscopic features of rat kidneys induced hypercholesterolemia.

This research was true experimental study with post test only control group design. A total of 25 rats were divided into five groups, sequentially K-, K +, P1, P2, and P3. The groups of K +, P1, P2, and P3 were induced by a high cholesterol diet for 14 days. The treatment group was given different doses of celery extract, namely 0.39 mg / 200g BB (P1), 0.78mg / 200gBB (P2) and 1.17mg / 200kgBB (P) for 14 days. Histological features of alveolar damage observed were renal tubular degeneration and necrosis. The observation was performed under a light microscope with 400x magnification. One Way ANOVA and Post Hoc LSD test were used to analyze the data.

The results showed that the mean of airbone area in group K was 54.72%, K + 66.48%, and P 59.37%. There were significant differences in the K + and P groups with K-, $p = 0.009$.

The conclusion of this study is celery extract can reduce microscopic damage of rat kidneys induced by hypercholesterolemia diet. Counseling should be carried out on the benefits of consuming celery as a treatment for kidney damage due to a high cholesterol diet.

Keywords: celery, cholesterol, kidney microscopic damage

PENGARUH EKSTRAK SELEDRI (*Apium graveolens L.*) TERHADAP GAMBARAN MIKROSKOPIS TUBULUS GINJAL TIKUS (*Rattus norvegicus*) YANG DIINDUKSI DIET HIPERKOLESTEROL

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ABSTRAK

Kolesterol menyebabkan peningkatan dan aktivasi terhadap enzim NADH/NAD(P)H oxidase, sehingga terjadi peningkatan produksi radikal bebas penyebab stres oksidatif. Seledri mengandung senyawa-senyawa antioksidan yang dapat menangkal radikal bebas. Penelitian ini bertujuan untuk mengetahui pengaruh pemberian ekstrak seledri terhadap gambaran mikroskopik ginjal tikus yang diinduksi diet hiperkolesterol.

Penelitian ini merupakan *true experimental* dengan *post test only control group design*. Sebanyak 25 ekor tikus dibagi menjadi lima kelompok yaitu K-, K+, P1, P2, dan P3. Kelompok K+, P1, P2, dan P3 diinduksi diet tinggi kolesterol selama 14 hari lalu kelompok perlakuan diberi ekstrak seledri dengan dosis yang berbeda yaitu 0,39 mg/200g BB (P1), 0,78mg/200gBB (P2) dan 1,17mg/200kgBB (P) selama 14 hari. Gambaran mikroskopik tubulus ginjal yang diamati adalah degenerasi dan nekrosis tubulus ginjal. Pengamatan menggunakan mikroskop cahaya perbesaran 400x. Analisis data menggunakan *One Way ANOVA* dan *Post Hoc LSD test*.

Hasil penelitian didapatkan rerata area kerusakan pada kelompok K- sebesar $18.52 \pm 4,00$, K+ 53.26 ± 7.30 , P1 35.52 ± 6.36 , P2 36.94 ± 1.76 dan P3 31.26 ± 7.27 . Terdapat perbedaan yang signifikan pada kelompok K+ dan K- dengan P1, P2, dan P3.

Kesimpulan penelitian ini adalah ekstrak seledri dapat mengurangi kerusakan mikroskopik tubulus ginjal tikus yang diinduksi diet hiperkolesterol. Perlu dilakukan penyuluhan terhadap manfaat mengkonsumsi seledri sebagai salah satu pengobatan tubulus ginjal karena pola diet tinggi kolesterol.

Kata kunci: seledri, kolesterol, kerusakan mikroskopik ginjal