

**EFEK PEMBERIAN EKSTRAK ETANOL DAUN SELEDRI (*Apium graveolens* L.) TERHADAP EKSPRESI GEN *TUMOR NECROSIS FACTOR- $\alpha$*  (TNF- $\alpha$ ) TIKUS PUTIH (*Sprague dawley*) MODEL 5/6 SUBTOTAL NEFREKTOMI**

**ABSTRAK**

Penyakit Ginjal Kronis (*Chronic Kidney Disease*) merupakan keadaan patologis yang ditandai dengan kelainan struktural maupun fungsional ginjal dan berlangsung lebih dari tiga bulan serta ditandai dengan penurunan *glomerulus filtration rate* (GFR). Kejadian CKD akan terus meningkat hingga 20 tahun yang akan datang dan diperkirakan insidensi CKD pada tahun 2020 ialah 28 juta kasus dan meningkat menjadi 38 juta kasus pada tahun 2030. Inflamasi merupakan salah satu mekanisme yang terjadi pada CKD ditandai dengan peningkatan sitokin proinflamasi salah satunya adalah TNF- $\alpha$ . Ekstrak etanol herba seledri (*Apium graveolens* L.) memiliki kandungan dapat menurunkan inflamasi. Penelitian ini bertujuan untuk mengetahui efek pemberian ekstrak etanol seledri terhadap pencegahan peningkatan ekspresi gen TNF- $\alpha$  tikus putih (*Sprague dawley*) model 5/6 subtotal nefrektomi. Penelitian menggunakan desain rancangan acak lengkap dengan pendekatan *post test only with control group*. Dua puluh lima sampel bahan biologi tersimpan ginjal dibagi dalam lima kelompok yaitu kelompok A (kontrol sehat), kelompok B (kontrol sakit), dan kelompok C, D, dan E (kelompok perlakuan dengan ekstrak etanol seledri berdosisi 200, 250, 300mg/kgBB/hari). Analisis data menggunakan uji parametrik *One Way Anova*. Rerata ekspresi gen TNF- $\alpha$  kelompok A=1,73 $\pm$ 0,59; B=1,99 $\pm$ 0,39; C=1,78 $\pm$ 0,54; D=1,77 $\pm$ 0,46; E=1,77 $\pm$ 0,49. Hasil uji *One Way ANOVA* menunjukkan nilai p=0,922 rata-rata nilai ekspresi gen TNF- $\alpha$  menunjukkan bahwa tidak terdapat perbedaan rerata yang bermakna diantara kelima kelompok perlakuan (p>0,05). Ekstrak etanol seledri dosis 200, 250, dan 300 mg/kgBB/hari belum sepenuhnya berperan dalam mencegah peningkatan ekspresi gen *Tumor Necrosis Factor  $\alpha$*  (TNF- $\alpha$ ), namun memiliki potensi berdasarkan tren rerata.

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**Kata kunci:** 5/6 subtotal nefrektomi, daun seledri, TNF- $\alpha$

**THE EFFECT OF ETHANOL EXTRACT OF CELERY LEAVES (*Apium graveolens L.*) ON GEN EXPRESSION OF TUMOR NECROSIS FACTOR- $\alpha$  (TNF- $\alpha$ ) OF WHITE RAT (*Sprague Dawley*) 5/6 SUBTOTAL NEPHRECTOMY MODEL**

**ABSTRACT**

Chronic Kidney Disease is a pathological condition characterized by structural and functional abnormalities of the kidneys and occurs for more than three months and is characterized by a decrease in the glomerular filtration rate (GFR). The incidence of CKD will continue to increase for the next 20 years and it is estimated that the incidence of CKD in 2020 is 28 million cases and increases to 38 million cases in 2030. Inflammation is one of the mechanisms that occur in CKD characterized by an increase in proinflammatory cytokines, one of which is TNF- $\alpha$ . The ethanol extract of celery (*Apium graveolens L.*) herb has the content to reduce inflammation. This study aims to determine the effect and effective dose of ethanol extract of celery leaves on the prevention of increased TNF- $\alpha$  gene expression in white mouse (*Sprague dawley*) 5/6 subtotal nephrectomy model. The study used a completely randomized design with a post test only approach with a control group. Twenty five samples of kidney stored biological material were divided into five groups, group A (sham control), group B (sick control), and groups C, D, and E (the treatment group with celery ethanol extract at doses of 200, 250, 300mg/kgBW/day). Data analysis used the One Way Anova parametric test. Mean expression of TNF- $\alpha$  gene group A=1,73 $\pm$ 0,59; B=1,99 $\pm$ 0,39; C=1,78 $\pm$ 0,54; D=1,77 $\pm$ 0,46; E=1,77 $\pm$ 0,49. One Way ANOVA test results show the p value=0,922. The average TNF-  $\alpha$  gene expression showed that there was no significant difference between the five treatment groups ( $p > 0.05$ ). Celery ethanol extract at doses of 200, 250, and 300 mg/kgBW/day did not fully play a role in preventing the increase in the expression of the Tumor Necrosis Factor (TNF- $\alpha$ ) gene, but had an potential based on the mean trend..

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**Keyword:** , 5/6 subtotal nephrectomy, celery leaves, TNF- $\alpha$