

## INTISARI

**Latar Belakang:** Pada gagal ginjal kronis terjadi kerusakan tubulus dan penurunan ekskresi asam urat, disebabkan oleh adanya adesi sel leukosit, sel mononuklear serta obstruksi lumen dan penurunan aliran tubulus yang mengakibatkan kenaikan asam urat. Daun yakon (*Smallanthus Sonchifolius*) diketahui mempunyai potensi mencegah adesi sel leukosit dan sel mononuklear.

**Tujuan penelitian:** Mengkaji pengaruh pemberian ekstrak etanol daun yakon (*Smallanthus sonchifolius*) terhadap cedera tubular dan kadar asam urat pada mencit dengan 5/6 nefrektomi subtotal.

**Metode Penelitian:** Penelitian ini merupakan penelitian quasi ekperimental dengan *post test only control group design*. Gagal ginjal kronis diinduksi menggunakan 5/6 Nefrektomi Subtotal (SN) pada mencit jantan galur Swiss Webster (12-16 minggu, 30-40 gram, n=25). Diperlukan 5 kelompok yaitu kelompok SO digunakan sebagai control tanpa pemberian ekstrak etanol daun yakon, kelompok SN dengan perlakuan 5/6 nefrektomi subtotal tanpa diberikan ekstrak etanol daun yakon. Kelompok dengan model 5/6 SN yang diberikan ekstrak yakon secara oral dengan dosis 98 mg/kgBB (grup YK1), 49 mg/kgBB (grup YK2) dan 24,5 mg/kgBB (grup YK3). Skor cedera tubular dapat diukur menggunakan mikroskop perbesaran 400x sebanyak 10 lapang pandang. Sedangkan untuk kadar asam urat diukur dari vena retroorbital.

**Hasil:** kelompok 5/6 SN menyebabkan cedera tubular lebih tinggi (SN = 0,000 vs SO) kadar asam urat (SN = 0,347 vs SO). Pemberian ekstrak etanol daun yakon memiliki cedera tubular lebih rendah (SN = 0,015 vs YK1; 0,000 vs YK2; 0,487 vs YK3) serta kadar asam urat lebih rendah (SN = 0,009 vs YK1; 0,028 vs YK2; 0,754 vs YK3).

**Kesimpulan:** Pemberian ekstrak etanol daun yakon memiliki derajat cedera tubular yang lebih rendah dan menurunkan kadar asam urat yang lebih rendah pada mencit model nefrektomi subtotal.

**Kata Kunci:** Ekstrak etanol daun yakon (*Smallanthus sonchifolius*), Cedera Tubular, kadar asam urat, 5/6 Nefrektomi subtotal.

## ABSTRACT

**Background:** In chronic renal failure, tubular damage and decreased excretion of uric acid are identified as a result of adhesion of leucocytes and mononuclear cells, lumen obstruction, and decreased tubular flows resulting in increased uric acid. Yacon leaves (*Smallanthus sonchifolius*) are known to potentially prevent the adhesion of leucocytes and mononuclear cells.

**Research Objective:** To examine the effects of the administration of the ethanol extracts from yacon leaves (*Smallanthus sonchifolius*) on tubular injuries and uric acid levels among mice using 5/6 subtotal nephrectomy.

**Research Method:** This was quasi-experimental research using the posttest-only control group design. Chronic renal failure was induced with 5/6 subtotal nephrectomy (SN) in Swiss Webster male mice (12-16 weeks, 30-40 gram, n = 25). There were a total of 5 groups in this research, namely the SO group which was used as a control without the administration of ethanol extracts from yacon leaves; the SN group given the treatment of 5/6 subtotal nephrectomy without the administration of ethanol extracts from yacon leaves; and groups with the 5/6 SN model with the oral administration of extracts of yacon leaves with a dose of 98 mg/kgBw (Group YK1), 49 mg/kgBw (Group YK2), and 24.5 mg/kgBW (Group YK3). Tubular injuries score was quantified in x400 magnification with 10 visual fields. The uric acid level, was measured from retroorbital vein.

**Findings:** Group 5/6 SN caused an increase in tubular injuries (SN = 0.000 vs. SO) and in the uric acid level (SN = 0.347 vs. SO). The administration of ethanol extracts from yacon leaves reduced tubular injuries (SN = 0.015 vs. YK1; 0.000 vs. YK2; 0.487 vs. YK3) and the uric acid level (SN = 0.009 vs. YK1; 0.028 vs. YK2; 0.754 vs. YK3).

**Conclusions:** The administration of the ethanol extracts from yacon leaves resulted in a lower degree of tubular injuries and a lower level of uric acid in the Subtotal Nephrectomy model in mice.

**Keywords:** ethanol extracts from yacon leaves (*Smallanthus sonchifolius*), tubular injury, uric acid, 5/6 subtotal nephrectomy