

**EFEK PEMBERIAN KEFIR SUSU KAMBING BERBAGAI DOSIS
TERHADAP KADAR UREUM PADA TIKUS PUTIH (*Rattus norvegicus*)
GALUR WISTAR MODEL DIABETES MELITUS TIPE 2**

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ABSTRAK

Pendahuluan: Diabetes melitus tipe 2 (DMT2) merupakan penyakit metabolik yang ditandai dengan hiperglikemia akibat terganggunya hormon insulin. DMT2 dapat memicu berbagai komplikasi, salah satunya nefropati diabetik yang berkaitan pada peningkatan ureum. Upaya penatalaksanaan DMT2 salah satunya adalah dengan pangan fungsional, seperti kefir susu kambing yang mengandung prebiotik dan probiotik, sehingga dapat meminimalisir kerusakan ginjal dan menurunkan kadar ureum. Tujuan penelitian ini untuk mengetahui efek pemberian kefir susu kambing berbagai dosis terhadap kadar ureum tikus putih (*Rattus norvegicus*) galur Wistar model DMT2.

Metode: Penelitian ini menggunakan metode *true experimental* dengan rancangan *posttest only with control group design*. Sebanyak 30 ekor tikus putih (*Rattus norvegicus*) jantan galur Wistar dibagi menjadi lima kelompok secara acak. Kelompok A (kontrol sehat), kelompok B (kontrol sakit) dengan induksi HFD-STZ, kelompok perlakuan C, D, E dengan induksi HFD-STZ yang diberi kefir susu kambing selama 28 hari dengan dosis 1,05; 2,1; dan 4,2 mL/200gBB/hari. Kadar ureum diukur dengan metode *Urease-GLDH Enzymatic UV Test*. Analisis data univariat dan bivariat menggunakan *software* SPSS.

Hasil: Rerata kadar ureum (mg/dL) pada setiap kelompok tikus, yaitu kelompok A = 36 mg/dL; kelompok B = 58,6 mg/dL; kelompok C = 65 mg/dL; kelompok D = 40,3 mg/dL; kelompok E = 42,2 mg/dL. Hasil uji non parametrik *Kruskal-Wallis* didapatkan nilai $p = 0,261$ yang menunjukkan bahwa tidak terdapat perbedaan kadar ureum yang bermakna antar kelompok.

Kesimpulan: Kefir susu kambing tidak berpengaruh secara signifikan terhadap kadar ureum tikus putih Galur Wistar (*Rattus norvegicus*) model Diabetes melitus tipe 2.

Kata Kunci: Diabetes Melitus Tipe 2, Kefir Susu Kambing, Ureum.

**EFFECT OF GIVING GOAT MILK KEFIR AT VARIOUS DOSES ON UREA
LEVELS IN WISTAR STRAIN WHITE RATS (*Rattus norvegicus*) WITH
TYPE 2 DIABETES MELLITUS MODEL**

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ABSTRACT

Introduction: Type 2 diabetes mellitus (T2DM) is a metabolic disease characterized by hyperglycemia due to disruption of the insulin hormone. T2DM can trigger complications, one of which is diabetic nephropathy, associated with increased urea levels. One of the management for T2DM is the use of functional foods such as goat milk kefir, which contains prebiotics and probiotics that help minimize kidney damage and reduce urea levels. The aim of this research was to determine the effect of goat milk kefir at various doses on urea levels in white rats (*Rattus norvegicus*) of Wistar strain with T2DM.

Method: This study used a true experimental method with a posttest-only control group design. A total of 30 male Wistar strain white rats (*Rattus norvegicus*) were randomly divided into five groups. Group A (the healthy control group), group B (the sick control group) with HFD-STZ induction, and treatment groups C, D, and E were HFD-STZ-induced groups given goat milk kefir for 28 days at doses of 1,05; 2,1; and 4,2 mL/200gBW/day. Urea levels were measured using the Urease-GLDH Enzymatic UV Test method. Univariate and bivariate data analyses were performed using SPSS software.

Results: The mean urea levels (mg/dL) in each group of rats were as follows: group A = 36,0 mg/dL; group B = 58,6 mg/dL; group C = 65 mg/dL; group D = 40,3 mg/dL; group E = 42,2 mg/dL. The results of the nonparametric Kruskal-Wallis test showed a p-value of 0,261 indicating that there was no significant difference in urea levels between groups.

Conclusion: Goat milk kefir does not significantly affect urea levels in Wistar strain (*Rattus norvegicus*) white rats with Type 2 diabetes mellitus.

Keywords: Goat Milk Kefir, Type 2 Diabetes Mellitus, Urea.