

Uji Efek Protektif Jus Buah Tomat (*Solanum Lycopersicum L.*) Terhadap Fungsi Ginjal Tikus Yang Diinduksi Parasetamol.

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ABSTRAK

Parasetamol dosis berlebih dapat menyebabkan nefrotoksisitas akibat akumulasi NAPQI dan stres oksidatif, yang merusak tubulus proksimal ginjal. Tomat (*Solanum lycopersicum L.*), kaya akan likopen berpotensi mencegah kerusakan ini melalui aktivitas antioksidannya. Penelitian ini bertujuan mengevaluasi efek protektif jus tomat terhadap fungsi ginjal tikus yang diinduksi parasetamol toksik. Penelitian eksperimental ini menggunakan desain *posttest-only control group* dengan 25 tikus putih (*Rattus norvegicus*) yang dibagi menjadi 5 kelompok: kontrol positif, kontrol negatif, dan tiga kelompok perlakuan. Tikus diinduksi parasetamol dosis toksik, sementara kelompok perlakuan diberi jus tomat. Evaluasi dilakukan melalui pengukuran kreatinin plasma dan analisis histopatologi ginjal. Hasil penelitian menunjukkan parasetamol dosis toksik (250 mg/kgBB) meningkatkan kadar kreatinin dan bobot relatif ginjal, menandakan kerusakan ginjal akut. Pemberian jus tomat dosis tinggi (800 mg/kgBB) paling efektif menurunkan kadar kreatinin dan melindungi jaringan ginjal dibandingkan dosis lebih rendah. Kandungan antioksidan seperti likopen, vitamin A, dan C dalam jus tomat berperan menetralkan radikal bebas, mengurangi peradangan, dan mencegah kerusakan ginjal akibat stres oksidatif. Pemberian parasetamol 250 mg/kgBB menyebabkan kerusakan ginjal, ditandai peningkatan kreatinin dan berat relatif ginjal. Jus tomat dosis 800 mg/kgBB memberikan efek protektif terbaik, menurunkan kadar kreatinin mendekati kontrol positif. Hasil ini menunjukkan potensi jus tomat sebagai agen protektif terhadap kerusakan ginjal akibat parasetamol.

Kata kunci: Nefrotoksisitas, Parasetamol, Antioksidan, Likopen, Stres Oksidatif

Protective Effect Test Of Tomato Juice (Solanum Lyopersicum L.) To Renal Function Of Rats Induced With Paracetamol.

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ABSTRACT

Excessive doses of paracetamol can cause nephrotoxicity due to NAPQI accumulation and oxidative stress, which damages the renal proximal tubules. Tomato (Solanum lycopersicum L.), rich in lycopene has the potential to prevent this damage through its antioxidant activity. This experimental study used a posttest-only control group design with 25 white rats (Rattus norvegicus) divided into 5 groups: positive control, negative control, and three treatment groups. The rats were induced with a toxic dose of paracetamol, while the treatment groups were given tomato juice. Evaluation was done through plasma creatinine measurement and kidney histopathology analysis. The results showed that a toxic dose of paracetamol (250 mg/kgBB) increased creatinine levels and kidney relative weights, indicating acute kidney damage. Administration of high doses of tomato juice (800 mg/kgBB) was most effective in reducing creatinine levels and protecting kidney tissue compared to lower doses. Antioxidants such as lycopene, vitamin A, and C in tomato juice neutralize free radicals, reduce inflammation, and prevent kidney damage due to oxidative stress. Administration of paracetamol 250 mg/kgBB causes kidney damage, characterized by increased creatinine and relative kidney weight. Tomato juice dose of 800 mg/kgBB provides the best protective effect, reducing creatinine levels close to the positive control. These results indicate the potential of tomato juice as a protective agent against paracetamol-induced kidney damage.

Keywords: Nephrotoxicity, Paracetamol, Antioxidant, Lycopene, Oxidative Stress