

**GAMBARAN HISTOLOGIS KORTEKS GINJAL TIKUS PUTIH  
(*Rattus norvegicus*) JANTAN DEWASA STRAIN WISTAR  
PASCA PENGHENTIAN PAJANAN  
MONOSODIUM GLUTAMAT PERORAL**

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**Abstrak**

**Latar Belakang:** Monosodium glutamat (MSG), salah satu penyedap rasa yang berperan dalam rasa *umami*. Penggunaan melebihi ambang batas menyebabkan kerusakan ginjal. **Tujuan:** Penelitian bertujuan untuk mengetahui gambaran histologis korteks ginjal tikus putih (*Rattus norvegicus*) jantan dewasa strain wistar pasca penghentian pajanan MSG peroral. **Metodologi:** Desain penelitian ini merupakan eksperimental murni dengan menggunakan 27 tikus yang dibagi 9 kelompok. Sampel dipilih dengan metode *simple random sampling*. Kelompok kontrol positif (KP) diberikan akuadest 1,5ml selama 28, 42, 56 hari; Kelompok kontrol negatif (KN) diberikan MSG 5mg/gBB/hari selama 28, 42, 56 hari; Kelompok perlakuan (P) diberikan MSG 5mg/gBB/hari selama 28 hari dan dihentikan selama 1, 14, 28 hari. Tikus kemudian dimatikan secara bertahap pada hari ke-29, ke-43 dan ke-57. Lalu, tikus dibedah dan diambil organ ginjalnya untuk pembuatan preparat ginjal dengan pewarnaan H&E. Variabel data adalah jumlah korpuskulum ginjal dan tubulus proksimal yang rusak maupun normal. Data diamati dengan perbesaran lensa objektif 10x untuk korpuskulum ginjal dan perbesaran 40x untuk tubulus proksimal. Data dianalisa menggunakan *one-way anova* dilanjutkan LSD dan *Kruskal Wallis Test* dilanjutkan *Mann-Whitney Test* dengan program SPSS 20.0. **Hasil:** Tidak terdapat perbedaan bermakna rerata jumlah tubulus proksimal normal dan rusak pada seluruh kelompok perlakuan (P) ( $p \geq 0,05$ ). Tidak terdapat perbedaan bermakna rerata jumlah korpuskulum ginjal normal pada seluruh kelompok perlakuan (P) ( $p \geq 0,05$ ). Terdapat perbedaan bermakna rerata jumlah korpuskulum ginjal rusak pada seluruh kelompok perlakuan (P) ( $p < 0,05$ ). **Kesimpulan:** Pajanan MSG menyebabkan kerusakan tubulus proksimal dan korpuskulum ginjal dan terjadi regenerasi setelah 14 hari penghentian pajanan MSG.

**Kata kunci:** Monosodium Glutamat (MSG), regenerasi, tubulus proksimal, korpuskulum ginjal

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**HISTOLOGICAL OF RENAL CORTEX OF ADULT MALE WISTAR RATS  
(*Rattus norvegicus*) AFTER CESSATION OF ORAL ADMINISTRATION  
MONOSODIUM GLUTAMATE**

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**Abstract**

**Background:** Monosodium glutamate (MSG) is a flavor enhancer which used for arising umami taste. Excessive consumption of MSG resulted in kidney degeneration. **Objective:** The aim of this study was to determine the histological of renal cortex of adult male wistar rats (*Rattus norvegicus*) after cessation of oral administration monosodium glutamate. **Methodology:** The design of this study is true experimental, using 27 rats which were divided into 9 groups. The sample was selected using simple random sampling method. Positive control groups (KP) received 1,5ml aquadest for 28, 42, 56 days; Negative control groups (KN) received MSG at a dose of 5mg/gBW/day for 28, 42, 56 days; Treatment groups (P) received MSG at a dose of 5mg/gBW/day for 28 days and stopped for 1, 14, 28 days. Then, the rats were dissected gradually at day-29, day-43 and day-57. The kidney was processed into microscopic preparations and stained with H&E. Measured variables include normal and abnormal proximal tubules and renal corpuscles. The proximal tubules were observed with 40x objective lens and renal corpuscles were observed with 10x objective lens. The data were analyzed using One-way ANOVA followed by LSD and Kruskal Wallis Test followed by Mann-Whitney Test (SPSS v20.0). **Results:** There were no significant differences in the mean number of normal and abnormal proximal tubules between treatment groups (P) ( $p \geq 0,05$ ). There were no significant differences in the mean number of normal renal corpuscles between treatment groups (P) ( $p \geq 0,05$ ). There were significant differences in the mean number of abnormal renal corpuscles between treatment groups (P) ( $p < 0,05$ ). **Conclusions:** Excessive consumption of MSG resulted in degeneration of proximal tubules and renal corpuscles and regeneration occur in 14 days after withdrawal of MSG exposure.

**Keywords:** Monosodium Glutamate (MSG), regeneration, proximal tubule, renal corpuscle.

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