

## ABSTRAK

### **EFEK PERASAN KULIT BATANG PULE (*Astonia scholaris* (L.) R. BR.) TERHADAP GAMBARAN HISTOPATOLOGIK HATI DAN GINJAL TIKUS WISTAR (*Rattus norvegicus*) YANG DIINDUKSI STREPTOZOTOCIN (STZ)**

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Penelitian ini bertujuan untuk mengetahui efek perasan kulit batang Pule terhadap gambaran histopatologi hati dan ginjal tikus Wistar yang diinduksi streptozotocin (STZ) sehingga mengalami diabetes melitus. Penelitian dilakukan selama 28 hari dan hewan percobaan yang digunakan adalah 25 ekor tikus Wistar jantan yang dibagi menjadi 5 kelompok. Tikus Kelompok I, II, dan III diinduksi dengan STZ dosis 40 mg/kg BB/ekor/IP, Kelompok IV tikus normal namun diberi 1 mL perasan kulit batang Pule 18 mg/200 g/BB/hari/PO, dan Kelompok V sebagai kontrol negatif. Kelompok I diberi 1 mL perasan kulit batang Pule 18 mg/200 g/BB/hari/PO, Kelompok II diberi 1 mL perasan kulit batang Pule 18 mg/200 g/BB/hari/PO dengan nekropsis rutin setiap 4 hari sekali, Kelompok III kontrol positif diberi akuades 1 mL, Kelompok IV tikus normal yang diberi 1 mL perasan kulit batang Pule 18 mg/kg BB/ekor/hari/PO, Kelompok V kontrol negatif tikus normal diberi akuades 1 mL. Pada akhir penelitian, semua tikus Kelompok I, III, IV, dan V dieuthanasi, dinekropsi, dan diambil sebagian organ hati dan ginjalnya untuk dilakukan pemeriksaan histopatologi dan diwarnai dengan Hematoksilin Eosin (HE).

Hasil pengamatan gambaran histopatologi organ hati dan ginjal tikus percobaan Kelompok V (kontrol) histopatologi tidak menunjukkan perubahan histopatologi. Tikus percobaan Kelompok IV menunjukkan perubahan pada hati dan ginjal berupa kerusakan organ. Tikus percobaan Kelompok III menunjukkan perubahan pada hati berupa ketidakradieran susunan hepatosit, pelebaran sinusoid, kongesti, degenerasi hidropik, dan nekrosis hepatosit serta perubahan gambaran histopatologi ginjal berupa pelebaran ruang kapsula Bowman, nekrosis glomerulus, pelebaran lumen tubuli, pendarahan disertai nekrosis sel tubulus. Tikus percobaan Kelompok I dan II menunjukkan gambaran histopatologi yang sama dengan Kelompok III. Hal ini mengindikasikan bahwa tidak ada perbaikan organ menuju arah kesembuhan setelah tikus diberi perasan kulit batang Pule. Penelitian ini memperlihatkan bahwa bila mengonsumsi obat herbal perasan kulit batang Pule secara terus menerus akan mengakibatkan kerusakan pada organ hati dan ginjal.

Kata kunci: Pule, tikus Wistar, hati, ginjal, streptozotocin, diabetes melitus, histopatologi

## ABSTRACT

### THE EFFECTS OF PULE (*Astonia scholaris* (L.) R. BR.) BARK EXTRACTS FOR HISTOPATOLOGIC IMAGES OF KIDNEY AND LIVER IN WISTAR RATS (*Rattus norvegicus*) INDUCED BY STREPTOZOTOCIN (STZ)

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This study aims to determine the effects of Pule bark extracts on histopathologic images of liver and kidney in Wistar rats induced by streptozotocin (STZ) which yields to diabetes mellitus. The study was conducted for 28 days and the experimental animals used were 25 male Wistar rats divided into 5 groups. Rats of Group I, II, and III were induced by STZ dose 40 mg / kg BW / IP, normal rats of Group IV were given 1 mL of Pule pulsed bark 18 mg / 200 g / BB / day / PO, and Group V acted as a negative control. Group I was given 1 mL of Pule bark extracts 18 mg / 200 g / BB / day / PO, Group II was given 1 mL of Pule bark extracts of 18 mg / 200 g / BB / day / PO with routine necropsy every 4 days, Group III acted as a positive control given 1 mL distilled water, normal rats of Group IV were given 1 mL of Pule bark extracts 18 mg / kg BW / day / PO, while Group V as negative control of normal rats were given 1 mL of distilled water. At the end of the study all Group I, III, IV and V were euthanized, necropsified then liver and kidney are partially removed for histopathologic examination and stained with Hematoxylin Eosin (HE).

There is no histopathologic change in the results of liver and kidney observation in the experimental laboratory rats of Group V. While laboratory rats of Group IV show changes in the liver and kidney in the form of organ damage. Laboratory rats of Group III show a change in the liver such as hepatocyte insufficiency, sinusoidal extension, congestion, hydropic degeneration, and hepatocyte necrosis as well as histopathologic renal image changes in Bowman's capsule space, glomerular necrosis, dilation of the lumen tubule, and bleeding with tubular cell necrosis. Laboratory rats of Group I and II show the same histopathologic image as Group III. This indicates that there is no improvement in organ towards the healing process after the rats are given pule skin bark. Thus, this study shows that taking herbal pulmonary stomach pulse skin remedy will damage liver and kidney organ.

Keywords: Pule, Wistar rat, liver, kidney, streptozotocin, diabetes mellitus, histopathology