

ABSTRAK

Penyakit perlemakan hati nonalkoholik ditandai dengan adanya stres oksidatif dan akumulasi lemak dalam hati. Berbagai studi telah melaporkan kandungan antioksidan akar *Eurycoma longifolia* Jack. (pasak bumi). Penelitian ini bertujuan untuk mengetahui pengaruh pemberian jangka panjang ekstrak metanol akar pasak bumi (EMAPB) terhadap aktivitas serum alanin aminotransferase dan aspartat aminotransferase (ALT-AST) pada tikus terinduksi karbon tetraklorida. Jenis penelitian ini adalah eksperimental murni dengan rancangan acak lengkap pola searah. Tiga puluh ekor tikus dialokasikan secara acak ke dalam enam kelompok ($n=5$). Kelompok I diberi CMC-Na (6 hari, peroral); kelompok II diberi karbon tetraklorida 2 mL/kgBB secara intraperitoneal; kelompok III diberi EMAPB 300 mg/kgBB (6 hari, peroral); kelompok IV, V, VI diberi EMAPB 75, 150, 300 mg/kgBB (6 hari, peroral) dan diinduksi secara intraperitoneal dengan karbon tetraklorida 2 mL/kgBB pada hari ketujuh. Sampel darah diperoleh melalui pleksus vena retro-orbital, kemudian dilakukan pengukuran aktivitas serum ALT-AST. Kelompok I dan III pada hari ketujuh; kelompok II pada hari kedua; kelompok IV, V, VI pada hari kedelapan. Hasil penelitian menunjukkan bahwa praperlakuan EMAPB 150 mg/kgBB selama 6 hari secara signifikan ($p<0,05$) mencegah kenaikan aktivitas serum ALT-AST. Temuan ini mengindikasikan potensi farmakologi akar pasak bumi untuk mengurangi stres oksidatif dan kerusakan hepatoseluler, yang diduga terkait kandungan fitokimianya, namun diperlukan penelitian lebih lanjut.

Kata kunci: akar pasak bumi, ekstrak metanol, ALT-AST, karbon tetraklorida

ABSTRACT

Nonalcoholic fatty liver disease is characterized by oxidative stress and fat accumulation in liver. Numerous studies have reported antioxidant properties of *Eurycoma longifolia* Jack. (pasak bumi) roots. This study aimed to investigate effect of long-term administration of methanol extract of pasak bumi roots (EMAPB) against alanine aminotransferase and aspartate aminotransferase (ALT-AST) serum activity in rats induced by carbon tetrachloride. The study was a true experimental with single factor completely randomized design. Thirty rats were randomly divided into six groups ($n=5$). Group I received CMC-Na (6 days, peroral); group II received carbon tetrachloride 2 mL/kgBW intraperitoneally; group III received EMAPB 300 mg/kgBW (6 days, peroral); groups IV, V, VI were given EMAPB 75, 150, 300 mg/kgBW (6 days, peroral) and intraperitoneal induction of carbon tetrachloride 2 mL/kgBW on seventh day. Blood sample was obtained by retro-orbital plexus venous puncture, then measurement of ALT-AST serum activity were performed. Groups I and III on seventh day; group II on second day; groups IV, V, VI on eighth day. The result revealed that pretreatment for 6 days with EMAPB 150 mg/kgBW significantly ($p<0,05$) inhibited elevation of ALT-AST serum activity. This findings indicated pharmacological potential of pasak bumi roots in alleviating oxidative stress and hepatocellular damage, that may be related to its phytochemicals constituent, however further study needs to be done.

Keywords: pasak bumi roots, methanol extract, ALT-AST, carbon tetrachloride