INTISARI

Radikal bebas merupakan senyawa yang secara alami terdapat dalam tubuh dan berperan dalam menjaga homeostasis reaksi reduksi-oksidasi dalam tubuh. Apabila jumlahnya berlebih dapat memicu stres oksidatif yang berujung pada timbulnya berbagai penyakit. Biji buah rambutan diketahui memiliki aktivitas antioksidan yang dapat menangkal radikal bebas sehingga dapat menjaga keseimbangan reduksi-oksidasi dalam tubuh dan mencegah stres oksidatif. Penelitian ini akan mengukur kadar fenolik dan flavonoid total serta melihat pengaruh pemberian fraksi etil asetat ekstrak metanolik biji buah rambutan (EMBBR) terhadap enzim superoksida dismutase akibat induksi karbon tetraklorida.

Pada penelitian ini dilakukan analisis kualitatif kandungan flavonoid dengan KLT, serta penetapan kadar fenolik dan flavonoid total dalam fraksi etil asetat ekstrak metanolik biji buah rambutan dengan spektrofotometri. Pemejanan fraksi etil asetat ekstrak metanolik biji buah rambutan dilakukan secara per oral dengan dosis 2, 4, dan 8 mg/KgBB pada tikus jantan Sprague Dawley selama 14 hari, pada hari keempat belas setelah pemberian fraksi dilakukan pemejanan karbon tetraklorida dan tikus dipuasakan 24 jam sebelum diambil darahnya dan dikorbankan untuk penentuan berat relatif organ. Kadar enzim superoksida dismutase dalam serum darah tikus dianalsis menggunakan teknik ELISA dan dibandingkan hasilnya melalui uji statistik menggunakan perangkat lunak SPSS.

Diperoleh fraksi etil asetat EMBBR dengan rendemen 1,06%. Hasil analisis kualitatif menunjukkan adanya kandungan flavonoid. Hasil analisis spektrofotometri kadar flavonoid total 11,15%b/bER dan kadar fenolik total 23,45%b/bEAG. Berat relatif organ dan hasil analisis ELISA menunjukkan bahwa fraksi etil asetat EMBBR tidak memberikan pengaruh signifikan terhadap kadar enzim superoksida dismutase tikus yang diinduksi karbon tetraklorida.

Kata kunci : antioksidan, *Nephelium lappaceum* L., karbon tetraklorida, superoksida dismutase.

ABSTRACT

Free radical is a compound naturally produced by the body that takes a part in keeping homeostasis of reduction-oxidation reaction inside the body. Excess of free radicals may lead to oxidative stress which includes the development of other diseases. Rambutan (*Nephelium lappaceum L.*) seed is known for having antioxidant activity by scavenging free radicals inside the body and hence balancing the reduction-oxidation reaction. This study aimed to determine total phenolic and flavonoid content and evaluate the effect of ethyl acetate fraction from methanolic extract of rambutan seed on superoxide dismutase in carbon tetrachloride-induced rat.

Flavonoid compound from ethyl acetate fraction of rambutan seed methanolic extract was analyzed qualitatively using thin layer chromatography, total phenolic, and flavonoid content were also analyzed using a spectrophotometric method. The fraction was given orally into male Sprague Dawley rats for 14 days in the dose of 2, 4, and 8 mg/kg BW. The rats were induced by injection of carbon tetrachloride peritoneally after the last fraction was given and fasted for 24 hours before taken for blood sampling and were sacrificed. The rat liver was isolated and the relative organ weight was measured. The superoxide dismutase enzyme from the rat blood serum was determined using ELISA and compared statistically.

Ethyl acetate fraction of rambutan seed methanolic extract produced a yield of 1.06%. A qualitative analysis of flavonoids showed that ethyl acetate fraction contained a flavonoid compound. The fraction had 11.15 %w/w RE of total flavonoid content and 23.45 %w/w GAE of total phenolic content. Relative organ weight and ELISA result showed that ethyl acetate fraction of rambutan seed methanolic extract did not give a significant effect on the level of superoxide dismutase in carbon tetrachloride-induced rats.

Keywords : antioxidant, *Nephelium lappaceum* L., carbon tetrachloride, superoxide dismutase