ABSTRAK

Benzene yang berbahaya bagi kesehatan dan dikaitkan dengan penyakit neurotoksisiti dan neurodegeneratif. Daun salam sangat aman dikonsumsi karena terbukti tidak menunjukkan efek toksik, teratogenitas, dan genotoksik pada hewan percobaan dan memiliki efek antioksidan yang kuat. Penelitian ini bertujuan untuk mengetahui efek neuroprotektif ekstrak etanol daun salam pada tikus yang diinduksi benzena. penelitian ini dibagi menjadi 11 kelompok, kelompok 1 normal, kelompok 2 dan 3 kontrol negatif, kelompok 4 dan 5 kontrol positif, dan kelompok 6-11 kelompok pemberian ekstrak etanol daun salam. Benzene diberikan secara intraperitoneal setiap 3 dan 6 hari sedangkan ekstrak diberikan secara per oral selama 21 hari. Pada hari ke 22 tikus di anastesi dan diambil otak kemudian dilakukan analisis kadar IL-4 dan IL-6 dengan menggunakan Elisa kit yang diikur pada microplate reader 450 nm. Hasil penelitian menunjukkan bahwa kadar IL-4 dan IL-6 pada tikus yang hanya di berikan benzene mengalami peningkatan secara statistik berbeda signifikan dengan kelompok normal ($p<0,05$), sedangkan pada kelompok yang diberikan ekstrak terbesar yaitu 800 mg/kgbb terjadi penurunan kadar IL-4 dan IL-6 yang secara statistik tidak memiliki perbedaan signifikan dengan kelompok normal ($p>0,05$). Sehingga dapat disimpulkan bahwa ekstrak etanol daun salam memiliki aktivitas neuroprotektif karena daun salam mengandung flavonoid yang berperan mencegah terjadinya proses inflamasi akibat paparan benzene.

Kata kunci: Syzygium polyanthum, Neuroprotective, IL-4, IL-6

ABSTRACT

Benzene is harmful to health and is associated with neurotoxic and neurodegenerative diseases. Bay leaf is very safe for consumption because it has been proven not to show toxic, teratogenic, and genotoxic effects in experimental animals and has a strong antioxidant effect. This study aims to determine the neuroprotective effect of ethanolic extract of bay leaf on benzene-induced rats. This study was divided into 11 groups, group 1 was normal, group 2 and 3 were negative controls, groups 4 and 5 were positive controls, and groups 6-11 were given ethanol extract of bay leaf. Benzene was administered intraperitoneally every 3 and 6 days while the extract was administered orally for 21 days. On day 22, the rats were anesthetized and their brains were taken and then analyzed for levels of IL-4 and IL-6 using an Elisa kit measured on a 450 nm microplate reader. The results showed that the levels of IL-4 and IL-6 in rats that were only given benzene increased statistically significantly different from the normal group ($p<0.05$), while in the group given the largest extract, namely 800 mg/kg BW there was a decrease. IL-4 and IL-6 levels were statistically not significantly different from the normal group ($p>0.05$). So it can be concluded that the ethanolic extract of bay leaves has neuroprotective activity because bay leaves contain flavonoids that play a role in preventing the inflammatory process due to exposure to benzene.

Keywords: *Syzygium polyanthum, Neuroprotective,* IL-4, IL-6.