

ABSTRAK

Sepsis adalah sindroma klinik sebagai respon inflamasi sistemik karena respon imunitas tubuh yang berlebihan terhadap rangsangan produk mikroorganisme. Selama sepsis, lipopoliskarida akan memulai kaskade kompleks pada sel responsif khususnya makrofag yang akan menyebabkan peningkatan produksi mediator inflamasi berupa TNF α . Tujuan penelitian untuk mengetahui pengaruh ekstrak etanol akar alang-alang terhadap ekspresi tumor nekrosis faktor (TNF) α di hepar pada mencit model sepsis. Penelitian ini bersifat eksperimental murni in vivo di Laboratorium Biokimia dan Biomolekular Fakultas Kedokteran Universitas Padjajaran Bandung selama 8 bulan dari Januari-Agustus 2019 menggunakan desain penelitian *randomized post test only controlle group* pada empat kelompok mencit jantan galur DDY yaitu, kelompok I (kontrol negatif), kelompok II (kontrol positif), kelompok III dan IV diberi ekstrak etanol akar alang-alang masing-masing dosis 90 mg/KgBB dan 115 mg/KgBB selama 2 minggu. Pada akhir minggu kedua, kelompok II, III, IV diinduksi lipopolisakarida (LPS) dosis 10 mg/KgBB secara intraperitoneal agar sepsis, dan dinilai *murine sepsis score* (MSS) selanjutnya mencit dikorbankan dan organ heparnya diambil untuk dilakukan pemeriksaan ekspresi TNF α menggunakan *Realtime-Polymerase Chain Reaction* (RT-PCR). Hasil one way ANOVA test menunjukkan tidak adanya perbedaan signifikan antar kelompok perlakuan (nilai $p=0.180$), hal ini menunjukkan senyawa yang terkandung dalam ekstrak etanol akar alang-alang tidak berpengaruh dalam menurunkan ekspresi TNF α . Simpulan penelitian, pemberian ekstrak etanol akar alang-alang dengan dosis 90 mg/KgBB dan 115 mg/KgBB tidak berpengaruh dalam menurunkan ekspresi TNF α pada jaringan hepar mencit saat sepsis.

Kata kunci: alang-alang, ekspresi TNF α , hepar, sepsis.

ABSTRACT

Sepsis is a clinical syndrome as a systemic inflammatory response because of the body's excessive immune response to stimulation of microorganism products. During sepsis, lipopolysaccharides will initiate a complex cascade on macrophage-specific responsive cells which will cause increased production of inflammatory mediators that contain TNF α . The purpose of this study was to determine the effect of ethanol extract of cogon grass root on tumor necrosis factor (TNF) α expression on the liver of sepsis model mice. This study was true experimental research in vivo at the Biochemical and Biomolecular Laboratory of the Faculty of Medicine, Padjajaran University, Bandung for 8 months from January to August 2019 using randomized post-test only control group research design in four groups of male mice DDY strain, namely group I (negative control), group II (positive control), group III and IV were given ethanol extract of cogon grass root with each dose of 90 mg / KgBB and 115 mg / KgBB for 2 weeks. At the end of the second week, groups II, III, IV were induced by lipopolysaccharide (LPS) with a dose of 10 mg / KgBB intraperitoneally for sepsis, and assessed murine sepsis score (MSS) then the mice were sacrificed and the liver was taken to examine TNF α expression using Realtime-Polymerase Chain Reaction (RT-PCR). The results of one-way ANOVA test showed there was not any significant difference between treatment groups (p value = 0.180), this showed that the compounds contained in the ethanol extract of cogon roots had no effect in reducing TNF α expression. This study concludes, the appliance of ethanol extract of cogon root at a dose of 90 mg / KgBB and 115 mg / KgBB does not have any effect in decreasing TNF α expression in the mice's liver during sepsis.

Keywords: Cogon Grass, TNF α expression, liver, sepsis.