RINGKASAN

Kadmium merupakan bahan pencemar logam berat yang bersumber dari berbagai industri, seperti pertambangan, pengelasan logam, dan pupuk pertanian. Kadmium bersifat racun terhadap ginjal dengan menimbulkan peningkatan kadar kadmium darah, β2-*microglobulin*, malondialdehid, dan penurunan superoksida dismutase. Paparan kadmium dalam tubuh dapat dikelat dengan ekstrak etanol tubuh buah *Ganoderma lucidum* yang memiliki kandungan flavonoid. Tujuan penelitian adalah untuk mengetahui pengaruh dan dosis efektif ekstrak etanol tubuh buah *G. lucidum* terhadap penurunan efek toksisitas kadmium pada tikus putih jantan (*Rattus norvegicus*) galur Wistar. Metode yang digunakan adalah eksperimental dengan Rancangan Acak Lengkap (RAL), yang terdiri atas 5 taraf perlakuan dan 6 kali ulangan, P_0 (tanpa induksi kadmium dan ekstrak etanol *G. lucidum*), P_1 (diinduksi kadmium), P_2 (diinduksi kadmium dan ekstrak etanol *G. lucidum* 250 mg.kg^{-1}BB), P_3 (diinduksi kadmium dan ekstrak etanol *G. lucidum* 500 mg.kg^{-1}BB), dan P_5 (diinduksi kadmium dan ekstrak etanol *G. lucidum* 750 mg.kg^{-1}BB). Parameter penelitian yaitu kadar kadmium darah, β2-*microglobulin*, malondialdehid, dan superoksida dismutase. Sampel darah diambil saat *post test*. Hasil penelitian setiap parameter memiliki pengaruh yang signifikan berdasarkan ANOVA. Kadar kadmium darah, β2M dan MDA terendah pada perlakuan P_0, tertinggi pada perlakuan P_1 dan menurun sejalan dengan penambahan dosis ekstrak etanol tubuh buah *G. lucidum*. Kadar SOD tertinggi pada perlakuan P_0, terendah pada perlakuan P_1 dan meningkat sesuai penambahan dosis ekstrak etanol tubuh buah *G. lucidum*. Kadar kadmium darah dengan kadar β2M dan MDA memiliki korelasi positif, sedangkan kadar kadmium darah dengan kadar SOD berkorelasi negatif. Dosis 750 mg.kgBB^{-1} adalah dosis efektif ekstrak etanol tubuh buah *G. lucidum* berdasarkan penurunan kadar kadmium darah (54,10%), β2M (63,94%) dan MDA (20,31%), serta peningkatan kadar SOD (14,20%) dibandingkan kontrol sakit (P_1).

Kata kunci: β2-*microglobulin*, *G. lucidum*, kadmium, malondialdehid, superoksida dismutase.

SUMMARY

Cadmium is a heavy metal pollutant sourced from various industries, such as mining, metal welding, and agricultural fertilizers. Cadmium is toxic to the kidneys by causing an increase in blood levels of cadmium, β2-microglobulin, malondialdehyde, and decrease superoxide dismutase. Exposure to cadmium in the body can be chelated with the ethanol extract of the fruiting body of *Ganoderma lucidum* which contains flavonoids. The aim of the study was to determine the effect and effective dose of the ethanolic extract of the fruiting body of *G. lucidum* on reducing the toxicity effect of cadmium in male albino rats (*Rattus norvegicus*) Wistar strain.The method used was experimental with Completely Randomized Design (CRD), which consisted of 5 treatment levels and 6 replications. P_0 (did not induced by cadmium and ethanol extract of *G. lucidum*), P_1 (induced by cadmium), P_2 (induced by cadmium and ethanol extract of *G. lucidum* 250 mg.kg^{-1}BB), P_3 (induced by cadmium and ethanol extract of *G. lucidum* 500 mg.kg^{-1}BB), and P_5 (induced by cadmium and ethanol extract of *G. lucidum* 750 mg.kg^{-1}BB). The research parameters were blood cadmium, β2-microglobulin, malondialdehyde, and superoxide dismutase levels. Blood samples were taken during the post test. The results of each parameter had a significant effect based on ANOVA. Blood cadmium, β2M and MDA levels were lowest in treatment P_0, the highest in treatment P_1 and decreased alongside with the increasing doses of ethanol extract of *G. lucidum* fruiting bodies. The highest SOD level was in treatment P_0, the lowest was in treatment P_1 and increased according to the addition of the dose of ethanol extract of the fruiting body of *G. lucidum*. Blood cadmium levels with β2M and MDA levels had a positive correlation, while blood cadmium levels with SOD levels had a negative correlation. The dose of 750 mg.kgBB^{-1} is the effective dose of the ethanolic extract of the fruiting body of *G. lucidum* based on a decrease in blood cadmium levels (54.10%), β2M (63.94%) and MDA (20.31%), as well as an increase in SOD levels (14.20%) compared to sick control (P_1).

Keywords: β2-microglobulin, cadmium, *G. lucidum*, malondialdehyde, superoxide dismutation.