

ABSTRAK

Primaputri, Wendy Carinna. 2017. **Efek Paparan Profilin *Toxoplasma gondii* terhadap Kadar Superoxide Dismutase pada Kultur Adiposit (Studi Hubungan Infeksi *Toxoplasma gondii* dengan Disfungsi Adiposit)**. Tugas Akhir, Program Studi Kedokteran. Fakultas Kedokteran Universitas Brawijaya. Pembimbing : (1) dr. Agustin Iskandar, M.Kes, Sp.PK (2) Edwin Widodo, S.SI, M.Sc.

Obesitas merupakan permasalahan yang prevalensinya semakin lama semakin meningkat. Obesitas dapat disebabkan oleh infeksi, salah satunya infeksi parasit. *Toxoplasma gondii* adalah parasit yang dapat ditemukan di seluruh dunia, diperkirakan sekitar sepertiga populasi dunia mengalami infeksi parasit ini. Pada penelitian sebelumnya, telah didapatkan hasil bahwa infeksi *Toxoplasma gondii* dapat menyebabkan disfungsi adiposit melalui proses hiperplasia dan hiperproliferasi sel adiposit, yang menyebabkan stres oksidatif. Penelitian ini bertujuan untuk mengetahui efek paparan profilin *Toxoplasma gondii* terhadap kadar SOD pada kultur adiposit. Studi eksperimental menggunakan *true experimental post test only control group design* dilakukan terhadap kultur adiposit yang diberi perlakuan. Terdapat empat kelompok perlakuan pada penelitian ini yaitu kelompok kontrol negatif (media kultur), serta tiga kelompok yang masing-masing diberi dosis profilin 5 µg, 20 µg, dan 40 µg. Kadar SOD yang diukur dengan metode spektrofotometri dengan panjang gelombang 500-600 nm. Hasil penelitian menunjukkan tidak terdapat perbedaan bermakna pada empat kelompok perlakuan (ANOVA, $p=0,066$). Hubungan kedua variabel adalah signifikan, dengan kekuatan korelasi kuat, dan terjadi penurunan kadar SOD seiring dengan bertambahnya dosis profilin *Toxoplasma gondii* (Pearson, $p=0,011$, Koefisien korelasi = $-0,618$). Kontribusi paparan profilin *Toxoplasma gondii* dalam menurunkan kadar SOD adalah sebesar 38,2% (Regresi linier, $R^2=0,382$). Kesimpulan dari penelitian ini adalah paparan profilin *Toxoplasma gondii* dapat menurunkan kadar SOD, namun tidak terdapat perbedaan bermakna antara paparan profilin *Toxoplasma gondii* dengan kadar SOD.

Kata kunci : profilin, *Toxoplasma gondii*, Superoxide dismutase, disfungsi adiposit

ABSTRACT

Primaputri, Wendy Carinna. 2017. **Effect of *Toxoplasma gondii*'s Profilin Exposure on Superoxide Dismutase Level of Adipocyte Culture (Study of Relation Between Infection of *Toxoplasma gondii* and Adipocyte dysfunction)**. Final Assignment, Medical Program, University of Brawijaya. Supervisors : (1) dr. Agustin Iskandar, M.Kes, Sp.PK (2) Edwin Widodo, S.Si, M.Sc

Obesity is a problem which its prevalency is progressively increasing by the time. Obesity can be caused by infection, one of which is parasitic infection. *Toxoplasma gondii* is a parasite that can be found all around the world, it is estimated that one third of the world's poulation infected with this parasite. Prior research has concluded that infection of *Toxoplasma gondii* can cause adipocyte dysfunction through hyperplasia and hyperproliferation of adipocyte cells, which cause oxydative stress. This research was aimed to understand the effect of *Toxoplasma gondii*'s profilin exposure on Superoxide dismutase (SOD) level of adipocyte culture. Experimental study using true experimental post test only group design was conducted onto adipocyte culture which was given *Toxoplasma gondii*'s profilin. There were four groups in this research that were negative control group (culture media), and three groups that each were given profilin with dose 5 µg, 20 µg, and 40 µg. The level of SOD was measured by spectrophotometry method with a wavelength 500-600 nm. Result of this research indicated that there was no significant differences in the four groups (ANOVA, $p=0,066$). There was significant relation between two variable, with strong correlations, and the SOD level decreased along with increased dose of *Toxoplasma gondii*'s profilin (Pearson, $p=0,011$, Correlation coefficient= $-0,618$). *Toxoplasma gondii*'s profilin exposure contributed 38,2% in decreased of SOD level (Linier regression, R Square= $0,382$). The conclusion is *Toxoplasma gondii*'s profilin exposure can decrease SOD level, but there is no significant differences between exposure of *Toxoplasma gondii*'s profilin and SOD level.

Keywords : profilin, *Toxoplasma gondii*, Superoxide dismutase, adipocyte dysfunction