

Pengaruh pemberian klorofilin berbagai dosis terhadap indeks fagositosis makrofag dan kadar nitric oxide mencit BALB/c yang diinfeksi dengan *Salmonella typhimurium*

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ABSTRACT

Background: Immune responses to eliminate *Salmonella* infection are by activating macrophage and by producing NO. Chlorophyllin is a chlorophyll derivative that has immunomodulator properties.

Objective: The aim of this study was to prove effect of chlorophyllin in macrophage phagocytosis index and NO level.

Methods: A post test only controlled group design was conducted in 5 groups Balb/c mice (negative control, positive control, dosage 100 µg/200 g BW, dosage 200 µg/200 g BW and dosage 380 µg/200 g BW). Macrophage phagocytosis index was measured by counting cells that phagocyte latex particles. NO level was measured by Griess method. Macrophage phagocytosis index difference was analyzed by one way anova and NO level difference was analyzed by Kruskal-Wallis test (α 0,05).

Results: Means of macrophage phagocytosis index were 0,7(\pm 0,80), 1,8(\pm 0,80), 2(\pm 0,22), 2,5(\pm 0,43) and 3,2(\pm 0,68) respectively in negative control, positive control, chlorophyllin dosage 100 µg/g BW/day, 200 µg/g BW/day and 380 µg/g BW/day. There was a significant difference of macrophage phagocytosis index between group (p 0,000). Mean of NO level were 0,4 µM(\pm 0,10), 0,6 µM(\pm 0,60), 0,8 µM(\pm 0,64), 0,6 µM(\pm 0,67) and 0,4 µM(\pm 0,26) respectively in negative control, positive control, chlorophyllin dosage 100 µg/g BW/day, 200 µg/g BW/day and 380 µg/g BW/day. There was no difference of NO level between group (p 0,813).

Conclusion: There was a significant difference of macrophage phagocytosis index between chlorophyllin administered group and control. The higher chlorophyllin dosage, the higher macrophage phagocytosis index. There was no difference of NO level between chlorophyllin administered group and control.

Keywords: chlorophyllin, macrophage, NO, *Salmonella typhimurium*

ABSTRAK

Latar Belakang : Respon imun tubuh terhadap infeksi *Salmonella* diantaranya mengaktifkan makrofag dan produksi NO. Klorofilin merupakan turunan dari klorofil yang memiliki sifat sebagai immunomodulator.

Tujuan : Tujuan penelitian ini membuktikan pemberian klorofilin berbagai dosis berpengaruh terhadap indeks fagositosis makrofag dan kadar NO.

Metode : The post test only controlled group design pada mencit Balb/c terbagi dalam 5 kelompok. Perbedaan indeks fagositosis makrofag dianalisis menggunakan uji one way anova. Perbedaan kadar NO diukur menggunakan dianalisis menggunakan uji Kruskal-Wallis.

Hasil : Rerata indeks fagositosis makrofag 0,7(\pm 0,80), 1,8(\pm 0,80), 2(\pm 0,22), 2,5(\pm 0,43) dan 3,2(\pm 0,68) masing-masing pada kelompok kontrol negatif, kontrol positif, klorofilin dosis 100 µg/g BB/hari, 200 µg/g BB/hari dan 380 µg/g BB/hari. Terdapat perbedaan rerata indeks fagositosis makrofag (p 0,000). Rerata kadar NO 0,4 µM(\pm 0,1), 0,6 µM(\pm 0,60), 0,8 µM(\pm 0,64), 0,6 µM(\pm 0,67) dan 0,4 µM(\pm 0,26) masing-masing pada kelompok kontrol negatif, kontrol positif, klorofilin dosis 100 µg/g BB/hari, dosis 200 µg/g BB/hari dan dosis 380 µg/g BB/hari. Tidak terdapat perbedaan bermakna rerata kadar NO (p 0,813).

Simpulan : Ada perbedaan bermakna pada indeks fagositosis makrofag antara kelompok diberi klorofilin dengan kelompok tanpa klorofilin. Peningkatan dosis klorofilin meningkatkan indeks fagositosis makrofag. Tidak terdapat perbedaan bermakna pada kadar NO antara kelompok diberi klorofilin dengan kelompok tanpa klorofilin.

Kata kunci : klorofilin, makrofag, NO, *Salmonella typhimurium*