

**PENGARUH SUPLEMENTASI PROBIOTIK DAN
SELENIUM TERHADAP NLR (*NEUTROPHIL
LYMPHOCYTE COUNT RATIO*), HEMOGLOBIN DAN
ALBUMIN PADA TIKUS WISTAR YANG DIINDUKSI
*MYCOBACTERIUM TUBERCULOSIS***

***THE EFFECT OF PROBIOTIC AND SELENIUM
SUPPLEMENTATION ON THE NLR (NEUTROPHIL
LYMPHOCYTE COUNT RATIO), HAEMOGLOBIN AND
ALBUMIN IN WISTAR-INDUCED RAT BY MYCOBACTERIUM
TUBERCULOSIS***



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**PENGARUH SUPPLEMENTASI PROBIOTIK DAN SELENIUM
TERHADAP RESPON IMUN NLR (*NEUTROPHIL LYMPHOCYTE
COUNT RATIO*), HEMOGLOBIN DAN ALBUMIN PADA TIKUS
WISTAR YANG DIINDUKSI *MYCOBAKTERIUM TUBERCULOSIS***

ABSTRAK

Yuliati Widiastuti

Latarbelakang : Penyakit tuberkulosis (TBC) paru merupakan masalah kesehatan masyarakat global termasuk Indonesia. Penyakit tuberkulosis paru pada umumnya terjadi malnutrisi akibat efek samping obat anti tuberkulosis, yang menyebabkan gangguan saluran cerna dan respon imunitas. Probiotik dan Selenium diduga memiliki efek menguntungkan respon imunitas dan status gizi pada pasien terinfeksi tuberkulosis

Tujuan : Untuk menganalisis pengaruh pemberian suplementasi probiotik dan selenium terhadap NLR (Neutrophill Ratio Lymphocyte), Hemoglobin dan Albumin pada tikus wistar yang diinduksi *Mycobacterium tuberculosis*.

Metode : Penelitian eksperimen dengan rancangan *Randomized Post test Control Group Design*. Dua puluh delapan tikus Wistar dibagi 4 kelompok, kelompok 1 :kelompok kontrol hanya diberikan OAT, kelompok 2 : probiotik + OAT, kelompok 3 :selenium + OAT serta kelompok 4 :probiotik dan selenium + OAT. Setelah diinduksi 14 hari, hewan diberikan perlakuan selama 28 hari. Analisis data menggunakan Anova, Post Hoc atau Kruskal Wallis, Mann Whitney pada tingkat kemaknaan $p < 0.05$.

Hasil : Terjadi penurunan kadar NLR, peningkatan kadar Hemoglobin dan Albumin pada tikus kelompok 1 ($p < 0.05$), kelompok 2 ($p < 0.05$) serta kelompok 3 ($p < 0.05$). Efektifitas pemberian probiotik dan selenium paling kuat terdapat pada NLR, Hemoglobin dan Albumin

Simpulan : Suplementasi probiotik dan selenium selama 28 hari mampu meningkatkan sistem imunitas (NRL), Hemoglobin dan Albumin pada kelompok perlakuan lebih baik dibanding kelompok kontrol.

Kata Kunci : Probiotik, Selenium, NRL, Hemoglobin, Albumin, *Mycobacterium Tuberculosis*

**THE EFFECT OF PROBIOTIC AND SELENIUM SUPPLEMENTATION
ON THE IMMUNE NEUTROPHIL LYMPHOCYTE COUNT RATIO
(NLR), HAEMOGLOBIN AND ALBUMIN IN WISTAR-INDUCED RAT
BY *MYCOBACTERIUM TUBERCULOSIS***

ABSTRACT

Yuliati Widiastuti

Background : Pulmonary tuberculosis (TB) is a global public health problem including Indonesia. Generally malnourished due to side effect anti-tuberculosis drugs, which altering gastrointestinal tract, it effects on immune system and response. Probiotics and Selenium are thought to have beneficial effects for the immune system and nutritional status on TB patients

Objective : To analyze the effect of combination probiotic and selenium supplementation on Neutrophil Lymphocyte count Ratio (NLR), Hemoglobin and Albumin in Wistar-induced rat by *Mycobacterium tuberculosis*

Methods : Experimental research with *Randomized Post Test Control Group Design*. Animals Wistar rats of 28 tails, randomized into 4 groups. The treatment of group 1: the control of group received standard treatment of OAT, the treatment of group 2 : received a probiotic + OAT, the treatment of group 3 received a selenium + OAT, the treatment of group 4 received a probiotic and selenium + OAT. After 14 days induced, animals were given 28 days treatment according to their group. Data analyzed by Anova, Post Hoc or Kruskal Wallis, Mann Whitney at significance level $p < 0.05$.

Results : Decreased levels of NLR, Haemoglobin and Albumin on the treatment group 1 ($p < 0.05$), the treatment group 2 ($p, 0.05$), the treatment group 3 ($p, 0,05$). The most powerful effectiveness of the combination probiotic and selenium contained in the NLR, Haemoglobin and Albumin

Conclusion : Supplementation of probiotics and selenium given concurrently provides a good effect for increased levels of NLR, haemoglobin and albumin was better than control group.

Keywords: Probiotics, Selenium, Neutrophil Lymphocyte count Ratio (NLR), Haemoglobin, Albumin, *Mycobacterium Tuberculosis*