

ABSTRAK

EFEK IMUNOSTIMULAN SENYAWA N-(2,3-DIHIDROKSIPROPIL)LAURAMIDA: KAJIAN UJI AKTIVITAS FAGOSITOSIS MAKROFAG PERITONEUM MENCIT SECARA *IN* *VITRO*

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Latar Belakang: Senyawa N-(2,3-dihidroksipropil)lauramida merupakan senyawa derivat asam laurat yang disintesis dari minyak kelapa. Minyak kelapa sendiri beserta derivatnya telah banyak diteliti memiliki beberapa efek yang berhubungan dengan sistem imun antara lain sebagai antijamur, antibakteri, antivirus dan imunostimulan. Senyawa N-(2,3-dihidroksipropil)lauramida yang disintesis dari minyak kelapa berpotensi memiliki efek terhadap sistem imun tubuh serupa dengan minyak kelapa beserta derivatnya.

Tujuan Penelitian: Untuk mengkaji adanya efek imunostimulan senyawa N-(2,3-dihidroksipropil)lauramida melalui kemampuan menstimulasi aktivitas fagositosis makrofag

Metode Penelitian: Penelitian ini adalah penelitian eksperimen menggunakan rancangan penelitian metode *quasi experimental posttest only group design*. Pengujian ini dilakukan secara *in vitro* pada makrofag peritoneum yang diperoleh dari 4 ekor mencit Swiss jantan. Mencit dibedah untuk mengisolasi makrofag dari rongga peritoneum mencit kemudian dikultur selama 24 jam di atas *coverslips* dalam sumuran. Kemudian ditambahkan suspensi lateks dan senyawa N-(2,3-dihidroksipropil)lauramida pada kelompok eksperimen dan tanpa senyawapada kelompok kontrol lalu sumuran diinkubasi hingga 1 jam. Preparat kemudian dicat menggunakan Giemsa 20%. Preparat sel yang telah dicat kemudian diamati di bawah mikroskop cahaya kemudian dianalisa menggunakan One Way ANOVA dan uji PostHoc Tukey.

Hasil Penelitian: Persentase fagositosis makrofag yang diberi senyawa N-(2,3-dihidroksipropil)lauramida dengan konsentrasi 0;0,1;1;10 µg/mL berturut-turut adalah 9,3%;24,3%;34,4%;60,6%. Indeks fagositosis makrofag yang diberi senyawa dengan konsentrasi 0;0,1;1;10 µg/mL berturut-turut adalah 12,3; 26,6; 43,4; 76,6.

Kesimpulan: Senyawa N-(2,3-dihidroksipropil)lauramida memiliki kemampuan menstimulasi aktivitas fagositosis makrofag yang menunjukkan efeknya sebagai imunostimulan

Kata Kunci:Senyawa N-(2,3-dihidroksipropil)lauramida, Imunostimulan, Fagositosis Makrofag

ABSTRACT

IMMUNOSTIMULAN EFFECT OF N-(2,3-DIHYDROXYPRPYL)LAURAMIDE: STUDY OF PERITONEAL MICE MACROPHAGE PHAGOCYTOTIC ACTIVITY

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Background: *N*-(2,3-dihydroxypropyl)lauramide is a derivative compound of Lauric Acid which was synthesized from coconut oil. Coconut oil and some of the derivatives also have been studied on their activities which relate to immune system such as antifungi, antibacteria, antiviral and immunostimulant and the study showed a good result. *N*-(2,3-dihydroxypropyl)lauramide which was synthesized from coconut oil is very potential to be having such similar activities as coconut oil and some of the derivatives.

Objective: To study the immunostimulan effect of *N*-(2,3-dihydroxypropyl)lauramide through the ability to stimulate macrophage phagocytotic activity

Method: This study is an experimental study using primary data with *quasi experimental posttest only group design* as a method. This study use peritoneal macrophage as subject which was obtained from four male Swiss mice. Mices were dissected to isolate the macrophage from mice peritoneal cavity then those were cultured for 24 hours above coverslips inside the microplate. Then latex suspension and *N*-(2,3-dihydroxypropyl)lauramide were added for the experimental group and without the compound for the control group and then they were incubated for an hour. Coverslips then stained with Giemsa 20%. Coverslips which was stained with Giemsa then was observed under the light microscope then analyzed using the One Way ANOVA and Post Hoc Tukey test.

Result: Macrophage phagocytotic percentage which was given the *N*-(2,3-dihydroxypropyl)lauramide with each concentration such as 0;0,1;1;10 µg/mL is 9,3%;24,3%;34,4%;60,6%. Macrophage phagocytotic index which was given the compound with with each concentration such as 0;0,1;1;10 µg/mL is 12,3; 26,6; 43,4; 76,6.

Conclusion: *N*-(2,3-dihydroxypropyl)lauramide has an ability to stimulate macrophage phagocytotic activity which shows immunostimulant effect of *N*-(2,3-dihydroxypropyl)lauramide .

Keyword: *N*-(2,3-dihydroxypropyl)lauramide, Macrophage phagocytotic, Immunostimulant