

ABSTRAK

Buah mengkudu (*Morinda citrifolia* L.) mengandung protein, polisakarida, skopoletin, asam askorbat, β -karoten, L-arginin, alkaloid prokseronin dan enzim prokseroninase. Senyawa yang terkandung dalam buah mengkudu dilaporkan memiliki aktivitas imunomodulator. Kulit buah manggis mengandung tiga senyawa fenolik utama, yaitu 1,3,6,7-tetrahydroxy-2,8-(3-methyl-2-butenyl) xanthone; 1,3,6-trihydroxy-7-methoxy-2,8-(3-methyl-2-butenyl) xanthone; epicatechin. Ketiga senyawa itu juga diketahui memiliki aktivitas imunomodulator. Kombinasi ekstrak air kering buah mengkudu (EBM) dan kulit buah manggis (EKM) diharapkan lebih efektif meningkatkan respon sistem imun. Penelitian ini bertujuan untuk mengetahui aktivitas imunomodulator kombinasi ekstrak buah mengkudu dan kulit buah manggis.

Aktivitas imunomodulator (*in vivo*) menggunakan mencit Balb/c yang dibagi 6 kelompok dan diinduksi vaksin hepatitis B. Kelompok I merupakan kontrol negatif. Kelompok II, III, IV, V, VI, berturut turut diberi perlakuan EKM, EBM, EKM+EBM dosis 1 (2 kali dosis terapi), EKM+EBM dosis 2 (dosis terapi), EKM+EBM dosis 3 (0,5 kali dosis terapi), selama 14 hari. Selanjutnya dilakukan uji aktivitas makrofag dengan menggunakan *latex beads*. Hasil penelitian menunjukkan kombinasi EBM+EKM dosis 2 mampu meningkatkan kapasitas fagositosis secara signifikan ($p \leq 0,05$) dan meningkatkan indeks fagositosis secara tidak signifikan ($p \geq 0,05$) dibanding ekstrak tunggalnya.

Kata kunci: buah mengkudu (*Morinda citrifolia* L.), kulit buah manggis (*Garcinia mangostana* L.), imunomodulator, makrofag.

ABSTRACT

Morinda citrifolia L., especially the fruit contains protein, polysaccharide, scopoletin, ascorbic acid, B-carotene, L-arginine, alkaloids, proxeronine and proxeroinose. Some of those compounds were reported had immunomodulatory activities. In addition, the pericarp of *Garcinia mangostana* L. contains three main fenolic compounds such as 1,3,6,7-tetrahydroxy-2,8-(3-methyl-2-butenyl) xanthone; 1,3,6-trihydroxy-7-methoxy-2,8(3-methyl-2-buthenyl) xanthone and epicatechin. All of those compounds also had been reported as immunomodulatory agents. The aim of our study was to evaluate the immunomodulatory activities of combination between dried aqueous extract of *M. citrifolia* fruit and *G. mangostana* pericarp which is able to increase the immune system response.

This evaluation used *in vivo* method which was used six groups of mice (group I,II,III,IV,V and VI). The mice then induced by hepatitis B vaccine. The group I was negative control which was only treated by Na-CMC solution. For the group II, III, IV, V AND VI in sequence were induced by single extract of *M. citrifolia*, single extract of *G. mangostana*, the dose 1 of combine extract (twice of the therapeutic dose), the dose 2 of combine extract (therapeutic dose) and the dose 3 of combine extract (half of the therapeutic dose) for 14 days. We further determined the macrophage activity by using latex beads method. The result of the study can be concluded that the dose 2 of combine extract increased phagocytic capacity significantly and increased phagocytic index insignificantly than the single extracts.

Key words: *Morinda citrifolia* L. fruit, *Garcinia mangostana* L. pericarp, immunomodulatory, macrophage.



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**UJI AKTIVITAS IMUNOMODULATOR KOMBINASI EKSTRAK AIR KERING BUAH MENKUDU
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KULIT BUAH MANGGIS (*Garcinia mangostana* L.) PADA FAGOSITOSIS MAKROFAG IN VIVO**
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