

Pengujian sifat imunomodulator jamu anti atherosklerosis berbahan baku daun tanjung (*mimusops elengi*), daun belimbing manis (*averrhoa carambola*) dan temulawak (*curcuma xanthorrhiza*) =  
Immunomodulatory properties examination of anti atherosclerotic herbs made from cape leaf (*mimusops elengi*), sweet starfruit leaf (*averrhoa carambola*) and java ginger (*curcuma xanthorrhiza*)

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Abstrak

**ABSTRACT**

Atherosclerosis adalah pengerasan plak pada arteri akibat akumulasi kolesterol dan sisa sisa metabolisme dalam pembuluh darah. Penyakit kardiovaskular dapat dikurangi dengan meningkatkan sistem imun dan metabolisme tubuh. Namun, beberapa penggunaan obat farmasi untuk menurunkan kolesterol dapat memberikan efek samping yang membahayakan tubuh manusia. Tersedia 3 jenis tumbuhan, yaitu daun tanjung *Mimusops elengi* L., daun belimbing *Averrhoa carambola* L., dan temulawak *Curcuma xanthorrhiza* L., yang jika digabung secara empirik berfungsi sebagai jamu serbaguna. Beberapa hasil penelitian membuktikan bahwa daun tanjung mempunyai keaktifan sebagai antioksidan, anti kolesterol, dan anti platelet, sedangkan daun belimbing sebagai antihiperlipidemia, serta temulawak berperan sebagai hepatoprotektor. Jamu antiaterosklerosis yang memiliki beberapa khasiat akan diinduksikan dalam tikus secara *in vivo* dan diteliti profil darah dalam tinjauan hematologi sel darah merah, putih, eritrosit, hemoglobin, dll dan differensiasi leukosit netrofil, limfosit, eosinophil dan monosit, kemudian akan dilihat aktifitas imunomodulator dalam pencegahan pembentukan plak atherosklerosis. 3 macam dosis jamu diberikan dengan ukuran 2,7 ml/200 g BB, 3,6 ml/200 g BB, dan 4,5 ml/200 g BB serta control positif dan control normal sebagai pembanding. Konsentrasi leukosit tertinggi  $11,75 \times 10^3 / L$ , eritrosit tertinggi  $7,95 \times 10^3 / L$ , dan hemoglobin tertinggi 15,65 g/dL diperoleh oleh dosis 2 3,6 ml/200 g BB.

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**ABSTRACT**

Atherosclerosis is hardening of plaque in the arteries due to cholesterol accumulation and residual metabolic waste in the blood vessels. Cardiovascular disease can be reduced by increasing the immune system and metabolism. However, some use of pharmaceutical drugs to lower cholesterol can provide side effects that harm the human body. There are 3 types of plants, namely leaf tanjung *Mimusops elengi* L., leaf belimbing *Averrhoa carambola* L., and temulawak *Curcuma xanthorrhiza* L., which when combined empirically function as a versatile herb. Some research results prove that the leaf has a liveliness as an antioxidant, anti cholesterol, and anti platelet, while the leaf starch as antihyperlipidemia, and temulawak role as a hepatoprotektor. Antiatherosclerotic herbs that have several properties will be induced in mice *in vivo* and examined blood profiles in hematologic reviews red, white, erythrocyte, hemoglobin, etc. and leukocyte differentiation neutrophils, lymphocytes, eosinophils and monocytes immunomodulator in the prevention of atherosclerosis plaque formation. 3 kinds of dosage of herbal medicine given with size 2,7 ml 200 g of bodyweight, 3,6 ml 200 g of bodyweight, and 4.5 ml 200 g of bodyweight and positive control and normal control as comparison. The highest leukocyte concentrations  $11,75 \times 10^3 / L$ , the highest erythrocytes  $7,95 \times 10^3 / L$ , and hemoglobin highest 15,65 g/dL obtained by the dose 2 3,6 ml/200 g BB.

3 L, and the highest hemoglobin 15,65 g dL were obtained by dose 2 3,6 ml 200 g of bodyweight.