# Isolation and structure determination of chemical compounds and bioactivities test from the Stem Bark of Garcinia maluensis Lauterb

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Abstrak

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The use of natural products as medicines has been known since long time ago. Until nowadays plants are still being the primary source for the treatment of a wide variety of diseases by the great civilizations in the world. Indonesia has a high species richness of Garcinia (Garcinia spp.) and it is as an important basic materials for breeding of bioactive chemical compounds for medicines. One of species from Garcinia genus which grows in Papua (Indonesia) is Garcinia maluensis Lauterb that belong to Guttiferae (Clusiaceae) family.

This research was intended to isolate and determine the structure of chemical compounds from the stem bark of G. Maluensis Lauterb, as well as to conduct bioactivity test comprising a preliminary test to brine shrimp lethality test (BSLT) and antioxidant test by using DPPH (1,1-difenil-2-pikrilhidrazil) method from the isolated compunds. The isolation was conducted by technique of chromatographyc combinations and structure of isolated compounds were established by spectroscopy data: mass spectrometry (MS), IR, UV, 1H-NMR, 13C-NMR and 2-D NMR, included HMQC and HMBC.

The research founded mixture two compounds of polyisoprenylbenzophenones (GML-1, GML-2 and GML-4). One of compound which has molecular formula C38H50O6 was predicted as camboginol and the other compound which molecular formula C38H48O6 was predicted as (Z)-3-(3,4-dihidroxibenzoil) hidroxi-1-(3-methilbut-2aenyl)-5-((E)-2-(3-methilbut-2-enyl)hept-3-enyl)-7-(3-methilbutenylidene) bisiclo [3,3,1]non-3-ene2,9 dione (GML-2 dan GML-4 = cayubenzofenon). GML-3 compound has molecular formula C38H50O6 was predicted as epicambogin and GML-5 which molecular formula C29H48O was predicted as stigmasterol_

The result of the preliminary brine shrimp lethality test showed that compounds GML-1, GML-2, GML-3 and GML-4 were toxic with each LC50 was 2,72; 1,64; 7,34 dan 1,68 ug/mL. The result of antioxidant test to DPPH on the GML-1, GML-2, GML-3 and GML-4 showed antioxidant DPPH radical scavenging with lC50 13,92; 12,59; 23,27 dan 13,95 ug/mL. GML-5 did not show toxicity and antioxidant activity significantly. Toxicity and ability to inhibite free radical reaction of DPPH (1,1-

difenil-2-pikrilhidrazil) of GML-1, GML-2, GML-3 and GML-4 were predicted because of hidroxy groups existention on that compounds which give the polarity and have function as radical scavenging and so that inhibited the free radical reaction goes on.

For getting pure compound from mixture of GML-1, GML-2 and GML-4 need the next tecknical purification. The further isolation of the others fraction was needed for founding the others compound which have more interesting bioactivities. Also need to do the anticancer and antibacterial test or others bioactivites test from there compounds.