

Faiz Fakhriah F., 2015, Isolasi Senyawa Turunan 4-Fenil Kumarin dari Kulit Batang *Mesua Borneensis* serta Uji Aktivitas Antiplasmodial secara *In Vitro* terhadap *Plasmodium falciparum*. Skripsi ini di bawah bimbingan Dr. Mulyadi Tanjung, M.S dan Tjitjik Srie Tjahjandarie, Ph.D, Departemen Kimia, Fakultas Sains dan Teknologi Universitas Airlangga.

ABSTRAK

Tujuan penelitian ini untuk isolasi senyawa turunan 4-fenil kumarin yang terdapat dalam kulit batang *Mesua borneensis* dan penentuan aktivitas antiplasmodial terhadap *Plasmodium falciparum*. Dua senyawa turunan 4-fenil kumarin yaitu mammea A/BA (1) dan mammea A/AA siklo D (2) telah diisolasi dari kulit batang *Mesua borneensis* melalui proses maserasi, kromatografi cair vacum, dan kromatografi radial. Penetapan struktur kedua senyawa berdasarkan data spektroskopi yang meliputi UV, IR, NMR 1D dan 2D, serta MS. Uji aktivitas antiplasmodial terhadap *Plasmodium falciparum* yang sensitif terhadap klorokuin dari ekstrak etil asetat, mammea A/BA (1), dan mammea A/AA siklo D (2) memperlihatkan nilai IC_{50} yaitu 23,56; 3,72; dan 1,02 $\mu\text{g/mL}$.

Kata kunci: *Mesua borneensis*, 4-Fenil Kumarin, Mammea A/BA, Mammea A/AA Siklo D, Antiplasmodial

Faiz Fakhriah F., 2015, Isolation of 4-Phenylcoumarin Derivatives Compound from The Stem Bark of *Mesua borneensis* and Antiplasmodial Activity against *Plasmodium falciparum*. This final project is supervised by Dr. Mulyadi Tanjung, M.S and Tjitjik Srie Tjahjandarie, Ph.D, Chemistry Department Faculty of Science and Technology Airlangga University.

ABSTRACT

The purpose of this research were isolated and determined structure of 4-phenyl coumarin derivatives compound from the stem bark of *Mesua borneensis* and determined antiplasmodial activity against *Plasmodium falciparum*. The 4-phenyl coumarin derivatives compound, mammea A/BA (1) and mammea A/AA cyclo D (2) have been isolated from the bark of *Mesua borneensis* through maceration process, vacuum liquid chromatography, and radial chromatography. The structure of both compounds was determined based on spectroscopic data, including UV, IR, 1D and 2D NMR, and MS. Antiplasmodial activity test against *Plasmodium falciparum* that sensitive to chloroquine of ethyl acetate extract, mammea A / BA (1), and mammea A / AA cyclo D (2) that showed their IC₅₀ values were 23.56; 3.72; and 1.02 µg / mL.

Keywords: *Mesua borneensis*, 4-Phenyl Coumarins, Mammea A/BA, Mammea A/AA Cyclo D, Antiplasmodial