Muniroh, Amirotul, 2015, Senyawa Turunan Metoksi Amida Calkon sebagai Alternatif Inhibitor Enzim Feredoksin NADP$^+$ Reduktase *Plasmodium falciparum*, skripsi ini dibawah bimbingan Prof. Dr. Ni Nyoman Tri Puspaningsih, M.Si dan Drs. Hery Suwito, M.Sc., Departemen Kimia Fakultas Sains dan Teknologi, Universitas Airlangga, Surabaya.

ABSTRAK

Tiga senyawa turunan amida calkon disintesis menggunakan reaksi kondensasi Claisen-Schmidt dan reaksi amidasi yaitu senyawa Asam 4-(4-(3-(2-metoksi-fenil)akriloil)fenilamino)-4-oksobutanoat **(1)**, senyawa Asam 4-(4-(3-(2,3-dimetoksi-fenil)akriloil)fenilamino)-4-oksobutanoat **(2)**, dan senyawa Asam 4-(4-cinnamoil-fenil-amino)-4-oksobutanoat **(3)**. Penelitian ini bertujuan untuk mensintesis turunan amida calkon sebagai alternatif inhibitor enzim Feredoksin NADP$^+$ Reduktase *Plasmodium falciparum*. Identifikasi struktur senyawa hasil sintesis dilakukan dengan menggunakan metode spektroskopi yang meliputi, inframerah (IR), MS, dan resonansi magnetik inti (NMR). Uji secara *in silico* menggunakan *Autodock4* menunjukkan interaksi antara senyawa hasil sintesis dengan makromolekul (enzim) dalam bentuk ikatan hidrogen dan interaksi Van der Waals. Beberapa gugus fungsi yang berpengaruh pada senyawa hasil sintesis dalam pembentukan ikatan hidrogen dengan residu aktif enzim adalah gugus metoksi, gugus amida, gugus keton dan gugus karboksil.

Kata Kunci : amida-calkon, enzim Feredoksin NADP$^+$ Reduktase , inhibitor, *in silico*

Muniroh, Amirotul, 2015, Methoxy Amide Chalcones Derived Compound as Inhibitor Alternative of Ferredoxin NADP$^+$ Reductase Enzyme of *Plasmodium falciparum*, final project was under guidance of Prof. Dr. Ni Nyoman Tri Puspaningsih, M.Si and Drs. Hery Suwito, M.Sc., Departement of Chemistry, Faculty of Science and Technology, Airlangga University, Surabaya.

ABSTRACT

Three amide chalcone derivatives were synthesized using Claisen-Schmidt condensation reaction and amidation reaction, namely 4-(4-(3-(2-methoxy-phenyl)acryloyl)phenyl-amino)-4-oxobutanoic acid **(1)**, 4-(4-(3-(2,3-dimethoxy-phenyl)acryloyl)phenyl-amino)-4-oxobutanoic acid **(2)** and 4-(4-cinnamoylphenylamino)-4-oxobutanoic acid **(3)**. The objective of this study to synthesize amide-chalcone derived compound as inhibitor alternative of Ferredoxin NADP$^+$ Reductase Enzyme of *Plasmodium falciparum.* The structure of molecule targets were identified by spectroscopy methods, such as infrared (IR), MS, and Nuclear Magnetic Resonance (NMR). The *in silico* analysis using *Autodock4* showed the interaction between the molecule targets and the macromolecule (enzyme) in form of hydrogen bond and Van der Waals interaction. The methoxy group, amide group, ketones group and carboxyl group in the molecule targets have an influence in forming hydrogen bond with the residue of macromolecule.

Keywords : Amide-chalcone, Ferredoxin NADP$^+$ Reductase enzyme, inhibitor, *in silico*