

Suciati, Krisnadewi, 2018, Sintesis Senyawa Turunan Dihidropirimidin (DHPM) dengan Reaksi Biginelli menggunakan Katalis Asam *para*-Toluena Sulfonat (*p*-TSA), Skripsi dibawah bimbingan Dr. Hery Suwito, M.Si dan Dr. Alfinda Novi Kristanti, DEA., Departemen Kimia, Fakultas Sains dan Teknologi, Universitas Airlangga.

ABSTRAK

Senyawa turunan dihidropirimidin (DHPM) sangat menarik untuk disintesis dan dikembangkan. Pengembangan sintesis turunan DHPM dalam hal memodifikasi pereaksi dan metode terus dilakukan untuk memperoleh hasil yang paling baik dan ramah terhadap lingkungan. Pada penelitian ini, telah dilakukan sintesis senyawa turunan DHPM yaitu Etil-4-(2,4-dimetoksifenil)-6-metil-2-tioso-1,2,3,4-tetrahidropirimidin-5-karboksilat (MT-1) dan Etil-4-(4-hidroksi-3-metoksifenil)-6-metil-2-tioso-1,2,3,4-tetrahidropirimidin-5-karboksilat (MT-2) melalui reaksi Biginelli dengan variasi aldehida MT-1 menggunakan 2,4-dimetoksibenzaldehida dan MT-2 menggunakan 4-hidroksi-3-metoksi benzaldehida. Sintesis dilakukan menggunakan dua metode yaitu *microwave* dan refluks. Sifat elektrofilik C karbonil pada aldehida dapat mempengaruhi rendemen produk. Karakterisasi molekul target dilakukan menggunakan instrumen FT-IR, ¹H NMR, dan APT-NMR. Pada sintesis menggunakan metode refluks MT-1 didapatkan rendemen produk sebesar 83,99%, sedangkan rendemen produk MT-2 sebesar 62,55%. Sementara rendemen produk yang dihasilkan menggunakan metode *microwave* yaitu MT-1 sebesar 16,25% dan MT-2 sebesar 35,59%. Hasil Rendemen produk dipengaruhi oleh sifat elektrofilik dari aldehid yang digunakan. Semakin C karbonil pada aldehida bersifat elektrofilik maka semakin baik rendemen yang didapatkan.

Kata kunci: *Dihidropirimidin, Reaksi Biginelli, Metode Refluks, dan Metode Refluks*

Suciati, Krisnadewi, 2018, Synthesis of Dihydropyrimidin (DHPM) Derivatives via Biginelli Reaction using *para*-Toluene Sulfonic Acid (*p*-TSA), The script was under guidance of Dr. Hery Suwito, M.Si. and Dr. Abdoullloh, M.Si., Department of Chemistry, Faculty of Science and Technology, Airlangga University.

ABSTRACT

Dihydropyrimidine (DHPM) derivative are very interesting to be synthesized and developed. Development of DHPM derivative synthesis in terms of modifying reagents and methods continues to be done to obtain the best results and friendly to the environment. In this research, DHPM derivatives have been synthesized, which were Ethyl-4-(2,4-dimethoxyphenyl)-6-methyl-2-tioso-1,2,3,4-tetrahydropyrimidine-5 carboxylate (MT-1) and ethyl (4-hydroxy-3-methoxyphenyl)-6-methyl-2-tioso-1,2,3,4-tetrahydropyrimidine-5-carboxylate (MT-2) via Biginelli's reaction with MT-1 aldehyde variations using 2,4-dimethoxybenzaldehyde and MT-2 using 4-hydroxy-3-methoxy benzaldehyde. Target molecular characterization was performed using FT-IR, ¹H NMR, and APT-NMR instruments. Synthesized modified using two methods namely microwave and reflux. Electrophilic properties of the aldehydes can be influenced of product yields. Reflux method at MT-1 which was 83.99%, while the product yield of MT-2 was 62,55%. While the product yield obtained from microwave method that is MT-1 equal to 16,25% and MT-2 equal to 35,59%. The more electrophilic the better the product yield got.

Keywords: Dihydropyrimidine, Biginelli Reaction, Reflux Method, and Reflux Method