ABSTRAK

Sintesis Senyawa 4-Klorobenzoiltiourea Dari 4-Klorobenzoil klorida dan Tiourea dengan Lama Pemanasan yang Berbeda

Untuk mendapatkan senyawa baru yang dapat bekerja pada Sistem Saraf Pusat, dilakukan modifikasi struktur kimia benzoiltiourea menggunakan model pendekatan Topliss yang diperoleh dari reaksi asilasi antara salah satu gugus amina primer tiourea dengan turunan benzoil klorida. Senyawa ini mempunyai sifat lipofilik dan elektronik yang lebih besar daripada senyawa benzoiltiourea. 4-Klorobenzoiltiourea dibuat dengan mereaksikan tiourea dan 4-klorobenzoil klorida dalam pelarut THF. Lama pemanasan yang dilakukan yaitu 0,5 jam; 1 jam; dan 1,5 jam. Hasil sintesis 4-klorobenzoiltiourea dengan persentase terbesar diperoleh pada lama pemanasan selama 1 jam (50,84%). Kemurnian hasil sintesis ditunjukkan dengan adanya noda tunggal pada Kromatografi Lapis Tipis (KLT) dan jarak lebih yang sempit. Berdasarkan hasil analisis struktur dengan spektrofotometer ultraviolet (UV), spektrofotometer inframerah (IM), spektrofotometer ^{1}H-RMI, dan kromatografi gas-spektrometer massa (KGSM) terbentuk senyawa hasil sintesis 4-klorobenzoiltiourea.

Kata Kunci : 4-klorobenzoiltiourea, sintesis, lama pemanasan

ABSTRACT

Synthesis of 4-Chlorobenzoylthiourea from 4-Chlorobenzoil chloride and Thiourea with the Different Heating Time

To find new compounds acting on central nervous system, the research of structure modification of benzoylthiourea uses the Topliss approach model by acylating the thiourea with derivated benzoyl chloride. These compounds have higher lipophilic and electronic properties compared to the lead compound benzoylthiourea, with the expectation of the increase of the central nervous system depressant. 4-Chlorobenzoylthiourea had been made by reacting 4-chlorobenzoyl chloride with thiourea in tetrahydrofuran in the presence of pyridine. The heating time is 0,5 hour; 1 hour; and 1,5 hour with the percentage of the results of 4-chlorobenzoylthiourea compound are 41,56%; 50,84%; and 46,28%. The highest percentage of the result of 4-chorobenzoylthiourea is given by 1 hour of heating. The purity test of the synthesis product is shown by the single spot on the Thin Layer Chromatogram (TLC) and small difference of melting point. Characterization of the products of the synthesis was based on the analysis with UV and IR spectrophotometries, ^{1}H-NMR spectrometry and gas chromatography mass spectrometry (GC-MS), it was concluded that the structure of the synthesis product were in accordance to the prediction.

Keyword : 4-chlorobenzoylthiourea, synthesis, heating time.