Sintesis dan uji aktifitas biologi senyawa antibiotika 3-hidroksi pikolinil serin oktil ester dan turunannya

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Abstrak

ABSTRAK
Telah dilakukan sintesis senyawa 3-hidroksi pikolinil serin oktil ester (PSOE) dan turunannya melalui 3 tahap reaksi, yaitu sintesis senyawa oktil serin ester p-TsOH, sintesis senyawa PSOE dan sintesis senyawa PSOAE, PSOHE, PSOOE, PSOPPE. Sintesis senyawa oktil serin ester p-TsOH memberikan hasil 69,9 %. Sintesis senyawa PSOE memberikan hasil 29,7 %, sedangkan sintesis senyawa PSOAE, PSOHE, PSOOE dan PSOPPE berturut-turut memberikan hasil 31,8 %, 67,7 %, 40 % dan 46,17 %. Hasil uji aktifitas antibiotika terhadap mikroba E. coil, S. aureus, B. subtilis dan C. albicans menunjukkan bahwa senyawa hasil sintesis memberikan aktifitas anti bakteri paling baik terhadap B. subtilis dan aktifitas anti jamurnya lemah terhadap C. albicans. Hasil uji brine shrimp Artemia salina (BSLT) menunjukkan efek toksisitas senyawa PSOOE > PSOHE > PSOAE > PSOE > PSOPPE.
<hr>ABSTRACT
The Syntheses and Bioassay of Novel Antibiotics 3-Hidroxy Pycolinyl Serine Octyl Ester and its DerivativesThe 3-hidroxy pycolinyl serine octyl ester (PSOE) and its derivatives i.e. PSOAE, PSOHE, PSOOE and PSOPPE have been synthesized. These compounds were synthesized in three step reactions. The first step produced serine octyl ester p-TsOH in 69,9 %. The second step resulted PSOE in 29,7 %. The last step produced PSOAE, PSOHE, PSOOE and PSOPPE in 31,8 %, 67,7 %, 40,0 % and 46,17 % respectively. The biological assay of these compounds showed activity against E. coil, S. aureus, B. subtilis and C. albicans, in which the activity against B. subtilis was the strongest. In fact the activity of these compounds were stronger than that of standard antimycin A. The activity of these compounds showed no activity against fungus C. albicans. The Brine Shrimp Lethality Test (BSLT) by using Artemia salina was performed to show toxicity of these compounds. The toxicity was PSOOE > PSOHE > PSOAE > PSOE > PSOPPE.