

## **SINTESIS SENYAWA TURUNAN HALOGEN 3-ASETILKUMARIN SEBAGAI ANTIBAKTERI**

Maria Putri Arumsari  
20/455480/PA/19695

### **INTISARI**

Sintesis senyawa turunan halogen 3-asetilkumarin sebagai antibakteri telah dilakukan dalam penelitian ini. Senyawa turunan asetilkumarin disintesis dengan mereaksikan turunan salisilaldehid dengan etil asetoasetat dalam pelarut etanol menggunakan metode sonokimia. Senyawa turunan halogen 3-asetilkumarin hasil sintesis diuji aktivitas antibakteri terhadap bakteri Gram positif (*S. aureus*) dan Gram negatif (*E. coli*) dengan metode difusi cakram.

Hasil sintesis senyawa 3-asetilkumarin, 3-asetil-6-klorokumarin, dan 3-asetil-6-bromokumarin yang dihasilkan adalah sebesar 79,52%; 72,81%; dan 68,17%. Hasil uji aktivitas antibakteri menunjukkan bahwa senyawa 3-asetilkumarin dan 3-asetil-6-bromokumarin tidak aktif terhadap bakteri *E. coli* dan *S. aureus*, sedangkan 3-asetil-6-klorokumarin memiliki aktivitas antibakteri lemah terhadap bakteri *S. aureus* namun tidak memiliki aktivitas antibakteri terhadap bakteri *E. coli*.

Kata kunci: antibakteri, kumarin, sonokimia.

***SYNTHESIS OF HALOGEN 3-ACETYLCOUMARIN DERIVATIVES  
AS AN ANTIBACTERIAL***

Maria Putri Arumsari  
20/455480/PA/19695

**ABSTRACT**

The synthesis of halogen-3-acetylcoumarin derivatives as an antibacterial had been done in this research. Acetylcoumarin derivatives were synthesized by reacting salicylaldehyde derivatives and ethyl acetoacetate in ethanol as the solvent using sonochemistry method. The synthesized coumarin derivatives were tested for their antibacterial activity against Gram positive (*S. aureus*) and Gram negative (*E. coli*) bacteria using the disc diffusion method.

The synthesis of 3-acetylcoumarin, 3-acetyl-6-chlorocoumarin, and 3-acetyl-6-bromocoumarin produced in 79.52%; 72.81%; and 68.17%, respectively. The results of the antibacterial activity test indicated that 3-acetylcoumarin and 3-acetyl-6-bromocoumarin were inactive towards *E. coli* and *S. aureus*, while 3-acetyl-6-chlorocoumarin had a weak activity against *S. aureus* but had no antibacterial activity against *E. coli*.

Keywords: antibacterial, coumarin, sonochemistry.