

# Sintesis ramah lingkungan senyawa imina turunan vanilin dan 2-hidroksi asetofenon serta uji toksisitas, antibakteri dan antioksidan = Green synthesis of imine compound from derivated vanilin and 2 hydroxy acetophenon also analyze of tocity antibacterial and antioxidant activity

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## Abstrak

Sintesis ramah lingkungan pada senyawa imina telah dilakukan dari turunan vanilin dan 2-hidroksi asetofenon dengan variasi kecepatan stirer dalam pelarut air. Selanjutnya, dilakukan kolom dan karakterisasi hasil produk serta uji toksisitas, antibakteri, dan antioksidan. Produk A [(E)-4-(1-(2-hydroxyphenyl) ethylidene amino)-1,5-dimethyl-2-phenyl-1H-pyrazol-3(2H)-one)] diperoleh dari turunan 2-hidroksi asetofenon pada kecepatan 250 rpm selama 24 jam. Sedangkan, vanilin menghasilkan produk B pada kecepatan 450 rpm selama 15 menit. Hasil menunjukkan bahwa % yield untuk produk A dan B berturut-turut sebesar 40.68% dan 19.76%. Uji aktivitas antioksidan dan aktivitas biologi seperti: toksisitas dan antibakteri menunjukkan hasil bahwa produk B lebih bersifat toksik dan aktif sebagai antioksidan dibandingkan produk A. Sementara uji aktivitas antibakteri menunjukkan bahwa kedua produk tersebut memiliki respon positif terhadap bakteri *S.aureus* dan *E.coli*.

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The green synthesis of imine compound was determined from vanillin and 2-hydroxy acetophenone. It had been synthesized under varying stirring speed in water solution. After that, the process was followed by column and characterization of the reaction product, which were further examined for its toxicity, antibacterial and antioxidant activities test. The Product A, [(E)-4-(1-(2-hydroxyphenyl) ethylideneamino)-1,5-dimethyl-2-phenyl-1H-pyrazol-3(2H)-one)] was synthesized from 2-hydroxy acetophenone under stirring 250 rpm and 24 hour reaction time. Meanwhile vanillin was determined product B [(E)-4-(4-hydroxy-3-(vinyl)oxy)benzylideneamino)-1,5-dimethyl-2-phenyl-1H-pyrazol-3(2H)-one)] under stirring 450 rpm and 15 minute reaction time. The % yield of product A and B were respectively 40.68% and 19.76%. The antioxidant and biological activities like toxicity and antibacterial activity showed that the product B are toxic and more active as an antioxidant than product A. While the antibacterial activity test showed that both products have a positive response to *S. aureus* bacteria and *E. coli* bacteria.