

**SINTESIS SENYAWA ALIL FENIL ETER EPOKSIDA SERTA UJI
AKTIVITASNYA SEBAGAI ANTIMALARIA TERHADAP
*Plasmodium falciparum***

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INTISARI

Sintesis senyawa alil fenil eter epoksida serta uji aktivitasnya terhadap *Plasmodium falciparum* telah dilakukan. Penelitian ini bertujuan untuk mensintesis senyawa epoksida berbasis fenol. Senyawa alil fenil eter disintesis melalui reaksi antara fenol dan alil bromida dalam pelarut DMF dan katalis K_2CO_3 dengan pengadukan selama 48 jam pada suhu ruang. Senyawa alil fenil eter epoksida disintesis melalui reaksi epoksidasi alkena antara alil fenil eter dengan *m*-CPBA dalam pelarut kloroform dengan metode refluks selama 6 jam pada suhu 50 °C dan dilanjutkan pengadukan selama 18 jam. Produk hasil sintesis dilakukan karakterisasi menggunakan instrumen GC-MS, FTIR, 1H -NMR, dan ^{13}C -NMR. Uji aktivitas antimalaria senyawa alil fenil eter epoksida dilakukan secara *in vitro* terhadap *Plasmodium falciparum* strain FCR-3.

Sintesis alil fenil eter menghasilkan produk berwujud cairan kekuningan dengan persen hasil 92,5%. Sementara itu, sintesis alil fenil eter epoksida menghasilkan produk berwujud cairan coklat tua dengan persen hasil 77,3%. Uji aktivitas antimalaria senyawa alil fenil eter epoksida menunjukkan bahwa senyawa tersebut memiliki aktivitas penghambatan yang baik terhadap *Plasmodium falciparum* strain FCR-3 dengan nilai IC_{50} sebesar 7,499 $\mu g/mL$.

Kata kunci: alil fenil eter epoksida, antimalaria, epoksida, fenol, *Plasmodium falciparum*.

***SYNTHESIS OF ALLYL PHENYL ETHER EPOXIDE AND ITS ACTIVITY
TEST AS ANTIMALARIA AGAINST Plasmodium falciparum***

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ABSTRACT

Allyl phenyl ether epoxide was successfully synthesized and its activity was tested against *Plasmodium falciparum*. This study aims to synthesize phenol-based epoxide compounds. Allyl phenyl ether was synthesized by reacting phenol with allyl bromide in DMF using K_2CO_3 as a catalyst, followed by stirring for 48 hours at room temperature. Allyl phenyl ether epoxide was synthesized through the alkene epoxidation reaction between allyl phenyl ether and *m*-CPBA in chloroform using reflux method for 6 hours at 50 °C and stirring continuously for 18 hours. The synthesized products were characterized using GC-MS, FTIR, 1H -NMR, and ^{13}C -NMR instruments. The antimalarial activity of allyl phenyl ether epoxide was tested *in vitro* against *Plasmodium falciparum* strain FCR-3.

The synthesis of allyl phenyl ether produced a yellowish liquid with a yield of 92.5%. Meanwhile, the synthesis of allyl phenyl ether epoxide produced a dark brown liquid with a yield of 77.3%. The antimalarial activity test of allyl phenyl ether epoxide showed good inhibitory activity against *Plasmodium falciparum* strain FCR-3 with an IC_{50} value of 7.499 $\mu g/mL$.

Keywords: allyl phenyl ether epoxide, antimalarial, epoxide, phenol, *Plasmodium falciparum*.