

# ISOLASI DAN PENENTUAN STRUKTUR MOLEKUL ALKALOID ERYTHRINAN DARI DAUN DADAP SEREP (*ERYTHRINA SUBUMBRANS*) SERTA UJI AKTIVITAS ANTIMALARIA *IN VITRO*

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**ANTI MALARIALS; PLANTS EXTRACTS**

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## ABSTRAK

Telah dilakukan penelitian tentang isolasi dan penentuan struktur molekul alkaloid erythrinan dari daun dadap serep (*Erythrina subumbrans*) serta uji aktivitas antimalaria *in vitro*. Daun dadap serep dimaserasi dengan n-heksana dan disaring. Residu dilembabkan dengan  $\text{NH}_4\text{OH}$  dan direndam dengan pelarut diklorometana (DCM). Fraksi DCM diuapkan dan dipartisi dengan HCl. Fraksi HCl ditambah  $\text{NH}_4\text{OH}$  hingga pH di antara 10-11, kemudian diekstraksi dengan DCM. Isolasi dilakukan dengan kromatografi kolom dengan fasa diam silika gel dan fasa gerak DCM : MeOH, pada proses isolasi diperoleh satu senyawa alkaloid erythrinan. Penentuan struktur molekul dilakukan dengan metode spektroskopi UV, IR, NMR-1D, NMR-2D (COSY, HSQC, HMBC), dan GC-MS. Berdasarkan data spektroskopi dapat disimpulkan bahwa senyawa hasil isolasi adalah senyawa alkaloid erythrinan dengan nama : Erythrinan-1,2,6,7-tetradehydro-3,15,16-trimethoxy (erysotrine) yang menunjukkan aktivitas antimalaria terhadap *Plasmodium falciparum* dengan nilai  $\text{IC}_{50}$  sebesar 2,35  $\mu\text{g}/\text{ml}$ .

**Kata kunci** : *Erythrina subumbrans*, alkaloid erythrinan, kromatografi, *P. falciparum*.

# ISOLATION AND MOLECULAR STRUCTURE DETERMINATION OF ERYTHRINAN ALKALOID FROM DADAP SEREP'S (*ERYTHRINA SUBUMBRANS'S*) LEAVE AND *IN VITRO* ANTIMALARIA ACTIVITY TEST

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## ABSTRACT

Isolation and molecular structure determination of erythrinan alkaloid from the leaves of dadap serep (*Erythrina subumbrans*) and *in vitro* antimalaria activity test to the *Plasmodium falciparum* was done. The leaves of dadap serep (*Erythrina subumbrans*) was soaked with n-hexane and filtered. The residue was humidified using  $\text{NH}_4\text{OH}$  and soaked with dichloromethane (DCM). The DCM fraction was evaporated and subjected acid based extraction with HCl. The extract was then basified with  $\text{NH}_4\text{OH}$  to pH 10-11 and followed extraction using DCM. The DCM extract was evaporated to gave crude alkaloid mixture and subjected to column chromatography with silica gel as stationary phase and DCM : MeOH as mobile phase. Further fractionation of the fractions resulted one erythrinan alkaloid compound. Molecular structure determination of alkaloid was carried out using spectroscopics method, such as : UV, IR, NMR-1D, NMR-2D (COSY, HSQC, HMBC) and GC-MS. The structure of alkaloid is Erythrinan-1,2,6,7-tetrahydro-3,15,16-trimethoxy (erysotrine). This compound showed antimalaria activity to the *Plasmodium falciparum* with  $\text{IC}_{50}$  2,35  $\mu\text{g/ml}$ .

**Keyword :** *Erythrina subumbrans*, erythrinan alkaloid, chromatography, *P. falciparum*