

**KARAKTERISASI SENYAWA ORGANIK NON POLAR DARI  
MAKROALGA *Padina minor* ASAL KOTA SINGKAWANG  
DAN AKTIVITAS ANTIBAKTERI TERHADAP  
*Staphylococcus aureus* DAN *Escherichia coli***

**Abstrak**

Telah dilakukan karakterisasi senyawa organik non-polar dari makroalga *Padina minor* asal kota Singkawang dan aktivitas terhadap bakteri *Staphylococcus aureus* dan *Escherichia coli*. Tahap penelitian ini terdiri atas maserasi, fraksinasi, uji fitokimia, karakterisasi menggunakan FTIR dan GC-MS, dan uji aktivitas antibakteri dengan metode difusi sumuran. Proses fraksinasi menghasilkan fraksi *n*-heksana, diklorometana, dan metanol. Fraksi *n*-heksana dipilih untuk dilakukan pemisahan menggunakan eluen *n*-heksana: diklorometana secara bergradien dan menghasilkan 11 fraksi gabungan (F<sub>1</sub>RW<sub>1</sub>-F<sub>1</sub>RW<sub>11</sub>). Fraksi gabungan F<sub>1</sub>RW<sub>2</sub> dipisahkan kembali menggunakan eluen *n*-heksana: diklorometana secara bergradien dan diperoleh 18 fraksi gabungan (F<sub>2</sub>RW<sub>1</sub>-F<sub>2</sub>RW<sub>18</sub>). Isolat F<sub>2</sub>RW<sub>4</sub> dilanjutkan untuk karakterisasi GC-MS sedangkan Isolat F<sub>2</sub>RW<sub>3</sub> dikarakterisasi menggunakan FTIR. Hasil interpretasi FTIR menunjukkan adanya serapan gugus hidroksil O-H (345.65 cm<sup>-1</sup>), C=O (1743.65 cm<sup>-1</sup>), ikatan C=C (1633.71 cm<sup>-1</sup>), C-H (2926.01; 2854.01, 1438.9 dan 723.31 cm<sup>-1</sup>), dan C-O-C (1170.79 cm<sup>-1</sup>). Hasil Analisa GC-MS menunjukkan bahwa fraksi F<sub>2</sub>RW<sub>4</sub> memiliki 2 senyawa utama yaitu metil dekenoat dan 11-metil oktadekenoat. Hasil uji aktivitas antibakteri menunjukkan bahwa ekstrak metanol dan fraksi *n*-heksana *Padina minor* bersifat tidak aktif dalam menghambat bakteri *Staphylococcus aureus* dan *Escherichia coli*.

Kata Kunci: *Padina minor*, FTIR, GC-MS, Antibakteri

**CHARACTERIZATION OF NON POLAR ORGANIC  
COMPOUNDS FROM *Padina minor* MACROALGAE  
FROM SINGKAWANG CITY AND  
ANTIBACTERIAL ACTIVITY AGAINST  
*Staphylococcus aureus* AND *Escherichia coli***

**Abstract**

Characterization of non polar organic compounds of macroalga *Padina minor* from Singkawang city and activity against *Staphylococcus aureus* and *Escherichia coli* bacteria has been carried out. The stages of this research consisted of maceration, fractionation, phytochemical tests, characterization using FTIR and GC-MS, as well as testing the antibacterial activity with the well-diffusion method. The fractionation process produces n-hexane, dichloromethane, and methanol fractions. The n-hexane fraction was selected for packaging using gradient n-hexane: dichloromethane eluent and yielded 11 combined fractions (F<sub>1</sub>RW<sub>1</sub>-F<sub>1</sub>RW<sub>11</sub>). The combined fraction F<sub>1</sub>RW<sub>2</sub> was separated again using n-hexane: dichloromethane eluent in a gradient manner and 18 combined fractions (F<sub>2</sub>RW<sub>1</sub>-F<sub>2</sub>RW<sub>18</sub>) were obtained. Then the F<sub>2</sub>RW<sub>4</sub> isolate was characterized for GC-MS characterization and the F<sub>2</sub>RW<sub>3</sub> isolate was characterized using FTIR. The FTIR interpretation results show the absorption of hydroxyl groups O-H (345.65 cm<sup>-1</sup>), C=O (1743.65 cm<sup>-1</sup>), C=C bonds (1633.71 cm<sup>-1</sup>), C-H (2926.01; 2854.01, 1438.9 and 723.31 cm<sup>-1</sup>), and C-O-C bonds (1170.79 cm<sup>-1</sup>). The results of the GC-MS analysis showed that the F<sub>2</sub>RW<sub>4</sub> fraction had 2 main compounds, namely methyl decanoate and 11-methyl octadecenoate. The results of the antibacterial activity test showed that the methanol extract and n-hexane fraction of *Padina minor* were inactive against the inhibiting bacteria *Staphylococcus aureus* and *Escherichia coli*.

Keywords: *Padina minor*, FTIR, GC-MS, Antibacterial