

## Antimetastasis Ekstrak Daun Gaharu (*Aquilaria malaccensis* Lam. dan *Gyrinops versteegii* (Gilg.) Domke) Terhadap Cell Line Kanker Payudara T47D

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### INTISARI

*Gyrinops versteegii* (Gilg.) Domke dan *Aquilaria malaccensis* Lam. merupakan tumbuhan penghasil gaharu yang banyak ditemui di Indonesia. Ekstrak daun *G. versteegii* dan *A. malaccensis* diketahui memiliki sifat antikanker dan diduga berpotensi sebagai antimetastasis. Tujuan dari penelitian ini adalah untuk mengetahui potensi antimetastasis dari ekstrak kloroform daun penghasil gaharu melalui penghambatan migrasi dan agregasi pada sel kanker payudara.

Sampel daun *G. versteegii* dan *A. malaccensis* diperoleh dari Kebun Raya Bogor. Ekstraksi dilakukan dengan metode soxhletasi menggunakan pelarut kloroform. Uji sitotoksisitas dilakukan dengan MTT assay menggunakan cell line T47D. Nilai  $IC_{50}$  yang diperoleh kemudian digunakan sebagai dasar untuk konsentrasi perlakuan pada uji migrasi dengan metode *scratch wound healing* dan uji agregasi dengan metode *hanging drop aggregation*.

Hasil penelitian menunjukkan bahwa ekstrak kloroform campuran daun *A. malaccensis* dan *G. versteegii* memiliki nilai  $IC_{50}$  paling rendah yaitu  $141,47 \pm 0,36$   $\mu\text{g/ml}$  terhadap sel kanker payudara T47D. Ekstrak kloroform daun gaharu *A. malaccensis* mampu menghambat migrasi sel T47D. Ekstrak kloroform daun gaharu campuran mampu menghambat migrasi pada konsentrasi  $3/4 IC_{50}$  ( $106,10$   $\mu\text{g/ml}$ ) dan mampu menghambat pembentukan agregat. Hal ini membuktikan bahwa ekstrak kloroform daun gaharu memiliki potensi antimetastasis sebagai alternatif pengobatan kanker payudara.

Kata kunci: Gaharu, T47D, antimetastasis, migrasi, agregasi

## **Antimetastatic of Agarwood Leaves (*Aquilaria malaccensis* Lam. and *Gyrinops versteegii* (Gilg.) Domke) Extract against Breast Cancer Cell Line T47D**

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### **ABSTRACT**

*Gyrinops versteegii* (Gilg.) Domke and *Aquilaria malaccensis* Lam. is an Agarwood plant that is commonly found in Indonesia. *G. versteegii* and *A. malaccensis* leaves extract are known to have anticancer properties and are thought to have potential as antimetastatic. The aim of this research is to determine the antimetastatic potential of chloroform extract of agarwood leaves through inhibition of migration and aggregation in breast cancer cells.

Samples of *G. versteegii* and *A. malaccensis* were obtained from the Kebun Raya Bogor. Extraction was carried out using soxhletation method with chloroform solvents. Cytotoxicity test was examined on T47D cell line using MTT assay. The IC<sub>50</sub> value was obtained then used as the basis for the concentration of treatment in the migration with the scratch wound healing assay and aggregation test with the hanging drop aggregation assay.

The results showed that the chloroform extract of *A. malaccensis* and *G. versteegii* leaves had the lowest IC<sub>50</sub> value 141,47±0,36 µg/ml on breast cancer cell line T47D. The chloroform extract of agarwood leaf *A. malaccensis* was able to inhibit T47D cell migration. The chloroform extract of combined agarwood leaves was able to inhibit migration at 3/4 IC<sub>50</sub> concentrations (106.10 µg / ml) and inhibit aggregate formation. These results prove that the chloroform extract of agarwood leaves has potential as an antimetastatic for breast cancer alternative treatment.

Keywords: Agarwood, T47D, antimetastatic, migration, aggregation