

**ISOLASI DAN ELUSIDASI STRUKTUR SENYAWA METABOLIT
SEKUNDER HASIL FERMENTASI JAMUR ENDOFIT *Diaporthe* sp.
MENGUNAKAN MEDIA *BROWN RICE SOLID MEDIUM* (BRSM)
SERTA UJI AKTIVITAS SEBAGAI ANTIBAKTERI**

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INTISARI

Isolasi dan elusidasi struktur senyawa metabolit sekunder menggunakan *brown rice solid medium* (BRSM) hasil fermentasi jamur endofit genus *Diaporthe* sp. serta uji aktivitas sebagai antibakteri telah dilakukan. Penelitian ini bertujuan untuk mengisolasi dan menentukan struktur senyawa metabolit sekunder jamur endofit *Diaporthe* sp. serta untuk mengetahui aktivitas biologi senyawa sebagai antibakteri.

Penelitian ini diawali dengan tahapan isolasi, peremajaan, dan fermentasi jamur endofit *Diaporthe* sp. Fermentasi jamur endofit *Diaporthe* sp. menggunakan media BRSM. Jamur yang telah difermentasi diekstraksi dengan metode padat-cair menggunakan pelarut etil asetat. Ekstrak kasar yang diperoleh di skrining menggunakan HPLC analitik dan dilakukan purifikasi menggunakan Reverelis mode *flash* dan HPLC preparatif. Isolat murni yang didapat dilakukan penentuan struktur senyawa dengan spektrofotometri UV-Vis, LC-MS, NMR 1D dan 2D. Aktivitas antibakteri isolat murni diuji menggunakan metode Dilusi Cair (*Broth Dilution*) sehingga diperoleh nilai MIC (*Minimum Inhibitory Concentration*).

Hasil penelitian ini dari isolat senyawa murni yang diperoleh berdasarkan analisis spektroskopi UV-Vis, LC-MS, NMR 1D dan 2D teridentifikasi sebagai senyawa sitokalasin H (**1**), sitokalasin J (**2**) dan sitokalasin H1 (**3**). Senyawa **1**, senyawa **2** dan senyawa **3** menunjukkan bioaktivitas antibakteri terhadap bakteri *Escherichia coli* pada konsentrasi 50 µg/mL.

kata kunci: antibakteri, *Brown Rice Solid Medium*, *Diaporthe* sp., MIC.

**ISOLATION AND STRUCTURE ELUCIDATION OF SECONDARY
METABOLITES FROM FERMENTATION BY ENDOPHYTE FUNGI
Diaporthe sp. USING BROWN RICE SOLID MEDIUM (BRSM) AND
ACTIVITY TEST AS ANTIBACTERIAL**

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ABSTRACT

Isolation and structural elucidation of secondary metabolite compounds using Brown Rice Solid Medium (BRSM) from fermentation of endophytic fungi of the genus *Diaporthe* sp., along with antibacterial activity tests, were conducted. This study aimed to isolate and determine the structure of secondary metabolites from the endophytic fungus *Diaporthe* sp. and to determine their biological activity as antibacterials.

This study began with the isolation, rejuvenation, and fermentation of the endophytic fungus *Diaporthe* sp. Fermentation of the endophytic fungus *Diaporthe* sp. used BRSM medium. The fermented fungus was extracted using the solid-liquid method using ethyl acetate as a solvent. The crude extract was screened using analytical HPLC and purified using Reverelis flash mode and preparative HPLC. The structure of the pure isolate was determined using UV-Vis spectrophotometry, LC-MS, 1D and 2D NMR. The antibacterial activity of the pure isolate was tested using the Broth Dilution method to obtain the Minimum Inhibitory Concentration (MIC) value.

The results of this study from pure compound isolates obtained based on UV-Vis spectroscopy, LC-MS, 1D and 2D NMR analysis were identified as Cytochalasin H (**1**), Cytochalasin J (**2**) and cytochalasin H1 (**3**). Compound **1**, compound **2** and compound **3** showed antibacterial bioactivity against *Escherichia coli* bacteria at a concentration of 50 µg/mL.

Keywords: antibacterial, Brown Rice Solid Medium, *Diaporthe* sp., MIC.