AKTIVITAS SITOTOKSIK ISOLAT TERPENOID DARI FRAKSI DIKLOROMETANA RUMPUT GONG (*Eriocaulon cinereum* R.BR) MENGGUNAKAN HPLC SEMI PREPARATIF TERHADAP SEL KANKER SERVIKS (HeLa)

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INTISARI

Latar Belakang : Fraksi etil asetat dan fraksi diklorometana yang mengandung senyawa terpenoid pada *Eriocaulon cinereum* R.Br atau rumput gong telah diteliti memiliki aktivitas sitotoksik terhadap sel kanker serviks HeLa dengan nilai IC_{50} 249,602 µg/mL; 292,681 µg/mL. Namun belum diketahui senyawa apa yang bertanggung jawab atas aktivitas tersebut.
Tujuan : Penelitian ini bertujuan untuk mengetahui profil senyawa dan aktivitas sitotoksik isolat terpenoid dari fraksi diklorometana *E. cinereum* R. Br terhadap sel kanker HeLa.
Metode : Rumput gong diekstraksi dengan metode Ultrasound-assisted Extraction (UAE) dengan 2 pelarut secara bertingkat yaitu n-heksan-etil asetat dilanjutkan fraksinasi menggunakan metode *Vacuum Liquid Chromatography* (VLC) dengan fase gerak diklorometana dan etil asetat. Fraksi dimurnikan menggunakan *High Performance Liquid Chromatography* (HPLC) semi preparatif kolom C18 dengan fase gerak pengoptimasian dimulai dari air, air:metanol, dan metanol. untuk mengisolasi terpenoid. Senyawa terpenoid diuji menggunakan plat KLT silika GF_{254} kemudian disemprot dengan reagen anisaldehid-asam sulfat. Aktivitas sitotoksik pada sel HeLa diuji menggunakan metode MTT-*Assay* dan dibaca pada ELISA-*reader* untuk mendapatkan nilai IC_{50}.
Hasil : Hasil identifikasi isolat pada waktu retensi 19 menit menunjukkan adanya senyawa terpenoid. Hasil olah data uji sitotoksik sel HeLa isolat terpenoid dari fraksi diklorometana *E. cinereum* memiliki nilai IC_{50} 83,248 µg/mL dengan indeks selektivitas 2,157.
Kesimpulan : Isolat *E. cinereum* R.Br pada waktu retensi 19 menit positif mengandung terpenoid, memiliki aktivitas sitotoksik cukup aktif menurut *National Cancer Institute* dan tergolong sedang menurut *World Health Organization*, serta memiliki aktivitas sitotoksik yang selektif terhadap sel kanker HeLa.

Kata kunci : *E. cinereum,* HeLa, isolat terpenoid, HPLC, sitotoksik

CYTOTOXIC ACTIVITY OF TERPENOID ISOLATES FROM DICHLOROMETHANE FRACTION *RUMPUT GONG* (*Eriocaulon cinereum* R.BR) USING SEMI PREPARATIVE HPLC AGAINST CERVIX CANCER CELLS (HeLa)

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ABSTRACT

Background : The ethyl acetate and dichloromethane fractions containing terpenoid compounds in *Eriocaulon cinereum* R.Br or gong grass have been studied to have cytotoxic activity against HeLa cervical cancer cells with an IC_{50} value of 249.602 g/mL; 292,681 g/mL. However, it is not yet known what compound is responsible for this activity.
Objective : This study was aimed to determine the compound profile and cytotoxic activity of terpenoid isolates of the dichloromethane fraction of *E. cinereum* R. Br against HeLa cancer cells.
Method : *Rumput gong* were extracted using the Ultrasound-assisted Extraction (UAE) method with 2 solvents in stages, namely n-hexane-ethyl acetate followed by fractionation using the Vacuum Liquid Chromatography (VLC) method with dichloromethane and ethyl acetate as mobile phases. The fraction was purified using a semi-preparative High Performance Liquid Chromatography (HPLC) C18 column with optimization of the mobile phase starting from water, water: methanol, and methanol. to isolate terpenoids. Terpenoid compounds were tested using a silica TLC plate GF_{254} then sprayed with anisaldehyde-sulfuric acid reagent. Cytotoxic activity on HeLa cells was tested using the MTT-Assay method and read on an ELISA-reader to obtain the IC_{50} value.
Result : The result of the identification of isolates at a retention time of 19 minutes showed the presence of terpenoid compounds. The result of the cytotoxic test of HeLa cell terpenoid isolates from the dichloromethane fraction of E. cinereum had an IC50 value of 83,248 g/mL with a selectivity index of 2,157.
Conclusion : The isolate of *E. cinereum* R.Br at retention time of 19 minutes was positive for terpenoids, had moderately active cytotoxic activity according to the National Cancer Institute and was classified as moderate according to the World Health Organization, and also had selective cytotoxic activity against HeLa cancer cells.

Keyword : *E. cinereum*, HeLa, terpenoid isolate, HPLC, cytotoxic