

Aktivitas Sitotoksik Ekstrak N-Heksan Batang Faloak (*Sterculia Quadrifida* R.Br) Terhadap Pertumbuhan Sel HeLa

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INTISARI

Latar Belakang : Batang faloak (*S. quadrifida* R. Br) merupakan tanaman khas Nusa Tenggara Timur yang memiliki berbagai kandungan metabolit sekunder bermanfaat, salah satunya sebagai aktivitas antikanker serviks. Saat ini profil senyawa ekstrak n-heksan dan aktivitas sitotoksik antikanker dari batang *S. quadrifida* R.Br terhadap pertumbuhan sel HeLa belum dibuktikan, sehingga diperlukan pengujian untuk melihat potensi dan aktivitas senyawa dengan ekstrak n-heksan batang *S. quadrifida* R. Br terhadap pertumbuhan sel HeLa.

Tujuan : Mengetahui profil senyawa dan aktivitas sitotoksik ekstrak n-heksan dari batang *S. quadrifida* R.Br terhadap pertumbuhan Sel HeLa.

Metode : Batang faloak diekstraksi menggunakan metode *ultrasound assisted extraction* (UAE) selama 30 menit dengan pelarut n-heksan sebanyak 3 kali. Senyawa yang dihasilkan dari ekstrak n-heksan batang faloak diidentifikasi dengan Kromatografi Lapis Tipis (KLT) menggunakan pereaksi semprot Dragendorf, $AlCl_3$, KOH 5%, Anisaldehyd dan $FeCl_3$. Ekstrak yang diperoleh diuji sitotoksik pada sel HeLa dengan metode *MTT-assay* pada variasi konsentrasi 12,5; 25; 50; 100; dan 200 $\mu\text{g/mL}$. Hasil pengujian berupa persentase sel hidup yang selanjutnya digunakan untuk penentuan IC_{50} .

Hasil : Hasil identifikasi ekstrak n-heksan mengandung senyawa flavonoid, alkaloid, kuinon, dan terpenoid, sedangkan hasil uji sitotoksik menunjukkan ekstrak n-heksan *S. quadrifida* R.Br memiliki nilai IC_{50} 1128,300 $\mu\text{g/mL}$ dengan indeks selektifitas 1,641.

Kesimpulan : Ekstrak n-heksan *S. quadrifida* R.Br yang mengandung senyawa flavonoid, alkaloid, kuinon, dan terpenoid memiliki aktivitas sitotoksik lemah menurut *US National Cancer Insitute*.

Kata kunci : *S. quadrifida* R. Br, KLT, sel HeLa, *MTT-assay*

Cytotoxic Activity of N-Hexane Faloak Stem Extract Faloak (*Sterculia Quadrifida* R.Br) Against Hela Cell Line

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ABSTRACT

Background : Faloak steam (*S. quadrifida* R. Br) is a typical plant of East Nusa Tenggara which contains various useful secondary metabolites, one of which is cervical anticancer activity. Currently, the compound profile of n-hexane extract and anticancer cytotoxic activity of *S. quadrifida* R.Br stems on the growth of HeLa cells has not been proven, so testing is needed to see the potential and activity of compounds with n-hexane extract of *S. quadrifida* R. Br stems on growth. HeLa cells.

Objective : To determine the compound profile and cytotoxic activity of n-hexane extract from the stem of *S. quadrifida* R.Br on the growth of HeLa cells.

Methods : Faloak stems were extracted using the ultrasound assisted extraction (UAE) method for 30 minutes with n-hexane as solvent 3 times. Compounds produced from the n-hexane extract of faloak stems were identified by Thin Layer Chromatography (TLC) using Dragendorf spray reagent, $AlCl_3$, KOH 5%, Anisaldehyd and $FeCl_3$. The compounds obtained from the extraction were tested for cytotoxicity on HeLa cells by the MTT-assay method at various concentrations of 12,5; 25; 50; 100; and 200 g/mL. The results of the cytotoxic test were in the form of the percentage of live cells which were then used to determine the IC_{50} .

Results : The results of the identification of n-hexane extract compounds containing flavonoids, alkaloids, quinones, and terpenoids after spraying with reagents and heating. The results of the cytotoxic test data showed that the n-hexane extract of *S. quadrifida* R.Br was identified as having an IC_{50} value of 1128,300 g/mL with a selectivity index of 1.641.

Conclusion : *S. quadrifida* R.Br of n-hexane extract was positive for flavonoids, alkaloids, quinones, and terpenoids and had weak cytotoxic activity according to the US National Cancer Institute.

Key words : *S. quadrifida* R. Br, TLC, HeLa cells, MTT-assay