

INTISARI

Kanker merupakan penyakit dengan angka kematian yang masih tinggi. Secara empiris, rumput teki (*Cyperus rotundus* L.) telah digunakan sebagai bahan campuran dalam resep pengobatan beberapa jenis kanker (kanker serviks) terutama di China. Tujuan dari penelitian ini adalah mengetahui efek sitotoksik dari fraksi protein umbi teki terhadap kultur sel kanker (sel SiHa) dan kultur sel normal (sel Vero).

Penelitian ini merupakan penelitian eksperimental murni dengan rancangan acak lengkap pola satu arah. Fraksi protein umbi teki diendapkan dengan penambahan amonium sulfat dalam konsentrasi tertentu sehingga didapat seri fraksi-fraksi protein. Pengujian dilakukan secara kolorimetri menggunakan metode MTT [*3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl tetrazolium bromide*]. Hasil yang diperoleh berupa persen kematian sel yang kemudian diolah secara statistika dengan menggunakan analisis probit (harga LC_{50}) dan *t-independent*.

Dari hasil uji sitotoksitas diketahui bahwa fraksi protein umbi teki bersifat sitotoksik terhadap kultur sel SiHa dan sel Vero. Harga LC_{50} yang diperoleh pada FP₂₀, FP₄₀, FP₆₀, dan FP₈₀ terhadap sel SiHa berturut-turut sebesar 105,80 $\mu\text{g/ml}$; 106,20 $\mu\text{g/ml}$; 108,08 $\mu\text{g/ml}$; dan 84,46 $\mu\text{g/ml}$. Pada perlakuan terhadap sel Vero sebesar 35,1 $\mu\text{g/ml}$; 27,4 $\mu\text{g/ml}$; 14,7 $\mu\text{g/ml}$; dan 16,4 $\mu\text{g/ml}$. Harga LC_{50} tersebut menunjukkan fraksi protein umbi teki memiliki sitotoksitas lebih besar terhadap sel Vero dibanding sel SiHa.

Kata kunci : umbi teki, sitotoksitas, sel SiHa, sel Vero, fraksi protein, nilai LC_{50}

Cytotoxicity of Nutgrass Tuber (*Cyperus rotundus* L.) Protein Fraction

PF₂₀, PF₄₀, PF₆₀, and PF₈₀ against SiHa Cell Culture

ABSTRACT

Cancer is a disease with high death rate. In China, nutgrass (*Cyperus rotundus* L.) has been used empirically in cervical cancer treatment. The aim of this research is to determine cytotoxic activity of nutgrass tuber against cancer cells (SiHa cells) and normal cells (Vero cells).

The study was a pure experimental research with one way complete random design. Protein fractions of nutgrass tuber were obtained by precipitation using ammonium sulphate salt in various concentrations. The cytotoxicity assay was determined colorimetrically using the MTT (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl tetrazolium bromide) method. Data were collected in the percentage of cell death were calculated using probit analysis (LC₅₀ value) and analyzed with t-independent.

The results of cytotoxicity assay determined that protein fraction of nutgrass tuber had cytotoxic activity to SiHa and Vero cells. The LC₅₀ value obtained from FP₂₀, FP₄₀, FP₆₀, dan FP₈₀ to SiHa cells are 105,80 µg/ml; 106,20 µg/ml; 108,08 µg/ml; and 84,46 µg/ml respectively, while LC₅₀ value for Vero cells respectively are 35,09 µg/ml; 27,36 µg/ml; 14,73 µg/ml; and 16,43 µg/ml. The LC₅₀ value indicated that protein fraction of nutgrass tuber possess higher cytotoxicity to Vero cells compared SiHa cells.

Keyword: nutgrass tuber, SiHa cell, Vero cell, protein fraction, cytotoxicity, LC₅₀ value