INTISARI

PROFIL PROTEIN SEL KANKER PAYUDARA T47D
SETELAH PEMBERIAN EKSTRAK DAUN JERUK PURUT
(*Citrus hystrix* DC.)

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Daun jeruk purut (*Citrus hystrix* DC.) mengandung senyawa flavonoid, kumarin, saponin dan terpenoid. Penelitian sebelumnya menunjukkan bahwa daun jeruk purut bersifat sitotoksik dan dapat menginduksi apoptosis sel kanker. Pemberian senyawa kemoprevensi mempengaruhi ekspresi protein tertentu. Dosis dan waktu paparan mempengaruhi efektifitas agen kemoprevensi. Penelitian ini bertujuan untuk mempelajari pengaruh pemberian ekstrak etil asetat dan kloroform dengan perbedaan waktu paparan terhadap profil protein sel T47D (*human breast cancer cell line)* dan sel Vero. Sel Vero merupakan sel nonkanker yang biasa digunakan untuk perbandingan pengujian agen antikanker. Metode penelitian meliputi pembuatan ekstrak, ekstraksi protein sel, pengukuran konsentrasi sampel dengan metode Bradford dan pemisahan pita protein dengan SDS-PAGE. Sel diberi perlakuan ekstrak dengan waktu paparan 12 jam, 24 jam dan 48 jam. Dosis ekstrak berdasarkan nilai IC_{50} masing-masing sel. Doksorubisin dengan dosis 2,5 μg/ml dan 5 μg/ml digunakan sebagai kontrol positif. Berat molekul protein sampel ditentukan dari persamaan regresi linier log BM protein marker terhadap nilai Rf (*Retention factor)*. Nilai berat molekul protein sel T47D berkisar antara ±10,4 -111,4 kDa dan Vero berkisar antara 9,3-111,2 kDa. Perbedaan waktu paparan ekstrak menyebabkan perbedaan profil pita protein pada sel T47D dan sel Vero, demikian juga pemberian ekstrak etil asetat dan kloroform. Analisis profil protein dengan SDS-PAGE dapat digunakan sebagai studi awal untuk pengujian efek daun jeruk purut yang lebih spesifik sebagai obat kanker.

Kata kunci : Daun jeruk purut (*Citrus hystrix)*, T47D, waktu paparan, profil protein, SDS-PAGE.

ABSTRACT

PROTEIN PROFILE OF BREAST CANCER CELL LINE T47D AFTER TREATED WITH KAFFIR LIME (*Citrus hystrix* DC.) LEAVES EXTRACT

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Kaffir lime (*Citrus hystrix* DC.) leaves contains flavonoid, coumarin, saponin and terpenoid. Previous study showed that kaffir lime leaves are cytotoxic and can induce apoptosis of cancer cells. Giving chemoprevention compound cause differences in certain protein expression. Dose and exposure time affect the effectiveness of chemoprevention agents. The objective of this study was to examine the effect of ethyl acetate and chloroform extracts of kaffir lime leaves with a time dependent to protein profile of T47D (human breast cancer cell line) and Vero. Vero are noncancerous cells were used for comparison in chemoprevention agent test. The methods include leaves extraction, protein cells extraction, measuring the concentration by Bradford assay and separation of protein bands by SDS-PAGE. Cells treated with different exposure time 12, 24 and 48 hours. Dose of the extract is based on the IC_{50} value of each cell. Doxorubicin at a dose of 2.5 µg / ml and 5 µg / ml was used as a positive control. The molecular weight of protein samples was determined from linear regression equation of log protein marker molecule weight to the value of Rf (retention factor). Results showed that the value of T47D cell protein molecular weight range from ±111.4-10.4 kDa and Vero cell range from 9,3-111,2 kDa. The time dependent cause different protein profiles in T47D and Vero cells, as well as treatment with extract of ethyl acetate and chloroform. Analysis of the protein profile by SDS-PAGE can be used as a preliminary study to test the effect of lime leaves more specific as cancer drugs.

Keywords: Kaffir lime leaves (*Citrus hystrix),* T47D, time-dependent, protein profile, SDS-PAGE.