INTISARI

CHRISTIANA, PW., 2020.UJI AKTIVITAS SITOTOKSIK DAN JUMLAH PROTEIN Bcl-2 dan p53 EKSTRAK DAN FRAKSI DAUN ROSEMARY (*Rosmarinus officinalis*) TERHADAPSEL KANKER PAYUDARA T47D, THESIS, FAKULTAS FARMASI, UNIVERSITAS SETIABUDI, SURAKARTA.

Daun Rosemary (*Rosmarinus officinalis*) sering ditemukan dengan aktivitas antikankernya. Penelitian ini bertujuan untuk mengetahui aktivitas sitotoksik ekstrak dan fraksi daun rosemary terhadap sel kanker payudara T47D, mengetahui indeks selektivitas sel kanker T47D terhadap sel Vero dan untuk mengetahui ekpresi protein gen Bcl-2 dan p53.

Metode penyarian yang digunakan adalah sokhletasi dengan pelarut metanol. Ekstrak yang dihasilkan kemudian difraksinasi denggan partisi cair-cair. Uji sitotoksik menggunakan metode MTT *assay* dengan sel kanker payudara T47D terhadap sel vero dan hasilnya dibaca absorbansi dengan ELISA *Reader*. Pengaruhnya terhadap ekpresi protein gen Bcl-2 dan p53 dilihat dengan imunositokimia. Analisa data IC_{50} dan ekspresi protein menggunakan uji statistik *Anova*.

Hasil penelitian menunjukkan ekstrak dan fraksi etil asetat daun rosemary memiliki efek sitotoksik lemah>50µg/mlyaitu dengan IC_{50}berturut-turut 60,359 µg/mldan 58,433 µg/ml. Fraksi n-heksan menunjukkan efek sitotoksik sedang dengan nilai IC_{50} sebesar 34,801µg/ml. Indeks selektivitas ekstrak memiliki nilai 3,3. Ekstrak daun rosemary mampu meningkatkan ekspresi p53 dan mampu menghambat ekspresi Bcl-2 pada konsentrasi 30,179 – 120,718 µg/ml dan fraksi n-heksana mampu meningkatkan ekspresi p53 dan mampu menghambat ekspresi Bcl-2 pada konsentrasi 17,401- 69,602 µg/ml.

Kata Kunci : Daun rosemary (*Rosmarinus Officinalis*), sitotoksik, ekspresi Bcl-2 dan p53, sel kanker payudara T47D.

ABSTRACT

CHRISTIANA, PW., 2020. CYTOTOXIC ACTIVITY and PROTEIN EXPRESSION OF Bcl-2 and p53 ROSEMARY (Rosmarinus officinalis)EXTRACT AND FRACTION IN BREAST CANCER CELLS T47D, THESIS, FACULTY OF PHARMACEUTICALS, SETIA BUDI UNIVERSITY, SURAKARTA

Rosemary leaves (Rosmarinus officinalis) are often found with anticancer activity. This study aims to determine the cytotoxic activity of extracts and fractions of rosemary leaves against T47D breast cancer cells, determine the selectivity index of T47D cancer cells against Vero cells and to determine the protein expression of Bcl-2 and p53 genes.

The extraction method used was sokhletation with methanol as a solvent. The resulting extract is then fractionated with a liquid-liquid partition. Cytotoxic test using the MTT method assay with T47D breast cancer cells against vero cells and the results were read absorbance with ELISA Reader. Its effect on the expression of Bcl-2 and p53 gene proteins was seen with immunocytochemistry. IC50 data analysis and protein expression using the Anova statistical test.

The results showed extract and ethyl acetate fraction of rosemary leaves had a low cytotoxic effect >50 µg/ml ie with IC50 respectively 60.359 µg/ml and 58.433 µg / ml. N-heksan fraction had a moderate cytotoxic effect < 50µg / ml with IC_{50} value 34,801 µg/ml. The selectivity index of extracts and ethyl acetate fraction has a value 3.3. Rosemary leaf extract can increase the expression of p53 and can inhibit the expression of Bcl-2 at a concentration of 30.179 – 120.718 µg/mland the n-hexane fraction can increase the expression of p53 and can inhibit the expression of Bcl-2 at concentrations of 17.401- 69.602 µg/ml.

Keywords: Rosemary leaf (Rosmarinus Officinalis), cytotoxic, expression of Bcl-2 and p53, T47D breast cancer cells.