INTISARI

Widyasari, E., 2019. UJI AKTIVITAS SITOTOKSIK EKSTRAK DAN FRAKSI-FRAKSI DAUN JAMBU BIJI (*Psidium guajava* L.) TERHADAP SEL KANKER PAYUDARA MCF-7, SKRIPSI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA.

Daun jambu biji (*Psidium guajava* L.) merupakan tanaman suku Myrtaceae berkhasiat menghambat pertumbuhan kanker, antivirus, antibakteri, dan antidiare. Penelitian ini bertujuan untuk mengetahui aktivitas sitotoksik ekstrak dan fraksi-fraksi daun jambu biji, indeks selektivitas, golongan senyawa kimia dan fraksi teraktif.

Tanaman daun jambu biji diekstraksi dengan menggunakan metode maserasi dengan pelarut etanol dan difraksinasi dengan pelarut n-heksana, etil asetat dan air. Uji aktivitas sitotoksik dilakukan dengan menggunakan metode MTT (*Microculture Tetrazolium Technique*) dengan seri konsentrasi 1000; 500; 250; 125; 62.5; 31.25; 15.625 μg/mL. Kontrol positif Cisplatin dengan menggunakan seri konsentrasi 100; 50; 25; 12,5; 6,25; 3,125; 1,5625 μg/mL Nilai IC_{50} didapatkan dari persamaan regresi linear antara log konsentrasi vs % viabilitas sel.

Aktivitas sitotoksik terhadap sel kanker payudara MCF-7 diperoleh nilai IC_{50} ekstrak etanol, fraksi n-heksana, fraksi etil asetat dan fraksi air berturut-turut sebesar 320,4401 μg/ml, 71,473 μg/ml, 202,163 μg/ml dan 244,054 μg/ml. Indeks selektivitas ekstrak etanol sebesar 4,04, fraksi n-heksana sebesar 8,52, fraksi etil asetat sebesar 6,6, dan fraksi air sebesar 12,11. Golongan senyawa kimia yang diduga memiliki aktivitas sitotoksik yaitu steroid, alkaloid, dan tanin. N-heksana adalah fraksi teraktif.

Kata kunci : Daun jambu biji (*Psidium guajava L.*), sel MCF-7, sitotoksik fraksi *n*-heksana, etil asetat dan air.

ABSTRACT

Widyasari, E., 2019. EXTRACT AND FRACTIONS OF CYTOTOXICS ACTIVITY TEST FROM GUAVA LEAVES (*Psidium guajava* L.) ON BREAST CANCER CELLS MCF-7, THESIS, FACULTY OF PHARMACY. SETIA BUDI UNIVERSITY, SURAKARTA

Guava leaf (*Psidium guajava* L.) is a plant parts Myrtaceae efficacious to inhibit the growth of cancer, antiviral, antibacterial, and anti-diarrhea. This study aims to determine the cytotoxic activity of extracts and fractions of guava leaves, selectivity index, class of chemical compounds and fractions most active.

Plant leaves of guava extracted using maceration method with ethanol and fractionated with n-hexane, ethyl acetate and water. Cytotoxic activity tests were carried out using the MTT (Microculture Tetrazolium Technique) method with a concentration series of 1000; 500; 250; 125; 62.5; 31.25; 15,625 µg/mL. Cisplatin positive control using concentration series 100; 50; 25; 12.5; 6.25; 3,125; 1.5625 µg/mL. IC50 values were obtained from the linear regression equation between log concentration vs% cell viability.

Cytotoxic activity against breast cancer cells MCF-7 obtained IC50 values of ethanol extract, n-hexane fraction, ethyl acetate fraction and water fraction respectively 320.4401 µg/ml, 71.473 µg/ml, 202.163 µg/ml and 244,054 µg/ml. Selectivity index ethanol extract of 4.04, n-hexane fraction of 8.52, ethyl acetate fraction of 6.6, and a water fraction of 12.11. Groups of chemical compounds suspected of having cytotoxic activity are steroids, alkaloids, and tannins. N-hexane is the most active fraction.

Keywords: Guava leaves (*Psidium guajava* L.), MCF-7 cells, cytotoxics fraction of n-hexane, ethyl acetate and water.