

ABSTRAK

UJI AKTIVITAS SITOTOKSIK FRAKSI N-HEKSANA BUAH RANTI HITAM (*Solanum nigrum* L.) HASIL FERMENTASI KOMBUCHA TERHADAP LINI SEL KANKER PAYUDARA MDA-MB 231

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Latar belakang: Pengobatan kanker secara kimia diketahui menyebabkan berbagai efek samping yang merugikan. Sehingga perlu adanya alternatif pengobatan seperti menggunakan senyawa herbal yaitu buah ranti hitam dan kombucha. **Tujuan:** Mengetahui aktivitas sitotoksik fraksi n-heksan buah ranti hitam (*Solanum nigrum* L) sebelum dan sesudah fermentasi kombucha terhadap lini sel kanker payudara MDA-MB 231. **Metode :** Uji aktivitas sitotoksik fraksi n-heksan buah ranti hitam sebelum dan sesudah fermentasi dilakukan dengan metode MTT (3-(4,5- dimetiltiazol-2-il)-2,5-difeniltetrazolium bromide) sedangkan evaluasi hasil fermentasi meliputi analisis alkaloid metode gravimetri, analisis total fenolik, analisis total asam tertitrasi dan evaluasi pH. **Hasil** Berdasarkan uji sitotoksik metode MTT diperoleh nilai IC_{50} sebelum dan sesudah fermentasi kombucha sebesar 501,099 bpj 1388,87 bpj. **Kesimpulan :** Nilai IC_{50} fraksi n-heksan buah ranti hitam termasuk kategori sitotoksik sedang (moderat) sedangkan nilai IC_{50} hasil fermentasi fraksi n-heksan termasuk kategori tidak toksik.

Kata Kunci : Fraksi n-heksan buah ranti hitam, Kombucha, Lini sel kanker payudara MDA-MB231, MTT, *Solanum nigrum* L., Uji aktivitas sitotoksik.

ABSTRACT

CITOTOXIC ACTIVITY N-HEXANE FRACTION OF BLACK NIGHTSHADE (*Solanum nigrum* L.) FRUIT FERMENTED BY KOMBUCHA AGAINST MDA-MB 231 BREAST CANCER CELL LINE

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Background: Cancer treatment by chemically known to cause various adverse side effects. There is a need for alternative treatments such as using herbal compounds, namely black nightshade and kombucha. **Objective:** To determine the cytotoxic activity of n-hexane fraction of black nightshade (*Solanum nigrum* L) before and after kombucha fermentation against MDA-MB 231 breast cancer cell line **Methods:** Test of cytotoxic activity of n-hexane fraction of black nightshade before and after fermentation using MTT method (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide) while evaluation of fermentation results include alkaloid analysis using gravimetric method, total phenol analysis, total titrated acid analysis and evaluation of pH. **Results:** Based on the cytotoxic test, the MTT method obtained IC_{50} values before and after kombucha fermentation of 501.099 ppm and 1388.87 ppm. **Conclusion:** IC_{50} value of n-hexane fraction of black nightshade is categorized as moderate cytotoxic whereas IC_{50} value from n-hexane fraction fermentation includes non-toxic category.

Keywords: cytotoxic activity test, Kombucha, MDA-MB231 breast cancer cell line, MTT, n-hexane fraction of black nightshade, *Solanum nigrum* L.