ABSTRAK

ANALISIS LC-MS/MS EKSTRAK METANOL KULIT BATANG *Chisocheton macrophyllus* (Meliaceae) ASAL SUKABUMI SERTA AKTIVITAS SITOTOKSIK TERHADAP SEL KANKER PAYUDARA MCF-7

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Latar Belakang: Salah satu kanker penyebab kematian ialah kanker payudara oleh sel kanker MCF-7. *Chisocheton macrophyllus* merupakan salah satu tanaman herbal yang berpotensi sebagai antitoksik. Ekstrak kulit batang *Chisocheton macrophyllus* asal Kebun Raya Bogor menunjukkan aktivitas sitotoksik terhadap berbagai jenis sel kanker. Belum ada kajian profil senyawa kimia dan aktivitas sitotoksik dari kulit batang tanaman *Chisocheton macrophyllus* asal Sukabumi. Penelitian ini bertujuan mengetahui profil senyawa ekstrak metanol kulit batang *Chisocheton macrophyllus* asal Sukabumi menggunakan LC-MS/MS serta potensi ekstrak metanol kulit batang *Chisocheton macrophyllus* sebagai antikanker terhadap sel kanker payudara MCF-7.

Metode: Penelitian ini menggunakan studi eksperimental yang dilakukan dengan dua tahapan, pertama analisis LC-MS/MS ekstrak metanol kulit batang *Chisocheton macrophyllus* asal Sukabumi. Kedua, uji aktifitas sitotoksik dari ekstrak metanol kulit batang *Chisocheton macrophyllus* asal Sukabumi terhadap sel kanker payudara MCF-7

Hasil: Ekstrak metanol kulit batang *Chisocheton macrophyllus* asal Sukabumi berdasarkan analisis LC-MS/MS teridentifikasi senyawa 12-hydroxy-methyl abietate, alisol I, kurarinone, nootkatone dan $C_{24}H_{26}O_6$. Ekstrak metanol kulit batang *Chisocheton macrophyllus* asal Sukabumi memiliki aktivitas sitotoksik tergolong lemah terhadap sel kanker payudara MCF-7 dengan nilai IC_{50} 340 µg/mL.

Kesimpulan:. Ekstrak metanol kulit batang *Chisocheton macrophyllus* asal Sukabumi teridentifikasi senyawa 12-hydroxy-methyl abietate, alisol I, kurarinone, nootkatone dan $C_{24}H_{26}O_6$. Ekstrak metanol kulit batang *Chisocheton macrophyllus* asal Sukabumi memiliki aktivitas sitotoksik lemah sebagai antikanker terhadap sel kanker payudara MCF-7

Kata Kunci:*Breast Cancer Cell* MCF-7,*Chisocheton macrophyllus*, LC-MS/MS, Sukabumi.

ABSTRACT

LC-MS/MS ANALYSIS OF METHANOL EXTRACTS OF STEM BARK OF *Chisocheton macriphyllus* (Meliaceae) FROM SUKABUMI AND CYTOTOXIC ACTIVITY ON BREAST CANCER CELLS MCF-7

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Background: One of the causes of cancer death is breast cancer by MCF-7 cancer cells. Chisocheton macrophyllus is one of the herbal plants that has the potential as an antitoxic. Chisocheton macrophyllus bark extract from Bogor Botanical Gardens showed cytotoxic activity against various types of cancer cells. There has been no study of the profile of chemical compounds and cytotoxic activity from the bark of the Chisocheton macrophyllus plant from Sukabumi. This study aims to determine the profile of methanol extract of Chisocheton macrophyllus stem bark from Sukabumi using LC-MS/MS and the potential of Chisocheton macrophyllus bark methanol extract as anticancer against MCF-7 breast cancer cells.

Methods: This study used an experimental study conducted in two stages, the first was LC-MS/MS analysis of the methanol extract of the stem bark of Chisocheton macrophyllus from Sukabumi. Second, test the cytotoxic activity of the methanol extract of the stem bark of Chisocheton macrophyllus from Sukabumi against MCF-7 breast cancer cells.

Results: The methanol extract of the stem bark of Chisocheton macrophyllus from Sukabumi based on LC-MS/MS analysis identified compounds 12-hydroxy-methyl abietate, alisol I, kurarinone, nootkatone and $C_{24}H_{26}O_6$. The methanol extract of the stem bark of Chisocheton macrophyllus from Sukabumi had a relatively weak cytotoxic activity against MCF-7 breast cancer cells with an IC_{50} value of 340 g/mL.

Conclusion: The methanol extract of the stem bark of Chisocheton macrophyllus from Sukabumi was identified as 12-hydroxy-methyl abietate, alisol I, kurarinone, nootkatone and $C_{24}H_{26}O_6$ compounds. The methanol extract of the stem bark of Chisocheton macrophyllus from Sukabumi has weak cytotoxic activity as anticancer against MCF-7 breast cancer cells.

Keywords: *Breast Cancer Cell* MCF-7, *Chisocheton macrophyllus*, LC-MS/MS, Sukabumi.